

TOWN OF ATHERTON

Heritage Tree Preservation Standards and Specifications



December 2019

TOWN OF ATHERTON

HERITAGE TREE PRESERVATION STANDARDS AND SPECIFICATIONS

SECTION 1.00 DEFINITIONS

For the purpose and interpretation of the standards and specifications, the following definitions shall apply:

- 1.1 **Appraised Value** - means the value of a heritage tree as determined by the Town Arborist using the most recent edition of the Guide for Plant Appraisal, published by the Council of Tree and Landscape Appraisers.
- 1.2 **Building Official** - means the Director of Building and Planning or the Director's designee.
- 1.3 **Certified Arborist** – means an individual possessing a current International Society of Arboriculture arborist certification.
- 1.4 **Cutting** means the detaching or separating from a protected tree any substantial limb, branch, or root.
- 1.5 **Dead or Dangerous Tree** - means dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property, as determined by the Town Arborist.
- 1.6 **Development Project** - means any construction activity that requires a Demolition, Grading, Drainage, Building Permit or Landscape Permit.
- 1.7 **Diameter at Breast Height** – measurement of trunk diameter taken at 4.5 feet (or 54 inches) above the Natural Grade. The diameter may be calculated by using the following formula: $DBH = \text{circumference at 4.5 feet} \div 3.142$.
- 1.8 **Disfavored tree** - means any of the following species:
 1. Acacia baileyana—Bailey Acacia
 2. Acacia decurrens—Green Wattle
 3. Acacia melanoxylon—Black Acacia
 4. Ailanthus altissima—Tree of Heaven

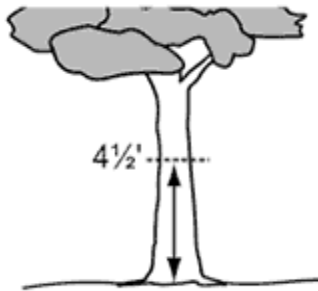
5. Albizia julibrissin – Mimosa
6. Any species of Eucalyptus
7. Pinus radiata—Monterey Pine

It is strongly recommended that these trees not be planted in the Town of Atherton.

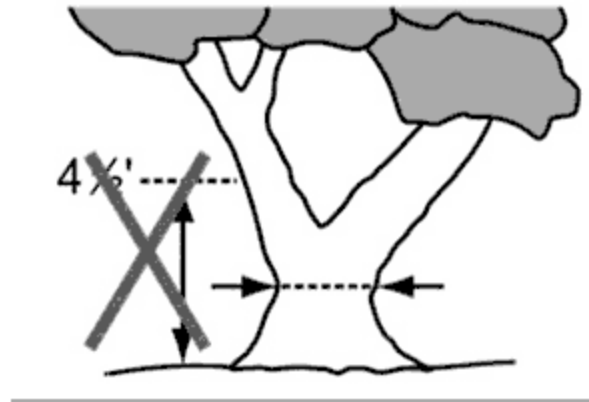
- 1.9 **Disturbance and/or Damage** - refers to demolition, construction, sub terrain grading activities, landscaping improvements, other development activities and/or any other action, as determined by the Building Official or Town Arborist, which may cause damage to the health of a Heritage tree , including any Heritage Tree within 15 feet of the property line. Examples include, but are not limited to, Excessive Pruning, topping, Cutting, girdling, poisoning, over-watering, unauthorized relocation or transportation of a Heritage tree, Trenching, excavating, altering the grade, compaction or paving near the tree, and screwing anything into the Heritage tree (for example, but not limited to, installing tree houses, etc.).
- 1.10 **Dripline** - means the outermost circumference of the Heritage tree’s canopy, from which water drips to the ground. When depicted on a map, the Dripline will appear as an irregularly shaped circle that follows the contour of the Heritage tree’s branches as seen from overhead.
- 1.11 **Excessive Pruning** – is considered Disturbance and/or Damage to the Heritage tree and is prohibited unless approval is granted by the Town Arborist prior to initiating the work. The percentage and distribution of foliage to be removed shall be adjusted according to the plant’s species, age, health, and site. Topping and lion’s tailing shall be considered prohibited pruning practices for Heritage trees. ANSI A300 (Part 1)-2017 is required to be followed.
 1. Lion’s tailing - The removal of interior lateral branches that results in a concentration of growth at the branch ends shall be considered an unacceptable practice.
 2. Topping- Is the reduction of tree size by cutting to stubs without regard for long-term tree health or structural integrity.
- 1.12 **Heritage tree** means:
 1. A tree meeting any of the following conditions:
 - a. An oak tree (Quercus lobata, Quercus agrifolia or Quercus douglasii) located anywhere on a lot, that has a minimum trunk circumference of forty-eight (48) inches or diameter of fifteen and two-tenths (15.2) inches, as measured at fifty-four (54) inches above the Natural Grade.

