



Arboricultural report

To: Auckland Council Community Facilities treemanager@aucklandcouncil.govt.nz
From: Andrew Barrell, Consultant Arborist, Director Tree3 Ltd andybarrell@xtra.co.nz
Date: 01 April 2026
Re: 3 Pigeon Mountain Road, Half Moon Bay – *works in root zone of trees in open space zone for site development*
Tree Owner Approval application – supporting information

Introduction

- 1) I have been engaged to provide an arboricultural assessment of works that will implicate two trees located on Auckland Council (AC) land adjacent to 3 Pigeon Mountain Road, Half Moon Bay as part of a proposal which will include an application to AC for tree owner approval (TOA).
- 2) The proposal involves site development and will entail works within the site that encroach into the outer edge of the root zone of the two trees growing within the AC reserve. The works will include cut and fill, installation of decking and construction of retaining walls.
- 3) The aim of this report is to provide an assessment of the trees and the impacts of the proposed works along with recommendations to support an application to secure TOA from AC Community Facilities (ACCF) to carry out the proposed works. The report will also address resource consent issues if/where relevant.
- 4) I visited the site on 15 November 2025 to carry out an assessment of the trees and the proposed works. I had unrestricted access to the trees in the reserve during this visit, weather conditions were fine and all inspection work was carried out by cursory visual inspection from ground level.
- 5) The main reference for this report is the Resource Consent plan set drawn by Shape Architects Ltd, file reference: "260318 3 PMR RC - Plans & Controls (1-2)", project number 207 and dated 24 March 2026. Snips from this plan set have been included within the body of this report for clarification purposes however they are not to scale and any detailed information should be taken from the original document which will be provided with the TOA package.
- 6) I have arboricultural experience and qualifications, the details of which are summarised on my company website at the following address: <http://tree3.co.nz/about-us/andy-barrel-cv/>. I have based this report on my observations and the supplied information and the recommendations have been made in light of my experience.

Proposal & background information

- 7) **The proposal.** Figure 1 is a snip of the above referenced Master Plan showing the location of the trees in relation to the overall site layout. Enlarged sections have been included later in this report. There are other trees located around the boundary of the site but they will remain unaffected by the proposed works provided adequate site management procedures are adopted.

Figure 1 – Site plan showing location of trees in relation to overall site layout.



- 8) **Relevant industry standards** that relate to this assessment include Australian Standard AS4970-2025 *Protection of tree on development sites* (AS4970) and British Standard BS5837 – *Trees in relation to design, demolition and construction – Recommendations* (BS5837). AS4970 defines the *Notional Root Zone* (NRZ) as a circular area around a tree with a radius equal to twelve times the stem diameter at 1.4m above ground level. If the tree has multiple stems an aggregate value is used to calculate the NRZ. This area should be appropriately managed to allow for the survival of the tree. In addition, AS4970 describes the *structural root zone* (SRZ) as an area within a circle around the tree within which important roots will be present that are critical to the support of the tree.
- 9) AS4970 suggests that if less than 10% of the NRZ is implicated/compromised by any works then any associated adverse impacts will be insignificant; if the disruption affects 10-20% of the NRZ there is an expectation that remedial measures may be necessary which can include viable root zone area/s being added elsewhere and contiguous with the remaining NRZ. If the works implicate more than 20% of the NRZ then the disruption is considered to be of a scale that could have serious consequences for tree health and stability and should be avoided if at all possible.

