

**BEFORE THE HEARING COMMISSIONERS**

**IN THE MATTER OF** The Resource Management Act 1991

**AND** Plan Change H(b) of the Manawatu District  
Plan: Notable Trees

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STATEMENT OF EVIDENCE OF

**Jeremy (Jez) Partridge**

on behalf of

Manawatu District Council

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Dated: 18<sup>th</sup> May 2023

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## **1 INTRODUCTION**

### **1.1 Code of Ethics**

1. I have read the Code of Conduct for Expert Witnesses (Section 7 of the Environment Court Consolidated Practice Note 2023) and I agree to comply with this Code of Conduct. This evidence is within my area of expertise, except where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

### **1.2 Qualifications and Experience**

2. My full name is Jeremy Thomas Elliston Partridge. I currently run my own business Treecology Consultancy based in Greytown. I am a Consulting Arborist who works mainly throughout the lower north island. Treecology provides planning advice, tree management advice, safety and risk assessments, STEM assessments, Plan Changes and all types of expert arboricultural advice to a wide range of clients including councils, businesses, colleges, and schools.
3. I have around 20 years of experience working in the arboricultural sector as a Climbing Arborist, Council Tree Officer, and Consultant Arborist. I worked as a Climbing Arborist in the UK, and then for a number of Councils as a Tree and Landscape Officer, ultimately at a Senior level. My duties at these Councils included management of protected trees, making Tree Preservation Orders, and assessing applications to undertake work to protected trees or in proximity to them. I have been providing advice as a Consultant Arborist in New Zealand since 2009.
4. I hold a Level 6 Diploma in Arboriculture from Wintec, Hamilton (2021), a Level 4 Arboriculture Award from Myerscough College, UK (2020), and a Craftsman's Certificate in Tree Surgery from Merrist Wood Agricultural College in the UK (1991), and Higher National Diploma (degree) in Environmental Protection from Farnborough College of Technology in the UK (1995), and a Master of Science degree from Bangor University in Wales (1996). I also hold the International Society of Arboriculture Tree Risk Assessment qualification recertified in 2023. I am a full member of NZ Arboricultural Association and sit on one of its sub-committees.

## **2 SCOPE OF EVIDENCE**

5. I have been asked by Manawatu District Council to prepare evidence in relation to the submissions and further submissions made on the Council plan change of the Manawatu District Plan Notable Trees Chapter. Council engaged me to assess the Notable Trees listed in its Operative District Plan in 2021. I assessed these trees using the NZ Standard Tree Evaluation Methodology (STEM) in 2021, and undertook a basic safety assessment of each tree. The findings of those assessments were used to determine which of those trees should remain listed in the District Plan as Notable Trees.
6. My evidence is restricted to consideration of the submissions received by Council on the Trees Chapter Plan Change. In preparing this evidence, I have read the following documents: Proposed changes to Trees Chapter of the Manawatu District Plan (MDP); Summary of Submissions dated; and each individual original submission.

## **3 DISTRICT PLAN TREE ASSESSMENT METHOD**

### **3.1 Standard Tree Evaluation Methodology (STEM)**

7. The method by which Manawatu District Council has chosen to assess whether trees are worthy of inclusion in the District Plan has involved assessment of the existing Notable Trees listed in Appendix 1D of the District Plan using the NZ Standard Tree Evaluation Methodology (STEM) developed by Ron Flook.
8. The Standard Tree Evaluation Method (Flook, R., 1996); is a tree evaluation methodology used to determine the intrinsic quality of trees. It can also set the monetary value of a tree. It is designed for those who have to make decisions about the importance of trees within urban and rural environments. It is currently being used by over 30 Territorial Authorities (TAs) in New Zealand to assess whether trees should be included within their respective district plans.
9. STEM generates a total STEM score, the higher the score the more important the tree. TAs use STEM to score a tree and then, usually in a separate process decide upon a threshold score which if reached would justify the protection of trees within a District Plan.

