

# HERITAGE TREE AND CITY TREE PROTECTION SPECIFICATIONS FOR CONSTRUCTION

Public Works  
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## Background

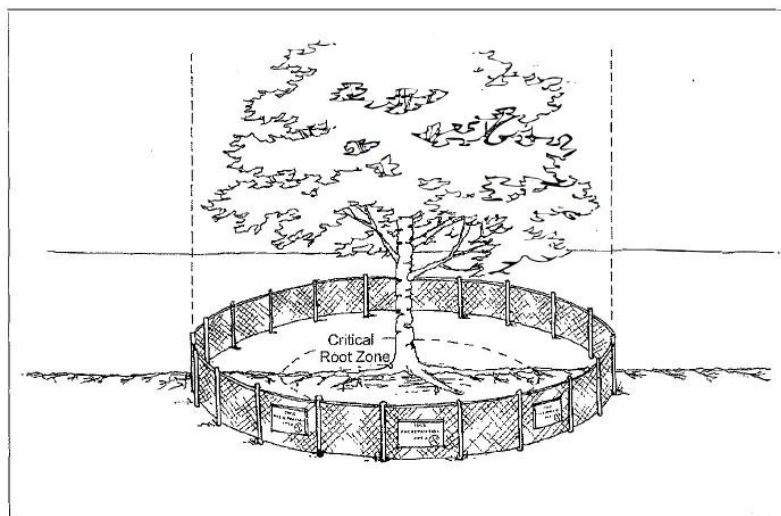
Tree protection measures are required for all heritage trees and city owned trees being retained on or immediately adjacent to active construction sites.

Violation of any of the below provisions may result in heritage tree violation fines, issuance of a stop work order, or other disciplinary action.

## Instructions

1. Retain a [city approved consulting arborist](#) as the Project Arborist to design and monitor tree protection specifications. The Project Arborist shall report violations of the tree protection specifications by the Contractor to the City Arborist as an issue of non-compliance.
2. Design and implement tree protection measures before construction begins.
  - A tree protection fencing verification letter is required prior to building permit issuance.
3. Report damage of heritage tree(s) by construction activities to the Project Arborist or City Arborist within six (6) hours. Remedial action should be taken within 48 hours.
4. Delineate a Tree Protection Zone (TPZ) around the dripline of protected tree(s). The Project Arborist may establish, with approval by the City Arborist, a larger or smaller TPZ based on the species tolerance, health and vigor of the tree(s).
5. Construct a protective barrier around the TPZ (see Figure 1 below) with the following specifications:
  - Fencing shall be six (6)-foot-tall chain link;
  - Fence posts shall be 1.5 inches in diameter, driven 2 feet into the ground, at most 10 feet apart;
  - Signage (in both English and Spanish) should be printed on an 11" x 17" yellow-colored paper and secured in a prominent location on each protection fence. Signage shall include the Project Arborist's contact information;
  - Fencing may be moved to within the TPZ if authorized by the Project Arborist and City Arborist. The fence must remain at least 1.5 times the diameter of the tree from its trunk (i.e. The fence must remain at least 30-inches from the trunk of a 20-inch tree); and
  - Movable barriers of chain link fencing secured to cement blocks may be substituted for fixed fencing if the Project Arborist and City Arborist agree that the fencing will have to be moved to accommodate certain phases of construction. The builder may not move the fence without authorization from the Project Arborist or City Arborist.

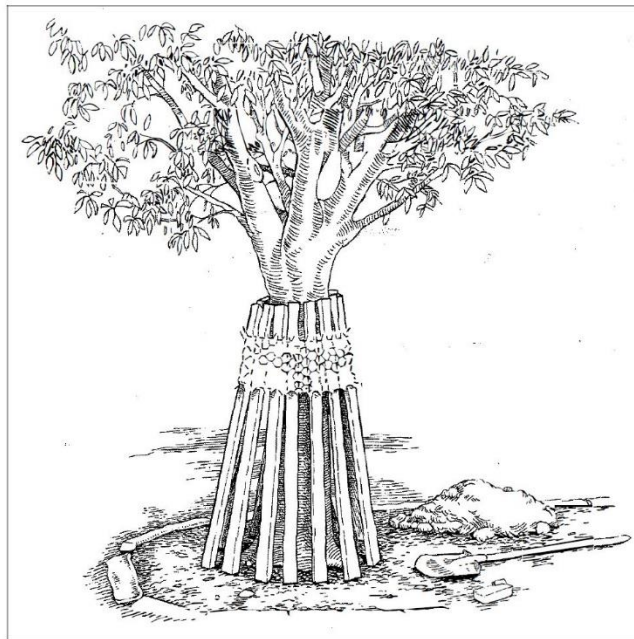
**Figure 1: Fenced tree protection zone**



Matheny, N., Smiley, E. T., Gilpin, R., & Hauer, R. (2023). *Managing trees during construction* (3rd ed.). International Society of Arboriculture.