- 10) In addition to the above industry standard, the *protected root zone* (PRZ) is described as follows in Chapter J – *Definitions* of the Auckland Council (AC) Unitary Plan (AUP):
“The circular area of ground around the trunk of a protected tree, the radius of which is the greatest distance between the trunk and the outer edge of the canopy. For columnar crown species the protected root zone is half the height of the tree.”
- 11) This AUP metric is relevant with regards to whether or not the proposed activities exceed the *permitted activity* standards in the relevant AUP chapter which in turn dictates whether or not resource consent is required. If the activity affects less than 20% of the PRZ then it complies with the *permitted activity* standard in *Chapter E16 – Trees in open space zones*.
- 12) **Tree protection rules** relating to this site and proposal are contained in the AUP. My understanding is that the relevant activity status for this proposal is found in Chapter E16 (*Trees in open space zones*) as summarised below.
- Activity A7 (*Works within the protected root zone*) which has *permitted activity* status.
- 13) The relevant standard for works in protected root zone areas is reproduced below:
E16.6.2 Works within the protected root zone
(2) For roots greater than 60mm but less than 80mm in diameter:
(a) excavation undertaken by hand digging, or air spade, or hydro vac or machine excavator within the protected root zone with direction and/or supervision of a qualified arborist:
(i) works must not disturb more than 20 per cent of the protected root zone;
(ii) works involving root pruning must not be on roots greater than 80mm in diameter at severance;
(iii) any machine excavator must operate on top of paved surfaces and/or ground protection measures;
(iv) any machine excavator must be fitted with a straight blade bucket.
(c) excavation undertaken by trenchless methods must not be undertaken at a depth less than 800mm below ground level.
- 14) The proposed works are not expected to exceed the above standards which in turn means the proposal will not require resource consent.

Assessment

15) The two trees are numbered as T6 and T7. Both trees appeared to be in good health at the time of inspection with full healthy canopy cover and no obvious indications of failing health. Figure 2 shows the trees as viewed during the site inspection and relevant tree details are shown in Table 1. The trees are both pohutukawa (*Metrosideros excelsa*). The species in general has a reputation for being very tolerant of the often less than ideal circumstances affecting root zone areas within the built environment.

Figure 2 – Image of T6 & T7.

