4.095 URBAN FORESTRY SPECIAL CHARGE.

(2)Definitions.

(c) <u>Program Costs</u>. The Urban Forestry Program Costs shall include the costs to the City to perform the activities associated with the Urban Forestry Program. They do not include any costs incurred by the City that are reimbursed from other sources such as federal or state funding, grants, insurance proceeds, restitution, donations, endowments, or other third party sources, including, specifically, public nuisance abatement costs recovered under Sec. 23.40, MGO, or the Street Tree Replacement Fund under Sec. 10.105, MGO."

10.05 OCCUPANCY OF RIGHTS-OF-WAY.

- (6) Excavation Permit Requirement.
 - (b) <u>Excavation Permit Application</u>. Application for a permit shall be made to the Department. Permit applications shall contain and will be considered complete only upon compliance with the requirements of the following provisions:
 - 2. Submission of a completed permit application form, including the following:
 - e. The applicant shall identify all street trees within the project area and whether the trees, including their root structures, will be impacted by the proposed work. When identifying any impacted trees, the applicant must identify the species of the impacted trees and the DBH or caliper measurement of the tree, as those terms are defined in Sec. 10.105(2).
- (8) Right-of-Way Repair/Restoration.
 - (b) Repair or Restoration Required. The Permittee shall be required to either repair the public right-of-way and to pay a degradation fee, or restore the right-of-way. It is the Permittee's election whether to restore the excavation and surrounding pavement in lieu of repair and a degradation fee. In addition to repairing its own work, the Permittee must repair the general area of the work, and the surrounding areas, including the paving and its foundations, to the specifications of the Department. If the work will involve the removal of a tree in the right-of-way, Permittee shall also be required to comply with Sec. 10.105.

(11) Other Obligations.

- (d) Tree Protection.
 - Requirement. For any trees within the project area that are not the subject of a tree
 trimming, pruning or removal permit issued under Sec. 10.101, the applicant shall comply
 with Section 107.13, the Tree Protection Specifications, of the City's Standard
 Specifications for Public Works Construction, where applicable, while performing work
 under the permit issued under this Section.
 - 2. Penalty. In addition to revocation or suspension of the permit under Sub. (12) and the requirements of Section 10.105, the failure to comply with the Tree Protection Specifications as required under this Subdivision shall be subject to a forfeiture of five hundred dollars (\$500), unless the violation results in the removal of a tree, in which case the forfeiture shall be one hundred and fifty dollars (\$150) per trunk diameter inch of the impacted tree, as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch. Each day such violation or failure to comply continues shall be considered a separate offense.
- (12) Revocations, Suspensions, Refusals to Issue or Extend Permits .

- (a) <u>Grounds</u>. The Department may refuse to issue a permit or may revoke, suspend or refuse to extend an existing permit if it finds any of the following grounds:
 - 16. The applicant or Permittee has failed to identify impacted trees, comply with Section 107.13, the Tree Protection Specifications, of the City's Standard Specifications for Public Works Construction or an approved tree trimming or tree replacement plan, or caused unauthorized injury or damages, including removal, of right-of-way trees on prior projects.
- (19) Penalty. Except as otherwise provided in this section, any person who violates this section or fails to comply with the provisions of this section shall be subject to a forfeiture of not less than two hundred and fifty dollars (\$250) nor more than one thousand dollars (\$1,000). Each day such violation or failure to comply continues shall be considered a separate offense.

10.055 OCCUPANCY OF STREETS OR OTHER PUBLIC AREAS.

- (3) Permit Application. An application for a street occupancy permit shall be in writing to the City Traffic Engineer and shall describe the premises to be occupied by lot, block and/or street on or over which such material or machinery is desired to be placed, the area of occupation sought, the character of the material for which the permit is desired and the duration of the proposed occupation. The application shall identify all street trees within the proposed occupancy area and whether the trees, including their root structures, will be impacted by the proposed work. When identifying any impacted trees, the applicant must identify the species of the impacted trees and the DBH or caliper measurement of the tree, as those terms are defined in Sec. 10.105(2). The application should also note whether the proposed occupation area will require, or reasonably necessitate, the trimming, pruning or removal of any City tree. The application shall include a drawing of the proposed occupation area, the application fee, the certificate of insurance and surety bond required under Subdivision (4)(a), and an agreement to abide by all conditions set forth in Subsection (4).
- (4) <u>Permit Conditions</u>. As a condition of a street occupancy permit issued under this Section, permittees agree to abide by the following conditions:
 - (c) Occupation Limitations.
 - 4. Public Trees. No permit shall be issued where, in the determination of the City Forester, the proposed occupancy will endanger the health or welfare of an existing street tree, unless the applicant has also been granted a tree trimming, pruning or removal permit under Sec. 10.101 and/or the applicant agrees to comply with Section 107.13, the Tree Protection Specifications, of the City's Standard Specifications for Public Works Construction.
 - (n) Restoration. Upon either the expiration of the permit or, if the work of construction is completed before the permit expires, the completion of the work, the permitted area occupied under this Section shall be restored to its original condition and left in good repair and condition. The permittee shall be responsible for the repair of any damage noted by City staff and shall repair it to City of Madison Standard Specification for Public Works Construction. Any new or reconstructed sidewalk shall comply with Section 10.06. If the occupation resulted in the removal of a tree in the right-of-way, Permittee shall also be required to comply with Sec. 10.105. The City Traffic Engineer or City Engineer shall inspect the area upon completion of the restoration and the permittee shall make any further repairs required by the City Traffic Engineer or City Engineer needed to address any deficiencies that did not exist prior to the occupation. If permittee does not adequately restore the permitted area as required, the City may perform any repairs or restoration and recover the costs thereof as a special charge against the adjoining property under Sec. 4.09(13).
 - (s) Tree Protection.

