

## **Article 27: Tree Preservation and Replacement**

### **27.1 Title**

This Ordinance shall be known as the "Cherokee County Tree Preservation and Replacement Ordinance."

### **27.2 Purpose and Intent**

The purpose of this Ordinance is to provide standards for the protection and replacement of trees as part of the land development and building process, and to enrich the quality of life for the citizens of Cherokee County through education about and preservation of its tree resources. This is accomplished through the preservation, protection and planting of trees and other landscape material, particularly those trees recognized herein as "Specimen", "Heritage", "Overstory" and "Understory" trees, and the provision of natural and/or planted buffers between dissimilar uses as part of the land development process. The Ordinance is intended to further the County's policy of preserving trees as a natural resource as well as to provide clear direction for those instances where trees are either removed or where land is to be developed where no trees exist.

### **27.3 Definitions**

In construing the provisions hereof and the meaning of each and every word, term, phrase, or part thereof, where the context will permit, the definitions of words as contained in the adopted Zoning Ordinance of Cherokee County, supplemented by the following, shall apply:

**Agriculture** – The science or art of cultivating the soil, harvesting crops, and raising livestock.

**Boundary Tree** – A tree located on adjacent property in proximity to a boundary line of subject project. Requirements set forth herein covering Critical Root Zone shall be adhered to.

**Buffer** – A natural and/or landscaped area for buffering incompatible land uses for the purpose of visibly separating one use from another. This is accomplished through screening and distance to shield or block noise, light, glare, or visual or other nuisances, and/or for protecting natural features such as streams and wetlands.

**Caliper** – A standard of trunk measurement for replacement trees. Caliper inches are measured at the height of six (6) inches above the ground for trees up to and including four (4) inch caliper and twelve (12) inches above the ground for trees larger than four (4) inches caliper.

**Certified County Arborist ("Arborist")** - The county official responsible for enforcing the Ordinance, reviewing Tree Preservation and Replacement Plans, etc., to include developing arboricultural standards relative to tree care, protection, construction impacts and administrative guidelines for Ordinance compliance as well as the determination of tree removal in public places. Said individual shall also be responsible for coordinating the County's Arbor Day programs, grants and other similar programs.

**Critical Root Zone** – The area beneath a tree which must be left undisturbed in order to preserve a sufficient root mass to give a tree a reasonable chance of survival. The Critical Root Zone of a tree is established on the basis of the trunk diameter at DBH. Trees are to be represented on plans by a concentric circle centered on the trunk location with a diameter equal in feet to twice the number of inches of the tree's trunk diameter at DBH. The Critical Root Zone shall be used by plan reviewers to determine compliance with design standards and construction specifications. A circle is graphically

efficient to produce and represents the most likely configuration of a tree's root pattern, even when the crown is skewed or one-sided. The ratio of circle diameter to trunk diameter is based on typical dripline distances noted on open grown trees with full crowns.

**Density Factor** – A unit of measure used to prescribe the calculated tree coverage on a site.

**Diameter Breast-Height (DBH)** – The standard measure of size for overstory and understory trees existing on a site. The tree trunk is measured at a height of four and one-half feet (4-1/2') above the ground. If a tree splits into multiple trunks below four and one-half feet (4 -1/2'), measure the trunk at its most narrow point beneath the split.

**Drip Line** -- The line enclosing the area directly beneath the tree's crown from which rainfall would drip from the outermost branch tips of the tree or group of trees collectively.

**Heritage Tree** – Any tree which is determined by Cherokee County to be of unique and intrinsic value to the general public because of its size, age, historic association, unique species to the region, ecological value or any tree designated a Georgia State Champion, United States Champion or World Champion by the American Forestry Association (Refer to Appendix B). This Ordinance calls for the Arborist to maintain a list of trees that are of special interest to the County. Upon recommendation by the Arborist, the Board of Commissioners may designate a tree as a Heritage Tree, provided the tree's health, aerial space, and open ground area for the root system have been certified by the Arborist as sufficient. The Arborist shall maintain a registry of Heritage Trees.

**Land Disturbance Permit** – The authorization granted by Cherokee County necessary to begin a Land Disturbing Activity.

**Land Disturbing Activity** – Any alteration of the natural environment that shall require a Land Disturbance Permit for removal of trees incidental to the development of land or to the marketing of land for development and includes, but it is not limited to, soil erosion permit, clearing and grubbing permit, Land Disturbance Permit or building permit.

**Overstory Tree** – Those tree species that compose the top layer or canopy of vegetation and will generally reach a mature height of greater than forty (40) feet. Replacement trees must be chosen from the list in Appendix D.

**Parking Lot** – Two or more Parking Spaces.

**Parking Space, Single** – The clear space containing one row of parking spaces.

**Parking Space, Double** -- The clear space containing two rows of opposing parking spaces.

**Pasture Land** – Land cleared of trees and used for livestock grazing or crop production for the past 5 years as depicted on aerial photos from Cherokee County or other sources.  
(Ord. 2015-O-011, 12-15-15)

**Permanent Damage** – Permanent Damage is defined as injury to a tree which will likely lead to decline or death of the tree or shortening the tree's expected lifespan.

**Replacement Planting** – The planting of trees on a site that before development had more trees, and after development shall have fewer trees per acre.

**Site** – Any plot or parcel of land, or a combination of contiguous lots or parcels of land, where grading, building, construction, or alteration is performed or permitted.

**Site Density Factor** -- The minimum number of Tree Density Units per acre which must be achieved on a property at completion of development. Reference Appendix C.

**Soil Compaction** – A change in the physical properties of soil which include an increase in soil weight per unit volume, and decreases in soil pore space. Soil compaction is caused by repeated vibrations, frequent traffic and weight. As related to tree roots, compacted soil can cause physical root damage, a decrease in soil oxygen levels with an increase in toxic gases, and can create an impervious condition to new root development.

**Specimen Tree** – Any tree that qualifies for special consideration for preservation due to its size, type, and condition (Refer to Appendix A). Individual trees may be considered important county resources because of unique or noteworthy characteristics or values.

**Stop Work Order** – An official order from the County for work to cease on a development site until such time as specific issues are resolved.

**Timber Harvest** – Under Georgia law all timber harvests or sales must be reported on Department of Revenue form PT-283T. The official code of Georgia Annotated defines Timber Harvest.

**Tree** - Any self-supporting woody perennial plant, usually having a main stem or trunk and many branches, and at maturity normally attaining a trunk diameter greater than three (3) inches at any point and a height of over ten (10) feet.

**Tree Diameter** - The widest cross-sectional dimension of a tree trunk measured at diameter breast height (DBH) or at a point below DBH for new trees or multi-trunked species, but in no case less than six (6) inches from the ground.

**Tree Preservation and Replacement Plan** – A plan that identifies Tree Protection Areas where existing trees are to be preserved and where proposed replacement trees are to be planted on a property to meet the requirements of this Ordinance, as well as methods of tree protection to be undertaken on the site and other pertinent information.

**Tree Planting List** – The recommended species of trees listed in Appendix D.

**Tree Protection Area** – Any portion of a site wherein are located existing trees which are proposed to be preserved in order to comply with the requirements of this Ordinance. The Tree Protection Area shall include at a minimum all area as defined by CRZ.

**Tree Save Area** – An area designated for the purpose of meeting tree density requirements, saving existing trees, and/or preserving natural buffers.

**Understory Tree** - A species that, under normal forest conditions, grows to maturity beneath Overstory Trees and will generally reach a mature height of at least ten (10) feet but less than forty (40) feet. Replacement trees must be chosen from the list in Appendix D.

**Zoning Ordinance** – The Zoning Ordinance of Cherokee County, Georgia, as amended from time-to-time by the Cherokee County Board of Commissioners.

## 27.4 Violation & Penalties

27.4-1 Violation of any section of this Ordinance shall cause imposition of penalties as set forth in this Section. Such penalties may be imposed against the property owner, applicant, developer, contractor performing the work that constitutes the violation or any other individual or entity that can be established as a responsible party in the discretion of the County (collectively the

“Offending Party”). Any Offending Party may be issued a citation and summons to appear before a Court of competent jurisdiction, and may be deemed guilty of violating a county ordinance, and may generally be punished by a fine not to exceed \$1,000.00, in addition to the more stringent and specific penalties provided for in this section, nothing shall limit the County from pursuing any other available legal remedy, including, but not limited to, the pursuit of injunctive relief and the denial, revocation, or suspension of any County permits.

#### 4-1.1 Activities under a Land Disturbance Permit

4-1.1.1 Unauthorized removal or permanent damage of each Overstory or Understory Tree in a Tree Save Area, Zoning Buffer and Stream Bank Buffer: Immediate Stop-Work Order, plus a fine of not less than five hundred (500) dollars for each occurrence, plus one (1) dollar per square foot of disturbed area; not to collectively exceed \$1,000.00 for any single occurrence; plus re-vegetation as directed in the discretion of the Arborist.

4-1.1.2 Unauthorized removal or permanent damage of each Specimen Tree: Immediate Stop-Work Order, plus a fine of not less than one thousand (\$1,000) dollars, plus replacement planting at three (3) times the density unit value of the removed or damaged Specimen Tree as shown in Appendix C – Table A.

4-1.1.3 Unauthorized removal or permanent damage to any Heritage Tree: Immediate Stop-Work Order, plus a fine of not less than one thousand (\$1,000) dollars, plus replacement planting at eight (8) times the density unit value of the removed or damaged Heritage Tree as shown in Appendix C – Table A.

