

Tree ID	Tree Species	Common Name	Trunk Diameter at base (cm)	Trunk Diameter at 1.3m (cm)	Nominal Tree Height (m)
108	Eucalyptus sieberi	Black Ash	0.50	0.63	6.00
109	Acacia parramattensis	Parramatta Wattle	0.32	0.38	3.84
110	Allocaesia illiralis	Black She-Oak	0.08	0.13	2.00
111	Allocaesia illiralis	Black She-Oak	0.14	0.24	2.00
112	Allocaesia illiralis	Black She-Oak	0.23	0.31	2.76
113	Eucalyptus sieberi	Black Ash	0.37	0.15	6.84
114	Allocaesia illiralis	Black She-Oak	0.16	0.23	2.00
115	Allocaesia illiralis	Black She-Oak	0.10	0.15	2.00
116	Eucalyptus sieberi	Black Ash	0.22	0.27	2.64
117	Allocaesia illiralis	Black She-Oak	0.14	0.24	2.00
118	Eucalyptus sieberi	Black Ash	0.38	0.42	3.36
119	Eucalyptus sieberi	Black Ash	0.41	0.55	4.92
120	Acacia parramattensis	Parramatta Wattle	0.15	0.20	2.00
121	Eucalyptus sieberi	Black Ash	0.55	1.04	6.60
122	Eucalyptus sieberi	Black Ash	0.87	0.98	10.44
123	Alnus incana	Willow-leaved Hakea	0.18	0.28	2.00
124	Alnus incana	Willow-leaved Hakea	0.17	0.20	2.04
125	Cotoneaster glaucophyllus	Cotoneaster	0.30	0.30	2.40
126	Corymbia gummifera	Red Bloodwood	0.22	0.28	2.64
127	Pittosporum undulatum	Sweet Pittosporum	0.18	0.20	2.00
128	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.23	2.00
129	Conatopodium gummiferum	New South Wales Christmas Bush	0.53	1.60	6.36
130	Allocaesia illiralis	Black She-Oak	0.14	0.20	2.00
131	Acacia parramattensis	Parramatta Wattle	0.34	0.28	2.58
132	Eucalyptus sieberi	Black Ash	0.36	0.33	3.12
133	Conatopodium gummiferum	New South Wales Christmas Bush	0.16	0.22	2.00
134	Conatopodium gummiferum	New South Wales Christmas Bush	0.13	0.17	2.00
135	Pittosporum undulatum	Sweet Pittosporum	0.30	0.31	3.60
136	Conatopodium gummiferum	New South Wales Christmas Bush	0.10	0.16	2.00
137	Conatopodium gummiferum	New South Wales Christmas Bush	0.31	0.80	3.72
138	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.20	2.00
139	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.20	2.00
140	Eucalyptus sieberi	Black Ash	0.30	0.45	3.60
141	Acacia parramattensis	Parramatta Wattle	0.33	0.38	3.96
142	Pittosporum undulatum	Sweet Pittosporum	0.31	0.42	3.72
143	Acacia parramattensis	Parramatta Wattle	0.40	0.53	4.80
144	Conatopodium gummiferum	New South Wales Christmas Bush	0.16	0.20	2.00
145	Conatopodium gummiferum	New South Wales Christmas Bush	0.10	0.11	2.00
146	Pittosporum undulatum	Sweet Pittosporum	0.09	0.10	2.00
147	Conatopodium gummiferum	New South Wales Christmas Bush	0.19	0.22	2.28
148	Pittosporum undulatum	Sweet Pittosporum	0.31	0.22	2.52
149	Pittosporum undulatum	Sweet Pittosporum	0.24	0.30	2.88
150	Conatopodium gummiferum	New South Wales Christmas Bush	0.08	0.10	2.00
151	Pittosporum undulatum	Sweet Pittosporum	0.12	0.15	2.00
152	Conatopodium gummiferum	New South Wales Christmas Bush	0.14	0.20	2.00
153	Pittosporum undulatum	Sweet Pittosporum	0.30	0.24	2.40
154	Pittosporum undulatum	Sweet Pittosporum	0.22	0.28	2.64
155	Pittosporum undulatum	Sweet Pittosporum	0.18	0.29	2.16
156	Corymbia gummifera	Red Bloodwood	0.97	0.62	6.84
157	Pittosporum undulatum	Sweet Pittosporum	0.20	0.23	2.40
158	Conatopodium gummiferum	New South Wales Christmas Bush	0.17	0.19	2.04
159	Conatopodium gummiferum	New South Wales Christmas Bush	0.11	0.15	2.00
160	Banksia serrata	Old Man Banksia	0.32	0.35	2.64
161	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.18	2.00
162	Conatopodium gummiferum	New South Wales Christmas Bush	0.13	0.17	2.00
163	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.20	2.00
164	Acacia parramattensis	Parramatta Wattle	0.38	0.40	3.36
165	Corymbia gummifera	Red Bloodwood	0.39	0.51	4.68
166	Pittosporum undulatum	Sweet Pittosporum	0.14	0.17	2.00
167	Conatopodium gummiferum	New South Wales Christmas Bush	0.12	0.16	2.00
168	Pittosporum undulatum	Sweet Pittosporum	0.13	0.15	2.00
169	Conatopodium gummiferum	New South Wales Christmas Bush	0.17	0.24	2.04
170	Conatopodium gummiferum	New South Wales Christmas Bush	0.15	0.21	2.00
171	Conatopodium gummiferum	New South Wales Christmas Bush	0.22	0.28	2.64
172	Pittosporum undulatum	Sweet Pittosporum	0.19	0.22	2.28
173	Pittosporum undulatum	Sweet Pittosporum	0.23	0.28	2.76
174	Pittosporum undulatum	Sweet Pittosporum	0.22	0.33	2.64
175	Pittosporum undulatum	Sweet Pittosporum	0.14	0.18	2.00
176	Conatopodium gummiferum	New South Wales Christmas Bush	0.17	0.23	2.04
177	Conatopodium gummiferum	New South Wales Christmas Bush	0.14	0.20	2.00
178	Conatopodium gummiferum	New South Wales Christmas Bush	0.16	0.22	2.00
179	Pittosporum undulatum	Sweet Pittosporum	0.31	0.38	2.52
180	Pittosporum undulatum	Sweet Pittosporum	0.18	0.23	2.16
181	Allocaesia illiralis	Black She-Oak	0.22	0.28	2.64
182	Conatopodium gummiferum	New South Wales Christmas Bush	0.12	0.17	2.00
183	Allocaesia illiralis	Black She-Oak	0.10	0.15	2.00
184	Allocaesia illiralis	Black She-Oak	0.10	0.15	2.00
185	Pittosporum undulatum	Sweet Pittosporum	0.14	0.22	2.00
186	Allocaesia illiralis	Black She-Oak	0.30	0.35	2.40
187	Allocaesia illiralis	Black She-Oak	0.10	0.19	2.00
188	Eucalyptus sieberi	Black Ash	0.11	0.16	2.00
189	Eucalyptus sieberi	Black Ash	0.41	0.49	4.92
190	Pittosporum undulatum	Sweet Pittosporum	0.16	0.20	2.00
191	Eucalyptus capillaris	Brown Stringybark	0.27	0.32	3.24
192	Acacia parramattensis	Parramatta Wattle	0.29	0.39	3.48
193	Eucalyptus capillaris	Brown Stringybark	0.34	0.50	4.08
194	Eucalyptus sieberi	Black Ash	0.78	0.80	9.36
195	Allocaesia illiralis	Black She-Oak	0.13	0.19	2.00
196	Corymbia gummifera	Red Bloodwood	0.40	0.50	4.80
197	Eucalyptus sieberi	Black Ash	0.32	0.48	3.84
198	Eucalyptus sieberi	Black Ash	0.37	0.48	4.44
199	Corymbia gummifera	Red Bloodwood	0.22	0.26	2.64
200	Corymbia gummifera	Red Bloodwood	0.37	0.15	6.84
201	Allocaesia illiralis	Black She-Oak	0.19	0.26	2.28
202	Eucalyptus sieberi	Black Ash	0.22	0.27	2.64
203	Black Ash	Black Ash	0.28	0.28	2.40
204	Corymbia gummifera	Red Bloodwood	0.23	0.30	2.16
205	Allocaesia illiralis	Black She-Oak	0.14	0.20	2.00
206	Eucalyptus sieberi	Black Ash	0.68	0.68	8.16
207	Eucalyptus sieberi	Black Ash	0.27	0.35	2.64
208	Pittosporum undulatum	Sweet Pittosporum	0.36	0.40	3.12
209	Eucalyptus sieberi	Black Ash	0.49	0.80	5.88
210	Banksia serrata	Old Man Banksia	0.62	0.80	6.24
211	Eucalyptus sieberi	Black Ash	0.09	0.12	2.00
212	Eucalyptus sieberi	Black Ash	0.39	0.43	4.68
213	Eucalyptus sieberi	Black Ash	0.40	0.55	4.80
214	Pittosporum undulatum	Sweet Pittosporum	0.31	0.40	3.72
215	Banksia serrata	Old Man Banksia	0.43	0.58	5.16
216	Banksia serrata	Old Man Banksia	0.38	0.46	4.56
217	Cinnamomum camphora	Camphor Laurel	0.40	0.84	5.88
218	Pittosporum undulatum	Sweet Pittosporum	0.19	0.26	2.28
219	Pittosporum undulatum	Sweet Pittosporum	0.22	0.28	2.64
220	Banksia serrata	Old Man Banksia	0.38	0.35	3.12
221	Banksia serrata	Old Man Banksia	0.38	0.48	4.56
222	Corymbia gummifera	Red Bloodwood	0.40	0.49	4.80
223	Pittosporum undulatum	Sweet Pittosporum	0.24	0.32	2.88
224	Eucalyptus sieberi	Black Ash	0.28	0.42	3.60
225	Eucalyptus sieberi	Black Ash	0.20	0.24	2.40
226	Pittosporum undulatum	Sweet Pittosporum	0.25	0.25	3.00
227	Banksia serrata	Old Man Banksia	0.30	0.34	3.60
228	Eucalyptus sieberi	Black Ash	0.25	0.30	3.00
229	Eucalyptus sieberi	Black Ash	0.27	0.27	2.40
230	Allocaesia illiralis	Black She-Oak	0.38	0.48	4.56
231	Allocaesia illiralis	Black She-Oak	0.30	0.27	2.40
232	Allocaesia illiralis	Black She-Oak	0.30	0.37	3.60
233	Allocaesia illiralis	Black She-Oak	0.29	0.40	3.48
234	Pittosporum undulatum	Sweet Pittosporum	0.18	0.20	2.00