- Requirement. For any trees within the project area that are not the subject of a tree
 trimming, pruning or removal permit issued under Sec. 10.101, the applicant shall comply
 with Section 107.13, the Tree Protection Specifications, of the City's Standard
 Specifications for Public Works Construction, where applicable, while occupying the
 permitted area.
- 2. Penalty. In addition to revocation or suspension of the permit under Sub. (6) and the requirements of 10.105, the failure to comply with the Tree Protection Specifications as required under this Subdivision shall be subject to a forfeiture of five hundred dollars (\$500), unless the violation results in the removal of a tree, in which case the forfeiture shall be one hundred and fifty dollars (\$150) per trunk diameter inch of the impacted tree, as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch. Each day such violation or failure to comply continues shall be considered a separate offense.
- (5) <u>Public Trees</u>. Any trimming, pruning or removal of public trees within the permitted area will require the <u>prior</u> issuance of a separate permit under Sec. 10.101. The trimming, pruning or removal of any City tree without a permit issued under Sec. 10.101 or without the permission of the City Forester shall be cause to revoke a permit issued under this Section. <u>Any tree removal is further subject to Sec. 10.105.</u>

10.08 CONSTRUCTION OF DRIVEWAY APPROACHES AND PARKING FACILITIES.

- (3) Location of Entrances.
 - (e) No entrance shall be located where an existing City street tree is present unless no other location is available, the applicant obtains a tree trimming, pruning or removal permit under Sec. 10.101, and the applicant complies with Sec. 10.105.
- (7) Application.
 - (b) All applications for driveway approaches except Class I and Class II to parking and loading facilities shall be accompanied by scaled drawings, in quintuplicate, and approved by the respective City departments before a building permit will be issued. The following items must be indicated and dimensioned on the five submitted drawings:
 - 11. Utility poles, fire hydrants, trees or other structures to be moved.
 - 22. The applicant shall identify all street trees within the adjoining right-of-way and whether the trees, including their root structures, will be impacted by the proposed driveway approach. When identifying any impacted trees, the applicant must identify the species of the impacted trees and the DBH or caliper measurement of the tree, as those terms are defined in Sec. 10.101(2).
 - (c) Application for residential driveway approaches shall be made at the City Engineering Division and shall identify all street trees within the adjoining right-of-way and whether the trees, including their root structures, will be impacted by the proposed driveway approach. When identifying any impacted trees, the applicant must identify the species of the impacted trees and the DBH or caliper measurement of the tree, as those terms are defined in Sec. 10.101(2). Application for commercial driveway approaches to off-street vehicle facilities shall be made at the Traffic Engineering Division.
- (8) Restrictions and Responsibilities.
 - (b) The construction of such driveway and approaches shall not interfere with any existing structure on any street right-of-way without specific permission in writing from the Board and other owner thereof. The trimming, pruning and removal of any street tree shall require the prior issuance of a permit under Section 10.101 and compliance with Section 10.105.

- (c) The permittee shall assume all responsibility for any injury or damage to persons or property resulting directly or indirectly during the construction of any approach or driveway, including the injury or damage to any street tree.
- (m) <u>Tree Protection</u>. For any trees within the right-of-way adjacent to the permitted driveway entrance and approach area that are not the subject of a tree trimming, pruning or removal permit issued under Sec. 10.101, the permittee shall comply with Section 107.13, the Tree Protection Specifications, of the City's Standard Specifications for Public Works Construction, where applicable, while performing work on the authorized driveway entrance and approach.

(9) Administration.

(10) Penalties.

- (da) Except as provided in Subdivision (b), aAny person violating the provisions of this section shall be fined not less than twenty-five dollars (\$25) nor more than two hundred dollars (\$200) and each day of continued violation shall constitute a separate offense.
- (b) The failure to comply with the Tree Protection Specifications as required under Subsection (8)(m) shall, in addition to the requirements of Section 10.1015, be subject to a forfeiture of five hundred dollars (\$500), unless the violation results in the removal of a tree, in which case the forfeiture shall be one hundred and fifty dollars (\$150) per trunk diameter inch of the impacted tree, as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch. Each day such violation or failure to comply continues shall be considered a separate offense.
- (10) This ordinance shall be in effect from and after its passage and publication.