### **3.2 Tree Safety Assessment Method**

10. In addition to undertaking STEM assessments each tree had a basic safety and condition assessment undertaken to ensure trees are safe to retain. This essentially involves a visual assessment of trees to look for defects using the Visual Tree Assessment method, sounding of the tree with a percussion hammer up to 2 metres height to locate any cavities or decaying parts, and an evaluation of any visible roots, buttresses and area around the trees base, as well as looking for signs of any damage to structures caused by a tree or any nuisance caused by a tree. Any known threats to each tree were noted, and any tree management recommendations were also provided.
11. STEM does not include any advice regarding the assessment or score for a tree which is unsafe, has hazardous parts, or is causing a significant nuisance such as damaging the foundations of a building. In theory a tree which is in imminent risk of failure could still receive a high score using STEM. For this reason all assessments considered risk of failure and significant nuisance. Trees which are hazardous or dangerous should normally not be protected unless in exceptional circumstances e.g. an historic veteran tree which has been reduced to a safe height. No hazardous or dangerous trees or trees causing a significant nuisance are included in the proposed Schedule of Notable Trees.

## **4 SUBMISSIONS AND RESPONSES**

### **4.1 Submission 1 Suzanne Wood – Magnolia T8**

12. Asks if the notable tree comes down onto submitter's property causing damage, who indemnifies this? Will hold Council accountable for all damages incurred. Notable tree is on reserve land (McLaren Street). It is Council's responsibility to take care of the Magnolia tree. There are noted threats to the tree, slope stability and disease, significant nuisance and negative factors such as damage to a structure if the tree was to fall, possibly endangering lives. Tree will need regular inspections by Council and pruning as needed to ensure the health and vitality of the tree. Council's responsibility to sort out land discrepancies. Holding Council responsible for failure to inform landowner of the designation before the land was purchased. Submission provides mapping and aerial photo information of the site.

#### **4.1.1 Submission 1 Response**

13. The tree was re-inspected on 31<sup>st</sup> March 2023 as a result of the above submission. This latest inspection has allayed my previous concerns that the tree may have been diseased. The tree is now healthy and vigorous. I am now of the opinion that the tree had been over-thinned, and reacted by growing dense internal growth. The tree has now recovered and is healthy with no significant defects noted. I now therefore recommend a standard 3 to 5 year inspection regime for this tree.
14. I do not consider that the tree requires any management at this time, and it is safe to retain. There is no current threat to the tree from disease or danger of collapse caused by slope stability. It is located on a steep slope but has a well-developed anchoring root structure and is well balanced and not particularly tall tree. For all these reasons the risk of any failure at the current time is low.
15. It has now been established that the tree is on Council owned land. In the very unlikely event that the tree failed Council would not currently be at fault as no significant defects or risk factors have been identified to suggest that the tree is likely to fail. The tree is owned by Council and therefore should now be appropriately managed by Council in accordance with its usual tree management regime. The tree attained a STEM score of 198 points well above Council's STEM threshold.

#### **4.2 Submission 2 - Clare and Adrian Hare Giant Redwood T6**

16. The assessment by the Arborist is different from what the submitters understood to be the Arborist's opinion at time of the site visit. Two issues: Health and safety of people/property; Incremental damage to the existing Pines Court accessway and future maintenance works triggering a resource consent. Considered by surrounding residents to be a health and safety hazard due to its size (provides information on extent of risk if tree falls); tree is damaging existing buildings; encroaching under Pines Court access leg (serves 6 other properties); ongoing maintenance burden for nearby residents; is an exotic species; planted by Colonel Halcombe or family; would've been appropriate when Feilding was smaller, now considered inappropriate for the location.
17. Appears that STEM result does not consider health and safety of people. Without a secondary opinion from a Level 6 Arborist at the owner's cost, unsure which consent category tree removal might be. Bestows additional cost upon the owner. Will need consent for any future maintenance of the damage from the root system which has cracked the concrete and for tree to be removed. Submission is not objecting to the proposed rules but objects to Tree 6 being listed in the schedule.