High Retention value

Moderate Retention value

Low Retention value

Very Low Retention value (should remove)

Extent of canopy as verified by site measure and aerial photos

Existing Tree Proposed for Removal

Tree Identification Number

Nominal Tree Protection Zone (TPZ) (Shown for high value trees)

Standing Dead Tree

TREE RETENTION VALUE NOTES
The proposed retention value of the trees was determined based on a considered combination of the size, age, condition and suitability of the tree. Each tree was then ranked according to one of 4 retention categories;
1. **"High" Retention Value** — these are trees that are typically in good or very good condition, large and visually prominent, historically or environmentally important. They should represent a serious physical constraint to development and their removal avoided where possible and feasible.
2. **"Moderate" Retention Value** — these are trees that are in good to reasonable condition, with no major structural defects and could be retained where possible and feasible to do so.
3. **"Low" Retention Value** — these are trees that are of poor condition or have structural defects, are particularly small or common plants, are not historically, environmentally or socially significant and should not be considered as a constraint to development. They could be retained only if they are not likely to be impacted by or constrain potentially desirable development outcomes.
4. **"Very Low" Retention Value** — these are trees that are in very poor health, or poor form, or have serious structural defects, are considered weeds or combination of all these, and therefore should be considered for removal regardless of any development.

Consideration has also been given to the relationship of the trees to one another and their proximity to the likely development areas on the site. For example, trees that are part of a closely spaced group, or are likely to be significantly misshapen or unstable with the removal of surrounding trees and structures are considered with these factors in mind.