10.101 REGULATION OF TREE TRIMMING, PRUNING AND REMOVAL WITHIN THE PUBLIC RIGHT-OF-WAY OF ANY STREET, ALLEY OR HIGHWAY.

(2) <u>Definitions</u>.

- <u>Tree Replacement Plan.</u> A plan, proposed by a person seeking a permit to remove a tree in a public street, alley or highway, prepared by a certified arborist, to replace the tree, which plan shall take into account the size, age, species, canopy and location of the tree, and may include actual tree replacement and reestablishment at or near the location of the removed tree, other tree plantings, payments to the Street Tree Replacement Fund as provided for under Sec. 10.101, or a combination thereof.
- (3) <u>Permit Required for Trimming, Pruning, and Removal of Trees within the Public Right-of-Way of any</u> Street, Alley, Highway or Greenway.
 - (b) Any person seeking a permit to trim, prune, or remove a tree in a public street, alley, highway or greenway shall submit a written proposed trimming, pruning or removal plan to the City Forester, setting forth the following:
 - 4. If removal of a tree in a public street, alley or highway is proposed, a Tree Replacement Plan shall also be required.
 - (d) If the City Forester determines that the Tree Trimming Plan and, if applicable, the Tree Replacement Plan are is in accordance with the intent and purpose of this ordinance, it will, within 10 days of the hearing at which the plan was considered, authorize the City Clerk to issue a permit to the person submitting the plan. The City Clerk will issue the permit upon submission of the permit fee of fifty dollars (\$50).
 - (f) If a Tree Replacement Plan is approved, a condition of the permit shall also be compliance with the approved Plan.

(7) Penalty.

- (a) Except as provided in Sub. (b), aAny person who violates the provisions of this section shall, upon conviction, pay a forfeiture of not less than twenty-five dollars (\$25) nor more than five hundred dollars (\$500). Each day during which any violation of the provisions of this section shall occur or continue shall constitute a separate offense.
- (b) If, as the result of a violation of any provision of this section, the injury, mutilation, or death Any person who, without the authority granted by a permit issued under this Section, causes the removal of a tree located within the public right-of-way of any street, alley, highway or greenway shall, in addition to the requirements of Section 10.105, be subject to a forfeiture of one hundred and fifty dollars (\$150) per trunk diameter inch of the impacted tree, as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch. is caused, the cost of repair and replacement of such tree shall be the responsibility of the person in violation. The replacement value of trees shall be determined in accordance with the most recent edition of A Guide to Plant Appraisal published by the International Society of Arboriculture.

10.105 STREET TREE REPLACEMENT FUND. (NEW ORDINANCE)

(1) Purpose. Over the last several decades, the City has invested in growing, sustaining and protecting its urban forest, including street trees located in the median or terrace areas of the City's rights-of-way. These street trees provide substantial benefits to the City, its residents, visitors, and property owners, in addition to providing long lasting environment benefits. Street trees support both individual and community goals for healthy, safe and prosperous communities. Indeed, a healthy, vibrant, diverse, established and well managed urban forest is crucial for the health, safety and welfare of the public. It can take generations to develop a healthy urban forest, and generations to replace one. The City's historical and ongoing commitment to its urban forest has led it to be recognized by the Arbor Day Foundation as a Tree City USA community since 1989.

However, in addition to being subject to disease and infestations like other trees, street trees face numerous other unique challenges due to their location, including threats posed by passing vehicles, soil quality, space availability, impacts from construction activities, and conflicts with other right-of-way users (including utilities) and adjoining property uses. A fully mature street tree, if removed before the end of its natural life, may take several decades to be replaced, although, in reality, many such trees can never actually be fully replaced.

The purpose of this ordinance is to establish a mechanism whereby the City and the public will be made whole for the removal of a street tree.

(2) <u>Definitions</u>. For the purposes of this section, the following definitions apply:

<u>Aggregate Diameter</u> means the combined diameter of a Multiple Stemmed Tree of each stem that has a diameter of six inches or greater when measured at breast height as follows:

For Multiple Stemmed Trees where the trunk separations begin at lower than four and one-half feet from the ground, but higher than one foot from the ground, measurement shall be taken one foot below the separation.

For Multiple Stemmed Trees where the trunk separations begin below one foot from the ground, the measurement shall be taken at four and one-half feet above the average ground level at the base of the tree.

<u>Caliper</u> means the diameter of a tree as measured at a point six inches above the existing grade at the base of the tree. This point of measurement is used only for measuring nursery stock and replacement trees.

<u>DBH or Diameter at Breast Height</u> means the diameter of the trunk of the tree measured in inches at a point four and one-half feet above the existing grade at the base of the tree or the

Aggregate Diameter of a Multiple Stemmed Tree, rounded down to the nearest inch. This point of measurement is used for measuring mature and established trees.

<u>Multiple Stemmed Tree</u> means a single tree made up of two or more main stems originated below the height used for measuring DBH.