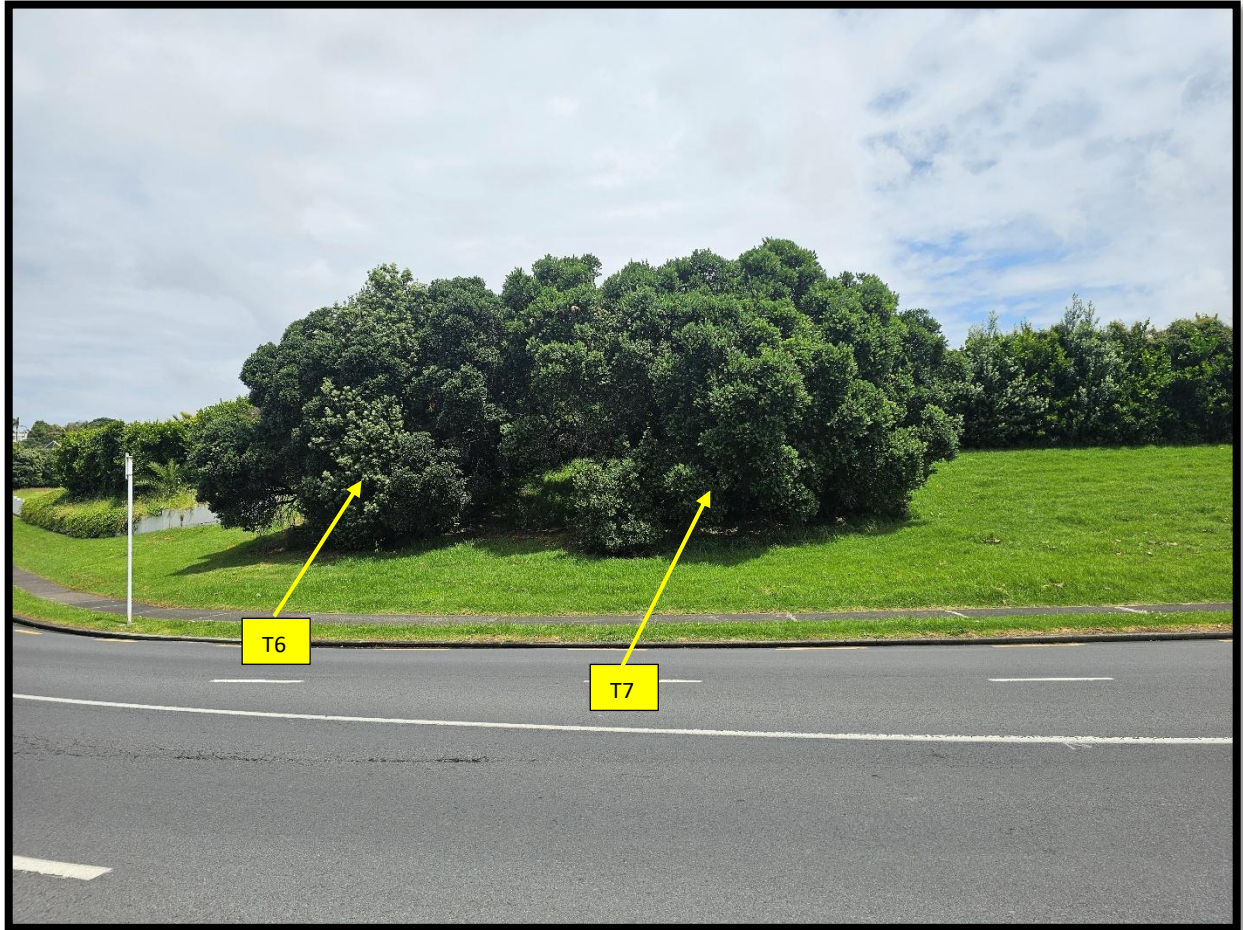


Table 1 – Tree details.

| T# | Ht | Dbh | Bd | NRZ | SRZ | PRZ |
|----|----|------------|-----------------|-----|-----|-----|
| 6 | 7 | 11x (9-25) | Multi-stem, <90 | 8.8 | 3 | 6.4 |
| 7 | 7 | 9x (13-29) | Multi-stem, <90 | 8.3 | 3 | 7.5 |

Explanatory notes: Ht = height in metres (estimated); Dbh = diameter at breast height in cm; Bd = basal diameter in cm (multiple stems at ground level, no bigger than 90cm); NRZ = notional root zone; SRZ = structural root zone; PRZ = protected root zone (AUP metric). **Note:** NRZ , SRZ & PRZ are as described above and each metric represents the radius of a circle around the tree in metres.

16) The canopy of each tree extends towards the subject site by approximately 5m in each case. Figures 3 and 4 below show close-up views of the root zone encroachments. These images show that no works are proposed within 5m of either tree which in turn means there will be no canopy conflicts and no requirement to carry out any canopy trimming. The images also detail the types of activity within each root zone area (e.g. fill, retaining walls etc.)



Figure 3 – Root zone encroachments for T6.