- b. A tree located outside the Main Buildable Area, that has a minimum trunk circumference of forty-eight (48) inches or diameter of fifteen and two-tenths (15.2) inches, as measured at fifty-four (54) inches above the Natural Grade.
- c. A split trunk or low-branching tree located outside the Main Buildable Area, that has a minimum trunk circumference of forty-eight (48) inches or diameter of fifteen and two-tenths (15.2) inches, as measured at fifty-four (54) inches above the Natural Grade. If the trunk branches or splits below this point, the smallest circumference or diameter below the lowest branch shall be measured.
- d. A multi-stemmed tree located outside the Main Buildable Area, that has a total trunk circumference of forty-eight (48) inches or total diameter of fifteen and two-tenths (15.2) inches when calculated as follows: considering at all the branches at fifty-four (54) inches above Natural Grade, add the measurement of the largest branch to one-half the measurement of each additional branch. Reference the Guide for Plant Appraisal authored by representatives to the Council of Tree and Landscape Appraisers.

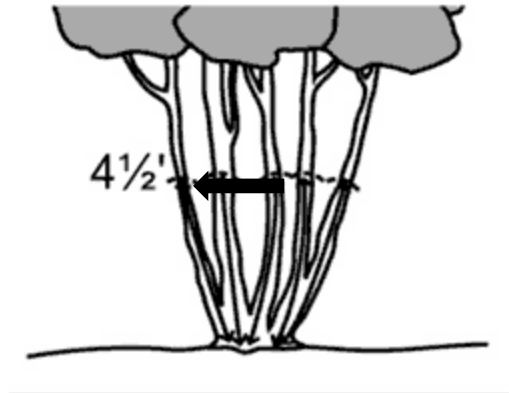
Measuring Tree Size for Existing Trees



Measuring Split Trunk Tree



Measuring Multi-stemmed Trees



2. A tree so designated by the City Council, based upon findings that the particular tree is unique and of importance to the public due to its unusual age, appearance, location or other factors.
3. A tree that has been removed without a permit that cannot be measured pursuant to subsection (1), above, will be presumed to have been a Heritage tree if it meets any of the following criteria:
 - a. the tree has a stump of at least seventeen and three-quarters inches ($17 \frac{3}{4}$ "") in diameter as measured at the Natural Grade.
 - b. the tree is a native oak with a minimum of 75 years of age.

- c. the tree is any other species of tree with a minimum of 45 years of age, unless otherwise specified in this Section.
- d. the tree is a redwood with a minimum age of 30 years of age.
- e. In the absence of remaining physical evidence, photographs and other circumstantial evidence of characteristics, including but not limited to height, canopy dimensions, and similar trees in the immediate area may be used to create a presumption that the tree was a Heritage tree.

Notwithstanding the foregoing, anyone may rebut this presumption by providing substantial evidence to the contrary to the satisfaction of the Town Arborist.

4. Exemptions: The trees listed below shall not be classified as Heritage trees, regardless of their size or age, nor shall they be used for replacement plantings:

- a. Acacia baileyana—Bailey Acacia
- b. Acacia decurrens—Green Wattle
- c. Acacia melanoxylon—Black Acacia
- d. Ailanthus altissima—Tree of Heaven
- e. Albizia julibrissin – Mimosa
- f. Eucalyptus—any species

1.13 **Injury** - means bruising, scarring, tearing or breaking of roots, bark, trunk, branches or foliage, the application of herbicide or poisoning, natural issues such as weather, insects and animals, or any other action that is likely to cause the death of or Irreparable Damage to a Heritage tree.

1.14 **Irreparable Damage** - means any action undertaken by a Person, as defined by the Atherton Municipal Code, foreseeably leading to the death or permanent Injury of the tree, or which places the tree in a hazardous condition or an irreversible state of decline within one year from when action was taken. The includes, but is not limited to, Cutting, topping, girdling, poisoning, Trenching or excavating within the Tree Protection Zone (TPZ) zone, altering the grade, paving in excess of fifty percent (50%) of the Dripline, excessive watering of oak trees, and Excessive Pruning.

1.15 **Main Buildable Area** - is the area defined by applicable setbacks in which primary development is allowed under the Atherton Municipal Code.

- 1.16 **Mechanical Injury** - means a noninfectious Injury which often leads to poor growth, a damaged appearance or death to the Heritage tree. Common causes of Mechanical Injury are landscape maintenance equipment, staking damage, and vehicles.
- 1.17 **Monthly Inspection Report** - means a monthly written report prepared by the Project Arborist as detailed in Section 2.2.
- 1.18 **Natural Grade**- is the grade, as determined by the Town Arborist, unaffected by construction techniques such as fill, landscaping, or a berm.
- 1.19 **Person** - means anyone having a property interest in a Heritage tree. Property owners are liable under this Chapter for all violations, whether they were done directly by the property owner or someone acting on their property with or without specific authorization, including but not limited to contractors, gardeners, and maintenance persons; provided, however, it shall not include Persons acting under a right of easement without the direction of the property owner (e.g., PG&E).
- 1.20 **Project Arborist** - means a private Certified Arborist retained by the property owner for the purpose of overseeing on-site activity involving the welfare of the Heritage trees to be retained.
- 1.21 **Protective Heritage Tree Fencing** - means a temporary enclosure erected around a Heritage tree to be protected at the boundary of the Tree Protection Zone as defined by Atherton Municipal Code and Section 1.31 of this document. The fence serves three primary functions: 1) to keep the foliage, crown, branch structure and trunk clear from direct contact and damage by equipment, materials or disturbances; 2) to preserve roots and soil in an intact and non-compacted state; and 3) to identify the Tree Protection Zone in which no soil disturbance is permitted and activities are restricted. (See detail, Appendix I).
- 1.22 **Pruning** – The selective removal of plant parts to meet the specific goals and objectives of ANSI A300 (Part 1).
- 1.23 **Root Buffer** - means a temporary layer of material to protect the soil texture and roots. The buffer shall consist of (i) a base course of tree chips spread over the root area, keeping one foot clear of the trunk clear, to a 4”- 6” depth, (ii) a base course of 3/4-inch quarry gravel which shall cover the tree chips and (iii) a 3/4” plywood board covering the gravel and on the surface.
- 1.24 **Soil Compaction** - means the compression of soil particles that may result from the movement or parking of heavy machinery and trucks, storage of construction materials, structures, paving, etc. within the Tree Protection Zone (TPZ).