<u>Person</u> has the same meaning as in Sec. 10.05(1)(b), except that it does not include the City, its employees, agents, contractors and subcontractors when acting in their official capacity on behalf of the City.

Reestablishment Cost means the costs incurred to prepare a site suitable for the City to plant a replacement tree, including stump removal, soil replacement, and planting box construction.

Replacement Cost means the cost to the City to replace a lost tree, including purchasing of a tree, planting costs, and initial care and maintenance.

<u>Street Tree</u> is a tree within City controlled right-of-way, including within terrace areas, medians, and undeveloped right-of-way. Trees do not include shrubs and bushes.

- (3) <u>Street Tree Replacement Fund</u>. There is hereby established a Street Tree Replacement Fund, which fund shall only be used to directly support the planting, establishment, or protection of street trees. These funds may only be used by the Streets or Engineering Divisions, with the approval of the City Forester, to purchase and plant trees, replace soil, install planting boxes, protect existing street trees, or take other actions that directly support, protect, replace or enhance the City's street tree stock.
- (4) Requirement. Any person who removes, or causes the removal of a street tree shall either replace the tree as provided by an approved Tree Replacement Plan under Sec. 10.101, or reimburse the City for the value of the removed tree by paying into the Street Tree Replacement Fund. The value of the removed tree shall be established under Sub. (5).
- (5) Valuation. The City Forester shall determine the value of the removed street tree by applying the City Forester's Street Tree Valuation Policy, which policy shall be created by the City Forester and approved by the Board of Public Works. The Policy shall be updated at least bi-annually so that the valuations reflect the City's updated costs. In establishing the policy, the City Forester shall consider a tree's replacement cost (the costs that will be incurred by the City to purchase suitable replacement(s) for the tree), and reestablishment costs (the costs that will be incurred by the City to prepare a site suitable for sufficient canopy growth to replace the lost tree). Other factors to consider will include, but not be limited to, size, age, species, and character of the tree, type of street, soil condition, and the existing tree canopy. The value determination for a tree is meant to reflect the City's actual costs that would be incurred to replace the removed tree.
- (6) Notice. Once the valuation for a tree is determined under Sub. (5), the City Forester shall provide notice to the person of such value and the requirement to make payment to the Street Tree Replacement Fund within thirty (30) days. Notice may be provided in person, or be sent by first class mail or electronic communications. If notice is sent, it is considered complete upon mailing.
- (7) Appeals. Any person aggrieved by the City Forester's valuation determination under Sub. (5) may appeal the City Forester's determination to the Streets Superintendent by filing a notice of appeal with the City Forester within ten (10) days of the notice under Sub. (6), stating the grounds therefore. The Streets Superintendent may, after hearing from the City Forester and the appellant, affirm or modify, in whole or in part, the valuation determination of the City Forester. The decision of the Street Superintendent may be appealed to the Board of Public Works by filing a notice of appeal with the City Clerk Engineer within ten (10) days of the Street Superintendent's determination, stating the grounds therefore. The Board of Public Works shall fix a reasonable time for the hearing on the appeal and give due notice to the parties in interest, and decide the same within a reasonable amount of time. During the hearing, any party may appear in person or by an agent or attorney. The Board of Public Works may, in conformity with this ordinance, affirm or modify, wholly or partially, the valuation

determination. The Board's decision shall be a final administrative determination, subject to judicial review as may be provided by law.

(8) Penalty.

- (a) Any person who fails to make payment to the City as required under Sub. (4) within thirty (30) days from the notice provided under Sub. (6) or the expiration of any appeals under Sub. (7), whichever is later, shall, upon conviction, pay a forfeiture of not less than twenty-five dollars (\$25) nor more than five hundred dollars (\$500). Each day during which any violation of the provisions of this section shall occur or continue shall constitute a separate offense.
- (b) <u>Special Charge</u>. In addition to the penalties provided for under Subd. (a), if payment to the City as required under Sub. (4) is not made, and if the City proceeds to replace the removed tree, the City shall recover the actual costs of the tree replacement incurred by the City, up to the tree valuation as determined under Sub. (5), by imposing a special charge for current services against the property served.