ARTERRA DESIGN PTY LTD ABN 40 069 552 610
SUITE 602 / 51 RAWSON STREET, EPPING, NSW 2121
P 02 9957 2466 F 02 9957 3977 W ARTERRA.COM.AU

A	For Development Application	RWS	24/09/18
REVISION	DESCRIPTION	CHKD	DATE

PROJECT & CLIENT
58 Laitoki Road, Terrey Hills - ILUs and RACF

Tolucy Pty Ltd

DRAWING TITLE
Tree Retention Value Plan (West)

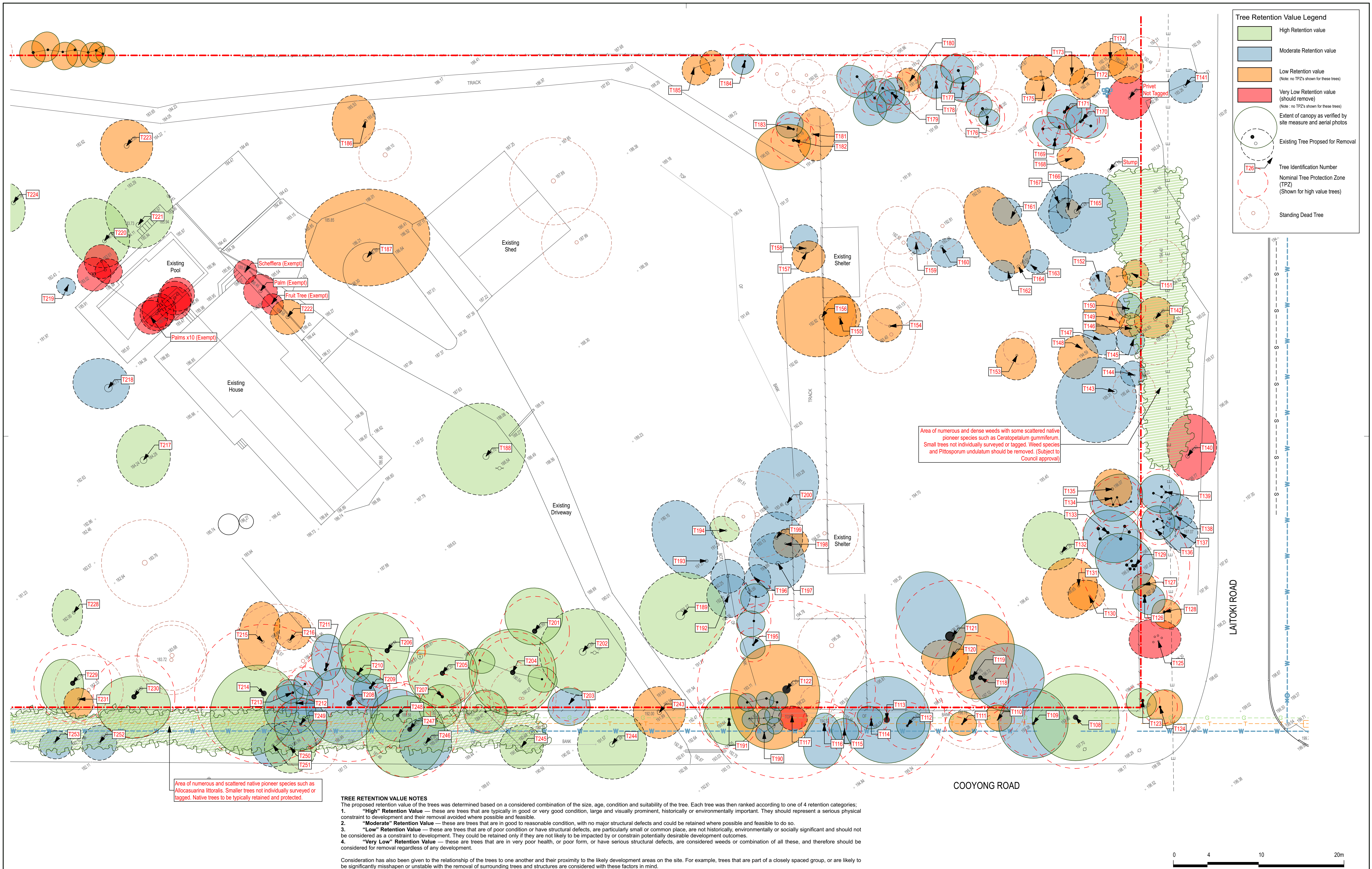
Project No : 18.17
Designed : RWS/CLB
Drawn : RWS/CLB
Scale : 1:200@A1/1:400@A3

North

0 4 10 20m

REVISION
T-01
A

Printed at : 3:45 pm 12/4/19



TREE RETENTION VALUE NOTES

The proposed retention value of the trees was determined based on a considered combination of the size, age, condition and suitability of the tree. Each tree was then ranked according to one of 4 retention categories:

1. **"High" Retention Value** — these are trees that are typically in good or very good condition, large and visually prominent, historically or environmentally important. They should represent a serious physical constraint to development and their removal avoided where possible and feasible.
2. **"Moderate" Retention Value** — these are trees that are in good to reasonable condition, with no major structural defects and could be retained where possible and feasible to do so.
3. **"Low" Retention Value** — these are trees that are of poor condition or have structural defects, are particularly small or common place, are not historically, environmentally or socially significant and should not be considered as a constraint to development. They could be retained only if they are not likely to be impacted by or constrain potentially desirable development outcomes.
4. **"Very Low" Retention Value** — these are trees that are in very poor health, or poor form, or have serious structural defects, are considered weeds or combination of all these, and therefore should be considered for removal regardless of any development.

Consideration has also been given to the relationship of the trees to one another and their proximity to the likely development areas on the site. For example, trees that are part of a closely spaced group, or are likely to be significantly misshapen or unstable with the removal of surrounding trees and structures are considered with these factors in mind.



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SUITE 602 / 51 RAWSON STREET, EPPING, NSW 2121
P 02 9957 2466 F 02 9957 3977 W ARTERRA.COM.AU

A For Development Application
REVISION DESCRIPTION
RWS 24/09/18
CHKD DATE

PROJECT & CLIENT
58 Laitoki Road, Terrey Hills - ILUs and RACF

Tolucy Pty Ltd
DRAWING NUMBER
Tree Retention Value Plan (East)

Project No : 18.17
Designed : RWS/CLB
Drawn : RWS/CLB
Scale : 1:200@A1/1:400@A3
North
T-02
A
Plotted at : 3:45 pm 12/4/19

TREE PROTECTION SPECIFICATIONS

1. Tree Protection Measures and Protocols.

All work around existing trees to be retained shall be in accordance with AS 4970-2009 Protection of trees on development sites with the clear establishment of the required Tree Protection Zones (TPZ's). If the scope of work allowed within or the extent of the Tree Protection Zones of existing trees is not clear, please refer to the Contract Manager or Project Consulting Arborist for clarification.