4-1.1.4 Failure to meet Site Density Factor requirements (see Appendix C): Immediate Stop-Work Order, plus withholding of Certificate of Occupancy or Final Plat approval

27.4-2 If the exact DBH or type of tree(s) removed or damaged is not readily apparent then, the amount of replacement shall be determined based on the Arborist’s estimate of the removed or damaged tree or trees based on information from the site development plans and/or site conditions. The location, species and planting specifications of replacement trees shall be approved by the Arborist prior to replanting, in accordance with the requirements of this Ordinance.

27.4-3 All violations that are of a continuing nature shall constitute a separate offense for each occurrence.

27.4-4 The Arborist is hereby charged with the responsibility for the enforcement of this Ordinance. The County Marshall’s office will serve notice to any person in violation thereof or institute legal proceedings as may be required.

## 27.5 Applicability

27.5-1 This Ordinance shall apply to all properties or portions thereof located within the unincorporated areas of Cherokee County, Georgia, to the extent of the provisions contained herein. The terms and provisions of this Ordinance shall apply to any activity on real property which requires the issuance of a Land Disturbance Permit except as exempted in Section 6.1 below

## 27.6 Exemptions

### 27.6-1 General

The following activities are specifically exempted from this Ordinance:

- 6-1.1 The construction of single-family detached and/or two (2) family residential dwelling that is not part of a Major Subdivision (a subdivision of land which results in the creation of five (5) or more lots).
- 6-1.2 Any addition, alteration, improvement or remodeling of an existing residence or the construction of structures accessory to an existing residence.
- 6-1.3 Tree removal by existing individual single-family detached and duplex homeowners; unless such tree(s) is/are noted as a Heritage Tree.
- 6-1.4 All plant or tree nurseries and botanical gardens and arboretums shall be exempt from the terms and provisions of this ordinance in relation to those trees which are being grown for relocation and continued growth in the ordinary course of business, or for some public purpose.
- 6-1.5 All orchards of trees in active commercial operation shall be exempt for bona fide agricultural purposes only.
- 6-1.6 Land clearing and grubbing activities for strictly agricultural purposes.
- 6-1.7 Timber harvesting operations as described in O.C.G.A. § 12-6-24(e)(3) and (4), meaning timber cutting that : 1) qualifies as ‘forest land management practice’ or ‘agricultural operation’ under O.C.G.A § 12-7-17; 2) is not incidental to development; and 3) is located on tracts zoned for or used for forestry, silvicultural, or agricultural purposes. However, such timber harvesting operations shall remain subject to the notice and guarantee requirements of Subsection 27.6.4, when applicable. (Ord. 2015-O-011, 12-15-15)
- 6-1.8 The installation of On-Site Sewage Management Systems (OSSMS), initial or repair, providing the disruption of the trees is kept to a minimum and Heritage Tree Guidelines are followed. If the OSSMS initial or repair is in a Tree Protection Area, a plan of the OSSMS shall be submitted to the Arborist prior to installation.

### 27.6-2 Removal of Disease or Insect Infestation

Arborist approval is not required to remove dead and diseased trees by individual homeowners. There are situations where large areas of tree removal is appropriate and would not fall under the exemptions listed in Section 6.1 including southern pine beetle infestation. Upon the written advice of the County Extension Service or the Georgia Forestry Commission or an ISA Certified Arborist in accordance with commonly accepted forestry practices and a finding of disease or insect infestation, the Arborist may authorize the removal of trees to prevent the danger of these trees falling, prevent potential injury to life or property and prevent fuel build up for forest fires. The owner/developer, prior to the removal of these trees, shall notify the Arborist, identifying the location of the infested property, and shall submit to the Arborist the written finding of an independent Certified Arborist, County Extension Service or the Georgia Forestry Commission.

### 27.6-3 Removal of Structurally Declining Trees

Trees that are identified as posing a risk of failure (whole tree falling or large tree parts breaking off) and documented in writing by a professional Landscape Forester or I.S.A. Certified Arborist, in accordance with commonly accepted “Hazard Evaluation” techniques and practices, and not caused by development activities, may be authorized by the Arborist for removal without penalty. Site Density Units must still be met; removal requests shall be accompanied with an amendment to the replanting plan. These trees, because of poor structural attributes, shall not be counted as Heritage or Specimen trees.

### 27.6-4 Timber Harvesting Operations

- 6-4.1 Notice. Pursuant to and in compliance with O.C.G.A § 12-6-24, all persons or firms harvesting standing timber in any unincorporated area of the County for delivery as pulpwood, logs, poles, posts, or wood chips to any wood yard or processing plant shall provide notice of such harvesting operations to County Arborist prior to entering onto the property if possible, but in no event later than 24 hours after entering onto the property. Further, such persons shall give notice of cessation of cutting within 24 hours after the job is completed. Such notice shall be provided for each separate tract to be harvested and shall be on and comply with the form provided by the Georgia Forestry Commission. Such notice shall be accompanied by a guarantee as required by Subsection 6-4.2 below. Such notice may be provided to the County Arborist in person, by mail, by facsimile transmission, or by email transmission. Any subsequent change in the facts provided in the notice shall be reported to the County Arborist within three (3) business days after such change. A copy of all timber harvest notices received by the County Arborist shall be provided to the Cherokee County Tax Assessor and the Cherokee County Tax Commissioner.
- 6-4.2 Guarantee. Pursuant to and in compliance with O.C.G.A. § 12-6-24(b)(3), the notice required by Section 6-4.1 above shall be accompanied by a bond or letter of credit, protecting the County against any damages caused by the timber harvesting operations, in the amount of \$5,000.00 or such lesser amount as the County Arborist may authorize in writing. All such bonds and letters of credit shall be on the forms provided by the County and shall be submitted to the Cherokee County Engineering Department by delivering the original bond/letter of credit or a copy of the previously provided and current bond/letter of credit applicable to that person. No more than one bond/letter of credit is required from each person or firm harvesting timber regardless of the number of tracts harvested, so long as the bond remains in effect. Otherwise, a valid replacement bond/letter of credit must be obtained and delivered to the County Arborist no later than the close of business on the fifth business day following the day that the County filed a claim to recover damages against the then-existing bond. Upon filing such claim, the County shall provide immediate notice thereof, including the date the claim was filed, to the person or firm causing the damage. Such notice may be given in person, by facsimile transmission or by email transmission.
- 6-4.3 Fees. There is no fee required for submitting a notice of timber harvest.
- 6-4.4 Penalty. Violation of the notice requirements of this Subsection 27.6-4 shall be punishable by a fine not exceeding \$500.00. (Ord. 2015-O-011, 12-15-15)

## **27.7 Permitting Applications**

### **27.7-1 Land Disturbance Permit**

Land disturbance activities shall not commence until such activities have been authorized by issuance of an appropriate Land Disturbance Permit (LDP) under the provisions of the Development Regulations, latest edition. No Land Disturbance Permit shall be issued for development without it being determined by the Arborist that the proposed development is in compliance with the provisions of this Ordinance.

### **27.7-2 Permit Procedures**

- 7-2.1 Prior to submission of any plans associated with the LDP application, applicants are required to conduct a pre-planning meeting with the Arborist. This meeting is intended to provide an opportunity for the applicant to present their conceptual plans as well as to ensure that applicant is aware of all provisions of this Ordinance that might potentially impact said plans. Resulting information from this conference, that are specific to items of which the Arborist has latitude, should be recorded by the applicant, and submitted to the Arborist for inclusion in the plans submitted for the LDP application.
- 7-2.2 All Tree Preservation and Replacement Plans and related documents shall be reviewed by the Arborist for conformance to the provisions of this Ordinance. The permit will require approval and sign-off by the Arborist.
- 7-2.3 Arborist sign-off shall constitute an approval of the required Tree Preservation and Replacement Plan and conformance to the provisions of these regulations.
- 7-2.4 The Arborist, at any time, may at his/her discretion, require an “as built” tree plan, which graphically communicates the size, location, and name of all trees and landscape material existing on site. The plan must be to scale and prepared by a Certified Arborist or Registered Landscape Architect.

## **27.8 Density Requirements**

The quantity of total existing and replacement trees on a site must be sufficient so as to produce a total Site Density Factor as follows: Trees should be distributed throughout the development and not located in only one area. Subsequent tree replacements are provided in Appendix C.

The required Site Density for each site shall be calculated by multiplying the total acreage of the site by the required Site Density Factor for the appropriate Zoning District (see Article 7).

<u>District</u>	<u>Site Density Factor (in units per acre)</u>
AG	20 (Platted new development only)
TND	20
R-80	20
R-60	20
R-40	20
R-30	20
R-20	19
R-15	19
R-3	18
RZL	18
RA	17
RTH	17
RM-10	16
RM-16	16
OI	16
NC	16
GC	16
HC	15
OD	15
LI	15
HI	15

Example: SDF for a Wooded Site zoned R-40 is calculated by multiplying the total acres by 20 units per acre. A 10 acre site x 20 units per acre = 200 units.

## 27.9 Mitigation Measures

### 27.9-1 General

It shall be the policy of the County to maximize the preservation and maintenance of existing trees and where necessary the planting of replacement trees. An approved Tree Protection and Replacement Plan must be included as a condition for issuance of a Land Disturbance Permit. The Arborist shall have the authority to reject and/or approve appropriate measures (including a combination of measures) based on the requirements of this Ordinance and the particular circumstances of each project. It shall also be the policy of the County to provide guidelines for new tree plantings in those instances where no trees currently exist, e.g., former pasture land. The provisions of this section are intended for the protection of either individual trees or stands of trees as a condition for approving of destruction, or damage to, tree or woodland/forest resources.