23.24 BREAKING, DAMAGING OR INJURING TREES, SHRUBS.

- (1) Except as authorized under Sec. 10.101, nNo person shall break, damage or injure any tree planted in any highway in the City of Madison, nor shall they pour salt water or anything detrimental to the health of the tree on any such public highway in such places as to injure any tree or shrub planted or growing therein.
- No person, during the course of performing or causing to be performed public or private work on or immediately adjacent to property that the City of Madison has an ownership interest in, including, without limitation, highways and highway right-of-ways, public walkways and bike paths, parks, and greenways, shall intentionally or negligently cause damage to any tree planted on said City of Madison property-such that the tree must be removed. In performing or causing to be performed such work, persons are expected to exercise ordinary care to prevent unnecessary damage to the tree and root structure so that the tree remains viable after the work is performed. It shall not be a violation of this provision if the City Engineer or City Forester, or their designees, authorize the damage to the tree prior to the damage, or within a reasonable time thereafter. Each tree damaged shall be a separate violation, and any person violating this provision shall be subject to the following forfeitures: if the tree damaged has a diameter of three (3) inches or less (measured at twelve inches above ground level and rounded to the nearest inch), a forfeiture of two hundred and fifty dollars (\$250) plus thirty dollars (\$30) per diameter inch; if the tree damaged has a diameter of more than three (3) inches (measured at twelve inches above ground level and rounded to the nearest inch), a forfeiture of one hundred and fifty-five dollars (\$155150) per diameter inch. However, no person shall be subject to a forfeiture under this subsection if that person has already reimbursed the City for the damage to the tree through the provisions of a public works contract.

1.08 - ISSUANCE OF CITATIONS AND COMPLAINTS FOR VIOLATIONS OF CERTAIN ORDINANCES AND PROVIDING A SCHEDULE OF CASH DEPOSITS.

(3) Schedule of Deposits.

(a) The schedule of cash deposits that follows this subsection is established for use with citations issued under this ordinance to persons seventeen (17) years of age and older.

"Offense

Ord. No./Adopted Statute No.** Deposit*

Failure to Comply with Tree Protection	10.05(11)(d)1	\$500/offense, or
Requirements During Excavation		\$150/inch for tree removals
Failure to Comply with Tree Protection	10.055(4)(s)1	\$500/offense, or
Requirements During Occupancy		\$150/inch for tree removals
Failure to Comply with Tree Protection	10.08(10)(b)	\$500/offense, or
Requirements During Driveway		\$150/inch for tree removals
Approach Construction		
Causing Removal of a Tree	10.101(7)(b)	\$150/inch for tree removals
Without a permit		
Failure to Make Payment to the	10.105(8)(a)	\$100/1st;
Street Tree Replacement Fund		\$250, 2nd;
		\$500, 3+
Damaging a City Tree	23.24(3)	\$250 + \$30/inch, 0>3 diameter
		inches
		\$ 155 150 per diameter inch over 3
		inches"

Standard Specifications for Public Works Projects

107.13 Tree Protection Specifications.

These specifications shall be applicable to all Contractors working in the Public Right of Way, whether by permit, Public Works Contract, Developer Agreement or any other permission to work within the Public Right of Way. However, any Contractor doing work related to an emergency situation as described in Sections 10.05(13)(a) and 10.101(5) of the Madison General Ordinances are not bound by these provisions for those situations only. The term "Contractor" shall also mean 'Permit Grantee' or anyone given permission to work in the Public Right of Way, regardless of whether a permit is obtained or granted. For the purposes of these specifications, "Public Right of Way" shall include any property that the City of Madison has an ownership interest in, including, without limitation, highways and highway right-of-ways, public walkways and bike paths, parks, greenways and stormwater management areas. Other Sections of the Standard Specifications may repeat portions of this specification for emphasis and / or expand upon these specifications. The specifications found in those other Sections are not intended to conflict with these specifications.

The maintenance and enhancement of the urban forest, in particular the established urban forest, is a goal of the City of Madison. Preserving and protecting healthy trees, especially mature trees, is one objective towards achieving this goal. Trees vary in their ability to adapt to altered growing conditions. Trees have established stable biological systems in the pre- existing physical environment. Disruption of this environment by construction activities interrupts the tree's physiological processes causing depletion of energy reserves and a decline in vigor, often resulting in the tree's death. Typically, this reaction may develop from one to twelve years or more after disruption. It could take generations to replace a fully mature tree. These tree protection specifications are intended to insure that appropriate practices will be implemented in the construction phase of the project to protect a tree's structural integrity and future health and both preserve trees and property value. Also, these specifications will reduce the likelihood of undesirable consequences that may result from uninformed or careless construction practices adjacent to trees. The most common forms of construction damage to trees are:

- Injury to roots, trunk or branches
- Bark or trunk wounding

- Soil compaction which degrades the functioning of roots and inhibits the development of new ones and restricts drainage, which desiccates roots
- Changes in existing grade which can cut or suffocate roots

Damage can be prevented or minimized by following the specifications below and properly educating construction staff of these specifications and use of care when working around trees during the construction process within the Tree Protection Zone. If the City Forester or City Engineer determines that a tree has been damaged due to failure to follow these specifications, or negligence of the Contractor or Subcontractor, a fine or liquidated damages shall be assessed to the Contractor or permit holder.

For the purposes of this Section 107.13, the definitions set forth in MGO Sec. 10.105(2) apply, including:

DBH or Diameter at Breast Height. which means the diameter of the trunk of the tree measured in inches at a point four and one-half feet above the existing grade at the base of the tree or the Aggregate Diameter of a Multiple Stemmed Tree, rounded down to the nearest inch. This point of measurement is used for measuring mature and established trees.