- 1.25 **Soil Fracturing** - means the loosening of hard or compacted soil around a Heritage tree by means of a pneumatic soil probe that allows sudden bursts of air to crack, loosen or expand the soil to improve the root growing environment.
- 1.26 **Street Heritage Tree** - means any Heritage tree growing within the street right-of-way, outside of private property and adjacent to the applicant's property. Please note that most trees in the Right of Way are the adjacent property owner's maintenance responsibility per Atherton Municipal Code Chapter 12.06.
- 1.27 **Town Arborist** – An arbor culturist, is a professional in the practice of arboriculture who works for the Town and is the person designated as such by the Building Official or Director of Public Works.
- 1.28 **Tree Protection and Preservation Plan** – Prepared by a Certified Arborist and required for all Development Projects, including any site improvements at grade or sub terrain, and shall include the following minimum information for Heritage trees;

A. Site Plan

A set of drawings (e.g. preliminary drawings, grading, demolition, building, utilities, landscape, irrigation, tree survey, etc.) that show existing site conditions and proposed landscape improvements, including trees to be removed, relocated or to be retained. Site plans shall include the following minimum information that may impact Heritage trees:

1. The site plan shall be scaled at 1" = 10' or 1" = 20' as necessary to clearly detail Heritage tree protection requirements, depending on the scope and complexity of the project and include all existing and proposed buildings and structures.
2. Include the Tree Protection Zone (TPZ), as defined in Section 1.31, measurement on the plans, which identifies the area to protect the Heritage trees and roots from disturbance and mulch to be applied within the TPZ.
3. Surveyed location, species, size/trunk diameter, Dripline area of existing Heritage trees (including Heritage trees located on neighboring property that overhang the project site) and street Heritage trees within 30-feet of the project site within the public right-of-way. Show Heritage trees on neighboring properties that are within 15' of the property line.
 - a. For any development site plan which includes Heritage trees on neighboring properties within 15 feet of the property line, the project applicant shall provide a courtesy notice via certified U.S. mail of the proposed development to the property owner as per the last known name and address of such owner(s) as shown upon the current tax assessor's records and shall provide the verification of such notice to the Town as part of the required Tree Protection and Preservation Plan.

4. Paving, concrete, excavation, Trenching, irrigation lines and/or grade change located within the Tree Protection Zone (TPZ), as defined in Section 1.31.
5. All proposed and existing hardscape, including but not limited to, driveways, slabs, walkways, etc. Identify proposed materials, impervious and semi-impervious surfaces.
6. Existing and proposed utility pathways with detail on the location, depth and materials for all proposed underground utilities, including, but not limited to, sewer, water, electrical, water retention tanks, etc.
7. The location of any areas where hand digging is proposed. Significant root Cutting (over 2") will require a letter from the Project Arborist which will include mitigation measures. The Town Arborist shall review any and all proposed hand digging, significant root Cutting and mitigation measures within required tree protection areas and plan approval is required prior to starting such work.
8. Surface and subsurface drainage and aeration systems to be used.
9. Walls, tree wells, retaining walls and grade change barriers, both temporary and permanent. Landscaping, irrigation and lighting within the TPZ of all Heritage trees. Show Landscape Screening in accordance with the Atherton Municipal Code, a minimum 3X away from all Heritage trees.
10. All of the final approved site plan sheets shall reference tree protection instructions.
11. OSHA Cuts (Occupational Safety and Health administration). OSHA Cut (means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads).

B. Written Inventory

A written inventory is required for all Heritage trees on the site and within 15 feet of a property line, associated with the demolition, grading and drainage and building permits and at the Town Arborist's or Building Official's discretion.

A Project Arborist letter report shall include:

1. A written narrative from an ISA Certified Arborist report.
2. Arborist Name, Certification # and company letterhead.

The letter report shall include the following for each Heritage tree, including any Heritage trees on neighboring properties within 15 feet of the shared property line:

1. Species (common and scientific name).
2. Size (diameter, height and crown spread).
3. Tree Protection Zone (TPZ) zone.
4. Condition (foliage, vigor, structural integrity, fair, good, etc.)
5. Prognosis (dangerous, imminent hazard, property damage). The Hazard Evaluation Form may be used to rate a dangerous condition. Life expectancy Location diagram (and photograph, if desired).