Before any site works commence tree protection zones and other measures must be established and conveyed to those all working on the site. The Contractor shall ensure all subcontractors are inducted prior to working on the site. All inductions shall include description and identification of the Tree Protection Zones and the restriction on work and activities with regard to trees.

Damage to roots or degradation of the soil through compaction and/or excavation within TPZ's is likely to cause serious damage to the tree. Any work operations required within TPZ's must be carried out with extreme care. All trees, palms and other shrubs within TPZ's are to be retained unless shown otherwise on the Tree Protection Plan(s). Trees marked for retention shall not be used to display signage, or as fence or cable supports for any reason. No materials stockpiling, chemicals or washout areas are permitted immediately upslope of or within the Tree Protection Zone. The washing down of wheel barrows, paint cans/brushes, acids and the like shall not be done near existing trees as the runoff is very harmful to tree roots.

No fuel powered pumps or generators or air compressors are to be placed within TPZ's. No fuel or chemicals shall be stored and no equipment or vehicles shall be serviced or re-fuelled within a TPZ.

2. Controlled Construction Access

Construction access points, stockpiling and storage areas shall be clearly identified on site and fenced off where appropriate. Uncontrolled access and parking of vehicles inside TPZ's shall be avoided. If access is required through a tree protection zone, the access way shall be treated with ground protection.

3. Tree Protection Fencing & Signage

The Tree Protection Plan(s) shows the extent of areas to be fenced and protected. Protection measures shall be certified as adequate by the Project Consulting Arborist. This fencing may form part of the general construction site fencing, where practical. It shall remain in place as long as possible and typically not be removed until the final landscape installation in those areas begins.

All tree protection fencing shall be 1800mm high galvanised chain wire or welded steel mesh. Fencing must be bolted together and secured with the necessary back stays and bracing.

Star pickets with bunting or danger tape shall not constitute acceptable tree protection fencing.

Suitable signage as defined by AS 4970-2009 Appendix C shall be affixed to the external side of the fencing at a spacing of not less than 1 sign per 20 lineal metres of fence.

If fence locations conflict with the proposed works, contact the Project Consulting Arborist and Contract Manager for resolution. No new services (unless under-bored) shall be located within or through the Tree Protection Zone.

4. Trunk and Lower Branch Protection

A trunk barrier is to be erected around the circumference of the tree trunk and root buttress where shown. This barrier will consist of a double layer of used carpet or carpet underfelt placed around the trunk. A layer of battens is to be placed over the underfelt. The battens are to have a maximum spacing of 50mm. The height of the battens is to be 2 metres or to the height of the first branches. Lower large branches may require the same protection if likely to be damaged by passing vehicles or equipment. Secure in place with galvanised steel bracing straps. Do not nail into or otherwise injury the trunk or bark. Battens may be made from any suitable waste timber of similar sizes and depths. All sharp or protruding edges are to be properly covered with tape or similar padding.



Example image of acceptable ground protection rumble boards

5. Works within the TPZ

All work within the root zone of existing trees shall be undertaken with the utmost care. If by necessity a tree requires removal of branches for building or access, pruning shall be done in strict accordance with accepted arboriculture techniques and AS 4373-2007. No rubbish, spoil or new materials shall be placed on the root zone of any existing tree or against their trunks.

6. Ground Protection

If it is proposed to create any access route, or similar, within the TPZ of a retained tree, the Contractor shall install rumble boards over the TPZ ground surface. No excavation shall be allowed. Contractor shall first place a suitable permeable geotextile to the extent required and then a 100mm thick layer of wood chip mulch or coarse no-fines gravel over the extent to be covered. Then place hardwood boards (minimum 3600 x 200 x 75mm) on their flat edge, side by side, with a 30 - 50mm gap to form a rumble strip. These boards are to be held together with three galvanised metal bracing straps nailed to each board. The two outer straps are to be approximately 200mm in from the ends of the boards. The third strap is to be along the centre line of the boards.

7. Provision of Temporary Irrigation

A temporary and automated (battery powered timer is sufficient) watering system to be placed within the TPZs of all trees to maintain adequate water to the retained trees and help maintain their healthy condition. This shall be a surface mounted 'residential-style' soaker hose and/or similar surface sprinkler systems. It is to be surface visible and spray delivered so that is operation can be easily visible and verified. It should be on a designated supply line, separate from other construction related water supplies to minimise its likelihood of being disconnected.

Typically, during spring and summer months it should be set to run for a minimum of 30 minutes every day, in the early morning. During, autumn and winter months it should be set to run for 1 hour once every week. The operation can be suspended temporarily in periods of extensive and prolonged rain.

The system is to remain in place for the duration of construction, or until the project consulting arborist approves it's removal. It may be removed to allow final landscape treatments to proceed. If accidentally disturbed or damaged by construction activities, it is to be reinstated as soon as practicable.

8. Structural Demolition Within TPZ's

Project Consulting Arborist shall be on site during all demolition work within the TPZ's to monitor and advise on tree protection. Secateurs and a handsaw shall be available to deal with and cleanly cut any exposed roots that have to be cut. Machines with a long reach may be used if they can work from outside TPZ's or from protected areas within TPZ's. They shall not encroach onto unprotected soil in TPZ's.

Debris to be removed from TPZ's must be moved across existing hard surfacing or temporary ground protection in a way that prevents compaction and disturbance of soil. Alternatively, it can be lifted out by machines provided this does not disturb TPZ's or damage the canopy. If appropriate, leave below ground structures such as footings and disused pipes in place if their removal will cause excessive root disturbance.

When pulling up existing paving the Contractor shall work backwards, lifting demolished paving back onto the existing paving. Roots may be found growing under the pavement and should not be trafficked. Roots growing into existing sub-base should be left and new surface finishes placed over the top without disturbance.

9. Excavations or Trenching within TPZ's

Excavation within TPZ's shall not be allowed using mechanical equipment such as excavators or backhoes. Excavation within TPZ's shall only be carried out carefully by hand taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air (air spade), or water vacuum extraction shall be an appropriate alternative to hand digging and is the preferred method.



Example image of acceptable tree protection batten

Exposed roots to be removed shall be cut cleanly with a sharp saw or secateurs at the face of the excavation. Roots temporarily exposed must be protected by appropriate covering with damp hessian or sand. Roots greater than 50mm in diameter are to be retained and shall only be cut in exceptional circumstances and only after consultation with the Project Consulting Arborist. Roots greater than 100mm in diameter shall typically not be allowed to be cut and must be worked around.

10. Soft Landscaping Installation

Final trimming and planting shall be judiciously undertaken around trees. All soft landscaping within the tree protection zones will be installed with care to avoid root disturbance from irrigation trenching, lighting installation and the planting of larger plants. Permanent irrigation (if used) shall be installed as spray heads located outside of TPZ's and spraying inwards. All other services such as small-scale electrical services shall also be designed and installed to avoid any excavation or trenching around the trees.

No significant excavation or cultivation, especially by rotary hoes or excavators, shall occur within TPZs. Where new designs require the levels to be increased, good quality and permeable top soil shall be used. It should be firmed into place but not over compacted. All areas close to tree trunks shall be kept at the original ground level. Where turf is to be installed tree trunks shall have mulched rings applied rather than grass laid up to the trunk.

The size of the installed plants shall typically be less than 5L pots so that the maximum depth of the new root balls is less than 200mm. Any planting proposed that is larger than this shall be only installed outside of the SRZ and with care to not injure roots while digging planting holes.

11. Canopy Pruning

The Contractor shall prune branches of protected trees only as directed by the Project Consulting Arborist. Pruning is only to be undertaken by a qualified arborist (under the supervision of a person with AQF Level 4 or above). The Project Consulting Arborist is to be at present at all times during the pruning work. Work is to be in strict accordance with to AS4373 Pruning of Amenity Trees. Do not treat wounds.

12. Root Pruning

Pruning of roots of protected trees shall only be as directed the Project Consulting Arborist. The Tree Contractor shall use only a qualified arborist (AQF Level 4 or above). The Project Consulting Arborist is to be present at all times during the root pruning.

Roots are not to be cut using normal excavation machinery of any sort. This usually results in splitting and massive disturbance well past the intended line of cut. When required to cut roots, use hand methods and sharp hand tools (e.g. secateurs, hand saw) such that the remaining root systems are preserved intact and undamaged. Roots are to be cut back by hand square to the direction of the root travel (or edge of the excavation). Do not cut any tree roots exceeding 40mm diameter unless permitted. Excavations within root zones should be kept open for as short a period as possible. Any excavated face containing roots is to be temporarily supported, where necessary, to prevent soil loss from around the other retained roots.

13. Accidental Tree Damage

Should a tree be accidentally damaged, the Contractor shall immediately notify the Project Consulting Arborist. Timing can be of the essence, particularly with bark injuries, trunk damage or chemical contaminations.

If a branch has been broken, it shall be removed and the damaged end pruned to a suitable branch collar. If the branch has been torn out of the trunk, assessment shall be made and the damage cleaned up by as much as possible without further damage to the tree.

If roots are accidentally disturbed or excavated, any broken, crushed and torn sections shall be exposed and pruned leaving clean cuts to minimise risk of infection by fungal pathogens and promote good conditions for new root growth.

