



TREE PRESERVATION FOR LOTS 4-12 ODDSTAD, PACIFICA, CA

PROTECTION OF TREES DURING CONSTRUCTION

The objective of these guidelines is to reduce the negative impacts of construction on trees. The tree protection regulations are intended to guide a construction project to ensure that appropriate practices will be implemented in the field to eliminate or mitigate undesirable consequences that may result from construction activities.

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 ones 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

TREE PROTECTION AND PRESERVATION PLAN

In order to avoid and minimize damage to existing trees which are not proposed to be removed or directly impacted by project activities, the following measures should be implemented during construction:

- All construction activity (grading, filling, paving, landscaping etc.) shall respect the root Protection zone (RPZ) around all trees within the vicinity of the project area that are to be Preserved. The RPZ should be a distance of 1.0 times the drip-line radius measured from the trunk of the tree. Exception to this standard could be considered on a case-by-case basis, provided that it is demonstrated that an encroachment into the RPZ will not affect the root system or the health of the tree, and is authorized by an ISA-Certified Arborist or comparable specialist.
- Temporary protective fencing shall be installed around the drip line of existing trees prior to commencement of any construction activity conducted within 25' of the tree canopy. The fence shall be clearly marked to prevent inadvertent encroachment by heavy machinery.
- Drainage will not be allowed to pond around the base of any tree.
- An ISA-Certified Arborist or tree specialist shall be retained to perform any necessary Pruning of trees during construction activity.



- Should any utility lines encroach within the tree protection zone, a single, shared utility conduit shall be used where possible to avoid negative impact to trees.
- Roots exposed, as a result of construction activities shall be covered with wet burlap to avoid desiccation, and should be buried as soon as practical.
- Construction materials or heavy equipment shall not be stored within the root protection zone of preserved trees.
- Only an ISA-Certified Arborist or comparable specialist will make specific recommendations as to where any existing trees can safely tolerate some level of fill within the drip line.
- Trenching within RPZ shall be done under the field supervision of an ISA-Certified Arborist and shall be hand dug as much as possible in addition to using auger or drill.
- Construction materials shall be properly stored away from existing trees to avoid spillage or damage to trees.

PRE-CONSTRUCTION REQUIREMENTS

The following four steps shall be followed in the Tree Protection and Preservation Plan prior to grading, demolition or building permit issuance:

- Site Plan:** Plot accurate trunk locations and the Drip line of all Heritage Trees. Indicate the Tree Protection Zone (TPZ) to be enclosed with the specified tree fencing as a bold dashed line.
- Verification of Tree Protection:** The Project Arborist shall verify, in writing, that all pre-construction requirements have been met prior to demolition, grading or building permit issuance.
- Pre-Construction Meeting** The demolition, grading and general contractors are required to meet with the Project Arborist prior to beginning demolition, grading or new construction to review tree protection measures and to establish haul routes, staging areas, etc.
- Protection:** Protective Tree Fencing for Heritage Trees shall be erected around trees to be protected to establish the TPZ in which no soil disturbance is permitted and activities are restricted. Tree fencing shall be erected before any demolition; grading or construction begins and remain in place until completion of project.

TREE PROTECTION ZONE or (TPZ)

Each Heritage Tree to be protected, including those on neighboring properties, shall have a designated TPZ identifying the area sufficiently large enough to protect the tree and roots from disturbance. The TPZ area can be determined by the drip line of the tree.



A. Activities prohibited within the TPZ include:

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 or dirty water
2. The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function
3. Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation
4. Soil Disturbance, Soil Compaction or grade changes
5. Drainage changes

B. Activities permitted or required within the TPZ include:

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.
3. Irrigation, aeration, fertilizing or other beneficial practices that have been specifically approved for use by the Project Arborist within the TPZ.

C. Erosion Control

1. Installation of erosion control elements such as wattles, silt fences, etc
2. Installation of protective ground cover

D. Steep slopes

1. If a 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.

E. 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, install the utility pipe, immediately backfill with soil and soak within the same day

F. Tree Pruning and Surgery

1. 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 trees be pruned, the standard pruning shall consist of “crown cleaning” as defined by ISA Pruning Guidelines.
 - i. Maximum Pruning Maximum pruning should only occur if approved by the Town Arborist. No more than one fourth (25 percent) of the functioning leaf, branch and



stem area may be removed within one calendar year of any Heritage Tree, or removal of foliage so as to cause the unbalancing of the tree. Trees should not be topped.