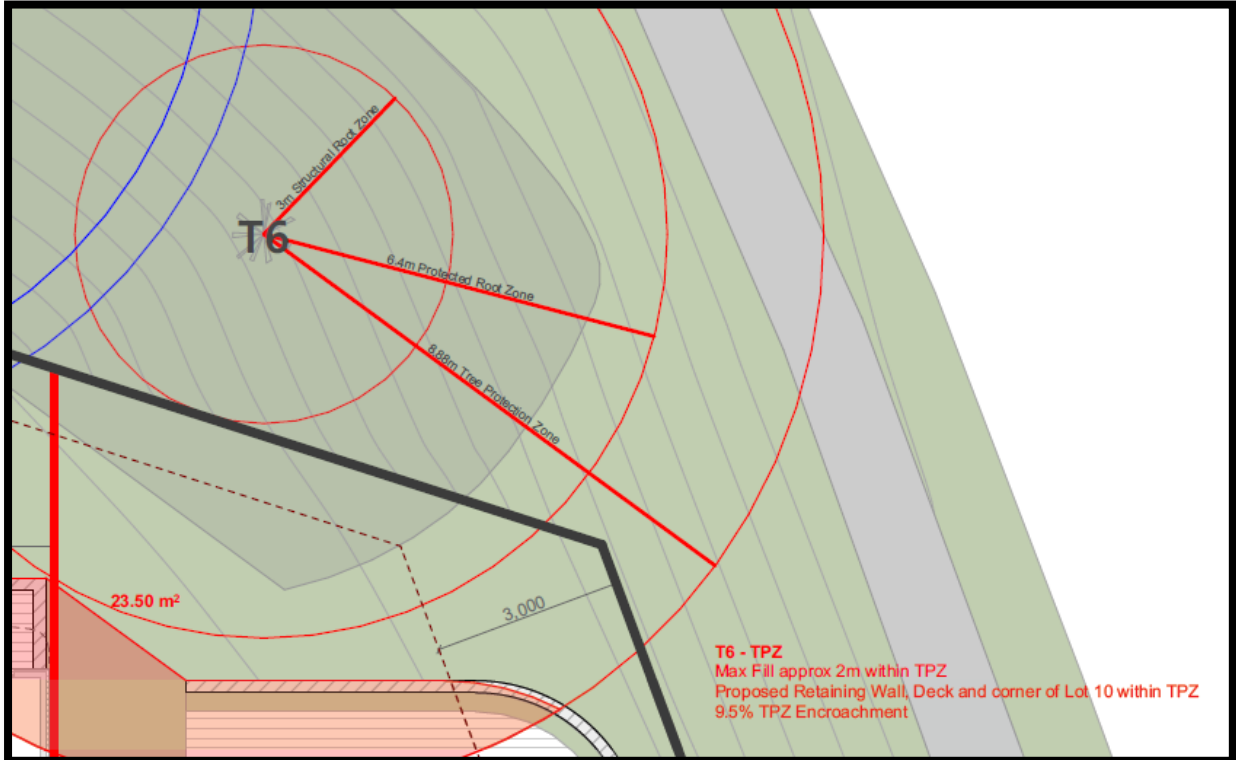
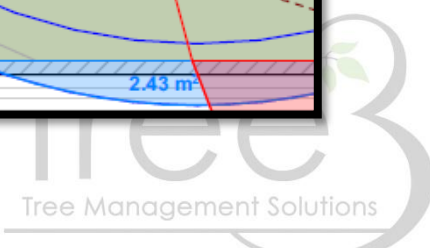
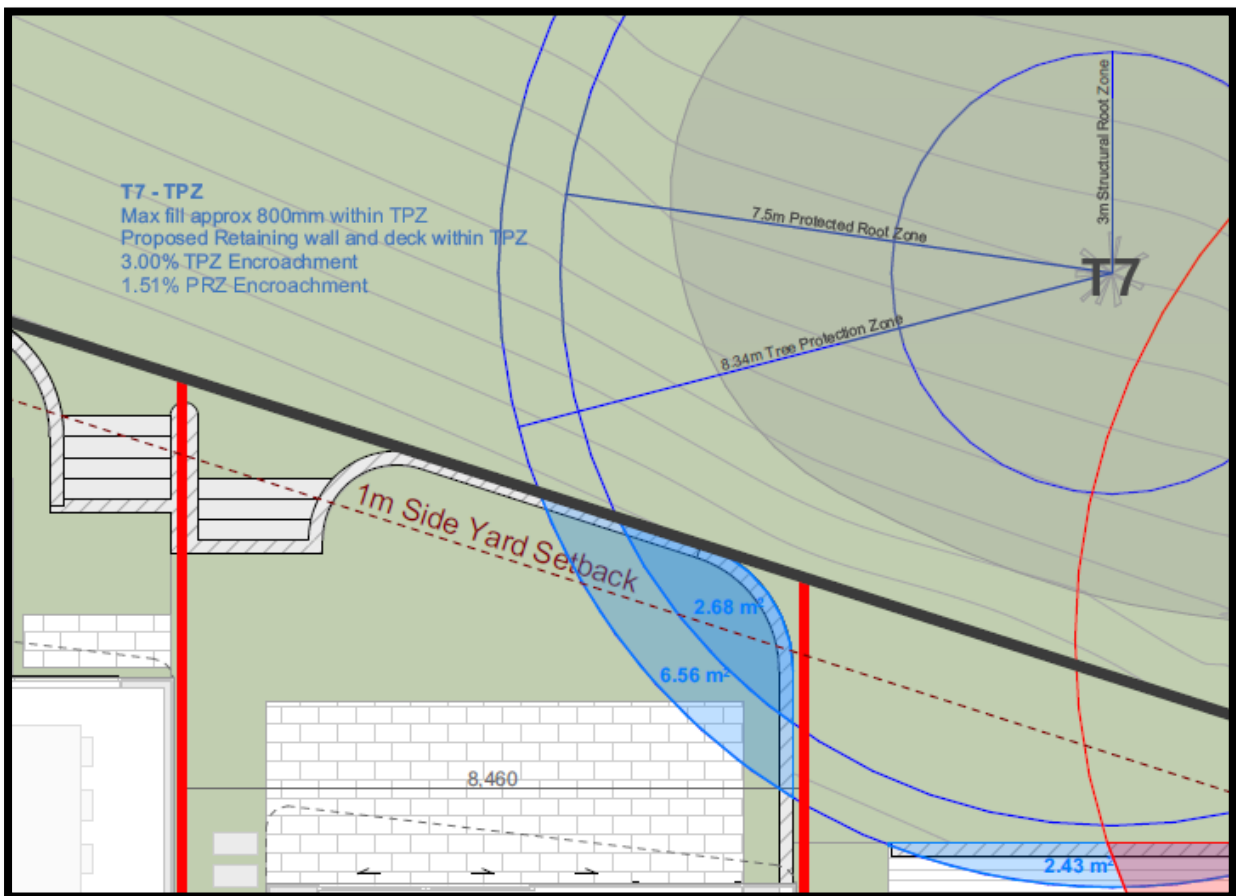