The Tree Protection Zone is the area around a tree that is the greater of either 5 feet, or 1 foot for each DBH. The Tree Protection Zone may be increased or decreased by the City Forester based upon the unique characteristics of the tree in question.

The City Engineer or City Forester may elect to specify the use of a-protective fencing and/or barricades by the Contractor to mark the $\frac{1}{2}$ ree $\frac{1}{2}$ rotection $\frac{1}{2}$ ones or $\frac{1}{2}$ ones of no disturbance for protected trees, street trees or designated trees. The fenced and/or barricaded enclosure shall achieve three-four primary goals, (1) to keep the foliage of tree crowns and branching structure clear from contact by equipment, materials and activities; (2) to preserve roots and soil conditions in an intact and non-compacted state and; (3) to identify the $\frac{1}{2}$ ree $\frac{1}{2}$ rotection in which no soil disturbance is permitted and activities are restricted, unless otherwise approved; and (4) to protect a tree trunk, roots and limbs from direct contact during work. The fences and/or barricades shall enclose the entire area designated by City Engineer or City Forester of the trees to be saved throughout the life of the project, or until final improvement work within the area is required, typically near the end of the project. The fences and/or barricades shall be erected before the demolition, grading or construction begins. Do not remove $\frac{1}{2}$ rone fencing/barricades to allow for deliveries or equipment access through the protection zone. Whenever construction fencing and/or barricades are is used, a bid item shall be included in the contract, unless specified as incidental.

107.13(a) Underground Utility Excavation & Installation.

The Contractor shall not grade, excavate, full depth saw cut sidewalk or otherwise disturb the area within the Tree Protection Zone five (5) feet of any tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system along the length of the terrace, without prior consultation with and permission from the City Forestry Representative.

For laterals or utilities located in close proximity to terrace trees, the situation shall be reviewed on a case by case basis by the Engineer and City Forestry Representative. The contractor shall use construction methods to minimize tree damage as directed by the Engineer. The Engineer may elect to terminate lateral installation prior to conflict with tree (normally terminate at the curb). Most laterals shall have their locations verified and on the plan set in advance of bidding. Laterals that have not had their locations verified, shall be so noted on the plans.

Boring under or within the 5-foot <u>Tree Pprotection</u> <u>Z</u>eone may be allowable, <u>and is</u> recommended compared to open trenching.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately in back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder,

sawzall or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

The Contractor shall not rip or pull roots out towards the trunk of a tree while excavating with a backhoe. The use of a backhoe to clean cut roots is NOT acceptable.

107.13(b) Curb Excavation and Installation.

Root masses that grow very close to, up to or over curb will require extra care during excavation. Curb modifications may be necessary as determined by the Engineer or City Forester, such as curving into the direction of the street to avoid damage to the root system or hand formed curb.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder, sawzall or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

The City Forester will review curb and gutter that is marked for removal and adjacent to street trees. Forestry will mark curb and gutter with "NRC" (No Root Cutting) next to trees that curb and gutter removal and replacement has a greater potential to damage tree roots. The Contractor shall proceed in the following sequence to repair sidewalk marked with NRC as follows:

- 1. Place a yellow ribbon around the tree marked NRC at approximately 4-feet from the ground in order to highlight these trees for the equipment operator removing the concrete;
- 2. Ribbon shall remain until forms have been removed;
- 3. Carefully remove the concrete curb and gutter so marked and those adjacent curb and gutter sections six (6) feet on either side of the visible root flair without excavating into the terrace or without damaging roots;
- 4. At the City's discretion, install a type II barricade;
- 5. Await inspection by Forester, who shall determine which roots can or cannot be cut or shaved, how much excavation can be safely allowed and communicate their findings to the Contractor and the Engineering Construction Inspector. After the Contractor notifies the City Forestry staff that the removals are complete and ready for their determination, the City Forestry staff shall respond by the end of the following work day. Rain days, weekends and holidays do not count as a work day for this purpose.
- 6. Proceed to cut or shave roots in the presence and under the direction of the Forester.

At locations where the curb and gutter is to be removed and replaced that are adjacent to street trees that are not marked "NRC", the Contractor can remove the concrete and underlying soil to sub-grade without notification to the City Forestry Representative.

Curb excavations shall be limited to one (1) foot behind the proposed curb for trees less than 10" in DBH (Diameter at Breast Height), for a distance of ten (10) feet each way from a tree trunk to reduce damage to the root system.

Curb excavations shall be limited to six (6) inches behind proposed curb for trees greater than 10" DBH, or street terrace widths less than six (6) feet for a distance of ten (10) feet each way from a tree trunk to reduce damage to the root system.

When excavation behind the curb is limited to less than 6 inches, the new curb must be a 'hand- formed' replacement for a minimum length as directed by the engineer.

Contractor shall not cut any roots that are 3" or larger in diameter without prior permission from the City Forestry Representative for curb and gutter installation.

In situations where root severing has to occur, the root cutting will be clean cuts – not jagged or ripped. The use of a Backhoe to clean cut tree roots is NOT acceptable.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder, sawzall or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

107.13(c) Sidewalk Excavation and Installation.