C. Photo Inventory

Prior to any site demolition, the applicant shall provide colored photographs all of existing Heritage trees on-site, within the public right-of-way adjacent to the property and on adjacent property within fifteen feet of the property demolition. These photographs can be integrated into the written inventory.

D. Appraisal

See Sections 1.29 “Tree Appraisal” and 1.1 and “Appraised Value”.

E. Grading & Drainage submittal:

Arborist Report/ Heritage Tree Removals / Arborist Letter, shall include but not be limited to:

1. Showing any impact to Heritage trees as a result of either grading or the installation of the proposed drainage system.
2. Recommend Heritage tree protection and which drainage and utility lines require hand digging.
3. Submit a report by a Certified Arborist that the removal of the Heritage trees indicated on the Plans is in compliance with Town regulations. The Town’s Arborist will need to review the proposed removal of any Heritage tree.
4. At the beginning of the job, prior to permit issuance, provide a letter signed by the Project Arborist who produced the Arborist Report attesting that they have reviewed the plans and the project is designed in accordance with their recommendations and the project plans are designed in accordance with their recommendations and is accordance with the Town’s Heritage Tree Ordinance and Standards documents to protect Heritage trees.

1.29 **Tree Appraisal** - means a method of determining the monetary value of a Heritage tree (herein “Appraised Value”), using its pre-existing condition if it has been Removed or

Damaged. A Project Arborist shall determine the Appraised Value as part of the required Tree Protection and Preservation Plan.

- 1.30 **Tree Preservation Area** - means the area outside the Buildable Area of the lot.
- 1.31 **Tree Protection Zone, (TPZ)** - means, unless otherwise specified by a Project Arborist or Town Arborist, is the designated protection area sufficiently large enough to protect a Heritage tree and its roots from Disturbance and/or Damage as defined in Section 8.10.020(I) of the Atherton Municipal Code. The TPZ shall be determined and shall meet all provisions as described in Section 2.2.
- 1.32 **Trenching** - means any excavation to provide irrigation, install foundations, utility lines, services, pipe, drainage or other property improvements below grade.
- 1.33 **Verification of Tree Protection** - means the Project Arborist shall verify, in writing, that all pre-construction requirements have been met.
- 1.34 **Vertical Mulching** - means auguring, hydraulic or air excavation of vertical holes within a Heritage tree's root zone to loosen and aerate the soil, typically to mitigate Soil Compaction.

SECTION 2.00 PROTECTION OF HERITAGE TREES DURING CONSTRUCTION

The objective of this section is to reduce the negative impacts of construction on Heritage trees. The tree protection regulations are for each Development Project to ensure the appropriate practices will be implemented in the field to eliminate or mitigate undesirable consequences that may result from construction activities associated with a Development Project as defined in Section 1.6.

Typical negative impacts that occur during construction may include:

- Mechanical Injury to roots, trunk or branches.
- Compaction of soil, which degrades the functioning roots, inhibits the development of new roots and restricts drainage.
- Changes in existing grade which can cut or suffocate roots.
- Alteration of the water table - either raising or lowering.
- Sterile soil conditions associated with stripping off topsoil.
- Trenching for utilities and irrigation.

SECTION 2.01 HERITAGE TREE PROTECTION AND PRESERVATION PLAN

Prior to commencement of a Development Project, a property owner shall have prepared a Tree Protection and Preservation Plan as defined in Section 1.28 as part of the building permit submittal. The Tree Protection and Preservation Plan shall be prepared by a Certified Arborist with detail as specified by the Tree Preservation Standards and Specifications.

2.1 **Pre-Construction Requirements**

The following five components shall be incorporated within the Tree Protection and Preservation Plan prior to grading, demolition or building permit issuance:

A. Site Plan

See Section 1.28 Tree Protection and Preservation Plan.

B. Tree Protection Disclosure Statement

A statement signed by the owner of the property and permit applicant, on a form provided by the Town, acknowledging the existence of Heritage trees on the property and that the approved Tree Protection and Preservation Plan shall be implemented and adhered through the finaling of the associated building permit.

C. Verification of Tree Protection

The Project Arborist shall verify, in writing, that all pre-construction requirements have been met as set forth in Section 2.1. Written verification must be submitted to and approved by the Town Arborist prior to demolition, grading or building permit issuance.

D. Pre -Construction Meeting

The demolition, grading and general contractors are required to meet with the Project Arborist and the Town at the site prior to beginning demolition, grading or new construction to review tree protection measures and to establish haul routes, staging areas, etc.

E. Protective Tree Fencing for Heritage Trees and Street Trees

1. Fenced enclosures

Fenced enclosures shall be erected around all Heritage trees at 8x the diameter of each Heritage tree to be protected to establish the TPZ in which no soil disturbance is permitted, and various activities are restricted.

2. Size and type of fence

All Heritage trees to be preserved shall be protected with 6-foot-high, minimum 12-gauge chain link fence. Fences are to be mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot

spacing (See detail, Appendix I). This detail shall appear on grading, demolition and building permit plans.

3. Duration

Heritage Tree fencing shall be erected before any demolition, grading or construction begins and remain in place until the Town Arborist approves its removal.

