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PROPOSED PUBLIC PATHWAY 21, 23 & 25 NORTH AVALON ROAD – AVALON BEACH ARBORICULTURAL ASSESSMENT REPORT

File No: RTC-16219

INTRODUCTION & METHODOLOGY

This report has been commissioned to address potential impacts that may occur to neighbouring and Council verge trees for the purpose of constructing a new Council verge public pathway. The assessment area and proposed pathway is located adjacent No. 21, 23 & 25 North Avalon Road terminating at the corner of Tasman Road, AVALON BEACH NSW. This report takes into consideration four (4) trees located close to the design footprint and provides recommendations for tree management based on Australian Standard AS4970 – 2009 Protection of Trees on Development Sites. Plans reviewed and works conducted to assist in preparation of this report include:

- The author conducted a visual site and tree inspection on Friday 25th October 2019. The inspection included assessment of trees with basal diameters greater than 80mm(Ø), observing tree vitality (vigour) and measuring the lower trunk to obtain Structural Root Zone (SRZ) radial setbacks, *being the area required for tree stability*.
- According the four trees with temporary tree numbers and identify trees by their accorded number throughout this report.
- Review of NB Consulting Engineers Proposed Civil Plans job No 190247 rev B dated 20.9.2019.

SUMMARY OF ASSESSMENT

The subject trees

1. The four subject trees are considered in good vigour with T3 displaying slightly low vitality. Of the four trees three are located within the Council verge with T1 situated on the boundary of No.23 North Avalon Road. The trees inspected are relatively young specimens capable of further growth with the remaining useful life expectancy of the trees considered relatively high being capable of retention for 10+ years.

The development proposal

2. The proposal is to construct a 1.2m wide public footpath central to the Council verge, constructed to Council specifications and details. The typical cross section detail plan shows excavation with potential regrading and batter to ensure levels and grades transition to existing levels.

Given the width of the Council verge and restriction in radial root development by adjacent roadside kerb & guttering the structural root zones (SRZ's) occupy the majority of the verge indicating SRZ disturbance is likely to be unavoidable.

Given the design footprint within the SRZ tree sensitive construction measures without grading cut or site leveling are required with severing of the anchoring root zone (the SRZ) not recommended to accommodate the proposal. Should excavation be required within the SRZ prior nondestructive tree root investigations are recommended to provide more information on the location of critical roots and associated impacts by the proposal.

Figure 1, showing tree & pathway location

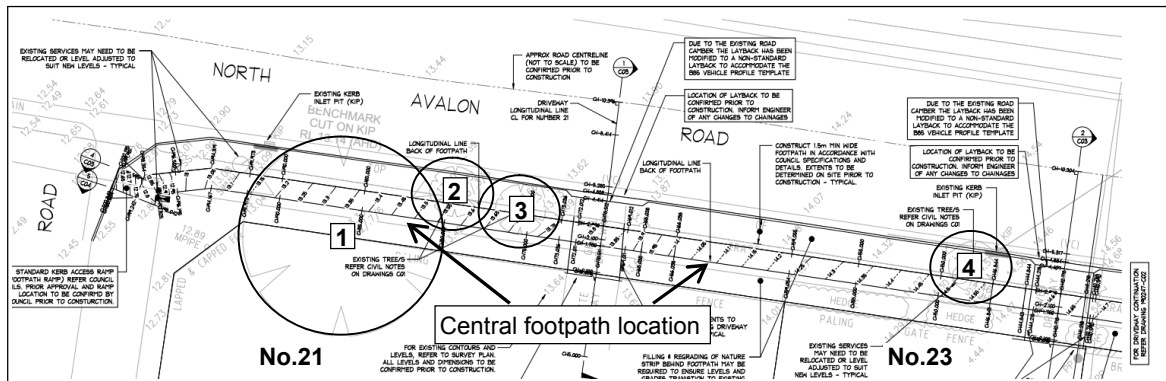
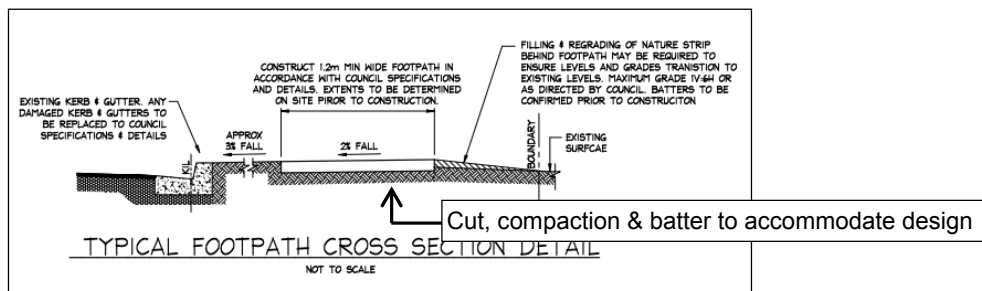


Table 1, tree schedule

Tree	Name	TrunkØ	SRZ	Comments
1	<i>Glochidion ferdinandi</i> Cheese Tree	600mm at base	2.7m	Tree height 6m with minor surface root activity evident
2	<i>Banksia integrifolia</i> Costal Banksia	250mm	1.8m	Tree height near 4m with high concentration of surface roots evident on tension side (footpath area) = high level of impact by path proposal
3	<i>Banksia integrifolia</i> Costal Banksia	100 & 200mm	2m	Tree height near 4m with moderate concentration of surface roots evident on tension side (footpath area) = high level of impact with path located at base of tree = tree removal likely
4	<i>Banksia integrifolia</i> Costal Banksia	250mm	1.8m	Tree height <3m with SW service at base. Has 4x smaller shrubs <2m in height adjacent

NOTE: all radial setbacks are taken from the centre of the tree

Figure 2, showing typical footpath cross section



Minimising construction impacts

- 3 In assessment of proposed design plans the following specific recommendations are provided for the purpose of minimising construction impacts:
 1. There should be no disturbance or excavation within structural root zones (SRZ's) being *the area required for tree stability* (AS4970).
 2. Where excavations are required within the SRZ in accordance with AS4970-2009 tree root mapping by nondestructive investigation techniques are to be conducted to provide more information on the location and distribution of critical roots, and to determine likely impacts to the trees.

3. In assessment of impacts to critical roots the likelihood of structurally compromising the anchorage of trees 2, 3 & 4 is to be closely considered due to tension root disturbance (roots that take up strain of lean & mass weight), primarily due to the confinement of roots within the narrow verge and adjacent roadside targets in the event of failure.
4. Based on the design footprint it is highly likely tree 3 will require removal unless tree sensitive design techniques are adopted to retain the tree.
5. Tree sensitive design techniques identified within AS4970-2009 and to consider for this proposal are:
 - Suspending the footpath to span over the SRZ without disruption to underlying tree roots by pier & beam construction
 - Constructing the pathway on top of a ground level, on a permeable subbase without grading cut or compaction within the SRZ
 - Install alternative permeable / porous pavement materials such as soft fall rubber, asphalt or permeable paving that does not require grading cut or compaction

General requirements

6. This report is to be used in conjunction with any previous arboricultural impact assessment report specific to tree protection and management advice provided for the purpose of construction activities.
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Yours sincerely



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