The City Forester will review sidewalk that is marked for removal and adjacent to street trees. Forestry will mark sidewalk with "NRC" (No Root Cutting) next to trees that sidewalk removal and replacement has a greater potential to damage tree roots. The Contractor shall proceed in the following sequence to repair sidewalk marked with NRC as follows:

- 1. Place a yellow ribbon around the tree marked NRC at approximately 4-feet from the ground in order to highlight these trees for the equipment operator removing the concrete;
- 2. Ribbon shall remain until forms have been removed;
- 3. Carefully remove the concrete sidewalk so marked and those adjacent sidewalk sections six
 - (6) feet on either side of the visible root flair without damaging roots;
- 4. At the City's discretion, install a type II barricade;
- 5. Await inspection by Forester, who shall determine which roots can or cannot be cut or shaved and communicate their findings to the Contractor and the Engineering Construction Inspector. After the Contractor notifies the City Forestry staff that the removals are

complete and ready for their determination, the City Forestry staff shall respond by then end of next work day. Rain days, weekends and holidays do not count as a work day for this purpose.

- 6. Proceed to cut or shave roots in the presence and under the direction of the Forester;
- 7. Install the granular sub-base, 3-inch minimum depth if the sub-grade is not acceptable, and new concrete sidewalk, 5-inch minimum depth;
- 8. Remove ribbon.

At locations where the sidewalk is to be removed and replaced that are adjacent to street trees that are not marked "NRC", the Contractor can remove the concrete and underlying soil to sub-grade without notification to the City Forestry Representative. The Contractor and the City shall review the construction site for privately owned trees (on private property, but near the sidewalk to be removed) that could require the above process. In those cases, the trees shall be reviewed on a case-by-case basis with the property owner.

Contractor shall not cut any roots that are 3" or larger in diameter without prior permission from the City Forestry Representative for sidewalk installation or repair within five (5) feet of any tree located in the terrace as measured from the outside edge of the tree trunk or visible aboveground portion of the root system. In situations where root severing has to occur, the root cutting will be clean cuts – not jagged or ripped. The use of a Backhoe to clean cut tree roots is NOT acceptable. All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of excavation. Exposed roots should be covered as soon as excavation and installation are complete.

107.13(d) Root Cutting / Root Grinding.

Roots shall be cut or ground as specified by the City Forestry Representative. This cutting or grinding shall require the use of tools such as: stump grinders; lopping shears; root saws; sawzall; front mounted stump or wheel grinders; and chainsaws. Unless otherwise specified the Contractor shall be paid per linear foot for Root Cutting for the length of the NRC Curb or NRC sidewalk, with a maximum length of fifteen (15) linear feet per NRC location, more specifically as follows:

Root Cutting - Curb & Gutter

Description

This item shall include all root cutting and / or root grinding as determined by the City Forestry Representative for roots under removed curb & gutter that has been marked with "NRC" for No Root Cut until further inspection. Work under this item shall include all work, materials, labor and incidentals necessary to cut or grind the root, using proper tools as prescribed by the City Forestry Representative.

Method of Measurement

Root Cutting – Curb & Gutter shall be measured per linear foot of curb & gutter that is marked with "NRC" in the field, with a maximum measurement of 15 linear feet per tree location.

Basis of Payment

Root Cutting – Curb & Gutter shall be measured as described above which shall be full compensation for all work, materials and incidentals to complete the work as described above regardless of the degree of difficulty per given location.

Root Cutting – Sidewalk

Description

This item shall include all root cutting and / or root grinding as determined by the City Forestry Representative for roots under removed sidewalk that has been marked with "NRC" for No Root Cut until further inspection. Work under this item shall include all work, materials, labor and incidentals necessary to cut or grind the root, using proper tools as prescribed by the City Forestry Representative.

Method of Measurement

Root Cutting – Sidewalk shall be measured per linear foot of sidewalk that is marked with "NRC" in the field, with a maximum measurement of 15 linear feet per tree location.

Basis of Payment

Root Cutting – Sidewalk shall be measured as described above which shall be full compensation for all work, materials and incidentals to complete the work as described above regardless of the degree of difficulty per given location.

107.13(e) Terrace Restoration.

All mechanical grading, including sod installation within five (5) feet of any tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system shall be prohibited unless directed by the City Engineer or City Forester.

107.13(f) Bark Abrasions and Limb Damage.

Contractor shall take precautions during construction not to disfigure, scar, or impair the health of any tree on public or private property.

Pre-construction pruning — Street trees will be pruned by City Forestry. All pruning shall be done according to ANSI A300 tree pruning specifications. No more than one-fourth (25 percent) of the functioning leaf and stem area may be removed within one calendar year. It must be recognized that trees are individual in form and structure, and that pruning needs may not always fit strict rules. Occasionally a limb may have to remain at a height less than fourteen (14) feet above the roadway. These instances shall be noted during the 'walk thru' and the Contractor shall employ methods to protect said limb. Pruning shall not be attempted by contractor unless approved by City Engineer or City Forester.