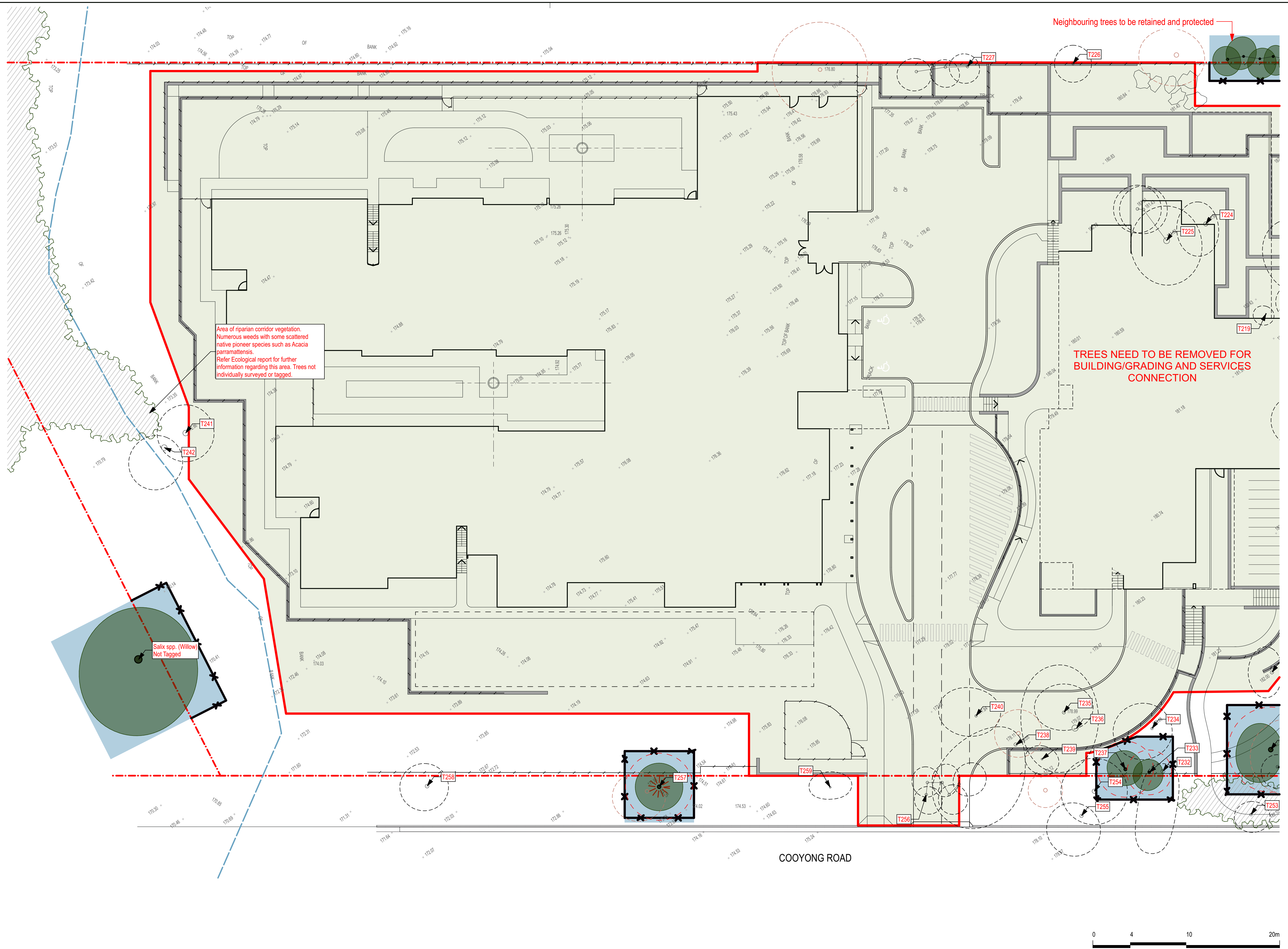


Example image of acceptable tree protection fencing measures to be applied. (1.8m high rigid metal fencing with appropriate lateral bracing)

58 Laitoki Road, Terrey Hills - Tree Impact Assessment Schedule									
Sl No	Tree Species	Common Name	Trunk Diameter at base (mm)	Trunk Diameter at 1.3m (mm)	Normal TPZ SRZ (m)	Normal SRZ (m)	SRZ (m)	SRZ (m)	Recommendation
108	Eucalyptus siderox	Black Ash	0.50	0.63	6.00	2.73	High	Retain and Protect	
109	Allocasuarina littoralis	Parramatta Wattle	0.52	0.58	3.84	2.30	Moderate	Retain and Protect	
110	Allocasuarina littoralis	Black She-Quai	0.58	0.53	2.00	1.40	Low	Retain and Protect	
111	Allocasuarina littoralis	Black She-Quai	0.54	0.54	2.00	1.82	Low	Retain and Protect	
112	Allocasuarina littoralis	Black She-Quai	0.53	0.51	2.76	2.02	Moderate	Retain and Protect	
113	Eucalyptus siderox	Black Ash	0.57	0.55	6.84	2.30	Moderate	Retain and Protect	
114	Allocasuarina littoralis	Black She-Quai	0.56	0.55	2.00	1.79	Moderate	Retain and Protect	
115	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
116	Eucalyptus siderox	Black Ash	0.52	0.57	2.64	1.91	Moderate	Retain and Protect	
117	Allocasuarina littoralis	Black She-Quai	0.54	0.54	2.00	1.82	V Low / Remove	Remove	
118	Eucalyptus siderox	Black Ash	0.58	0.42	3.36	2.30	Moderate	Retain and Protect	
119	Eucalyptus siderox	Black Ash	0.41	0.55	4.92	2.57	Low	Retain and Protect	
120	Allocasuarina littoralis	Parramatta Wattle	0.55	0.50	2.00	1.68	Low	Remove	
121	Eucalyptus siderox	Black Ash	0.56	0.54	6.60	3.36	Moderate	Retain and Protect	
122	Eucalyptus siderox	Black Ash	0.57	0.58	10.44	3.28	Low	Retain and Protect	
123	Eucalyptus siderox	Black Ash	0.56	0.58	2.00	1.88	High	Retain and Protect	
124	Allocasuarina littoralis	Black She-Quai	0.57	0.50	2.00	1.88	Low	Retain and Protect	
125	Allocasuarina littoralis	Black She-Quai	0.57	0.50	2.40	2.00	V Low / Remove	Remove	
126	Coleostephus gypsifolius	Red Bloodwood	0.50	0.40	2.40	2.00	V Low / Remove	Remove	
127	Cornelia panicea	Black She-Quai	0.52	0.58	2.64	1.94	Moderate	Retain and Protect	
128	Allocasuarina littoralis	Black She-Quai	0.56	0.50	2.00	1.68	Low	Remove	
129	Allocasuarina littoralis	New South Wales Christmas Bush	0.50	0.50	2.00	1.79	Low	Retain and Protect	
130	Allocasuarina littoralis	New South Wales Christmas Bush	0.53	0.50	6.36	4.03	Moderate	Retain and Protect	
131	Allocasuarina littoralis	Black She-Quai	0.54	0.50	2.00	1.68	Low	Remove	
132	Allocasuarina littoralis	Parramatta Wattle	0.54	0.50	2.88	2.04	Low	Remove	
133	Eucalyptus siderox	Black Ash	0.56	0.58	3.12	2.08	High	Remove	
134	Allocasuarina littoralis	New South Wales Christmas Bush	0.56	0.52	2.00	1.75	Moderate	Retain and Protect	
135	Allocasuarina littoralis	New South Wales Christmas Bush	0.53	0.57	2.00	1.57	Moderate	Retain and Protect	
136	Allocasuarina littoralis	Black She-Quai	0.50	0.51	3.60	2.02	Low	Remove	
137	Allocasuarina littoralis	New South Wales Christmas Bush	0.50	0.56	2.00	1.53	Moderate	Retain and Protect	
138	Allocasuarina littoralis	Black She-Quai	0.51	0.50	3.72	3.01	Moderate	Retain and Protect	
139	Allocasuarina littoralis	New South Wales Christmas Bush	0.55	0.50	2.00	1.68	Moderate	Remove	
140	Eucalyptus siderox	Black Ash	0.55	0.50	3.60	2.37	V Low / Remove	Remove	
141	Cornelia panicea	Black She-Quai	0.50	0.50	3.60	2.37	V Low / Remove	Remove	
142	Allocasuarina littoralis	New South Wales Christmas Bush	0.51	0.42	3.72	2.30	Low	Remove	
143	Allocasuarina littoralis	Parramatta Wattle	0.40	0.53	4.80	2.53	Moderate	Remove	
144	Allocasuarina littoralis	New South Wales Christmas Bush	0.50	0.50	2.00	1.68	Moderate	Remove	
145	Allocasuarina littoralis	Black She-Quai	0.50	0.51	2.00	1.31	Moderate	Remove	
146	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.26	Low	Remove	
147	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.26	Moderate	Retain and Protect	
148	Allocasuarina littoralis	New South Wales Christmas Bush	0.51	0.50	2.00	1.49	Low	Remove	
149	Allocasuarina littoralis	Black She-Quai	0.54	0.50	2.00	1.68	Moderate	Remove	
150	Allocasuarina littoralis	Black She-Quai	0.50	0.54	2.40	1.82	Low	Remove	
151	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
152	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
153	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
154	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
155	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
156	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
157	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
158	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
159	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
160	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
161	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
162	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
163	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
164	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
165	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
166	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
167	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
168	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
169	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
170	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
171	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
172	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
173	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
174	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
175	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
176	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
177	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
178	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
179	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
180	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
181	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
182	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.40	1.82	Low	Remove	
183	Allocasuarina littoralis	New South Wales Christmas Bush	0.51	0.57	2.02	1.57	Moderate	Retain and Protect	
184	Allocasuarina littoralis	Black She-Quai	0.50	0.56	2.00	1.45	Moderate	Retain and Protect	
185	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
186	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
187	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
188	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
189	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
190	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
191	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
192	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
193	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
194	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
195	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
196	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
197	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
198	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
199	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
200	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
201	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
202	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
203	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
204	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
205	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
206	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
207	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
208	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
209	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
210	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
211	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
212	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
213	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
214	Allocasuarina littoralis	Black Ash	0.58	0.68	8.16	8.81	High	Retain and Protect	
215	Eucalyptus siderox	Black Ash	0.58	0.58	6.24	2.13	High	Retain and Protect	
216	Eucalyptus siderox	Black Ash	0.58	0.58	6.24	2.13	High	Retain and Protect	
217	Eucalyptus siderox	Black Ash	0.58	0.58	6.24	2.13	High	Retain and Protect	
218	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
219	Eucalyptus siderox	Black Ash	0.58	0.58	6.24	2.13	High	Retain and Protect	
220	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
221	Eucalyptus siderox	Black Ash	0.58	0.58	6.24	2.13	High	Retain and Protect	
222	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
223	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
224	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
225	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
226	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
227	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
228	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
229	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
230	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
231	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
232	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
233	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
234	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
235	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
236	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
237	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
238	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
239	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
240	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
241	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
242	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
243	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
244	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
245	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate	Retain and Protect	
246	Allocasuarina littoralis	Black She-Quai	0.50	0.50	2.00	1.49	Moderate</		

Tree Impact and Protection Plan Legend

- Existing Tree Retained
Extent of canopy as verified by site measure and aerial photos
- Existing Tree to be Conditionally Retained
(Refer to NOTE 01)
- Existing Tree Removed
(Note: no TPZ's shown for these trees)
- Standing Dead Tree
- Tree Identification Number
T26
- Construction Period Tree Protection Zone - consolidated area
- Tree Protection Zone temporary fencing
- Trunk Protection Batters to be installed
- Expected loss of roots due to excavation or trenching
- Surface impact to be managed - minimal root loss expected
- Nominal Tree Protection Zone Radius (TPZ)
- Proposed Future Building
- Proposed Future Retaining Walls
- Extent of ground modification and disturbance



NOTE 02
Refer to the accompanying Arboricultural Impact Assessment Report for full description of trees, measurements and methods used to assess the trees, and proposed tree protection measures. Refer to T-03 for tree protection specifications and schedule.



ARTERRA DESIGN PTY LTD ABN 40 069 552 610
SUITE 602 / 51 RAWSON STREET, EPPING, NSW 2121
P 02 9957 2466 F 02 9957 3977 W ARTERRA.COM.AU

B	For LEC Determination	RWS	12/04/19
A	For Development Application	RWS	24/09/18
REVISION	DESCRIPTION	CHKD	DATE

PROJECT & CLIENT
58 Laitoki Road, Terrey Hills - ILUs and RACF

Project No : 18.17
Designed : RWS/CLB
Drawn : RWS/CLB
Scale : 1:200@A1/1:400@A3

Tolucy Pty Ltd

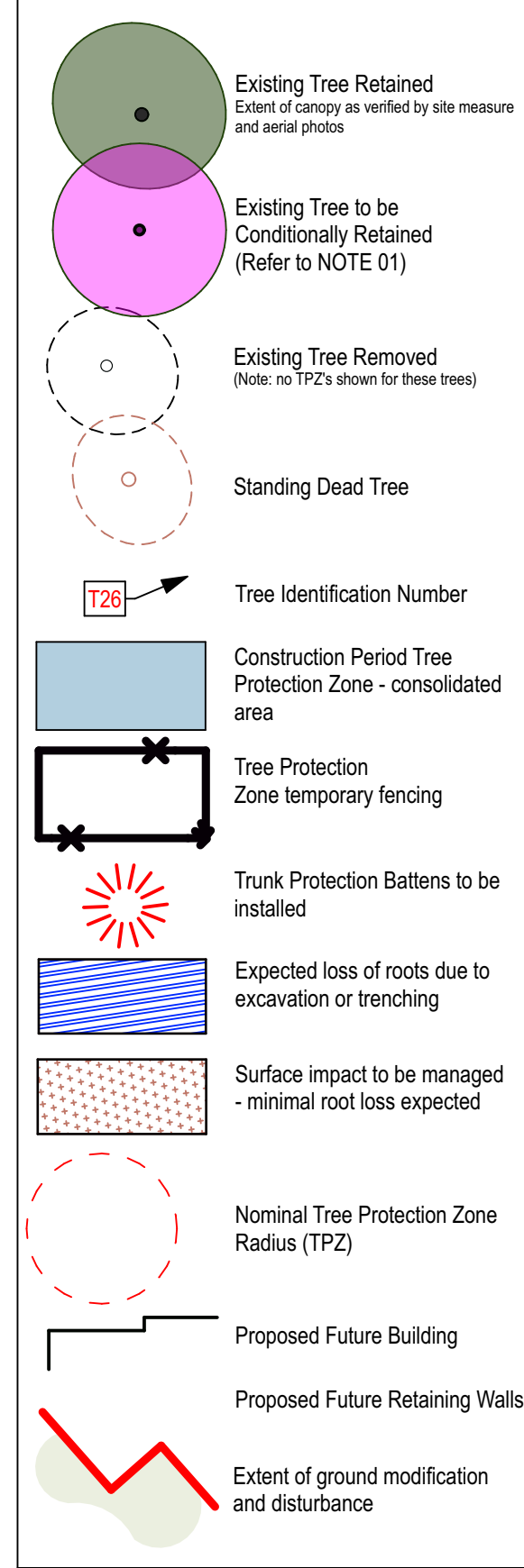
DRAWING TITLE
Tree Protection & Removal Plan (West)