Figure 4 – Root zone encroachments for T7.



- 17) These figures show that NRZ encroachments for both trees are below 10% (which is the threshold in AS4970 below which it is assumed that there will be no adverse effects) and that PRZ encroachments are below 20% (which complies with the *permitted activity* standard in Chapter E16). There will be no encroachments into the SRZ of either tree.
- 18) In other words the encroachments associated with the proposed works are substantially within the tolerable limits of the relevant industry standard (AS4970) and the AUP standard (less than 20% of the PRZ). On this basis alone it would be reasonable to assume that any associated adverse effects on tree health or stability associated with the works will be insignificant and of no consequence to the trees.
- 19) AS4970 indicates that root zone disturbances above the 10% threshold warrant detailed arboricultural input to ameliorate any adverse impacts which may include adding extra viable root zone area contiguous with existing root zone areas. In this situation there is an abundance of viable root zone area beyond both trees which is easily and readily available for any roots to colonise. It is very likely that this additional area is already being exploited by the trees with almost no limit on how much more can be optimised by the trees.
- 20) This means that the levels of encroachment could be significantly greater (potentially between 10 and 20% of the NRZ) and still have no significant adverse effect on the trees according to AS4970. As it is the encroachments are very minor and there is ample scope for additional root zone area to be colonised by the trees. It is concluded that the circumstances (minor levels of root zone encroachment, availability of additional viable root zone area, the robust species profile and observed good health of both trees) overwhelmingly indicate that the extent of any adverse effects on either tree will be insignificant.
- 21) **Other trees.** There are four nikau palms located along Compass Point Way. They stand within a narrow section of berm immediately adjacent to the road with a footpath on the other side and are upwards of 4m from the site boundary. These trees have very compact root balls and their root zone areas will not extend into the subject site therefore there is no reason to believe that they should be affected by the works.
- 22) Providing these works are carried out as per the recommendations in this report it is anticipated that the extent of any adverse effects suffered by any AC tree will be insignificant.

Alternative options

- 23) This proposal represents the latest iteration of multiple previous versions however this version results in negligible impacts on any trees in the *open space* zone. As such no further alternatives appear to be necessary as the aim is to avoid significant adverse impacts on AC trees and this objective is achieved with this layout.