#### **4.2.1 Submission 2 Response**

18. No information is provided by the submitters as to the detail of the opinion I provided during my site visit which allegedly differed from the findings provided in my assessment report. I do not consider that I provided an opinion during a site visit which differed from any findings and observations set out in my site visit notes and subsequent report.
19. The tree was re-inspected on March 31<sup>st</sup> 2023 as a result of the above submission. Residents are concerned that the size and bulk of the tree represents a hazard to surrounding properties if the whole tree were to fail and that the tree will require ongoing maintenance. There is no doubt that this is a large tree within an urban environment with many properties and structures around it. However I have now made two inspections of the tree's main trunk, canopy, and visible roots and found no evidence of any defects, decay or disease which would indicate that there is a likelihood of failure under normal weather conditions. Most trees in urban locations are within falling distance of a path, road or property and this fact alone should

not mean that a tree should be removed without an evidence based justification. The tree is tall but has a relatively narrow canopy spread as this species has a tall and columnar type form. This means there is less sail area for winds to act upon as would be the case for a wider spreading tree.

20. Most trees require maintenance from time to time but I have identified no tree works which are required to be undertaken at this time and I understand that there has been no recent work undertaken to the tree indicating that it has been a low maintenance tree. Going forward the tree may need some occasional tree work which would be an expense for the landowner. However, the cost of removal would be very substantial and I would anticipate that should the tree require any safety works in the future that Council would approve such works.
21. The tree is located between Pines Court and the neighbouring house at 26 Kimbolton Road and on the rear part of 28 Kimbolton Road. The areas has several large shrubs within it. There are no signs of root damage to surrounding kerbs, hard surfaces or structures. I inspected the garage at 26 Kimbolton Road from the outside on both my visits and there are no signs of damage caused to that building by the tree. Trees in urban areas are very likely to have roots under hard surfaces and even sometimes under property. This is generally not an issue unless soils are shrinkable, which is not the case here. When trees predate the structures around them they usually have well developed wide spreading root systems which will withstand some pruning. Not all trees cause damage to footpaths or roads nearby which is the case here.
22. During my inspection in September 2021 I walked up the 26 Kimbolton Road drive and looked inside the garage. The driveway has numerous long cracks in it and these start from where the drive leaves Kimbolton Road far away from where roots of the tree are likely to be located. The cracks continue in various parts of the driveway but the section of driveway closest to the tree is not cracked. The concrete floor inside the garage is also cracked. The fact that the cracks can be found well away from the tree and that there are no cracks in the concrete slab closest to the tree cast doubt on a relationship between tree roots and cracks.
23. There is no direct evidence that any of these driveway cracks are related to or caused by below ground tree roots. When hard surfaces are damaged by roots the tell-tale signs are upward deflection of the hard surface, lifting of the hard surface, upward facing cracking and tearing of the hard surface, ripples, or unevenness in the hard surface. In this case there is no evidence of any of such tell-tale signs and therefore no evidence that roots pushing the hard surface upwards from below.
24. The concrete driveway is flat with no ripples of unevenness and the cracks show no upward deflection. Other causes for the concrete cracking are therefore likely. In general, damage to structures or hard surfaces caused by direct growing or pushing of roots is normally most severe closest to the tree. If the roots of this tree were causing damage to nearby structures, I would therefore initially expect to see damage to kerbs and the garage itself but there is no such damage. There is therefore no evidence of damage to the drive caused by this tree and I am of the opinion, based on my inspections and my experience that the damage to the driveway has not been caused by tree roots. On the Pine Court side of the tree there are no cracks in the road, path or kerbs and if root damage was causing damage to the drive at 26 Kimbolton Road I would expect to see this damage all around the tree and not just on one side of the tree.
25. The submission asserted that the tree is damaging existing buildings and encroaching under Pines Court access leg (serving 6 other properties) and that this will result in an ongoing maintenance burden for nearby residents. The RPA for this tree is circle around the tree with a radius of 15 metres. The RPA is a precautionary area for root protection where roots may or may not be present, depending on the aspects such as soil type and moisture, and below ground barriers to root growth such as building foundations. If someone wanted to build a