4. "Warning" Signs

Warning signs shall be prominently displayed on each fence side so that they are clearly visible. (See Appendix II). The signs are available at the Building Department.

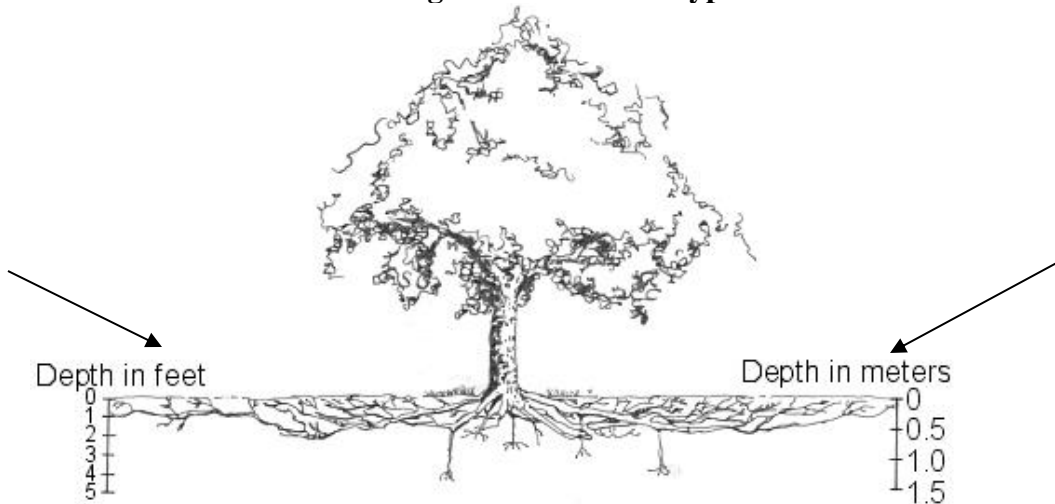
5. Mulch

A 4"-6" layer of coarse mulch or woodchips shall be placed beneath the Dripline of the protected Heritage trees. Mulch is to be kept 12" from the trunk.

2.2 **HERITAGE TREE PROTECTION ZONE (TPZ)**

Each Heritage tree to be protected, including those within 15' of a property line on neighboring properties, shall have a designated TPZ identifying the area sufficiently large enough to protect the Heritage tree and roots from Disturbance and/or Damage as defined in Section 1.7. Within the TPZ, roots that are critical for tree survival are typically found in the upper three-foot soil horizon and may extend beyond the Dripline area. Protecting the roots in the TPZ is necessary to ensure the tree's survival.

Diagram of roots of a typical tree



A. Tree Protection Zone (TPZ)

“Tree Protection Zone (TPZ)” is the designated protection area sufficiently large enough to protect a Heritage tree and its roots from Disturbance and/or Damage as defined in Section 8.10.020 F of the Atherton Municipal Code and as specified below. Unless otherwise specified below, the TPZ is a radius 10 times the diameter of a Heritage tree (expressed as 10x) measured at 4.5 feet above the Natural Grade.

The TPZ shall be determined the following way: the TPZ radius shall be 10 times the DBH (4.5') of the trunk. For example: a 15" DBH = a 12.5-foot radius from the perimeter of the Heritage tree, or a 25-foot TPZ. Any deviation in determining the TPZ shall be in accordance with ANSI standards subject to approval by the Town Arborist.

1. R1-A Zoning District for lots of more than 10,000 square feet:
 - a. The TPZ is 10x away from all buildings and structures.
 - b. The TPZ is 8x away from any new driveway.
2. R1-B Zoning District and lots in the R1-A Zoning District that are 10,000 square feet or less:
 - a. The TPZ is 6x away from all buildings, structures, and new driveways.
3. For all lots:
 - a. The TPZ is 6x away from all CMU walls and 5x away from all wood or metal fences that require a permit.
 - b. The TPZ is 3x from all landscaping, Landscape Screening trees and bushes.
 - c. For replacement of existing driveways and/or new, proposed compacted surfaces, allow for replacement in the existing location, but in no cases less than 3 times (3x).

B. Town Arborist Exception From the TPZ.

A Town Arborist exception from the TPZ standards noted in Section 2.2 (A) can be considered under any of the following scenarios.

- A TPZ exception in the R1-A from 10x the diameter, down to a minimum of 8x the diameter, for all development types unless otherwise specified.
- A TPZ exception in the R1-A from 6x the diameter, down to a minimum of 3x the diameter, for lots in the R1-B, or lots in the R1-A 10,000 square feet or less.

- A TPZ exception for all walls or fences from 6x the diameter, down to 3x the diameter.
1. An application and fee are required to be completed prior to a Town Arborist TPZ exception review. Submitting and paying for the application does not guarantee approval to reduce the TPZ. If the Town Arborist denies an application submitted for a Town Arborist exception to the TPZ, the application can be appealed to the Planning Commission in accordance with the Atherton Municipal Code.