- ii. Tree Workers Pruning shall not be attempted by construction or contractor personnel, but shall be performed by a qualified tree care specialist or certified tree worker, according to specifications contained within these procedures.

G. Tree Removal Procedure

1. When Heritage Trees are removed, tree removal practices apply:
 - i. A permit is required to remove any Heritage Tree, unless its removal has been approved by the Planning Commission.
 - ii. Any tree to be removed that may impact a Heritage Tree shall be done under the supervision of a certified arborist.
 - iii. The removal of trees that extend into the branches or roots of Heritage Trees shall not be attempted by demolition or construction personnel, grading or other heavy equipment. A certified arborist or certified tree worker shall remove, or oversee the removal of the tree in a manner that causes no damage above or below ground to trees that remain.

INJURY MITIGATION

To help reduce impact injury, one or more of the following mitigation measures shall be implemented and supervised by the Project Arborist.

- A. Irrigation Program Irrigate to wet the soil within the TPZ during the dry season as specified by the Project Arborist.
- B. Dust Control Program during periods of extended drought, or grading, spray trunk, limbs and foliage to remove accumulated construction dust.
- C. Soil Compaction Damage Compaction of the soil is the largest killer of trees on construction sites due to suffocation of roots. If compaction to the upper 12-inch soil within the TPZ has occurred, then the following mitigation measures shall be implemented:
 - Mix compost into the top 8 to 10 inches of soils to add a surge of nutrients and create a mulch ring around the tree
 - Add earthworms to help restore the flow of air and water
 - For severe compaction, create by installing vertical mulching, drill holes into the soils to break up the compressed particles and provide more air

DAMAGE TO TREES

- A. Reporting any damage or injury to trees shall be reported within 6-hours to the Project Arborist so that mitigation can take place. All mechanical or chemical injury to branches, trunk or to roots over 2-inches in diameter shall be reported in the Monthly Inspection Report.



- B. If a tree is damaged, a Certified Arborist determines the Tree Appraisal value by adjusting a tree's basic value by its condition, location, and species using the most recent edition of the Guide for Plant Appraisal, published by the Council of Tree and Landscape Appraisers. The formula used should also be noted.

MITIGATION

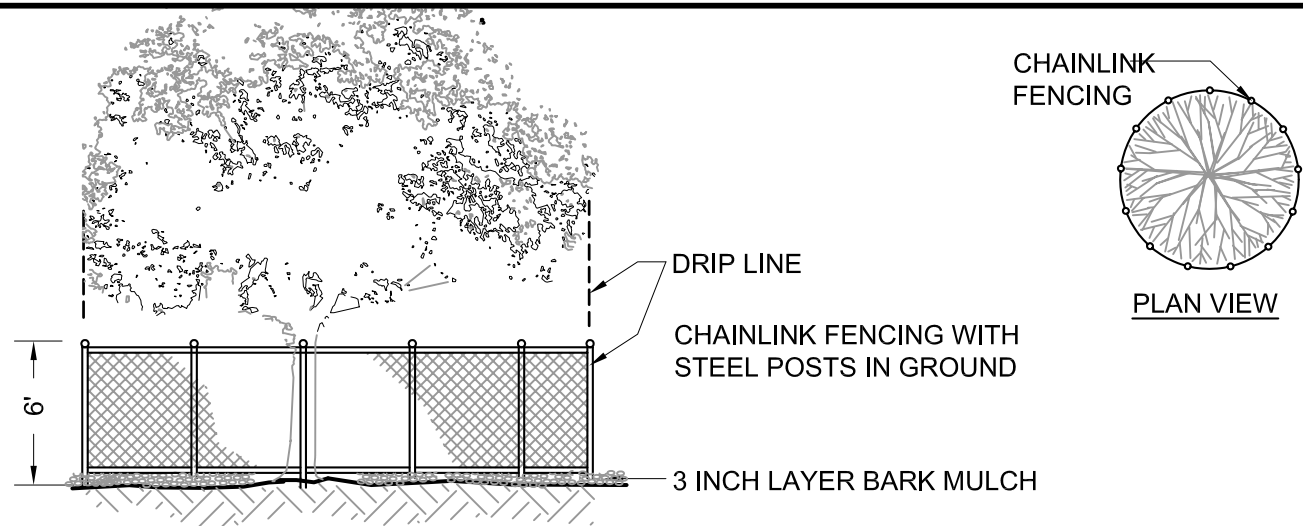
1. Root injury
 - i. If trenches are cut and tree roots 2-inches or larger are encountered they must be cleanly cut back to a sound wood lateral root under the supervision of the Project Arborist. The end of the root shall be sealed and kept moist. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may 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 must be kept wet until backfilled to reduce evaporation from the trench walls.
2. Bark or trunk wounding
 - i. Current bark tracing and treatment methods shall be performed by a qualified tree care specialist within two days.
3. Scaffold branch or leaf canopy injury
 - i. 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, consult the Project Arborist within 6 hours.