Contractor shall operate equipment in a manner as to not damage the branches of a tree. This may require using smaller equipment and loading or unloading materials in a designated space away from trees on the construction site.

Contractor shall notify City Forestry the same day of any damage to trees resulting from construction activities.

107.13(g) Soil Compaction.

The storage of parked vehicles, construction equipment, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots within five (5) feet from the face of the tree measured in any direction or within the <u>tree protection <u>tree</u> is prohibited. Poisonous materials include, but are not limited to, paint, concrete or stucco mix, dirty water or any other material which may be deleterious to tree health. This not only prevents compaction, but also prevents damage to the trunks of trees and branches through scraping of scuffing the bark.</u>

107.13(h) Contractor / Foreperson Acknowledgement.

The Tree Protection Specification and known conflicts and concerns shall be reviewed at the Pre- Construction meeting with the Contractor. This review shall include review of a one page educational informational sheet that details the procedures for avoiding damage to the tree and tree roots.

Utilities or others working in the Public Right of Way shall be required to sign this acknowledgement on a case by case basis.

107.13(i) Cost Recovery Charges and Liquidated Damages.

The Contractor's failure to follow the proper safeguards of these specifications shall result in the following cost recovery charges and liquidated damages to be assessed against the Contractor:

Where construction damage occurs causing or resulting in removal of the tree of 3 inch diameter or less (as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch):

- 1. The costs associated with removing the tree including wood disposal.
- 2. The costs associated with removing the stump to a depth of at least 24 inches below the ground, and roots greater than 1 inch in diameter.
- 3. The costs associated with replanting a replacement tree that is <u>either</u> balled & burlapped <u>or in a container</u> and shall have a minimum caliper of two (2) inches. The species and replanting location shall be determined by City Forestry.

Where construction damage occurs causing or resulting in removal of the tree of greater than 3 inch diameter (as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch):

- 1. The costs associated with removing the tree including wood disposal.
- 2. The costs associated with removing the stump to a depth of at least 24 inches below the ground , and roots greater than 1 inch in diameter.

- 3. The costs associated with replanting a replacement tree that is <u>either</u> balled & burlapped <u>or in a container</u> and shall have a minimum caliper of two (2) inches. The species and replanting location shall be determined by City Forestry.
- 4. The value of the existing tree which shall equal $$\frac{125}{150}.00$ per trunk diameter inch, as measured or estimated at 4 1/2 feet above the ground and rounded down to the nearest inch.

For bark scraping, trunk wounding and broken branches:

- 1. The costs associated with pruning broken branches, including wood disposal.
- 2. Loss of limb or broken branch larger than three (3) inches in diameter: \$500.00 for each occurrence. Breakage of limbs that are less than fourteen (14) feet above the roadway shall be reviewed on a case by case basis.
- 3. Any damage to trunk or bark for trees measuring less than 8 inches as measured at 4 1/2 feet: \$500.00 for each area.
- 4. Damage (measuring 8 square inches) to trunk or bark for trees measuring 8 inches 12 inches as measured at 4 1/2 feet: \$500.00 for each area.
- 5. Damage (measuring 16 square inches) to trees measuring greater than 12 inches as measured at 4 1/2 feet: \$500.00 each area.

For root cutting or excavation within the ‡Tree pProtection zZone:

- 1. For mechanical excavation within five (5) feet of a tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system or within the designated ₹Tree ₱Protection ₹Zone, whichever is larger, including ripping of roots back towards the trunk, without prior permission from City Forestry Representative: \$500.00 for each occurrence
- 2. For mechanical excavation beyond six (6) inches or one (1) foot of the proposed curb installation, as determined by the size of existing tree and terrace width, including ripping of roots back towards the trunk: \$500.00 for each occurrence (see Curb excavation and installation specifications)
- 3. For failure to cleanly cut damaged roots greater than one (1) inch on the same day as the excavation: \$500.00 for each occurrence.

Soil Compaction. The storage of parked vehicles, construction equipment, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots within five (5) feet from the face of the tree measured in any direction or within the designated $\frac{1}{2}$ rotection $\frac{1}{2}$ one, whichever is larger:

- 1. Initial fine of \$500.00 will be applied.
- 2. For each additional day that materials, parking of vehicles or construction equipment remains within five feet of the tree or within the designated Tree Protection Zone, whichever is larger, a \$500.00 fine will applied.

For Public Works Contracts these charges and liquidated damages shall be assessed as Liquidated Damages. For Private Contracts, Permit work, or others, these charges and liquidated damages shall be assessed as City imposed forfeitures or private contract forfeitures.

107.13(j) Private Development, Tree Removal.

If a private development shall require the removal of a public street tree to facilitate the construction of a site, adding a driveway, installing underground utilities, or any other improvement or site revision, the Developer shall obtain approval from City Forestry in advance of the proposed work.