This is driven with the following objectives in mind:

1. Protect existing trees or woodland/forest resources;
2. Provide additional protection for Specimen and Heritage Trees;
3. Planning for and identifying tree save areas at the earliest stages of development process

### 27.9-2 Preservation and Protection of Existing Trees

9-2.1 The required Site Density Factor shall first be met with existing trees when possible (See Section 8). Special emphasis shall be afforded to the preservation of Heritage and Specimen Trees (see Appendix A and B). When a choice is available as to which existing trees to save, Heritage Trees and Specimen Trees, even isolated individual trees, shall be given preference over other trees. As provided for in Appendix B, Heritage Trees shall be afforded special protection and may be removed in accordance with Appendix B.

9-2.2 Protection of existing individual trees and/or stands shall be incorporated as a required portion of initial design and project layout through project build out to include the following:

1. Planning for and identifying tree save areas at the earliest stages of development process;
2. Initial design of project lay-out;
3. Relocate proposed structures or infrastructure as necessary;
4. Utilize appropriate construction and planning methods to minimize damage to tree roots during construction; and
5. Set aside portions of project area as woodland/forest preserves conservation areas.

### 27.9-3 Planting of new trees

If the required Site Density Factor cannot be accomplished with existing trees, replacement trees shall be planted as required by this Ordinance. Using the guidelines provided in section 9.3.3 below, the precise locations may be at the discretion of the Arborist.

- 9-3.1 Trees selected for planting must be free from injury, pests, disease, nutritional disorders or root defects, and must be of good vigor in order to assure a reasonable expectation of survivability.
- 9-3.2 Standards for transplanting shall be in keeping with those established in the International Society of Arboriculture publication, "Tree and Shrub Transplanting Manual" or similar publication. Reference the American Association of Nurserymen publication "American Standard for Nursery Stock" (ANSI Z60, 1973) for plant material quality specifications. Reference the latest edition of the "Manual for Woody Landscape Plants: Michael Dirr, ISA Guidelines and ANSI Standards, or similar publication for information on site requirements for various tree species.
- 9-3.3 Guidelines:
- (1) Plant new trees in landscaped portions of parcel to replace those removed.
  - (2) Plant new trees on lands that currently lack trees (usually pasture or farmland).
  - (3) Plant new trees on portions of the project area set aside as tree save areas.
- 9-3.4 When new plant materials are to be installed, a plant material list shall be provided. Said list shall include:
1. Common and botanical names of all proposed plants.
  2. Plant quantities.
  3. Size and condition of plants. (Example: 2" caliper, 6 feet height, balled and burlapped).
  4. Spacing.
- 9-3.5 Artificial Materials Prohibited:
- All artificial plants, trees, shrubs, grass or other vegetation shall be prohibited from fulfilling the requirements of this Ordinance.
- 9-3.6 In the event that the minimum tree density cannot be met on a parcel then two (2) alternatives chosen at the discretion of the Arborist, are available for compensation and issuance of approval, of the Tree Preservation and Replacement Plan.
1. Tree Bank. It shall be at the discretion of the Arborist to designate sites other than said parcel for Tree Bank planting in order to achieve minimum site density requirements. The Arborist shall have the authority to allow approval of off-site replanting in a Tree Bank upon receipt of a site plan indicating site constraints that prevent the replanting of said trees. Approval for off-site replanting shall not exceed twenty five (25) percent of total trees required for replanting.

2. Tree Replacement Fund Contribution. County Arborist will require three (3) estimates from competent landscape contractors and middle dollar value will be used.

The Arborist shall have the authority to allow individuals developing sites to make contributions to the Cherokee County Tree Replacement Fund in lieu of the required replanting. Contributions shall be calculated by the Arborist and shall be paid prior to the issuance of a Land Disturbance Permit. Contributions shall be calculated as to reflect the current replacement cost (including labor) of the total number of trees that are required but are not planted. These contributions will be used to plant trees in public spaces or other areas of the County. Approval for Tree Replacement Fund Contribution in lieu of on site replanting shall not exceed twenty five (25) percent of the total trees required for replanting.

## **27.10 Tree Preservation and Replacement Plan Requirements**

27.10-1 Tree Preservation and Replacement Plans shall be prepared by a professional Landscape Architect, Urban Forester or ISA Certified Arborist, other state licensed professionals of similar design discipline may be authorized by the Arborist to prepare Tree Preservation and Replacement Plans, provided they demonstrate, to the satisfaction of the Arborist, competency and knowledge in the principles and practices of arboriculture as well as the demonstrated ability to prepare such plans in accordance with this Ordinance. Continuous and excessive reviews and re-submittals may disqualify the designer from further acceptance by the Arborist.

Tree Protection and Replacement Plans must include the following:

### 27.10-2 Tree Inventories and Surveys

Compliance with the required Site Density Factor shall be demonstrated on the Tree Protection and Replacement Plan and the Grading and Erosion Control Plan. The density of twenty (20) units per acre is based on the acreage of the overall site. All trees that are to be counted toward meeting density requirements must be inventoried or sampled based on the acreage of the overall site. The method used to inventory the trees must be indicated on the plans.

On tree save areas greater than three (3) acres, all tree save areas must be surveyed using an approved scientific sampling method (e.g., Basal Area). Timber cruising methods (50'X50' sample areas or the prism method) of sampling is needed for large tracts. The larger the site the more sample areas should be taken. Sampling should be done in areas to remain as undisturbed Tree Save Areas, not areas intended for development. The contents of each sample area shall be inventoried. All sampling areas shall be accurately depicted on the Tree Protection and Replacement Plan and appropriately flagged to corresponding locations on the actual site. When using sample areas, the basal area units should be averaged and an existing density factor per acre determined. Using this tree density, the appropriate amount of tree save area should be preserved to meet the Site Density Factor requirements. These calculations must be included on the tree plan.

On tree save areas of three (3) acres or less, all trees to be considered for density requirements must be individually inventoried. This tree inventory list and tree locations must be shown on the plan.

The existing tree line and vegetation characteristics of the site shall be shown on the plans. Existing trees or stands of trees used in the density calculations must be indicated on the plan.

The tree save areas should be clearly shown on the plans with their size in acres. Areas designated as Tree Save Areas must be wooded.

27.10-3 Exact location of all Specimen and Heritage trees

Special consideration shall be given to Specimen and Heritage Trees on development sites. Specimen Trees and Heritage Trees must be shown on the Tree Preservation and Replacement Plan with an indication whether they are to be retained or removed and reason for removal. Said trees must be flagged and numbered in the field with correlating numbers and exact location shown on the plan. Extra tree density credit will be given for saved Specimen and Heritage Trees. If no design features accommodate their preservation, removed Specimen Trees require recompense plantings of comparable species. Refer to Appendix A for Specimen Tree criteria and tree density unit values. Use the values in the replacement tree density chart (Appendix C, Table B) to determine the quantity and sizes of the needed recompense trees.

27.10-4 All Tree Save Areas must be delineated on the Tree Protection and Replacement Plan and the Grading and Erosion Control Plan.

Methods of tree protection shall be indicated for all Tree Save Areas and Specimen/Heritage Trees, including tree save fencing, erosion control, retaining walls, tree wells, tunneling for utilities, aeration systems, transplanting, signage, etc.

27.10-5 All Buffers must be identified on the Tree Protection and Replacement Plan

Any portion of a zoning buffer lacking sufficient vegetation to provide effective visual screening must be supplemented with evergreen plantings. A detailed planting plan for these areas is required. Planted trees must be a minimum six feet tall.

27.10-6 Indicate limits of disturbed area

During construction, tree save areas, zoning buffers, stream buffers, open space, and Specimen/Heritage Trees must be properly protected from disturbance using high visibility orange active tree save fencing. These tree save areas and the active tree save fencing locations must appear on the clearing, grading, erosion control and tree protection plans.

27.10-7 Existing and proposed location of underground utilities or easements must be shown.

27.10-8 Indicate staging areas for parking, material storage, concrete washout, debris burn, and burial holes where these areas might negatively impact protected trees.

27.10-9 The locations of all trees to be planted to meet Site Density Factor requirements. All required landscaping such as street trees, parking lot trees and landscape strips should be shown graphically on the plans. In addition, a detailed planting schedule showing the type (common and botanical names), sizes and quantity of trees to be planted, and any special planting notes.

27.10-10 Trees planted for Specimen Tree recompense, are not included in overall tree density calculations. These are additional requirements.

27.10-11 Tree Preservation and Replacement plans that consist of more than ten (10) new trees shall incorporate at least three (3) separate tree genera whereby no single tree genus accounts for more than thirty three (33%) percent of all newly planted trees.

27.10-12 A narrative explaining the actual planting dates is needed for larger sites. Remote and/or large replanting areas such as zoning buffers are best planted between November and April. Indicate clearly on the Tree Protection and Replacement Plan when planting will take place.

27.10-13 Additional information as required by the Arborist on a case by case basis.

After the submission of the plan, the Arborist will perform a site inspection. The Tree Protection and Replacement Plan shall provide sufficient information and detail to clearly demonstrate that all applicable requirements and standards of this Ordinance are or will be fully satisfied.