The application for a Town Arborist TPZ exception shall be submitted to the Town of Atherton with a narrative stating why the exception is requested, what the impact to any Heritage trees would be and any identified mitigation. The following information shall accompany the application and application fee:

- a. A plan showing location of the structure and the Heritage trees with size and species stated. Show TPZ zones from 5x to 10x on the plan.
 - b. Project Arborist report – stating what the damage and mitigation would be.
 - c. Any Trenching less than 10x the dbh is required to be hand dug including exploratory Trenching if approved to trench closer than 10x.
 - d. The percentage of Heritage tree roots to be cut.
 - e. Any utility easements.
 - f. Any supporting letters from Menlo Fire, PG&E and/or other utility providers.
 - g. The Town Arborist can require a meeting at site or with all parties to discuss further.
2. Any application to be submitted shall be reviewed by the Town Arborist for demonstrated compliance with any the following criteria, to the satisfaction of the Town Arborist:
 - a. The utility location is required by a utility company and it cannot be moved. A confirmation in writing from the utility is required.
 - b. If the species is tolerant of construction based on species, health, size and age from Matheny and Clark tolerance chart.
 - c. There are no roots over 2” diameter that need to be cut.

- d. Other criteria as may be required by the Town Arborist.

C. Prohibited Activities

Activities prohibited within the TPZ:

1. Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials, including but not limited to, paint, petroleum products, concrete, stucco mix, dirty water, swimming pool and/or spa water, trailer, container boxes, clean up areas, debris boxes, building materials, Trenching, grade changes, tree houses, and Soil Compaction.
2. The use of tree trunks as a winch support, anchorage, as a temporary power pole, signposts or other similar function.
3. Cutting of tree roots by utility Trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation.
4. Landscaping and irrigation improvements, unless approved in accordance with Section 2.2.D below.
5. Soil disturbance, Soil Compaction or grade changes.
6. Drainage changes, including swimming pool, spa, and/or water features discharge.
7. Any other activities which cause Disturbance and/or Damage to Heritage trees as defined in Section 1.9 and or as specified in Atherton Municipal Code Section 8.10.020.

D. Permitted Activities

Activities permitted within the TPZ:

1. Mulching - During construction, it is recommended that wood chips or similar material be spread within the TPZ to a 4-to 6-inch depth, leaving the trunk clear of mulch.
2. Root Buffer - When areas within the TPZ cannot be fenced, a Root Buffer is required and shall cover the root zone in accordance with 1.23. A Root Buffer is a temporary layer of material to protect the soil texture and roots. The buffer shall consist of a base of mulch chips spread over the root area to minimum of 6 inches depth, capped by a base course of 3/4th inch quarry gravel to stabilize 3/4th inch plywood on top.
3. Irrigation, aeration, fertilizing or other beneficial practices that have been specifically approved for use by the Project Arborist within the TPZ.

E. Erosion Control

If a Heritage tree is adjacent to or in the immediate proximity to a grade slope of 8% (23 degrees) or more, then approved erosion control or silt barriers shall be installed outside the TPZ to prevent siltation and/or erosion within the TPZ.

F. Tunneling and Directional Drilling

If Trenching or pipe installation has been approved within the TPZ, then the trench shall be either cut by hand, air spade, or by mechanically boring the tunnel under the roots with a horizontal directional drill and hydraulic or pneumatic air excavation technology. In all cases where there is tunneling or directional drilling, installation of the utility pipe, immediate backfilling with soil and soaking the TPZ within the same day. If boring is set up outside the Dripline of a Heritage tree and not directly under trunk, the depth of hole should be a minimum of 3 feet, preferably 4 feet such that it goes under the root depth of the Heritage tree. The bore hole should be offset by a distance based on the Heritage trees diameter (table below), taken from Best Management Practices- Managing Trees During Construction.

Minimum distance requirements for boring or auguring underneath tree roots.

| Tree Diameter (dbh) (centered on trunk) | Minimum offset distance | Minimum length of bore hole |
|--|-------------------------|-----------------------------|
| 15 inches | 12 feet | 15 feet |
| 20 inches | 15 feet | 20 feet |
| 25 inches | 18 feet | 25 feet |

G. Tree Pruning and Surgery

The most compelling reason to prune is to develop a strong, safe framework and tree structure and to reduce hazards. If the Project Arborist recommends that a Heritage tree be pruned, the standard Pruning shall adhere as defined by the ANZI A300 Pruning Guidelines.

1. Excessive Pruning

There shall be no Excessive Pruning in accordance with Section 1.9 above.

2. Tree Workers

Pruning, as defined in Section 1.22 above, shall not be attempted by construction or contractor personnel, but shall be performed by a qualified tree care specialist or certified tree worker

3. Root Pruning

All root Pruning should follow the most current [ANSI A300 Root Management Standard - Part 8-2013](#) and Root Management Best Management Practices.

H. Tree Removal Procedure

When Heritage trees are proposed to be removed, tree removal practices shall adhere to the procedures as prescribed in Chapter 8.10 of the Atherton Municipal Code.

I. Post Tree Protection and Preservation Plan Implementation

A mitigation program is required if, as determined by the Project Arborist required Monthly Inspection Form and/or as determined by the Town Arborist, the approved development is expected to create drought stress, dust accumulation or Soil Compaction to Heritage trees that are to be protected and preserved. To help reduce Disturbance and/or Damage, one or more of the following mitigation measures shall be implemented and supervised by the Project Arborist.

1. Irrigation Program

Irrigate to wet the soil within the TPZ during the dry season as specified by the Project Arborist.

2. Dust Control Program

During periods of extended drought, or grading, spray trunk, limbs and foliage to remove accumulated construction dust.

3. Soil Compaction Damage

Compaction of the soil is significantly detrimental to the long-term viability of Heritage trees on construction sites due to suffocation of roots. If compaction to the upper 12-inch soil within the TPZ has occurred, then one or more of the following mitigation measures shall be implemented as recommended by the Project Arborist and/or the Town Arborist.

a. Type 1 Mitigation

If an approved paving, hardscape or other compromising material encroaches within the TPZ, an aeration system shall be designed by a Certified Arborist and used within this area.

b. Type 11 Mitigation

If inadvertent compaction of the soil has occurred within the TPZ, the soil shall be loosened by a method approved by the Town Arborist, such as Vertical Mulching or Soil Fracturing.

J. Disturbance and/or Damage to Heritage Trees

1. Reporting

Any Disturbance and/or Damage or Injury to Heritage trees, whether accidental or otherwise, as verified by the Town Arborist, shall be reported within 6-hours to the Project Arborist and Town Arborist so that mitigation can take place. An Arborist Report shall be required and shall include, but not be limited to, the Disturbance and/or Damage that occurred and identified mitigation. All Injury to branches, trunk or to roots over 2-inches in diameter shall be reported in the Monthly Inspection Report. Any Trenching work 10 x the diameter of the Heritage tree is required to be reported in the monthly arborist report.

2. Arborist Report and Appraised Value

An Arborist Report including the Appraised Value of the tree shall be submitted to the Town Arborist. If a Heritage tree is Damaged, a Certified Arborist shall determine the Appraised Value of the Heritage tree. The formula used should also be noted. Refer to Section 1.1.

3. Mitigation

Mitigation for Disturbance and/or Damage or Injury to Heritage trees will be directed and performed under the Project Arborist's supervision.

Typical mitigation efforts for Disturbance and/or Damage may include, but not be limited to, the following:

a. Root injury

If trenches are cut and Heritage tree roots 2-inches or larger are encountered they shall be cleanly cut back to a sound wood lateral root under the supervision of the Project Arborist. The end of the severed root shall be sealed and kept moist. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots shall be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials shall be kept wet until backfilled to reduce evaporation from the trench walls.

b. Bark or trunk wounding

Current bark tracing and treatment methods shall be performed by a qualified tree care specialist within two days.

c. Scaffold branch or leaf canopy injury

Remove broken or torn branches back to an appropriate branch capable of resuming terminal growth within five days. If leaves are heat scorched from equipment exhaust pipes, the Project Arborist shall be informed within 6 hours.

d. Fertilization and watering

K. Inspection Schedule

The Project Arborist shall conduct the following required inspections of construction sites containing protected Heritage trees. Inspections shall verify implementation of the approved Tree Protection and Preservation Plan as defined in Section 1.28.

1. Pre -Construction Meeting

Prior to commencement of construction, the applicant or contractor shall conduct a pre-construction meeting to discuss Heritage tree protection and the tree preservation and protections standards and specifications of this document with the job site superintendent, grading equipment operators, Project Arborist, and Town Arborist.

2. Inspection of Protective Tree Fencing

Prior to issuance of a demolition, grading, or building permit, the Project Arborist shall provide the Town Arborist with a written statement verifying that the Project Arborist has conducted a field inspection of the Heritage trees and that the protective tree fencing, and signage is in place.

3. Inspection of Rough Grading

The Project Arborist shall perform an inspection during the course of rough grading adjacent to the TPZ to ensure Heritage trees will not be Injured by compaction, cut or fill, drainage and Trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The contractor shall provide the Project Arborist at least 48 hours advance notice of such activity.

4. Monthly Inspections

The Project Arborist shall perform monthly inspections to monitor changing conditions and Heritage tree health and submit a written report to the Town Arborist, referring to this document by the 15th of every month on a form as prescribed by the Town Arborist. If the 15th falls on a weekend or holiday, the form shall be submitted on the next working business day. Submission shall be by email to the Town Arborist.

5. Landscape Phase

Heritage tree protection fencing is required to remain in place during the landscape phase of each project. No Trenching for irrigation or plantings shall occur within the TPZ of Heritage trees. No irrigation should be installed within the TPZ of a Heritage Oak tree.

6. Removal of Heritage Tree protection fencing

To request removal of the fencing a report from the Project Arborist is required to be sent to the Town Arborist stating that all work is complete, and no additional use of equipment or Trenching will occur on site.

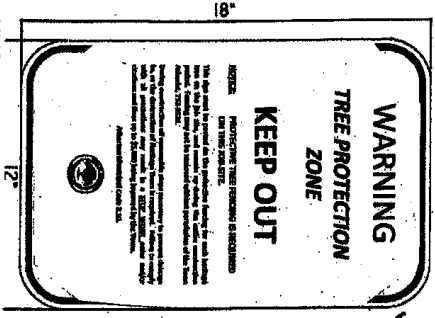
L. Violation – Penalties and remedies

1. Any Person causing a Heritage tree to be Disturbed and/or Damaged in violation of this chapter shall submit an amount equal to half (1/2) the Appraised Value of the Heritage tree as a civil penalty in addition to the penalties as outlined in Chapter 1.20. If a Heritage tree that has been Disturbed and/or Damaged dies within one (1) year of the date of the citation, it will be presumed that the Disturbance and/or Damage caused the death and the penalties set forth in subsection 2, immediately below, shall apply instead of those herein. Any Person causing a Heritage tree to be Removed in violation of this chapter shall submit an amount equal to two (2) times the Appraised Value of the Removed Heritage tree as a civil penalty in addition to the penalties as outlined in Chapter 1.20 of the Atherton Municipal Code. Pursuant to 1.20.020 of the Atherton Municipal Code, a civil action may be commenced to abate, enjoin, or otherwise compel the cessation of violation of any provision in this chapter. In a civil action brought pursuant to this chapter in which the Town prevails, the court may award to the Town all costs of investigation and preparation for trial, the costs of trial, reasonable expenses including overhead and administrative costs incurred in prosecuting the action, and reasonable attorney fees.
2. Where there has been a violation, the violator shall obtain a retroactive Heritage tree removal permit for the previously conducted unlawful activity, subject to the full range of requirements and conditions as specified in Section 8.10.040 of the Atherton Municipal Code.
3. All remedies provided in this section shall be cumulative and are not exclusive.

Appendix I

Warning Sign
 A warning sign shall be prominently displayed on each fence.
 The signs are available at the Building Department.

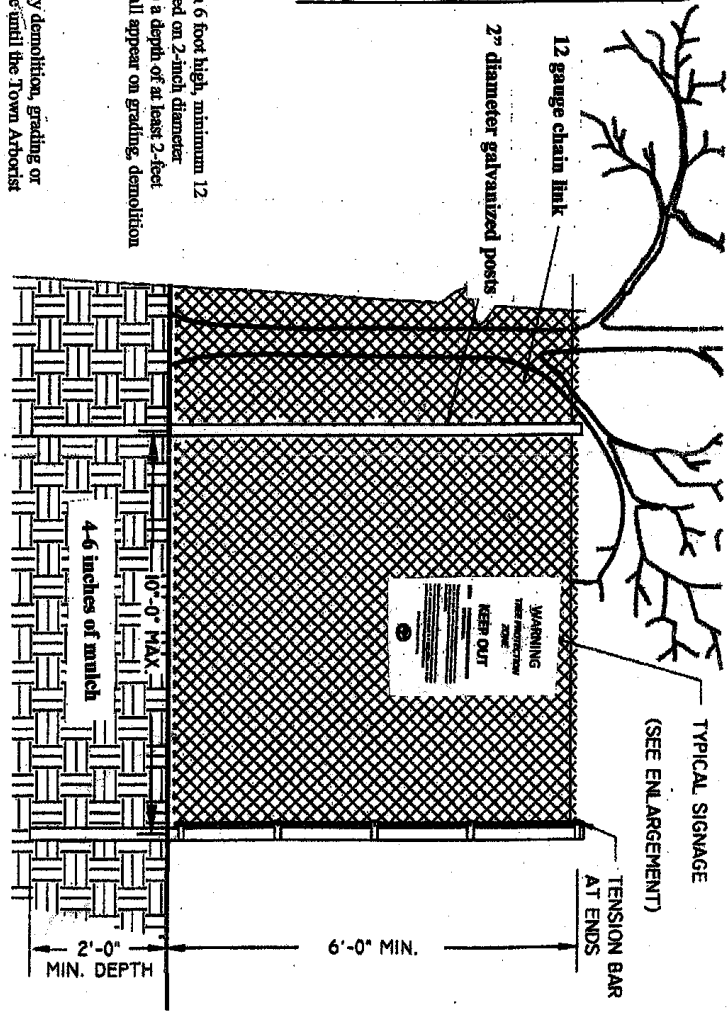
Fencing to be placed at dripline or 6 x diameter whichever is greater



NOTES:

Size and type of fence
 All trees to be preserved shall be protected with 6 foot high, minimum 12 gauge chain link fence. Fences are to be mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. This detail shall appear on grading, demolition and building permit plans.

Duration
 Tree fencing shall be erected before any demolition, grading or construction begins and remain in place until the Town Arborist approves the removal.



6' CHAIN LINK TREE PROTECTION FENCE



Activities prohibited within the TPZ include:
 Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials, cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches, soil disturbance, soil compaction, grade changes, and drainage changes.

WARNING
TREE PROTECTION
ZONE

KEEP OUT

**NOTICE: PROTECTIVE TREE FENCING IS REQUIRED
ON THIS JOB SITE.**

This sign must be posted on the protective fencing for each heritage tree on the job site, and remain up during the entire construction period. Fencing may not be removed without permission of the Town Arborist, 752-0526.

During construction all reasonable steps necessary to prevent damage to, or the destruction of Heritage Trees is required. Failure to comply with all precautions may result in a STOP WORK order and/or citations and fines up to \$5,000 being imposed by the Town.

Atherton Municipal Code 8.10.