DRAWING NUMBER
T-04

REVISION
B

Plotted at : 3:45 pm 12/4/19

Tree Impact and Protection Plan Legend

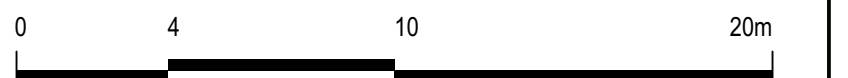
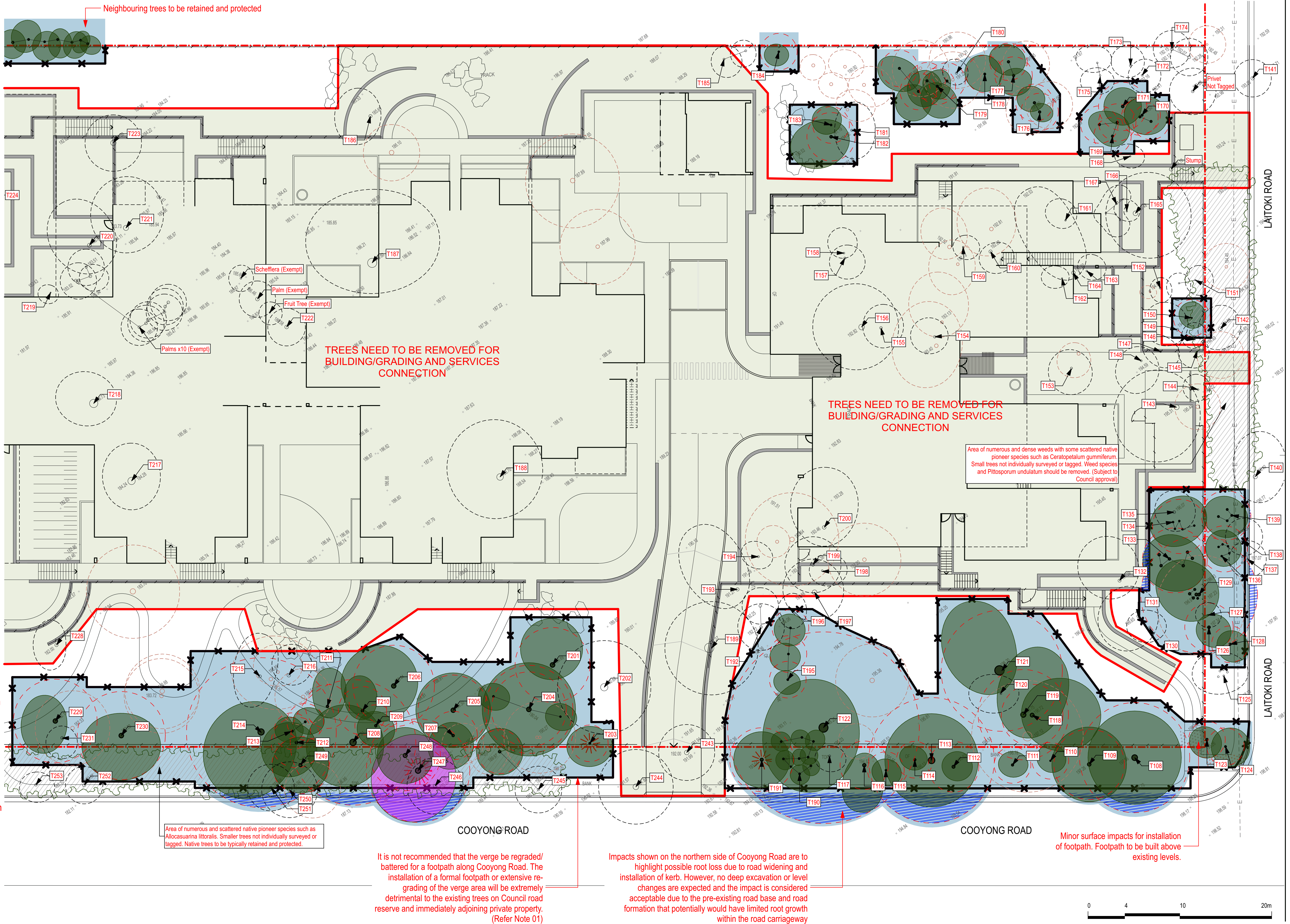


NOTE 01 - TREES TO BE CONDITIONALLY RETAINED

Northern Beaches Council has requested road widening and the installation of a new formalised kerb along the western side of Laitoki Road and the northern side of Cooyong Road. Trees that directly conflict with this have been shown to be removed. There is one tree illustrated by the pink colouring that is likely to be impacted by this work. Regrading of verge to be minimised. It is the Arborists recommendation that the verge levels be sensitively maintained to enable retention of the trees in and adjacent the verge. The protection of the conditionally retained tree needs to be made on site during the works. For this reason this tree has been listed as conditionally retained, subject to detailed observation of root disturbance once kerb work is undertaken. Refer also to Section 02 on drawing L-SD-07 by Arterra Design

NOTE 02

Refer to the accompanying Arboricultural Impact Assessment Report for full description of trees, measurements and methods used to assess the trees, and proposed tree protection measures. Refer also to T-03 for tree protection specifications and schedule.



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REVISION	DESCRIPTION	CHKD	DATE
B	For LEC Determination	RWS	12/04/19
A	For Development Application	RWS	24/09/18

PROJECT & CLIENT
58 Laitoki Road, Terrey Hills - ILUs and RACF

Tolucy Pty Ltd
DRAWING TITLE
Tree Protection & Removal Plan (East)

Project No : 18.17
Designed : RWS/CLB
Drawn : RWS/CLB
Scale : 1:200@A1/1:400@A3
DRAWING NUMBER
T-05
REVISION
B
Plotted at : 3:45 pm 12/4/19