### **27.11 Tree Preservation Standards During Construction**

In addition to proper utilization of Tree protection devices (see Section 11.1 below), the following measures are detrimental to the long term health and survivability of trees.

Prevention of the following:

1. The improper use of machinery on the trees;
2. The storage of materials in or around the trees;
3. Altering the natural grade to expose the roots or to cover the tree's root system with more than four (4) inches of soil;
4. Causing the infection or infestation of the tree by pests, fungus or harmful bacteria;
5. Pruning judged to be excessive by the Arborist or not in accordance with the standard set forth by the International Society of Arboriculture (ISA);
6. Paving with concrete, asphalt or other impervious surface within such proximity as to be harmful to the tree or its root system; and
7. Application of an herbicide, including pre-emergent herbicides, or defoliant to any tree without first obtaining a permit.
8. Soil compaction in the Critical Root Zone from heavy equipment, vehicular; or excessive pedestrian traffic, or storage of equipment or materials;
9. Root disturbance due to cuts, fills, or trenching;
10. Wounds to exposed roots, trunks, or limbs;
11. Other activities such as chemical storage, cement truck cleaning, fire, etc.

#### **27.11-1 Location and Types of Tree Protection Devices**

Tree protection devices are to be installed completely surrounding the Critical Root Zone of all trees or group of trees to be preserved. Active protection (see Section 11.2A below) is required where Tree Save Areas are located along the limits of disturbance. Passive protection (see Section 11.2B below) may be used in more remote Tree Save Areas as determined by the Arborist. Once Tree Save Areas are established and approved, any changes are subject to review and written approval by the Arborist.

### 27.11-2 Materials

- A. Active Tree Protection shall consist of chain link, orange laminated plastic, wooden post, rail fencing, or other equivalent restraining material.
- B. Passive Tree Protection shall consist of heavy mill plastic flagging of a bright color or equivalent signage on a continuous, durable restraint sufficient to delineate the bounds of any tree protection or save areas. See Appendix E

### 27.11-3 Sequence of Installation and Removal

All tree protection devices shall be installed prior to any Land Disturbing Activity. The Arborist will inspect the installation of tree protection devices. It shall be the sole responsibility of the property owner and/or developer to ensure that all Tree Protection devices remain in functioning condition throughout all phases of development and shall not be removed until final landscaping is installed. In the event Passive Tree Protection is not kept in functioning condition, Active Tree Protection may be required throughout the project.

### 27.11-4 Encroachment

If encroachment into a Tree Save Area occurs, which causes irreparable damage to the trees, the Tree Preservation and Replacement Plan shall be revised to compensate for the loss.

Under no circumstances shall the developer be relieved of responsibility for compliance with the provisions of this Ordinance, nor shall plan revision activities stop the County from instituting action for violation of this Ordinance (see Section 4).

27.11-5 Boundary Trees shall also be protected and included in Tree Save Areas. Under no circumstances shall the developer be relieved of responsibility for compliance with the provisions of this Ordinance, nor shall plan revision activities stop the County from instituting action for violation of this Ordinance (see Section 4).

### 27.11-6 Other Specifications

Where clearing has been approved, trees shall be removed in a manner that does not physically impact the trees to be preserved. Felling trees into Tree Save Areas or disturbing roots inside the Tree Save Areas shall be treated as a violation and shall be punishable in accordance with this Ordinance. All erosion and sedimentation control measures shall be installed so that sediment will not accumulate within the Tree Save Area. All Tree Protection Areas shall be designated as such with "Tree Protection Area" signs posted visibly on all sides of the fenced-in area. These signs are intended to inform subcontractors of the tree protection process. Signs requesting subcontractor cooperation and compliance with the tree protection standards are recommended for site entrances.

## **27.12 Tree Replacement Standards**

### 27.12-1 General

Species selected for replacement must be quality species, and must be ecologically compatible with the intended site. See Appendix D for list of recommended species. Deviations from the Recommended Tree Planting List are acceptable for use in meeting density requirements only with prior approval from the Arborist.

### 27.12-2 Minimum Planting Area

In order to provide sufficient growing area for planted trees, the following minimum criteria must be observed unless otherwise approved by the Arborist:

Overstory Trees: 450-sq. ft.

Understory Trees: 200-sq. ft.

Planting strips: (refer to Article 7.5-3 of the Cherokee County Zoning Ordinance titled, General Site Development Design Regulations for Commercial and Industrial Districts)

## 27.13 Parking Lot Planting Requirements

### 27.13-1 General

Trees shall be planted in areas surrounding the perimeter of the parking lot and shall be planted in planting areas or islands internal to the parking lot. Trees may be planted and spaced singly or in groups. Landscape islands shall be located in such a manner as to divide and break up the parking area.

### 27.13-2 Quantity, Spacing and Planting Standards

Parking lots which are required to contain five (5) or more parking spaces shall contain landscaping and plantings as follows:

1. For each five (5) parking spaces that are located around the exterior of the parking lot, there must be located a minimum of one (1) tree around the exterior of the parking lot.
2. For each ten (10) parking spaces that are located in the interior of the parking lot, there must be located a minimum of one (1) tree on the interior of the parking lot.
3. Each tree shall be at least three (3) inch caliper at time of planting and shall be a species selected from Appendix D.
4. The minimum planting area or space for each tree shall be in accordance with Section 12.2.
5. Ground areas shall be sodded, seeded with grass, mulched, or planted with groundcover species, or any combination thereof.
6. At least thirty (30) percent of the trees planted shall consist of Overstory Trees.

## 27.14 Compliance

### 27.14-1 Warranty or Maintenance Surety

Upon final installation of new trees, shrubs or other landscape material planted to meet the requirements of this Ordinance, and before acceptance by the County Arborist, the owner shall either post a Maintenance Bond or Letter of Credit in an amount equal to seventy five (75) percent of the value of the new trees or landscape material and their installation, warranting the new trees, shrubs or landscape material for a period of no less than fifteen (15) months from approval of Final Plat or Certificate of Occupancy.

### 14-1.1 Inspection

The Arborist shall perform an inspection of the plantings and landscape materials required by this Ordinance prior to the end of the fifteen (15) month warranty period. The owner shall be provided written notice of any replacements or restoration that must be made to maintain compliance with this Ordinance or conditions of zoning, special use, or variance approval as pertains to trees and landscaping.

Required landscape material found to be dead or near death shall be replaced prior to release of the warranty by the County. In no case shall replacement be delayed greater than thirty (30) days from notification unless an additional performance bond is posted with the County.

### 27.14-2 Performance Surety

In the event that new trees required to be planted as set forth herein, cannot be installed upon application for a Certificate of Occupancy or Final Plat approval as appropriate to the project, then at the discretion of the Arborist, a Performance Bond or Letter of Credit in an amount equal to one hundred thirty (130) percent of the value of the new trees or landscape material and their installation may be accepted in accordance with the performance bonding requirements and provisions of the County.

### 14-2.1 Compliance upon Permit Completion or Expiration

Properties where a permit is issued to conduct land disturbing activities that do not require the issuance of a Certificate of Occupancy or the approval of a Final Plat, shall comply with the Tree Density Standard of this Ordinance as follows:

### 27.14-3 Clearing, Clearing and Grubbing, or Grading Only Permits

A Performance Bond or Letter of Credit shall be posted with the County for the replacement units prior to the issuance of a Land Disturbance Permit. The amount shall be equal to one hundred thirty (130) percent of the value of the new trees or landscape material and their installation.

### 27.14-4 Continuing Maintenance

14-4.1 The owner, occupant, tenant, and respective agent of each, if any, shall be jointly and severally responsible for the perpetual maintenance and protection of buffers and landscape plantings required by this Ordinance.

14-4.2 The County Arborist is hereby authorized to order diseased, infested, dying, dead or damaged landscaping required herein to be replaced.

14-4.3 Replacement trees and landscaping shall be in accordance with the applicable provisions of this Ordinance.

## **27.15 Technology Ridge Tree Buffer Zone**

### 27.15-1 General

The I-575 Technology Ridge Buffer Zone is herein recognized as all parcels lying within seventy five (75) feet in a horizontal linear distance measured perpendicular from each side of the I-575 right-of-way within its entirety within Cherokee County. It is the intent that the buffer

zone will not only provide a visual aesthetic value, but also serve in a capacity to improve the quality of life by filtering noise, light, and airborne pollutants. These developments shall incorporate the following criteria prior to issuance of a Land Disturbance Permit:

#### 27.15-2 Corridor

The corridor for the I-575 Technology Ridge Tree Buffer Zone shall be recognized as those areas lying parallel on each side of I-575 and shall require a seventy five (75) foot minimum undisturbed tree buffer requiring ninety (90) percent visual screening during all seasons. Supplemental planting is required if this screening does not exist.

#### 27.15-3 Interchange Zones

The area within a distance of one thousand (1000) linear feet in each direction of the crossing of a right-of-way of an interchange and parallel with I-575 shall be recognized as an Interchange Zone and shall require a seventy five (75) foot minimum undisturbed tree buffer requiring seventy five (75) percent visual screening during all seasons. Supplemental planting is required if this screening does not exist.

### **27.16 Variances**

All petitions shall require a public hearing before the Zoning Board of Appeals and shall be subject to the provisions for variances as defined in Article 15 of the Cherokee County Zoning Ordinance and the application requirements of the Cherokee Planning and Zoning Department.

### **27.17 Non-liability of County**

The contents of this Ordinance shall not in any way be deemed to impose any liability upon Cherokee County, the Board of Commissioners or County employees nor shall it relieve the owner and occupant of any private property from the duty to keep trees upon private property or under his/her control in a safe condition as not to affect the health, safety and general welfare of the public.

### **27.18 Adoption and Amendment**

#### 27.18-1 Repeal Clause

The provisions of any ordinances or resolutions or parts of ordinances or resolutions in conflict herewith are repealed, save and except such ordinances or resolutions or parts of ordinances or resolutions which provide stricter standards than those provided herein.

#### 27.18-2 Severability

Should any section, subsection, clause, or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance in whole or any part thereof other than the part so declared to be invalid.

#### 27.18-3 Amendment

This Ordinance may be amended from time-to-time by Ordinance of the Board of Commissioners, Cherokee County. Such amendments shall be effective as specified in the adopting Ordinance.

27.18-4 Effective Date

This Ordinance shall become effective upon its adoption. To the extent that an individual has submitted a development plan with the County or participated in a pre-development meeting with County staff prior to the passage of this Ordinance, such individual shall be vested under the previous tree ordinance and subject to all such requirements in existence prior to the passage of this Ordinance.

## **APPENDIX A SPECIMEN TREES**

Some trees on a site warrant special consideration and encouragement for preservation. These trees are referred to as Specimen Trees.

The following criteria are used to identify Specimen Trees. Both the size and condition criteria must be met for a tree to qualify.

### Size Criteria

Overstory Trees: 24" DBH or larger

Understory Trees: 10" DBH or larger

### Condition Criteria

Life expectancy of greater than fifteen (15) years

Relatively sound and solid trunk with no extensive decay

No more than one major and several minor dead limbs

No major insect or pathological problem

As determined by County Arborist

### Type

Pines species do not qualify as Specimen Trees.

In order to encourage the preservation of Specimen Trees and the incorporation of these trees into the design of projects, additional density credit will be given for Specimen Trees which are successfully saved by a design feature specifically designated for such purpose. Credit for any Specimen Tree thus saved would be four (4) times the assigned unit value shown in Appendix C-Table A. To qualify, these trees must be within or directly adjacent to the developable areas of the site. Specimen Trees which lie inside areas already protected, such as buffers, wetlands or open space areas shall not receive extra density credit.

Considering every development site and situation will be different, Specimen Tree preservation cannot be expressed as a formula, but is a required design criteria. If the Tree Preservation Plan submitted for a development site does not incorporate design features to preserve Specimen Trees, an alternate site design may be required.

To ensure that preservation of Specimen Trees is afforded a high priority, the alternate design features may include revised building designs and locations, parking lot designs and locations and also infrastructure modifications.

While it is understood that all Specimen Trees cannot be preserved in a development, this program will be closely examined on every project prior to approval of any and all site plans. In this

connection, the remaining Specimen Trees on site, which are allowed to be removed, will require recompense planting equaling two (2) times their density unit value in Appendix C – Table A. Specimen trees must be replaced by species with potentials for comparable size and quality. Specimen recompense trees must be a minimum four (4) inch caliper at the time of planting.

If a Specimen Tree is to be removed, a plan or written documentation indicating the reason for the removal must be submitted to the Arborist.

In addition to the penalties addressed in Section 4.1.1.2 of this Ordinance, any Specimen Tree which is removed without the appropriate review and approval of the Arborist must be replaced by trees with a total density of eight (8) times the unit value of the tree removed. Size alone will determine whether a tree was of specimen quality if the tree is removed without approval and there is no evidence of its condition.

## APPENDIX B HERITAGE TREES

Cherokee County residents have long enjoyed an abundance and diversity of trees and forests. These have served as resources for shelter and products, shaded homes and streets, and immeasurably added to the aesthetic character of towns and neighborhoods. Many urban trees have been associated with historic events or sites or have been planted by individuals or groups commemorating special events or community leaders.

The Cherokee County Heritage Tree Register will recognize noteworthy trees or groves of trees and acknowledge the significance selected individual trees or stands have had to our communities. It is the intent of this Ordinance that this process of identifying and publicly noting significant (Heritage) trees and maintaining the Register listings with accurate historical and current data should result in appropriate maintenance and adequate consideration being given to the status of trees as urban assets of particular vulnerability in changing urban areas.

Heritage trees are individual trees or groves of trees of any size or species that are specially designated as heritage because of their historical, commemorative, or horticultural significance. The list of designated Heritage Trees remains open for new designations and provides useful information to the Planning & Zoning staff regarding the importance of their actions while planning activities near heritage trees.

Cherokee County shall compile a list of Heritage trees which may also include the oldest, tallest, largest and rarest native and exotic tree species growing in the county. One example of each species shall be designated with a small plaque placed at base of the tree.

Anyone may nominate a Heritage Tree by contacting the County Arborist.

Upon nomination by any person and with the written consent of the property owner(s), the County may designate a tree or trees as a Heritage tree. After County approval of a Heritage tree designation, the County Arborist shall notify the property owner(s) in writing.

**No tree on private property can be designated without the consent of the current property owner.** Once designated by current owner as a Heritage Tree, this Ordinance further states that it is unlawful for any person, without a prior written permit from the Board of Commissioners, to remove, destroy, cut, prune, break or injure any Heritage Tree. No Heritage Tree designation can be removed without the approval of the Board of Commissioners. If a Heritage Tree becomes a hazard, follow steps as defined in Section 6.3.

Within five (5) days of designation as a Heritage Tree, the property owner shall do one of the following:

- (1) Execute an Owner's Affidavit that identifies the tree(s) on the property which is classified as a Heritage Tree(s) and state that it is unlawful for any person, without a prior written permit from the Board of Commissioners, to remove, destroy, cut, prune, break, or injure any Heritage Tree.  
The Affidavit shall be recorded in the land records of Cherokee County in the chain of title for the respective property, and a copy of the Affidavit shall be provided to the County Arborist. A form Owner's Affidavit may be obtained from the County for use.

- (2) Execute a Conservation Easement that identifies the tree(s) on the property which is classified as a Heritage Tree(s), which Conservation Easement shall provide for the protection, preservation, and conservation of the Heritage Tree(s). The Conservation Easement shall further state that it is unlawful for any person, without prior written permit from the Board of Commissioners, to remove, destroy, cut, prune, break, or injure any Heritage Tree. The Conservation Easement shall be recorded in the land records of Cherokee County in the chain of title for the respective property, and a copy of the Conservation Easement shall be provided to the County Arborist. A form Conservation Easement may be obtained from the County for use.

Requests for the removal of a Heritage Tree designation will be denied by the Board of Commissioners, unless one of the following findings is made:

- (1) There is a public benefit, or a public health, safety, or welfare benefit, to the injury or removal that outweighs the protection of the specific tree (public benefit means a public purpose, service, or use which affects residents as a community and not merely as particular individuals); or
- (2) The present condition of the tree is such that it is not reasonably likely to survive; or
- (3) There is an objective feature of the tree that makes the tree not suitable for protection; or
- (4) There would be a substantial hardship to a private property owner in the enjoyment and use of real property if the injury or removal is not permitted; or
- (5) To not permit the injury or removal would constitute a taking of the underlying real property.

Decisions on removal of a Heritage Tree designation are subject to appeal to the Superior Court.

**APPENDIX C  
SITE DENSITY REQUIREMENTS**

The basic requirement of the Tree Preservation Ordinance is that all applicable sites retain a minimum tree density of as defined in Section 8. The term “unit” is an expression of basal area (a standard forestry inventory measurement), and is not synonymous with “tree”. A single tree equal to one tree unit is between thirteen (13) and fourteen (14) inches in diameter.

This density requirement must be met regardless of if the site had sufficient tree density prior to development. For these sites, the density may be achieved by counting existing trees to be preserved, planting new trees, or some combination of the two as represented by the formula below.

$$SDF = EDF + RDF$$

SDF (Site Density Factor) The minimum tree density to be met on a development site, expressed in units per acre.

EDF (Existing Density Factor) The total number of tree density units measured or calculated based on trees that will remain as conserved on site.

RDF (Replacement Density Factor) The density or total unit value of new trees to be planted on a site.

The Site Density Factor (SDF) is calculated by multiplying the number of site acres units per acre required.

Tree density calculations for a 2.2 acre example residential site would be as follows:

2.2 acres X 20 units per acre equal a SDF of 44 units.

**Trees Inventoried in Tree Save Areas**

Trees found (Measured in Diameter Breast Height)	Quantity	Unit Value	Total
5"-8" pines	21	0.3	6.3
9"-12" oaks	14	0.6	8.4
13"-16" oaks	10	1.2	12
17"-20" poplars	5	1.9	9.5
21"-24" oaks	3	2.8	8.4
<b>Total</b>			<b>44.6 Density Units</b>

The Existing Density Factor (EDF) is calculated by converting the diameter of individual trees to density factor units using Table A.

Therefore, with a Site Density Factor requirement of 44 units, a Tree Save Area totaling 44.6 Density Units satisfies the Site Density Requirement. These trees will be protected in a Tree Save Area.

To determine Tree Density on large sites, sample areas should be taken in areas to remain undisturbed. Use an approved timber cruising method (50' x 50' sample areas or Prism Method sampling). Flag the sample areas onsite and delineate locations on Tree Preservation Plan.

**TABLE A****Conversion of Existing Tree Diameters (DBH) to Density Factor Units**

Size Class	Diameters	Unit Value
1	1 - 4"	Need not be counted
2	5 – 8"	0.3
3	9 – 12"	0.6
4	13 – 16"	1.2
5	17 – 20"	1.9
6	21 – 24"	2.8
7	25 – 28"	3.8
8	29 – 32"	5.1
9	33 – 36"	6.5
10	37 – 40"	8.1

The unit value of an individual tree may be determined by using the formula:  $(\text{Diameter})^2 \times .7854 \div 144$

Replacement Density Factor (RDF) – If enough trees do not exist onsite to meet the tree density requirements, replacement trees will be needed. Calculate the RDF by subtracting the EDF from the SDF.

For instance, if it was determined that the 2.2 acre sample site mentioned earlier had only enough existing trees to yield a 30 unit per acre EDF, then replacement trees totaling 14 density factor units would be required.

$$\text{SDF (44)} - \text{EDF (30)} = \text{RDF (14)}$$

The density factor unit value for each caliper size of replacement (new) trees is shown in Table B. Replacement tree caliper is measured at a point on the trunk six (6) inches from the base.

**TABLE B****Conversion of Replacement Tree Caliper to Density Factor Units**

<b>Caliper Size</b>	<b>Density Factor Units</b>
1"	Not to be used
2"	0.4
3"	0.5
4"	0.7
5"	0.9
6"	1.0
7"	1.2
8"	1.3
9"	1.5
10"	1.7

The values in Table B shall also be used to determine the quantity of replacement trees needed for any Specimen Tree recompense planting. This planting is additional to planting required for Site Density requirements.

**Pasture Land Reduction**

It is recognized that some properties, or portions of them, may be devoid of trees due to agriculture use. In these cases a reduction of minimum tree density is warranted for new developments. In areas that meet the description of pasture land, the required minimum tree density shall be ten (10) units per acre.

Wooded Site SDF is calculated by multiplying the number of total site acres by 20.

EXAMPLE: a 10 acre site has a SDF of  $10 \times 20 = 200$  units

Pasture Land SDF is calculated by multiplying the number of total site acres by 10.

EXAMPLE: a 10 acre site has a SDF of  $10 \times 10 = 100$  units

Mixture of wooded and pasture land SDF is calculated using each component's unit per acre requirement.

EXAMPLE: a 10 acre site has 8 acres wooded and 2 acres pasture land a SDF of  $(8 \times 20 = 160 \text{ units}) + (2 \times 10 = 20 \text{ units})$  for a total SDF of 180 units

### **Easement Exclusion**

Properties possessing natural gas, petroleum or electric power transmission easements, or major sanitary sewer main (greater than eight (8) inches in diameter) or water main (greater than sixteen (16) inches in diameter) distribution easements, may exclude the land area contained in the easement from the total acreage of the property in fulfilling the Site Density Factor provided that no improvements (e.g., parking lots, tennis courts, driveways, storm water detention facilities, etc.) are proposed within the easement. If any improvements are proposed within the easement, then the land area so utilized within the easement for improvements shall be included in the Site Density Factor requirements.

### **Lake and Pond Exclusion**

Properties with an existing lake or pond greater than one (1) acre in size may exclude the land area contained in the lake or pond from the total acreage of the property in fulfilling the Site Density Factor.

### **Industrial Development Exclusion**

Large industrial buildings for headquarters, manufacturing, warehouse distribution and similar uses often cover the majority of a development site. In addition, the development of the site for a single industrial building typically requires a significant amount of tree clearing and grading. Considering these unique development conditions for this land use, 100% of the building footprint may be excluded from site density calculations if the following conditions are met:

1. Property is zoned LI or HI
2. Minimum building footprint is 30,000 square feet (Ord. 2015-O-011, 12-15-15)

### **Partial Exclusion of Buffers from Tree Density Requirements**

When designing a site, tree preservation shall not be limited to unusable, remote areas of the site. Tree preservation areas should be more evenly distributed around these sites. The intent is to preserve some natural characteristics of the site, such as quality existing vegetation, Specimen and Heritage Trees for aesthetics and conservational purposes.

In an effort to preserve trees and other natural vegetation within a development, 50% of the required post-development tree density shall be met outside stream bank and zoning buffer areas. The tree requirement cannot be fully satisfied by trees in buffer areas. The area of a development outside buffer areas must separately meet at least 50% of the required per acre tree density, even if trees in buffer areas would compensate or more than compensate.

#### Example:

30 acres x 20 units per acre = 600 units

600 units x 50% = 300 units minimum to be provided outside the buffer areas

A combination of trees save areas, preserved Specimen and Heritage trees and quality replanted trees will be used to meet this requirement within this developed area.

It is understood that many times open or sparsely vegetated zoning buffers will require supplemental or complete planting to meet visual screening requirements; therefore, trees planted for this purpose may count towards the SDF.

**APPENDIX D  
RECOMMENDED SPECIES LIST  
OVERSTORY TREES**

**TABLE A-1**

**Deciduous Species**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Acer barbatum	Florida Maple, Southern Sugar Maple
Acer leucoderme	Chalk Maple
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Aesculus flava	Yellow Buckeye
Betula nigra	River Birch
Carya illinoensis	Pecan
Carya ovata	Shagbark Hickory
Catalpa bignonioides	Catalpa
Cladrastis lutea	Yellowwood
Fagus grandifolia	American Beech
Fraxinus pennsylvanica	Green Ash
Ginko biloba	Ginko (named cultivar only)
Liquidambar styraciflua	Sweetgum
Liriodendron tulipifera	Yellow Poplar
Magnolia acuminata	Cucumber Tree
Metasequoia glyptostroboides	Dawn Redwood
Nyssa aquatica	Swamp Tupelo
Nyssa sylvatica	Black Gum
Parrotia persica	Persian Parrotia
Pistacia chinensis	Chinese Pistache
Platanus occidentalis	American Sycamore
Quercus accutissima	Sawtooth Oak

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Quercus alba	White Oak
Quercus bicolor	Swamp White Oak
Quercus coccinea	Scarlet Oak
Quercus falcata	Southern Red Oak
Quercus lyrata	Overcup Oak
Quercus nigra	Water Oak
Quercus nuttallii	Nuttall Oak
Quercus phellos	Willow Oak
Quercus palustris	Pin Oak
Quercus prinus	Chestnut Oak
Quercus shumardi	Shumard Oak
Robinia psuedoacacia	Black Locust
Sapindus drummondii	Soaptree
Sassafrass albidum	Sassafrass
Sophora japonica	Japanese Pagodatree
Taxodium disticum	Bald Cypress
Ulmus parvifloria	Chinese Elm
Zelkova serrata	Japanese Zelkova

**TABLE A-2**  
**Evergreen Species**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Cryptomeria japonica	Japanese Cedar
X Cupressocyparis leylandii	Leyland Cypress
Cunninghamia lanceolata	China fir
Magnolia grandiflora	Southern Magnolia
Pinus strobus	White Pine
Pinus taeda	Loblolly Pine
Pinus virginiana	Virginia Pine
Thuja occidentalis	Eastern Arborviate
Thuja plicata	Western Redcedar

**UNDERSTORY TREES****TABLE B-1****Deciduous Species**

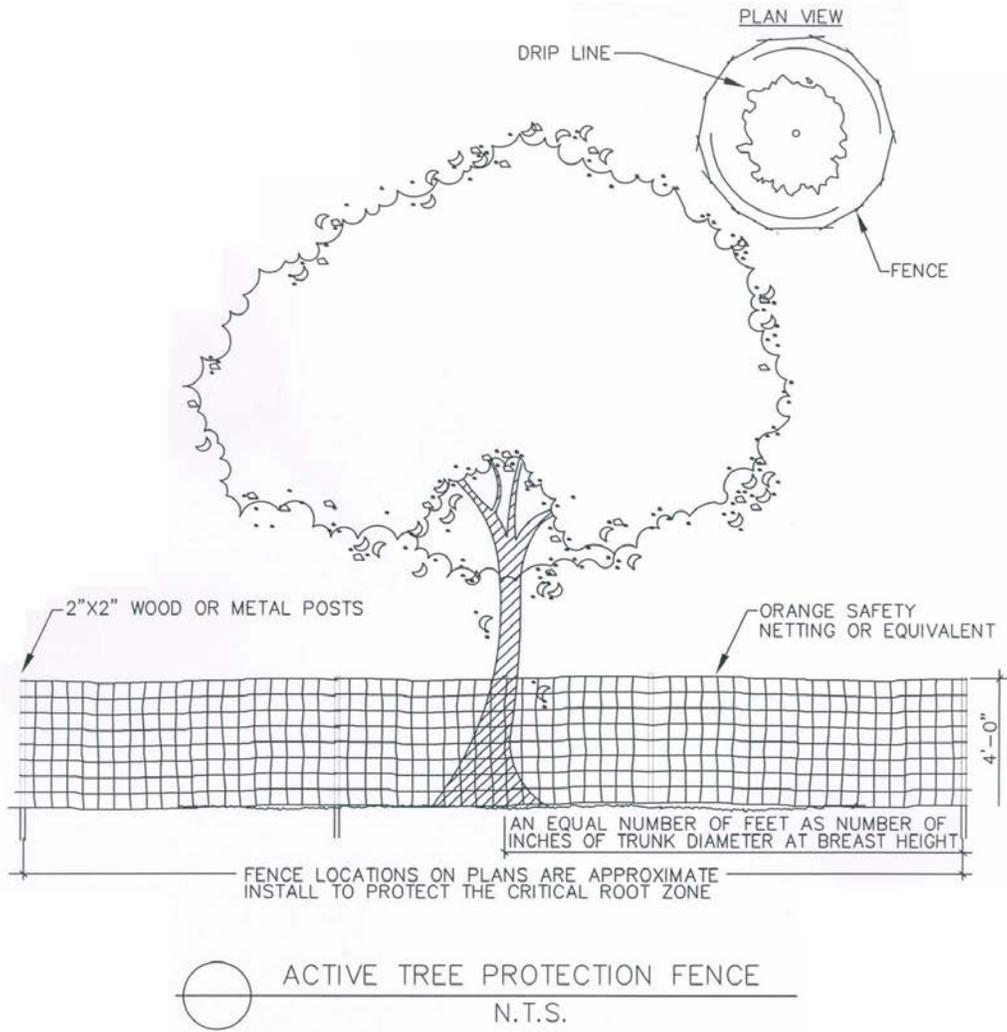
<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Acer buergerianum	Trident Maple
Amelanchier arborea	Serviceberry
Carpinus caroliniana	American Hornbeam
Cercus canadensis	Eastern Redbud
Chionanthus virginicus	Fringe tree, Grancy Graybeard
Continus coggygia	Common Smoketree
Cornus alternifolia	Alternate Leaf Dogwood
Cornus florida	Flowering Dogwood
Cornus kousa	Chinese Dogwood
Cotinus obovatus	American Smoketree
Crataegus phaenopyrum	Washington Hawthorne
Eriobotrya japonica	Loquat
Halesia carolinia	Silverbell
Hamamelis virginiana	Witch-hazel
Ilex decidua	Possomhaw - Decidious Holly
Ilex verticillata	Winterberry
Koelreuteria bipinnata	Golden Rain Tree
Koelreuteria paniculata	Goldenraintree
Lagerstroemia species	Crape Myrtle species
Magnolia x soulangeana	Saucer Magnolia
Magnolia stellata	Star Magnolia
Malus species	Flowering Crab
Oxydendrum aboreum	Sourwood
Ostrya virginiana	Hop hornbeam

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Prunus serrulata	Japanese Flowering Cherry
Prunus x yedoensis	Yoshino Cherry
Stewartia pseudocamellia	Japanese Stewartia
Styrax americanum	American Styrax
Styrax japonica	Japanese Styrax
Vitex agnus-castus	Chastetree

**TABLE B-2**  
**Evergreen Species**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
Ilex x attenuate	Savannah Holly
Ilex latifolia	Lusterleaf Holly
Ilex x Nellie R. Stevens	Nellie R. Stevens Holly
Ilex opaca	American Holly
Ilex vomitoria	Yaupon Holly
Illicium floridanum	Florida Anise-tree
Juniperus virginiana	Eastern Redcedar
Myrica cerifera	Waxmyrtle