house within the 15m RPA then the impact of the development within the RPA would need to be considered as part of the planning process, as is the case under the existing DP rules. However, there may not be roots present in the location of a potential development, or root impacts may be mitigated by low impact foundation design. In this particular case I think its unlikely that the RPA would constrain development beyond 5 metres of the trunk due to the number of structures already existing around the tree.

26. A few metres from the trunk this species is known for their fine thread like roots which, as a result of their small size, are unlikely to cause damage to structures. In an urban environment a spread of 15m is unlikely, but even if roots did extend 15m, the likelihood of these causing direct damage to structures is very low. Roots closer to the trunk potentially do have the capability to cause direct damage to structures as these roots are larger, but I have observed no damage to structures such as kerbs, roads or the garage caused by roots around this tree, which suggests that structural roots close to the trunk are below the organic top soil layer. This suggests good quality soil and good soil moisture around the tree, likely as a result of the open grown natural area immediately around the tree.
27. I therefore do not consider that the tree or its roots will cause an ongoing maintenance burden to nearby residents. There is no current damage being caused to structures around the tree and therefore the likelihood of future issues arising are very low.
28. The submission also raises a concern about having to get a Level 6 qualified arborist to assess a Notable Tree in order to allow it to be removed as a Permitted Activity (where it is an imminent threat to the safety of people or property which cannot be made safe by pruning, or where the tree is confirmed dead, or has less than five years life expectancy).
29. The removal of a Notable Tree in such an unsafe and poor condition is expected to be an extremely rare event which would likely only occur in an emergency. Usually a Resource Consent application should be submitted to remove a Notable Tree, at which time Council may have the application reviewed by an expert arborist, and may Limited Notify, or Notify the consent.
30. Given how unusual it is expected to be to need to remove a Notable Tree as a Permitted Activity it is appropriate that only a highly qualified arborist should make such an assessment. Level 6 qualified arborists are highly experienced, and are trained in matters such as the veteran tree management, monetary valuation, amenity valuation, risk assessment, disease diagnosis, and inspection and assessment of defects and decay. A level 4 qualification does not cover all of these assessment techniques, or when it does then not in as much detail.
31. It is therefore appropriate that if a Notable Tree is to be removed as a Permitted Activity, then its condition should firstly be assessed and certified by a Level 6 qualified arborist. Many of the larger Arborist Businesses who operate in the Manawatu and Wellington Regions employ Level 6 qualified arborists, and several Consultant Arborists also operate independently. It would be advisable for Council to compile a list of Level 6 qualified arborists that could be provided to the public on request.
32. This tree scored 204 points using the STEM method which is a relatively high score which is well above the STEM threshold. The tree was assessed as having a moderate form and whilst the STEM assessment method does not directly assess safety and condition, I undertook a health and safety inspection during my site visit and commented on its safety and condition in my STEM assessment notes.

#### **4.3 Submission 3 - Mrs H L Perry /Judith Perry– Coast redwood T1**

33. The tree is now a very ugly specimen of no aesthetic value to the area since the stripping of three quarters of the limbs off the south-west side in a storm. It no longer fulfills the

requirement for a notable tree as it is very lopsided and lean of tree is even more pronounced, and looks ugly viewed from submitter's house. The tree sheds a lot of sizeable old dead branches, twigs and foliage onto submitter's property and footpath, being dirty and dangerous for foot traffic using path, many of who stop and remark on how ugly the tree is.

