

## **DIVISION 2**

### **SECTION 02122 - TREE PROTECTION**

#### **PART 1 - GENERAL**

##### **Description of Work**

- A. The Contractor shall provide all labor, materials, and equipment necessary to perform the work items called for on the bid schedule.
- B. The Contractor shall perform tree protection regardless of the type, nature, or condition of trees encountered, as specified or required in order to accomplish the construction.

#### **PART 2 - MATERIALS**

##### **2.01 Temporary Fencing**

- A. Orange construction fencing, five feet or greater in height as required to fulfill the intent of this section.
- B. Fencing anchors for small trees shall be T posts. Anchors for fencing within the drip line of large trees shall be dual-socket portable concrete pier blocks sufficient to secure the fence in a vertical position for the construction period.

#### **PART 3 - EXECUTION**

##### **3.01 General**

- A. Prior to and during construction, barriers shall be erected around all protected existing trees. Barriers shall be orange construction fencing located no closer than six (6) feet to the surface of the trunk or one-half (½) of the drip line radius, whichever is greater. Posts shall be anchored in movable concrete blocks so as not to require excavation within the tree's drip line. There shall be no storage or movement of equipment, material, debris, or fill within the fenced tree protection zone. The drip line is defined as the area on the ground covered by the spread of branches.
- B. There shall be no cleaning of equipment or material or the storage and disposal of waste material such as paints, oils, solvents, asphalt, concrete, motor oil or any other material harmful to the life of a tree within the drip line of any protected tree or group of trees.
- C. No attachment, wires, signs, or permits may be fastened to any protected tree.
- D. Large areas containing clumps, groves, or copses of protected trees which are naturally separated from construction or land clearing areas, road rights-of-way and utility easements may be "ribboned off," rather than erecting protective fencing around each tree as required above. This may be accomplished by placing metal t-post stakes a maximum of thirty (30) feet apart and tying ribbon or rope from stake-to-stake along the outside perimeters of such areas being cleared.
- E. The temporary fencing shall be removed by the Contractor only after all heavy equipment has been permanently withdrawn from the site.

##### **3.02 Excavation**

- A. Install shoring or other protective support systems to minimize sloping or benching of excavations.

- B. Do not excavate within the tree drip line, unless otherwise indicated. Where excavation for new construction is required within tree drip lines, hand excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots.
- C. Relocate roots in backfill areas wherever possible. If encountering large, main lateral roots, expose beyond excavation limits as required to bend and relocate without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.
- D. After excavation outside the drip line of trees, any severed roots should be cut again smoothly with flush cuts.
- E. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with compost and wrap with burlap. Water and maintain in a moist condition and temporarily support and protect roots from damage until they are permanently relocated and covered with earth.
- F. Root Pruning: Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with installation of new work. Cut roots with sharp pruning instruments; do not break or chop. Roots 1 inch and larger shall be painted with two coats of Tree Seal or approved equal.
- G. Trenching should be done outside the drip line of trees. The installation of utilities, irrigation lines, or any underground fixture requiring excavation deeper than six inches shall be accomplished by boring under the root system of protected existing trees at a minimum depth of 24 inches. The auger distance is established from the face of the tree (outer bark) and is scaled from tree diameter at breast height as described in the chart below.

Tree Diameter at Breast Height (Inches)	Auger Distance from Face of Tree (Feet)
0-2	1
3-4	2
5-9	5
10-14	10
15-19	12
Over 19	15

### **3.03 Tree Repair and Replacement**

- A. Promptly repair trees damaged by construction operations to prevent progressive deterioration.
- B. Remove and replace dead and damaged trees that the City Forester determines to be incapable of restoring to a normal growth pattern.
  - 1. Provide new trees of same size and species as those being replaced. Plant and maintain as specified herein.

**END OF SECTION**