### APPENDIX E STANDARD DETAILS

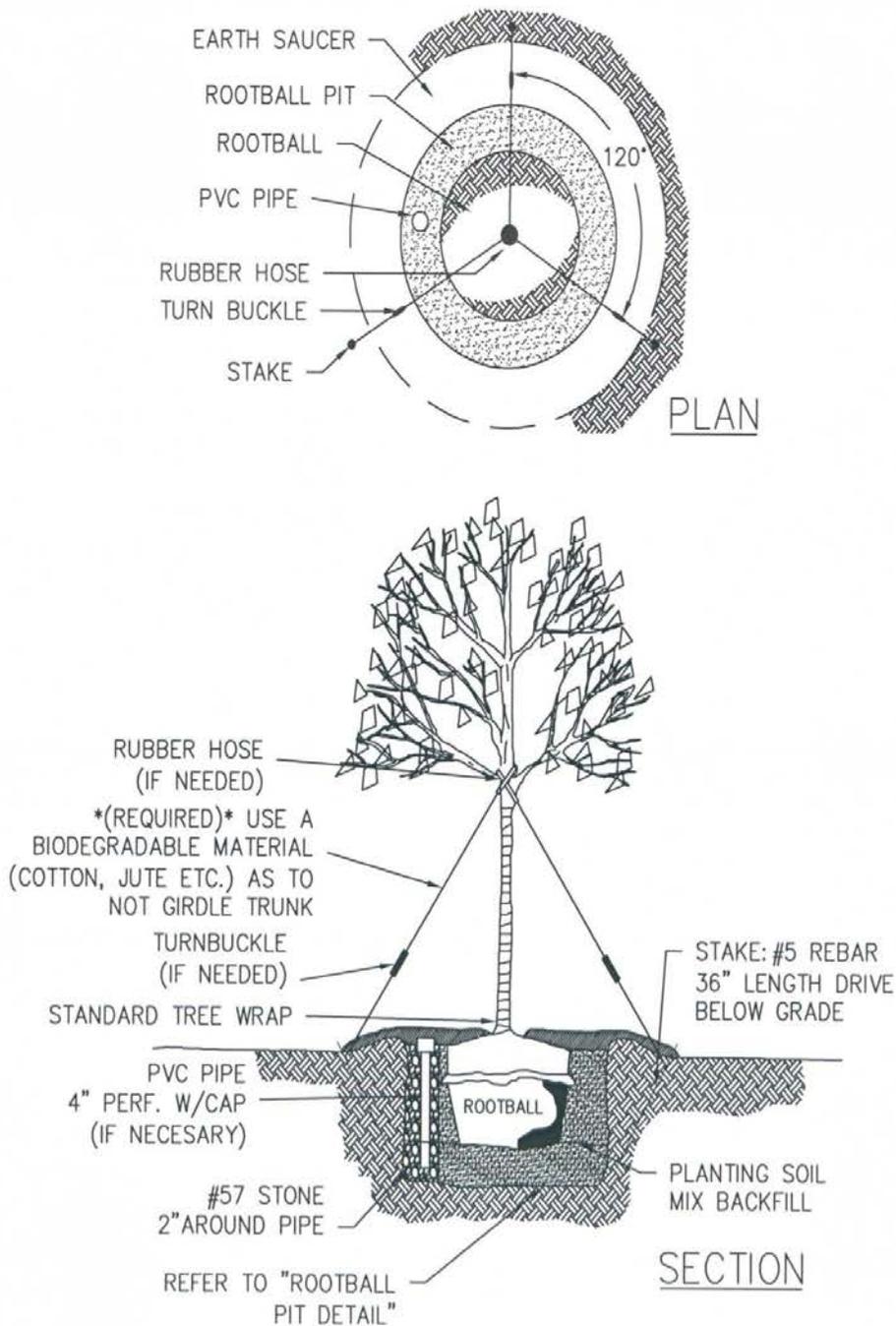


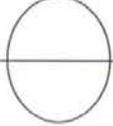


HEAVY MIL PLASTIC, MINIMUM 4" WIDTH,  
DARK LETTERING ON BRIGHT BACKGROUND

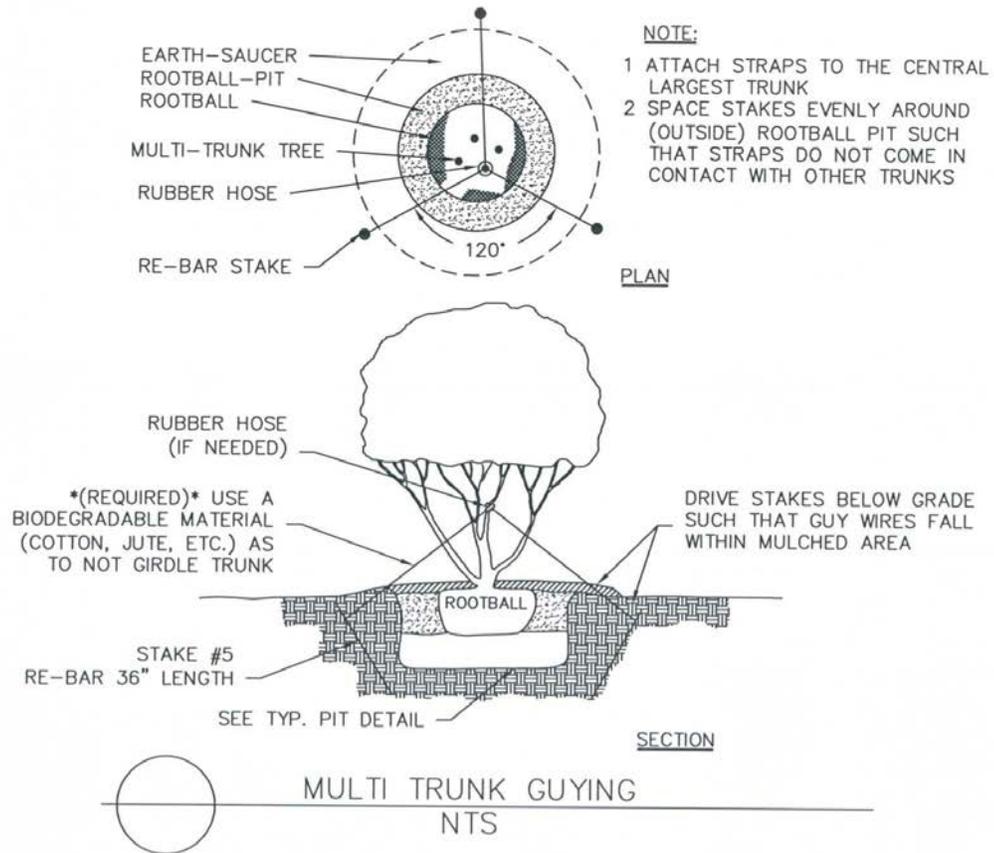


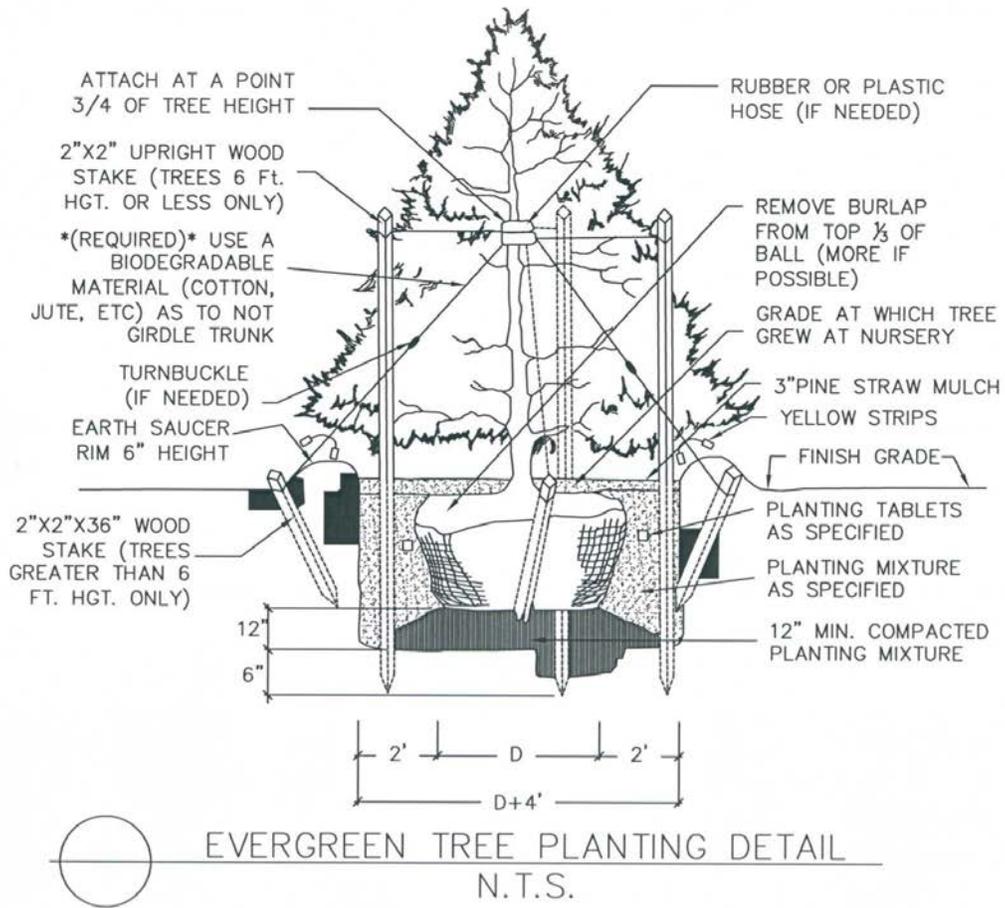
○ PASSIVE TREE PROTECTION FLAGGING  
N.T.S.




**TREE PLANTING/STAKING**  
 N.T.S

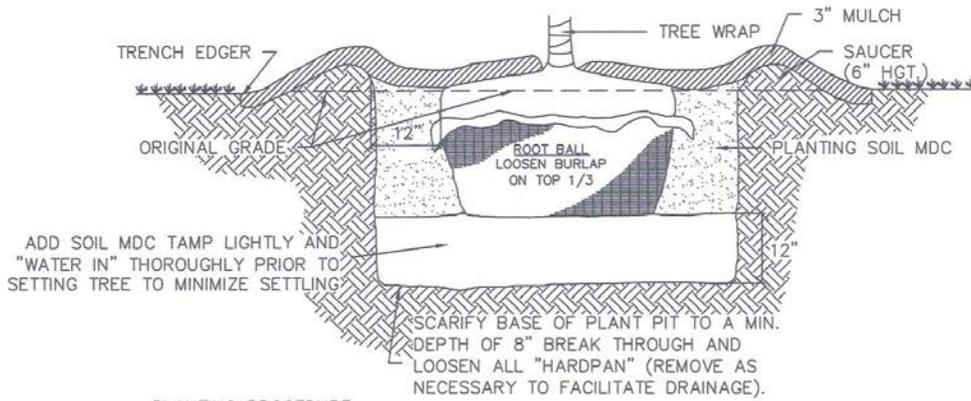
Note: Smaller Trees (Below 2' cal)  
 may be staked with one diagonal  
 2"X2" P.T. wood stake.





GENERAL NOTES:

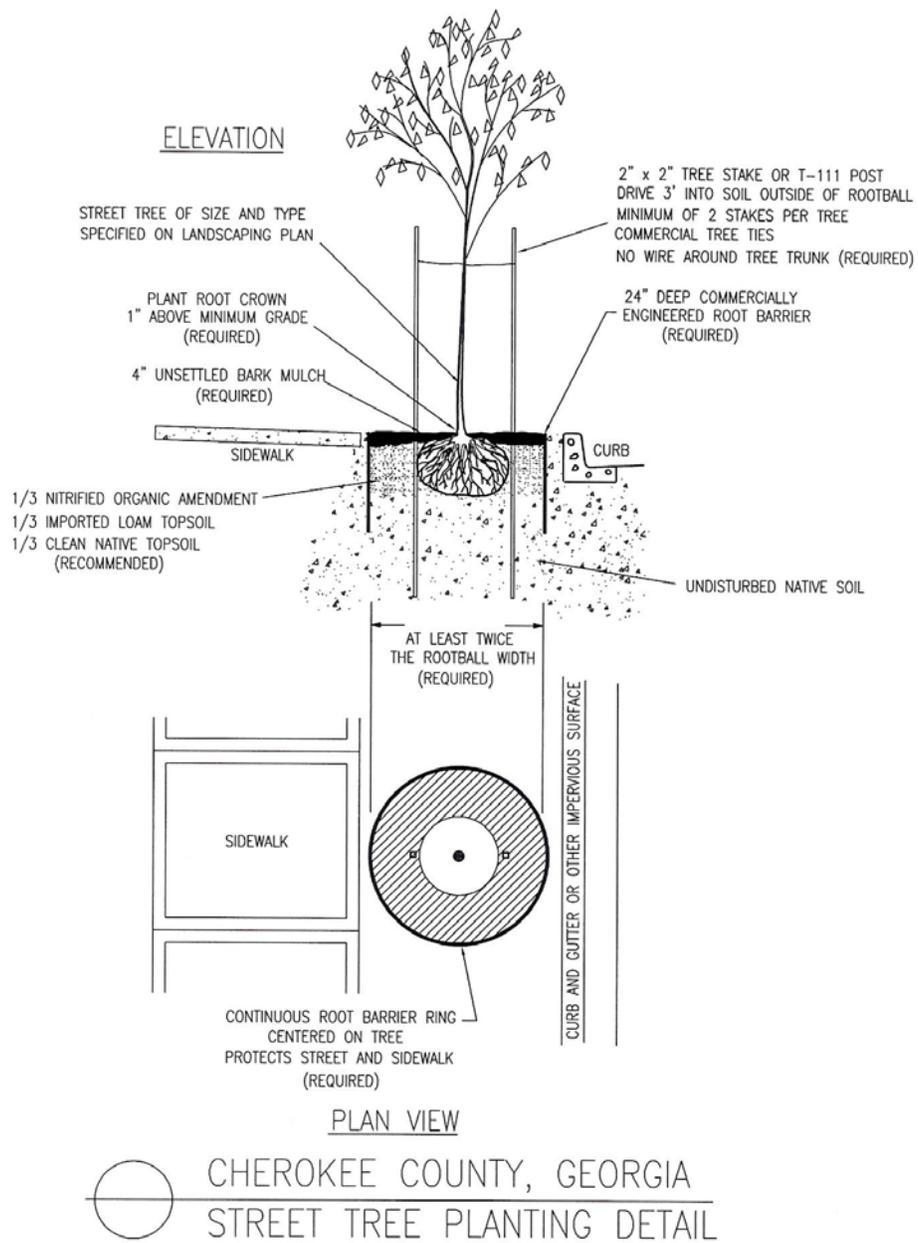
- 1 DO NOT ALLOW AIR-POCKETS TO FORM WHEN BACKFILLING.
- 2 IMMEDIATELY SOAK WITH WATER.
- 3 DO NOT BREAK ROOTBALL.



PLANTING PROCEDURE:

- 1 EXCAVATE ROOTBALL PIT.
- 2 SCARIFY PIT. ADD SOILMIX AND TAMP.
- 3 SET TREE LEVEL WITH IT'S ORIGINAL GRADE IN NURSERY.
- 4 BACKFILL W/SOIL-MIX AND CONSTRUCT SAUCER.
- 5 COMPLETE BACKFILLING, ADD MULCH AND APPLY TREE WRAP.
- 6 STAKE AND GUY SECURELY.

○ TYPICAL TREE PIT



(Ord. 2008-Z-001, 01-15-08)