#### **4.3.1 Submission 3 Response**

34. The tree was reinspected on 31 March 2023 as a result of the above submission. The tree has a lean of approximately 20 degrees as described during my assessment in September 2021. This lean was caused by the close proximity of an oak tree in the garden behind it which was removed. The oak tree forced the redwood to develop at an angle away from the oak. The most important safety consideration in situations like this is that there is no root plate lifting and that buttress roots and major structural roots are well formed and uncompromised. In this case the tree's root plate is not lifted and the buttresses and structural roots are well formed and in good condition. This indicates that the tree is not actively failing and that leverage on the root system and lower trunk caused by the lean are being absorbed by the tree's structure.
35. The lean is not ideal as a straighter structure has better stability. Trees are self-optimising structures which react to stress and weight imbalance by strengthening load bearing parts such as roots and buttresses. In this case the lean has occurred gradually over tens of years which has given the tree plenty of time to strengthen and thicken support loading parts on the opposite side to the lean which support the weight load.
36. The lean could be described as a defect but at the current time I am not of the opinion that the tree is unsafe. Since my last visit, the tree appears to have started to rebalance its upper crown by developing growth on the opposite side to the lean where there is now more light and phototropic growth. My prognosis on the safety of this tree therefore remains the same as that in my initial assessment. In my 2021 assessment I recommended that some work is undertaken to the tree to remove a branch over the footpath which may cause some issues to pedestrians and to reduce the extent of some branches on this site to reduce weight on this side of the tree.
37. The attractiveness of the tree or otherwise subjective and certainly the tree's appearance varies depending on the viewing position. From the objector's property the lean of the tree appears pronounced and the area of lost branches is strongly in view. However from some street views the lean is less apparent and the loss of branches less visible.
38. The tree attained a STEM score of 204 points which is relatively high and well above Council's STEM threshold. Whilst its form and function is assessed as 'moderate' due to its lean and absence of a complete canopy, it scored highly on Amenity Value. Whilst beauty is in the eye of the beholder it is true that the aesthetic value of the tree would be higher if the tree had no lean and no loss of branches. However I do not consider the tree to be unsafe, and it scores highly using the STEM method.

#### **4.4 Submission 4 – Horizons Regional Council Rules**

39. Rule TREE-R1: support standards TREE-S1 and TREE-S2, however this could be strengthened by requiring confirmation of the arborist to be used and their qualification level to be supplied at the time notification of the works is given to Council.
40. Standards TREE-S1, TREE-S2 and TREE-S3 require two different timeframes for notifying council. TREE-S1(ii) states council be "advised to working days prior to works taking place", whereas TREE-S2(i) and TREE-S3(i) requests notification "as soon as reasonably practicable". In HRC's view, this creates inconsistency, particularly in relation to TREE-R1 which references both TREE-S1 and TREE-S2. Suggest the 10 working day timeframe be applied to all three standards.



#### 4.4.1 Submission 4 Response

41. I do not have an objection to Rule TREE R1 being amended to require the arborist undertaking work to be named and their qualification provided. This would provide certainty to Council that the arborist in question was suitably qualified and allow Council to contact the arborist in question should any processing questions arise, or subsequent questions arise concerning the work undertaken.
42. I do not have an objection to Standards TREE-S1, S2, and S3 being made consistent so that a 10 working day works notice timeframe be applied to all three standards. This would provide a more consistent approach to the rules with an unequivocal timeframe provided for Council notification which will provide certainty for Council and arborists.