Recommendations

- 24) Prior to commencement of any works at 3 Pigeon Mountain Road a meeting shall be arranged by the applicant between the applicant's arborist ("*works arborist*", a suitably competent and professional arborist, engaged by the applicant, who can effectively manage site works around protected trees) and the site/project manager. AC should be given at least five working days' notice of this meeting so they may attend if they wish.
- 25) The aim of this meeting will be to explain the tree protection matters to the project manager and/or work site supervisory staff who are carrying out any works associated with the project within the vicinity of the subject trees located outside 3 Pigeon Mountain Road and as described in this report and the referenced documents. Items to be discussed at this meeting will include:
- Confirmation that the works are to be carried out in general accordance with the Master Plan set referenced in this report and provided with the TOA application.*
 - Confirmation of the location and nature of any tree protection fencing and root protection measures that will be required prior to commencement of any works. Ideally all nearby permeable root zone areas within the berm will be protected and this detail can be discussed and confirmed during this meeting.*
 - Confirmation of the location of any excavations in NRZ areas and the methodology to be used. This relates primarily to confirming the extent of works around T6 and T7 and how initial excavations are to be carried out.*
 - The restrictions on machinery and vehicle access, operations and manoeuvring within root zone areas.*
 - Restrictions on areas available for storing materials, equipment, and spoil.*
- 26) Tree protection fencing will be required to prevent any unnecessary encroachment into permeable root zone (NRZ) areas during works. The location and nature of this fencing will be confirmed during the meeting referred to above. The fencing will serve to isolate as much of the permeable root zone of the trees as practicable and necessary. The fencing will remain in place until all activities which may affect the trees have been completed and there is no further risk of any construction-related activities encroaching into or affecting any root zone areas. Any temporary adjustments of the tree protection fencing will only occur under the guidance of the works arborist and will be reinstated as soon as reasonably practicable to ensure no damage occurs to vulnerable root zone areas. Ideally the fencing will follow the site boundary but will encroach into the site to encompass NRZ areas of T6 and T7 within the site but beyond the works footprint.
- 27) Sediment/silt control shall be achieved using no-dig methods wherever possible and practicable if required in NRZ areas. This can be achieved by the use of silt socks as described in section F1.5 of GD05, page 125 onwards.
- 28) Any excavations or other ground disturbance work within any NRZ area will be subject to appropriate levels of arboricultural supervision by the works arborist. This supervision will be based on the following standard procedures:
- NRZ protection fencing will be installed prior to any works and remain in place for the duration of the project.*
 - Initial excavations within the NRZ area of the AC trees will be done under arborist supervision to ensure any roots that are encountered are dealt with appropriately i.e. either trimmed properly or retained and protected where necessary. **Note:** the assessments in this report have been based on the assumption that root loss will occur at the edge of the works footprint so it will be neither necessary nor viable to retain any roots within the works footprint.*
 - Initial excavation in NRZ areas will be carried out by a combination of hand-digging in conjunction with careful arborist supervision of any machinery use.*
 - Any roots in excess of 30mm diameter that are encountered will be retained wherever possible and protected by a layer of geotextile fabric, hessian or black polythene to prevent desiccation until covered with suitable backfill.*
 - The severance of any root less than 30mm shall be done at the discretion of the works arborist. Any roots which are to be cut shall be cut back cleanly to at least 50mm beyond the excavation face leaving a clean cut as opposed to fragmented or broken root ends, and the area around the root shall be either*

backfilled with the original material (or suitable base course material) or covered with geotextile fabric, hessian or black polythene to prevent desiccation.

- 29) In the event that machinery movements become necessary within any permeable root zone areas, suitable ground protection measures will be emplaced, to the satisfaction of the works arborist, prior to such movements occurring. It is anticipated that all works will be carried out from within the site so there will be no reason for machinery to operate beyond the site which will avoid any root zone conflicts.
- 30) Ground protection may consist of a layer of woodchip mulch at least 100mm deep on Geotech fabric, layers of carpet, trakmats, steel plates or any other suitable medium that will ensure underlying roots are not adversely affected. As mentioned above it is not anticipated that any machinery movements will occur within any vulnerable NRZ areas and these recommendations are included primarily as a precautionary measure to cover any unforeseen events.
- 31) Construction-related materials and machinery will be stored away from any permeable root zone areas of any trees in the adjacent reserve or berm areas and will remain either on existing formed surfaces or on areas with suitable ground protection within the subject site. Any machinery movements in the vicinity of any trees in the berm or adjacent reserve may require deployment of a spotter to ensure no impact damage occurs to branches or stems.
- 32) I recommend provision of a project completion memo (PCM) to the AC Resource Consent Monitoring Officer detailing compliance with the relevant tree protection requirements and confirmation that any adverse effects suffered by any retained tree as a result of the works will be insignificant. The default setting is that all information will be provided in the final PCM unless otherwise specified or required.

Andrew Barrell

Consultant Arborist, Director *Tree3 Ltd*

1 April 2026