REED ASSOCIATES LANDSCAPE ARCHITECTURE CORPORATION
California State License No. 2002

Paul Jay Reed



Reed Associates
Landscape Architecture
477 S. Taaffe St., Sunnyvale, CA 94086
(408)481-9020
fx.(408)481-9022



TREE PRESERVATION NOTES

1. CURRENT STANDARD DETAIL AT CITY ENGINEERING DIVISION SHALL PREVAIL.
2. TREE PRESERVATION MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION, DEMOLITION AND/OR GRADING ACTIVITIES COMMENCE. CITY OF FREMONT WILL STOP CONSTRUCTION IF TREE PRESERVATION MEASURES ARE NOT IN PLACE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. TREES CALLED OUT FOR PRESERVATION SHALL BE FENCED AT THE DRIPLINE. FENCING MAY OCCUR AT THE COMBINED DRIPLINES OF GROVES OF TREES. PLACE 3 INCH BARK MULCH BENEATH DRIPLINES OF TREES TO BE PRESERVED.
4. FENCING SHALL BE 6 FEET TALL CHAIN LINK FENCING WITH STEEL POSTS EMBEDDED IN THE GROUND.
5. NO GRADING SHALL OCCUR WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
6. NO CONSTRUCTION MATERIALS OR CONSTRUCTION VEHICLES MAY BE STORED WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
7. CONSTRUCTION VEHICLES OR MACHINERY MAY NOT PASS BETWEEN TWO OR MORE EXISTING TREES IDENTIFIED FOR PRESERVATION IF THEIR CANOPIES ARE WITHIN 10 FEET OF TOUCHING. ADDITIONAL FENCING MAY BE REQUIRED BY THE CITY AS NEEDED.
8. THE CONTRACTOR IS REQUIRED TO HAVE AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), APPROVED BY THE CITY, ON SITE IF SITE CONSTRUCTION EFFORTS REQUIRE REMOVAL OF EXISTING ROOTS OR BRANCH PRUNING. ROOTS APPROVED FOR CUTTING MUST BE CUT CLEANLY WITH A SAW. RIPPING OR SHREADING ROOTS SUBJECT TO FINE/PENALTY.
9. UNAUTHORIZED TREE REMOVAL IS SUBJECT TO REPLACEMENT EQUAL TO THE APPRAISED VALUE OF THE TREE LOST
10. THE CONTRACTOR IS REQUIRED TO WATER, FERTILIZE AND ATTEND TO OTHER MAINTENANCE NEEDS OF EXISTING TREES TO MAINTAIN HEALTHY GROWTH THROUGHOUT THE CONSTRUCTION PERIOD. AN EARTH BERM MEASURING MINIMUM 6 FEET IN DIAMETER, AND 6 INCHES IN HEIGHT SHALL BE CONSTRUCTED AT THE BASE OF EACH TREE TO FUNCTION AS A TEMPORARY WATERING BASIN DURING THE CONSTRUCTION PERIOD. TREES SHALL BE WATERED ACCORDING TO WEATHER AND TREE SPECIES REQUIREMENTS.
11. IF TREES ARE BEING RELOCATED: RELOCATION OF EXISTING TREES SHALL OCCUR UNDER THE OBSERVATION AND DIRECTION OF A CERTIFIED ARBORIST APPROVED BY THE CITY
12. TRUNK WRAP PROTECTION SHALL OCCUR FOR TREES SITUATED IN SMALL TREE WELLS OR SIDEWALK PLANTERS. THIS FORM OF PROTECTION WILL BE ALLOWED BY APPROVAL FROM SENIOR LANDSCAPE

TREE PROTECTION FENCING