## 5 CONCLUSIONS

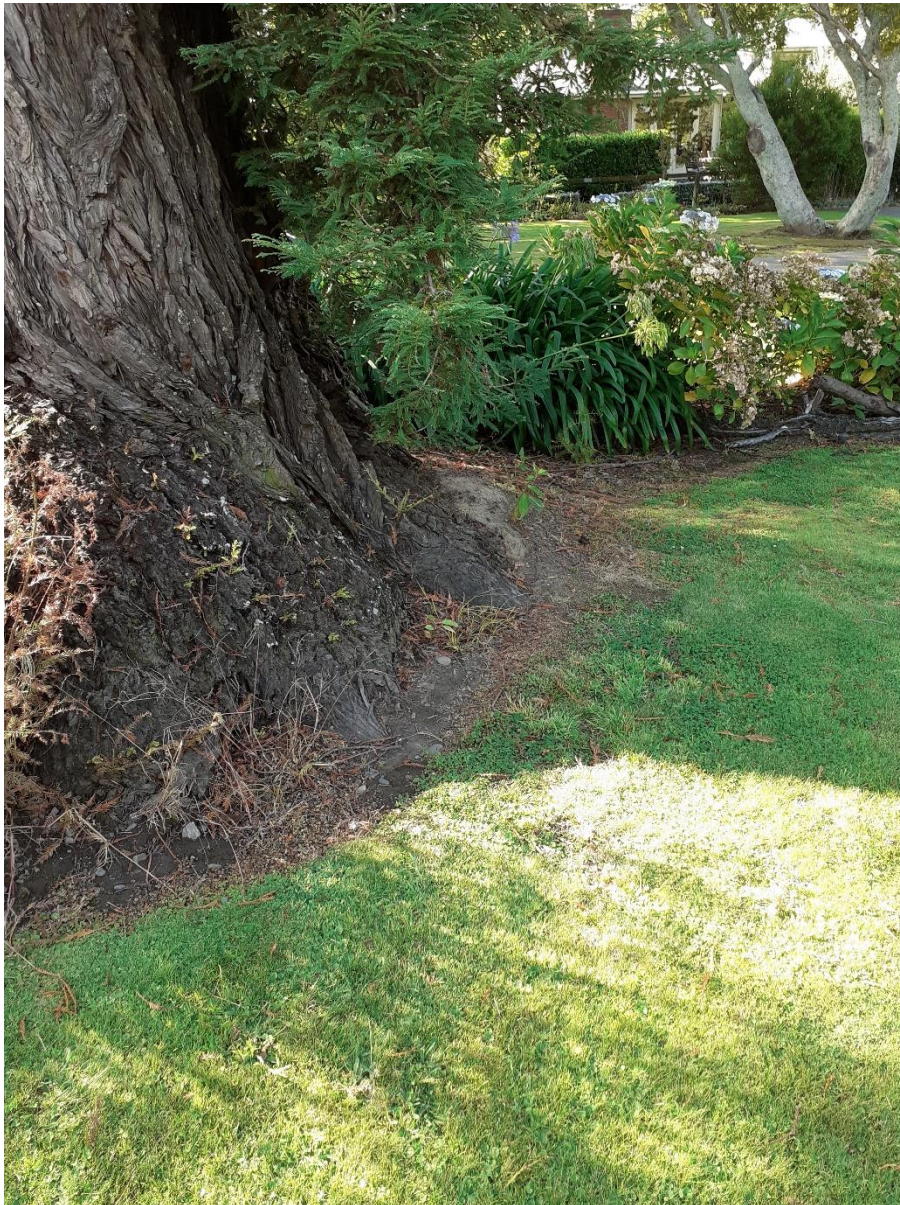
43. There have been two formal objections to the inclusion of T6 and T1 as Notable Trees. I am of the opinion that all three proposed Notable Trees on which there have been submissions are safe to retain. They have received more than sufficient STEM scores to be included in the District Plan well above the proposed STEM threshold score. None of the trees are causing significant damage to any structures which would warrant them not being listed as Notable Trees.

## APPENDICES

### Appendix 1: 31 March 2023 Photos



T1 South Street Redwood



T1 Redwood root plate and base opposite lean



T6 Redwood 28 Kimbolton Road



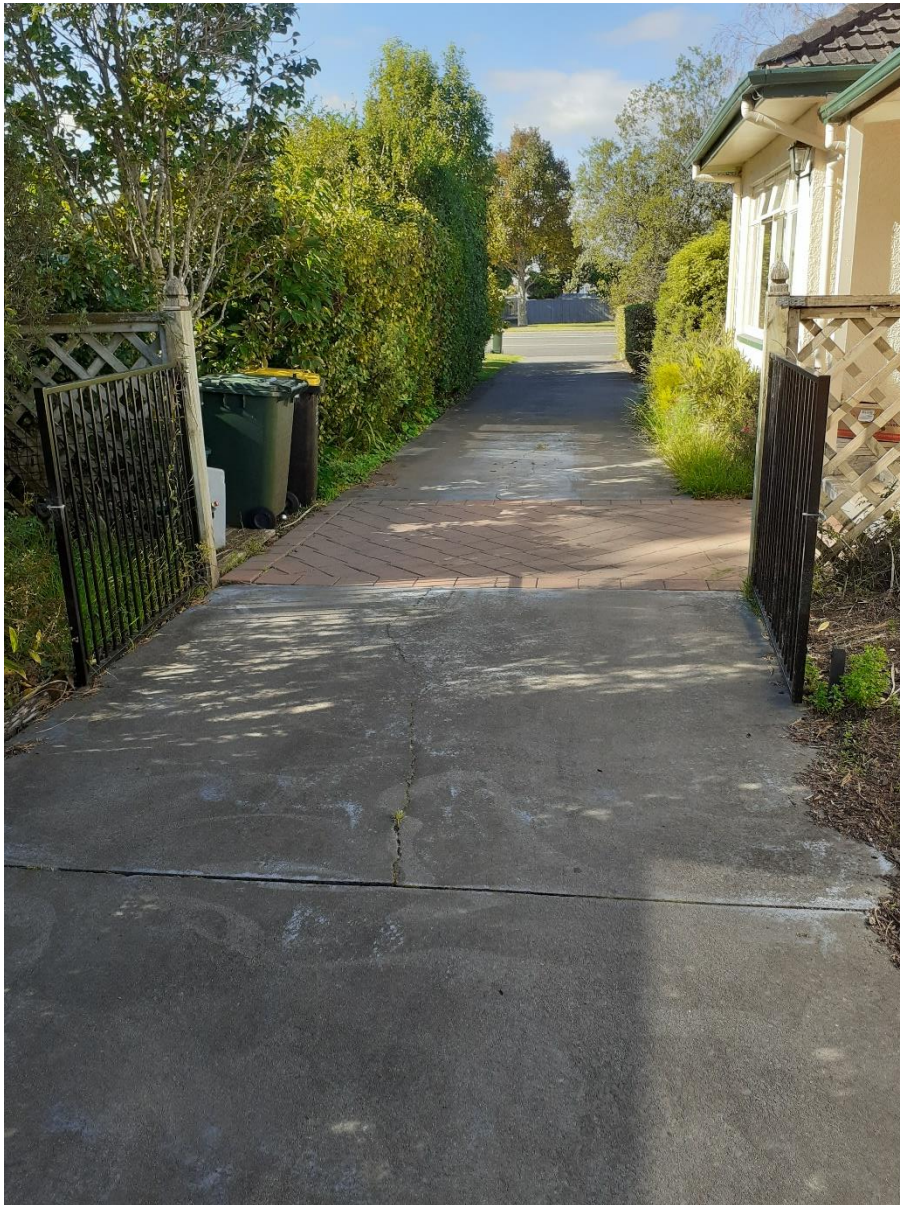
T6 – Pine Court next to tree. Note no damage to road, path or kerb caused by roots



T6 Redwood – Position next to 26 Kimbolton Road. Note no damage to garage or fence caused by tree or roots



T6 Redwood – 26 Kimbolton Road. Note driveway cracks well away from tree with no upward deflection of surface



T6 Redwood 26 Kimbolton Road – Note no upward deflection of surface cracks





T6 Redwood 26 Kimbolton Road. Note concrete section closest to garage and tree is not cracked



T8 Magnolia Waituna West



T8 Magnolia Waituna West