6. Place a 6-inch layer of coarse mulch or woodchips covered with  $\frac{3}{4}$ -inch plywood or alternative within the TPZ prior to construction activity. Placement of this protective covering will reduce soil compaction and root impacts. It will also help the soil retain moisture for the roots.
7. As specified by the Project Arborist, ensure adequate irrigation is supplied to the trees on a regular basis. Irrigation helps the trees tolerate root impacts better. Hand watering or drip irrigation lines would suffice. In most cases, irrigation is needed once every 2-3 weeks depending on soil moisture levels.
8. Prohibit the following activities within the TPZ. DO NOT:
  - Place heavy machinery for excavation;
  - Allow runoff or spillage of damaging materials;
  - Store or stockpile materials, tools, or soil;
  - Park or drive vehicles;
  - Trench, dig, or otherwise excavate without first obtaining authorization from the City Arborist or Project Arborist;
  - Change soil grade; and
  - Trench with a machine.
9. When work must occur within the TPZ of a heritage tree (as authorized by the Project Arborist or City Arborist) install trunk protections (see Figure 2 below) with the following specifications:
  - Securely bind wooden slats at least 1-inch-thick around the trunk (preferably on a closed-cell foam pad).
  - Secure and wrap at least one layer of orange plastic construction fencing around the outside of the wooden slats for visibility;
  - DO NOT drive fasteners into the tree;
  - Install trunk protection immediately prior to work within the TPZ and remove protection from the tree(s) as soon as work moves outside the TPZ;
  - Protect major scaffold limbs as determined by the City Arborist or Project Arborist; and
  - If necessary, install wooden barriers at an angle so that the trunk flare and buttress roots are also protected.

**Figure 2: Trunk Protection**



Matheny, N., Smiley, E. T., Gilpin, R., & Hauer, R. (2023). *Managing trees during construction* (3rd ed.). International Society of Arboriculture.

10. To avoid injury to tree roots:
  - Only excavate carefully by hand, compressed air, or high-pressure water within the dripline of trees;
  - When the Contractor encounters roots smaller than 2-inches, hand-trim the wall of the trench adjacent to the trees to make even, clean cuts through the roots;
  - Cleanly cut all damaged and torn roots to reduce the incidence of decay;
  - Fill trenches within 24 hours. When it is infeasible to fill trenches within 24 hours, shade the side of the trench adjacent to the trees with four layers of dampened, untreated burlap. Wet burlap as frequently as necessary to maintain moisture; and

- When the Contractor encounters roots 2 inches or larger, report immediately to the Project Arborist. The Project Arborist will decide whether the Contractor may cut roots 2 inches or larger. If a root is retained, excavate by hand or with compressed air under the root. Protect preserved roots with dampened burlap.
11. Route pipes outside of the area that is 10 times the diameter of a protected tree to avoid conflict with roots.
  12. Where it is not possible to reroute pipes or trenches, bore beneath the dripline of the tree. Do not bore less than 3-inches below the surface of the soil to avoid damage to small feeder roots.
  13. Avoid the following conditions. DO NOT:
    - Cut, break, skin, or bruise roots, branches, or trunks without authorization from the City Arborist;
    - Allow fires under and adjacent to trees;
    - Discharge exhaust into foliage;
    - Direct runoff toward trees;
    - Secure cable, chain, or rope to trees; and
    - Apply soil sterilants under pavement near existing trees.

#### **Periodic inspections**

The Project Arborist must provide periodic, on-site tree protection inspections during construction which:

- Occur at least once every four (4) weeks;
- Monitor the effectiveness of the Tree Protection Plan;
- Provide recommendations for any necessary additional care or treatment; and
- Will be followed by monthly construction monitoring reports emailed directly to the City Arborist.



**WARNING TREE PROTECTION AREA**

**ONLY AUTHORIZED PERSONNEL MAY ENTER THIS AREA**

**No excavation, trenching, material storage, cleaning, equipment access, or dumping is allowed behind this fence.**

**Do not remove or relocate this fence without approval from the project arborist. This fencing must remain in its approved location throughout demolition and construction.**

**Project Arborist contact information:**

Name:

Business:

Phone number:

## **ADVERTENCIA: ÁREA DE PROTECCIÓN DE ÁRBOLES**

**SÓLO EL PERSONAL AUTORIZADO PUEDE INGRESAR A ESTA ÁREA**

**No se permite la excavación, zanjas, almacenamiento de materiales, limpieza, acceso de equipos, o vertido de residuos detrás de esta cerca.**

**No retire ni reubique esta cerca sin la aprobación del arborista del proyecto. Esta cerca debe permanecer en su ubicación aprobada durante todo el proceso de demolición y construcción.**

**Información de contacto del arborista de este proyecto:**

Nombre:

Empresa:

Número de teléfono: