

**Policies and Standards  
Governing Activities  
Which Impact  
City Trees**



**City Of Raleigh  
Parks And Recreation Department  
Urban Forestry**

**Adopted By City Council  
February 19, 1991**

# Table of Contents

<b>PREFACE .....</b>	<b>3</b>
<b>DEFINITIONS.....</b>	<b>4</b>
<b>CHAPTER 1: TREE PLANTING POLICY .....</b>	<b>6</b>
<b>CHAPTER 2: MASTER STREET TREE PLANTING PLAN.....</b>	<b>9</b>
<b>CHAPTER 3: PLANTING STANDARDS .....</b>	<b>24</b>
<b>CHAPTER 4: TREE PROTECTION STANDARDS.....</b>	<b>50</b>
<b>CHAPTER 5: TREE PRUNING STANDARDS.....</b>	<b>55</b>
<b>CHAPTER 6: LINE CLEARANCE STANDARDS.....</b>	<b>60</b>
<b>CHAPTER 7: TREE REMOVAL POLICY .....</b>	<b>65</b>
<b>APPENDIX: RALEIGH CITY CODE CHAPTER 8. TREES AND VEGETATION.....</b>	<b>67</b>

## **PREFACE**

The following document outlines the requirements of the Tree and Shrub Ordinance, Section 9-8004, Duties of Urban Forester, of the Raleigh City Code;

“The Urban Forester shall have the authority to promulgate the rules and regulations governing the planting, maintenance, removal, fertilization, pruning and bracing of trees on city owned or controlled property, shall direct, supervise, regulate and control the planting, maintenance and removal of all the trees growing now or hereafter on said property. It shall be the duty of the Urban Forester to plan for an urban forestry program,…”

The following chapters pertain to and are enforceable on all persons who perform work or cause work to be performed on trees located on City owned and controlled property. When acting as free agent and not as an agent for the City or hired by the City, the person, firm, or agency wanting to alter or remove or plant any tree or shrub or do anything that would affect City owned or controlled trees, including cutting or filling the soil around the roots, shall submit a signed application for a tree permit and shall abide by all conditions attached to the permit. Violating any provision of the permit shall be subject to the provisions as described in Section 9-8014, Violations: Penalty. In addition, the Urban Forester shall at his/her discretion withdraw permit approval. If as part of a City project, work is done that impacts City trees, the sponsoring Department will submit a Tree Permit application for approval prior to City Council review. If the work is done by a contractor, then in addition to the Tree Permit application, the Department will submit contract specifications for review and approval.

All applications for tree permits can be obtained from the Urban Forester, Monday through Friday, 7:30 am to 4:00 pm, except official City holidays. The office is located at City Hall, 222 West Hargett St., Raleigh, North Carolina 27602. The mailing address is P.O. Box 590, Raleigh, NC 27602. The telephone number is (919) 890-3285. The fax number is (919) 890-3299. All permits are free except for tree removal. Make checks payable to the City of Raleigh.

The policies and standards contained herein are subject to change at the Urban Forester's discretion with approval of the Parks and Recreation Director as advances in technology warrant.

The entire ordinance is located in the appendix.

## **DEFINITIONS**

**CITY-OWNED OR CITY-CONTROLLED PROPERTY-** Property owned or leased by the city; or for which the city has a vegetation easement or planting contract; or upon which the city has an easement or street, sidewalk, greenway, park, alley, utility or other public purpose.

**CITY PROPERTY:** - City owned or controlled property.

**CONTAINER:** - Any receptacle which holds soil and plants.

**CRITICAL ROOT ZONE** – Generally a circular area surrounding a tree, the center of which is the center of the tree trunk and the radius is the distance from the outside of the trunk to any point 12 times the diameter, as measured at four and one-half feet from the ground on the low side of the trunk, which points constitutes the circumference of the critical root zone.

**MEDIAN, PLANTING:** - That portion of public right-of-way lying between two (2) roadways and used for the separation of vehicular traffic. A planting median is unpaved and may or may not have a raised curb.

**ORNAMENTAL TREE:** - A woody plant attaining a mature height of not more than thirty-five feet (35') and possessing one or more of aesthetically attractive qualities such as beautiful flowers, ornamental fruit, or pleasing foliage, bark, or form; ornamental trees must conform to the same requirements as shade trees.

**PLANTING BED:** - A designated area where the soil profile is discontinuous with that of the surrounding native soil and has been made so by soil amendments.

**PLANTING VAULT:** - A in-ground container, usually concrete or metal, set below grade to hold landscape plants; for the purposes of this document, subject to all provisions for containers.

**RIGHT-OF-WAY:** - A strip of land upon which Raleigh has the right to construct a street, sidewalk, bicycle path, use for public utilities, landscape with plants or to carry out any other public purpose.

**SHADE TREE:** - Evergreen or deciduous woody plant having one straight, well defined stem, and attaining a minimum height and crown spread at maturity of thirty-five feet (35'), and thirty feet (30') respectively. In addition it must not have an offensive odor or require excessive maintenance such as, but not limited to: frequent treatments to keep it free of insects or disease, or cleanup due to litter. Trees with multiple stems (such as birch) may be used by permission of the Urban Forester.

**SIGHT TRIANGLE:** - The area formed by a line measured back ten feet (10') from the intersection of the property corner along the approach street, then seventy feet (70') from the intersection of the property corner along the cross street (see fig. 1). These are to be considered the minimum dimensions; curves in the road, hills, and other site specific factors may require extensions of above dimensions.

**STREETSIDE RIGHT OF WAY:** - Planting strip running parallel to the street between the curb and property line of private property.

**TREE PERMIT:** - Consent given in writing by the Urban Forester to a person, firm, or agency to alter or remove any tree or to do anything that would affect that city owned or controlled tree, including cutting or filling the soil around the roots, or allowing any toxic pollutant to injure the tree.

**ZONE OF PROTECTION** - The area of the critical root zone that shall be fenced, with no construction related activities allowed within this zone of protection. The restricted activities are, but not limited to, storage, paving, grading, cutting, filling, travel within, dumping, or spilling of any solid or liquid, and parking of vehicles.

## **CHAPTER 1: TREE PLANTING POLICY**

### **PURPOSE OF POLICY:**

1. To contribute to the vitality of the Raleigh community, and to enhance the appearance and overall attractiveness of Raleigh for continued prosperity and growth.
2. To improve air quality, reduce noise pollution, reduce surface runoff, and to reduce surface and ground water contamination.
3. To identify needs for tree planting in the City, and to apportion available funds to meet those needs, according to the relative priority of the benefits provided to the entire community.
4. To continually strive to identify all suitable locations for tree planting throughout Raleigh, as well as suitable trees for those sites, with an emphasis on species diversity.
5. To handle requests for tree planting uniformly.

### **SUITABILITY OF PLANTING SITES:**

1. Planting shall be restricted to City-owned, controlled property, or planting easements.
2. All plantings shall follow the requirements of the Planting Standards.

### **ABILITY TO PLANT:**

The ability to plant trees is governed by the resources (funds, quality plants, equipment, and personnel) available during the planting season; mid-November to early April, and the weather.

## Identification of Tree Planting Needs, Funding Sources, and Funding Levels.

(Priorities are listed from highest to lowest)

Needs Category	Funding Sources and Level
1. Downtown Raleigh, thoroughfares, and special locations identified by City Administration.	40% of amount budgeted for tree planting in the General Fund.
2. Tree replacement for recently planted trees that have died.	10% of amount budgeted for tree planting in the General Fund
3. Cooperatively funded tree planting with individuals and/or groups.	35% of amount budgeted for tree planting in the General Fund.
4. Planting in previously unplanted areas, and replacement of mature trees that have been removed for reasons of public safety.	15% of amount budgeted for tree planting in the General Fund. □
5. Planting for projects not listed above.	100% of funds for plants shall come from requestor. (Work to be done time and resources permitting)

### Procedure for Handling Requests for Tree Planting

1. Requests for tree planting will be evaluated in the order in which they are received.
2. Requests for tree planting must be received by April 1 to be considered for planting during the following winter. Requests received after April 1 will be accepted, and if the site is found to be suitable for planting, trees may be planted during the planting season one year later.
3. All requests for tree planting will first be classified according to the needs established in this policy.
4. A maximum total of 40% of the funds allocated in “needs category” numbers 2 - 4 may be expended for requests for tree planting that are located within the same block, and received

during the same planting year.

5. If there are funds remaining in the needs category in which the request is classified, the request site will be examined for its suitability for tree planting.
6. If the site is considered appropriate for tree planting as per Planting Standards, the Urban Forester will make species recommendations and discuss them with the requester.
7. The City of Raleigh maintains the authority to select the least costly species that is appropriate for each site under consideration for tree planting. Requesters will be free to donate money to supplement the City's budget for trees, if they would prefer to have (a) a more expensive species planted, (b) additional trees planted, (c) and/or larger trees installed.
8. Requests for tree planting will continue to be received in each category until all funds are spent.
9. Surplus funds from one planting needs category may be applied to tree planting funds in another category if the money has not been earmarked by October 1 each year.
10. Offers to pay 100% of the purchase price for a tree will be accepted by the City if it is determined that City forces will be available to plant the tree or the donation covers the cost of contracting the labor to plant the tree.
11. Contributions for cooperative tree planting must be received by August 15, before trees are purchased for planting during the following winter.

### **Permits for Planting Trees on City Property**

Requests to plant trees on city property at no cost to the City will be accepted when application for "Tree Permit" is submitted to and approved by the Urban Forester, and the planting conforms to the Planting Standards.

## **CHAPTER 2: MASTER STREET TREE PLANTING PLAN**

### **PURPOSE:**

The considerations in developing the Master Street Tree Planting Plan for the City were primarily environmental and design goals and objectives. The environmental goals were diversity and availability of plant material, ease of maintenance, good local performance of plant material, and site-specific sensitivity. The goal of the design is to bring about street tree planting for Raleigh that visually enhances and reinforces the form of the City. The principles of design were used to assist in the achievement of this goal.

The design goal of this plan is to use street trees to visually enhance, unify, and give distinct character to the City travelways. The objectives were to provide a variety of trees for interest, to create a balance within the City as a whole, to emphasize special areas, to give the City streets a pleasing transition from the land uses that face them and to infuse the City's neighborhoods with character.

In order to achieve the first objective a list of desirable plant materials was composed. This list was organized into groups having one or two genera and used as a reference throughout the design process. The list was the assurance that not too many species would be used, creating confusion, nor too few would be used, creating monotony. The placement of different kinds of trees is spread evenly throughout the City. No one area has an overabundance of one tree type, yet there is a distinct repetition throughout the City.

For transition purposes, as well as to provide a variety of scale and a flexibility of selection in limited areas, a list of smaller trees was formed. Free selection from this list will allow considerable variation in the combinations of street trees along City travelways.

Policies were developed for city, community, and neighborhood focus areas and for collectors and minor residential roadways within neighborhoods. Established neighborhoods will receive maintenance attention for the predominate mix and allow new species to intermix. Unplanted neighborhoods will be planted according to resident citizen preference of species available from the City.

The policy for focus areas is a tiered policy, based on the Comprehensive Plan Update concepts, with one section building to the previous smaller section. City focus areas are the largest in the area, but the most restrictive in terms of allowed planting. These areas are highly intense and urban in nature with visibility and openness at a premium. The larger and more intense the focus area is, the more uniformity in plant material is desired, to provide a high contrast from the more diverse nature of planting in surrounding neighborhoods. Evergreen trees, understory trees and large shrubs are restricted plant material, particularly at intersections. Deciduous, open form and high branching trees are encouraged along with broad lawn areas and low evergreen planting. Maximized spacing of tree planting is also recommended. Plantings should take on a formal and urban look. Community focus areas are similar to city focus areas, with a decrease in intensity of use and a corresponding increase in plant mix. Community focus areas should have open form and high branching plant material, but in a greater density of planting or concentrated in groupings. Evergreen trees are still restricted, but understory trees are encouraged. Neighborhood focus areas should start to blend in with the surrounding residential neighborhood. All types of plant material should be used with arrangements kept in distinct groupings, which allow visibility between and around them. The focus areas are indicated on the Master Street Tree Planting Plan by size and color. The area covered by the circle is indicative of impact of the intensity of the business. The actual boundaries of the focus areas are defined on site by the extent of the business operations.

The City's opportunities to plant along the thoroughfares are limited by the lack of plantable sites and the State Department of Transportation's planting restrictions for State roads. Though the City's planting opportunities are limited, the City will be strongly encouraging the public to follow this plan when planting on private property.

**Table 1: City of Raleigh Street Tree Master Plan:**

Streets are listed alphabetically.

Street segments are ordered north to south and west to east. Trees are listed by common name, then botanical name. For additional information, the user should refer to the Street Tree Master Plan--Table of Trees and Tree Attributes.

Street	From	To	Primary Species	Second Species	Third Species
Atlantic Ave	Spring Forest Rd	Millbrook Rd	Elm, Chinese lacebark Ulmus parvifolia	Zelkova Zelkova spp.	Elm, other disease resistant Ulmus spp.
Atlantic Ave	Millbrook Rd	Whitaker Mill Rd	Planetree, London Platinus x acerifolia	Pines Pinus spp.	
Atlantic Ave	Whitaker Mill Rd	Capital Blvd	Oaks Quercus spp.	Maples: red & Freeman Acer: rubrum, freemanii	Hackberry Celtis spp.
Avent Ferry Rd	Western Blvd	I-440	Oaks Quercus spp.	Pines Pinus spp.	
Blount St	Wake Forest Rd	Hammond Rd	Oaks Quercus spp.	Maples: red & Freeman Acer: rubrum, freemanii	
Blue Ridge Rd	Edwards Mill Rd	Wade Ave	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Blue Ridge Rd	Wade Ave	Western Blvd	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Buffaloe Rd	Capital Blvd	Wake Expressway	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Capital Blvd	Wake Expressway	Dawson-McDowell	Oaks Quercus spp.		
Crabtree Blvd-prop	US 1	I-440	Sophora Sophora japonica	Elm, Chinese lacebark Ulmus parvifolia	
Creedmoor Rd	Wake Expressway	US 70	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Dawson St, South	Inside I-440		Elm, Chinese lacebark Ulmus parvifolia	European hornbeam Carpinus betulus	

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Durant Rd	Falls of Neuse Rd	US 1	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Ebenezer Church Rd	Duraleigh Rd	Edwards Mill Rd	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Edenton St & New Bern Ave	State Capital	To I-440	Zelkova Zelkova spp.	Elm, Chinese lacebark Ulmus parvifolia	Elm, other disease resistant Ulmus spp.
Edwards Mill Rd	US 70	Duraleigh Rd	Birch, river Betula nigra	Hackberry Celtis spp.	
Edwards Mill Rd	Duraleigh Rd	Hillsborough St	Pistache, Chinese Pistacia chinensis	Linden Tilia: americana, tomentosa	
Falls of Neuse Rd	Durant Rd	Strickland Rd	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Falls of Neuse Rd	Strickland	Spring Forest Rd	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	Sweetgum (fruitless) Liquidambar styraciflua 'Rotundiloba'
Falls of Neuse Rd	Spring Forest Rd	Millbrook Rd	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Falls of Neuse Rd	Millbrook Rd	Wake Forest Rd	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Garner Rd	Martin Luther King Blvd	Corporate Limits	Pistache, Chinese Pistacia chinensis	Linden Tilia: americana, tomentosa	
Glenwood Ave	I-440	Oberlin Rd	Birch, river Betula nigra	Goldenrain tree Koelreuteria paniculata	
Glenwood Ave	Oberlin Rd	Hillsboro St	Oaks Quercus spp.	Planetree, London Platanus X acerifolia	Goldenrain tree Koelreuteria paniculata
Gorman St	Hillsborough St	Tryon Rd	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	

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Hammond Rd	I-440	US 70	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Hillsborough St	Youth Center Dr	I-440	Crape myrtles-disease resistant Lagerstroemia spp.	Oaks Quercus spp.	
Hillsborough St	I-440	Oberlin Rd	Hornbeam, European Carpinus betulus	Zelkova Zelkova spp.	
Hillsborough St	Oberlin Rd	Glenwood Ave	Zelkova Zelkova spp.	Goldenrain tree Koelreuteria paniculata	European hornbeam Carpinus betulus
Hillsborough St	Glenwood Ave	Capital Square	Oaks Quercus spp.		
Hodge Rd	US 64	Rock Quarry Rd	Planetree, London Platanus X acerifolia	Pines Pinus spp.	
I-40			Pines Pinus spp.	Hardwoods, mixed	
I-440			Pines Pinus spp.	Hardwoods, mixed	
Jones Franklin Rd	Western Blvd	I-40	Planetree, London Platanus X acerifolia	Pines Pinus spp.	
Lake Wheeler Rd	South Saunders St	I-440	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Lake Wheeler Rd	I-440	Corporate Limit	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Lead Mine Rd	Strickland Rd	US 70	Birch, river Betula nigra	Hackberry Celtis spp.	
Leesville Rd	Northern Corporate Limits	Millbrook Rd	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	

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Leesville Rd	Millbrook Rd	US 70	Sophora Sophora japonica	Elm, Chinese lacebark Ulmus parvifolia
Litchford Rd	Wake Expressway	Spring Forest Rd	Maples: red & Freeman Acer: rubrum, freemanii	Pines Pinus spp.
Lynn Rd	US 70	Ray Rd	Ash, green Fraxinus pennsylvanica	Tupelo Nyssa: sylvatica, aquatica
Lynn Rd	Ray Rd	Six Forks Rd	Zelkova Zelkova spp.	Elm, Chinese lacebark Ulmus parvifolia
Martin Luther King Blvd Ext	Proposed west end of MLK	Rock Quarry Rd	Elm, Chinese lacebark Ulmus parvifolia	
Martin Luther King Blvd	Rock Quarry Rd	Poole Rd	Ash, green Fraxinus pennsylvanica	Tupelo Nyssa: sylvatica, aquatica
McDowell St, South	Capital Blvd	South Saunders St	Elm, Chinese lacebark Ulmus parvifolia	Hornbeam, European Carpinus betulus
Milburnie Rd-prop	US 401	US 64	Planetree, London Platanus X acerifolia	Pines Pinus spp.
Millbrook Rd	US 70	Six Forks Rd	Planetree, London Platanus X acerifolia	Pines Pinus spp.
Millbrook Rd	Six Forks Rd	Atlantic Ave	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica
Morgan St	Hillsborough St	New Bern Ave	Zelkova Zelkova spp.	
NC 54 & Western Blvd	I-40	I-440	Oaks Quercus spp.	
New Hope Rd	Capital Blvd	Raleigh Blvd	Maples: red & Freeman Acer: rubrum, freemanii	Pines Pinus spp.

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New Hope Rd	Raleigh Blvd	Poole Rd	Pistache, Chinese Pistacia chinensis	Oaks Quercus spp.	
New Hope Rd	Poole Rd	Rock Quarry Rd	Maples: red & Freeman Acer: rubrum, freemanii	Pines Pinus spp.	
New Hope Rd	Rock Quarry Rd	I40	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Perry Creek Rd	US 1	US 401	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Person St	Poplar St	south to I-440	Oaks Quercus spp.	Maples: red & Freeman Acer: rubrum, freemanii	Hackberry Celtis spp.
Poole Rd	Martin Luther King Jr Blvd	I-440	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Poole Rd	I-440	Wake Expressway	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Raleigh Blvd	I-440	I-440	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Rock Quarry Rd	Lenoir St	Raleigh Blvd	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Rock Quarry Rd	Raleigh Blvd	I-40	Birch, river Betula nigra	Hackberry Celtis spp.	
Rock Quarry Rd	I-40	Wake Expressway	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Sanderford Rd	South of I-440		Sophora Sophora japonica	Elm, Chinese lacebark Ulmus parvifolia	
Six Forks Rd	Strickland Rd	Sawmill Rd	Pistache, Chinese Pistacia chinensis	Linden Tilia: americana, tomentosa	

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Six Forks Rd	Sawmill Rd	Spring Forest Rd	Oaks Quercus spp.		
Six Forks Rd	Spring Forest Rd	Northbrook Dr	Pistache, Chinese Pistacia chinensis	Linden Tilia: americana, tomentosa	
Six Forks Rd	Northbrook	I-440	Oaks Quercus spp.		
Six Forks Rd	I-440	Atlantic Ave	Pistache, Chinese Pistacia chinensis	Linden Tilia: americana, tomentosa	
Six Forks Rd	Atlantic Ave	US 1	Sophora Sophora japonica	Elm, Chinese lacebark Ulmus parvifolia	
Skycrest Dr	I-440	Wake Expressway	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
South Saunders St	Inside I-440		Crape myrtles-disease resistant Lagerstroemia spp.	Oaks Quercus spp.	
South Saunders St	I-440	Tryon Rd	Oaks Quercus spp.		
Spring Forest Rd	Six Forks Rd	Falls of Neuse Rd	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Spring Forest Rd	Falls of Neuse Rd	Atlantic Ave	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Spring Forest Rd	Atlantic Ave	US 1	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
SR 2224	US 401	Milburnie Rd	Tupelo Nyssa: sylvatica, aquatica	Baldcypress Taxodium: distichum, ascendens	
Strickland Rd	Leesville Rd	Falls of Neuse Rd	Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	
Tarboro Rd	Inside I-440		Honeylocust cultivars Gleditsia triacanthos cultivars	Ginkgo-male trees only Ginkgo cultivars	

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Tryon Rd	Jones Franklin Rd	Avent Ferry Rd	Oaks Quercus spp.	Pines Pinus spp.	
Tryon Rd	Avent Ferry Rd	RR Tracks	Oaks Quercus spp.	Pines Pinus spp.	
Tryon Rd	RR Tracks	US 401/ US 70	Planetree, London Platanus X acerifolia	Pines Pinus spp.	
Tryon Rd	US 401/ US 70	Garner Rd	Planetree, London Platanus X acerifolia	Pines Pinus spp.	
Tryon Rd Ext			Oaks Quercus spp.	Pines Pinus spp.	
US 1 North			Oaks Quercus spp.		
US 401 North			Oaks Quercus spp.		
US 401 South			Oaks Quercus spp.		
US 64, Old	I-440	Wake Expressway	Oaks Quercus spp.	Hardwoods, mixed	
US 64-prop			Hardwoods, mixed	Pines Pinus spp.	
US 70 East			Oaks Quercus spp.		
US 70 West			Oaks Quercus spp.		
Wade Ave	I-40	I-440	Pines Pinus spp.	Hardwoods, mixed	
Wade Ave	I-440	Glenwood Ave	Baldcypress Taxodium: distichum, ascendens	Linden Tilia: americana, tomentosa	

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Wake Expressway			Pines Pinus spp.	Hardwoods, mixed	
Wake Forest Rd	Falls of Neuse Rd	I-440	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Wake Forest Rd	I-440	Person St	Maples: red & Freeman Acer: rubrum, freemanii	Tupelo Nyssa: sylvatica, aquatica	
Western Blvd	Inside I-440		Oaks Quercus spp.		
Whitaker Mill Rd	Five Points	Wake Forest Rd	Elm, Chinese lacebark Ulmus parvifolia	Hackberry Celtis spp.	
Wilmington St	Inside I-440		Maples: red & Freeman Acer: rubrum, freemanii	Oaks Quercus spp.	
Wilmington St	South Saunders St	I-440	Oaks Quercus spp.	Maples: red & Freeman Acer: rubrum, freemanii	



**Table 2: Table of Trees and Tree Attributes**

Species 'Cultivar' (Common name)	Visual Traits							Tolerances							Misc. Factors			
	F	H	S	O	F	F	F	C	C	P	D	P	D	P	R	S	Y	
	OR	ER	PER	TR	COL	COL	MON	LAY	OMP	PO	DR	OLL	OUT	SAL	UR	RO	AR	
	M	T	A	A	OR	OR	TH	S	PAR	RO	RO	IO	TO	TY	BLE	BLE	DE	
Nyssa sylvatica (blackgum)	P	5	3	LF	R					T	T	T	T		5	N	FS, PS	3
Phellodendron amurense 'Macho' (amur corktree)	O	3	3	B	Y					T	T	T			4	RS,WE	FS	2
Pinus taeda (loblolly pine)	P	5	3		EV			T			T		I		4	I	FS	2
Pistacia chinensis (Chinese pistache)	O	3	2		OR						T				4	PB	FS	2
Platanus x acerifolia 'Bloodgood' (London planetree)	P	5	5	B	YB				T	T	T	T			4	D,DE,I,RS	FS, PS	3
Platanus x acerifolia 'Columbia' (London planetree)	P	5	5	B	YB				T	T	T	T			4	D,DE,I,RS	FS, PS	3
Platanus x acerifolia (London planetree)	R	5	5	B	YB				T	T	T	T			4	D,DE,I,RS	FS, PS	3
Quercus macrocarpa (bur oak)	O	5	5		YB			T	I	T	T	T			4	DF	FS	3
Quercus acutissima (sawtooth oak)	O	3	3		Y				T	T	T				4	DF	FS	2
Quercus bicolor (swamp white oak)																		
Quercus imbricaria (shingle oak)	O	4	4		B						T		T		3	D,I,DF	FS, PS	3
Quercus lyrata (overcup oak)	O	4	3		B				T	T					3	DF	FS	3
Quercus phellos (willow oak)	O	5	5		B			T	T	T	T	T	T		5	DF,DE,RS	FS	3
Quercus rubra (northern red oak)	R	4	4	LF	R				T			T	T		4	DF,RS	FS, PS	3
Quercus shumardii (Shumard oak)	P	4	4	LF	R				T	T	T	T	T		5	DF,PB	FS	3
Quercus virginiana (live oak)	S	5	5		EV				T	T	T		T		5	DF,RS		3
Sophora japonica 'Princeton upright' (scholartree)	O	3	2	FI	N	W	7,8		T		T	T	T		5	DF,DE	FS	2
Sophora japonica 'Regent' (scholartree)	O	3	3	FI	N	W	7,8		T		T	T	T		5	DF,DE	FS	3
Taxodium distichum (baldcypress)	P	4	2	B,LG	B				T	T		T			4	N	FS	2
Sophora japonica 'Princeton upright' (scholartree)	O	3	2	FI	N	W	7,8		T		T	T	T		5	DF,DE	FS	2
Sophora japonica 'Regent' (scholartree)	O	3	3	FI	N	W	7,8		T		T	T	T		5	DF,DE	FS	3
Taxodium distichum (baldcypress)	P	4	2	B,LG	B				T	T		T			4	N	FS	2

**Table 2: Table of Trees and Tree Attributes**

Species 'Cultivar' (Common name)	Visual Traits						Tolerances						Misc. Factors		
	FORM	HEIGHT	SPREAD	ORNAMENTAL TRAITS	FALL COLOR	FLWR COLOR	FLWR MONTH	CLAY	COMPACTION	POOR DRNG	POLLUTION	DURABILITY	PROBLEMS	SUNSHADE	YARD WIDTH
Tilia americana (American linden)	P	4	3	Fr, LG	Y	YW	6		T	T	T	4	D, I, PS	FS	2
Tilia tomentosa (silver linden)	P	4	4	Fr, LG	Y	YW	6		T	T	T	4	D, I, PS	FS	2
Ulmus parvifolia (Chinese lacebark elm)	V	4	4	B	Y				T	T	T	5	C, PB, RA, RS	FS, PS	3
Zelkova serrata 'Green Vase' (Japanese zelkova)	V	4	4		R				T		T	4	C, PB, WW	FS, PS	3
Zelkova serrata 'Village green' (Japanese zelkova)	V	4	4		R				T		T	4	C, PB, WW	FS, PS	3

**Key**

**FORM** (Of the crown at maturity): C=Columnar, O=Oval, P=Pyramidal, R=Round, S=Spreading, U=Upright, V=Vase-shaped

**HEIGHT** (At maturity): 1=Very small(VS): <=20'; 2=Small(S): 20'-35'; 3=Medium(M): 35'-50'; 4=Large(L): 50'-65'; 5=Very Large(VL): >65'

**SPREAD** (Crown spread at maturity): 1=Very narrow(VN): <=20'; 2=Narrow(N): 20'-35'; 3=Medium(M): 35'-50'; 4=Wide(W): 50'-65'; 5=Very wide(VW): >65'

**ORNAMENTAL TRAITS**: B=Bark, Fl=Flowers, Fr=Fruit, LF=Fall leaf color, LG=Growing season leaf color, LY=Year-round leaf color

**FALL COLOR**: B=Brown, E=Evergreen, G=Green, O=Orange, N=Not significant, R=Red, Y=Yellow

**FLWR COLOR** (Flower color): L=Lavender, Pk=Pink, Pu=Purple, W=White, Y=Yellow, V=Variable

**FLWR MONTH** (Flower month. Number is month of year.)

**TOLERANCES** (Tolerance of conditions found in urban environments): I=Intolerant of, S=Somewhat tolerant of, T=Tolerant of): COMPACTION (Soil compaction), POOR DRNG (Poor soil drainage),

**DURABILITY**: 1=Very Low, 2=Low, 3=Medium, 4=High, 5=Very High

**PROBLEMS** (Potential maintenance problems): C=Crotches split, D=Disease; DE=Foliage, twig, bark debris; DF=Fruit debris, I=Insect, PS=Needs pruning to eliminate sprouts, PB=Needs pruning to develop good branch structure, PT=Needs pruning to develop single stem tree form, RA=Aggressive roots, RS=Surface roots, WE=Needs early watering, WW=Weak wooded

**SUN/SHADE** (Needs): FS=Full sun, PS=Partial shade, SH=Shade

**YARD WIDTH** (Minimum width of planting strip to minimize sidewalk damage by tree roots): 1: narrow strip; 2: medium strip; 3: wide strip

## ALL ROADS (SMALL MATURING TREES)

All street-planting plans may allow for small maturing trees to be intermixed with large maturing trees. Small maturing trees shall be used where trees are to be planted under primary electrical lines. (Table 3)

**TABLE 3**  
**Small Maturing Trees**  
 All Roads Tree Selection:

trident maple	<i>Acer buergeranum</i>
hedge maple	<i>A. campestre</i>
amur maple	<i>A. ginnala</i>
paperbark maple	<i>A. griseum</i>
Japanese maple	<i>A. palmatum</i>
serviceberry	<i>Amelanchier canadensis</i>
redbud	<i>Cercis canadensis</i>
redbud	<i>C. reniformis</i> 'Oklahoma' and 'Texas White'
fringetree	<i>Chionanthus virginicus</i>
dogwood	<i>Cornus florida</i>
franklinia	<i>Franklinia alatamaha</i>
Carolina silverbell	<i>Halesia carolina</i>
foster holly (standard)	<i>Ilex x attenuata</i> 'Fosteri' (standard)
American holly (standard)	<i>Ilex opaca</i> (standard)
goldenrain tree	<i>Koelreuteria paniculata</i>
crepe myrtle	<i>Lagerstroemia indica</i>
Jane magnolia	<i>Magnolia stellata</i> x <i>quinquepeta</i> 'Jane'
Korean Mountain Ash	<i>Sorbus alnifolia</i>

## **Areas Controlled by Design Policies**

### **FOCUS AREAS:**

CITY - uniformity of plant material is recommended, with deciduous, open form and high branching trees, spacing is to be maximized. Evergreens and small maturing trees and large shrubs are restricted especially at intersections.

COMMUNITY - an increase in plant mix. The density of plantings are to be increased with allowances for small maturing trees. Evergreens are to be restricted.

NEIGHBORHOOD - All types of plant material are allowed (as per the Planting Standards), but arranged in distinct groupings to allow visibility between and around them.

### **NEIGHBORHOOD STREETS:**

Established neighborhoods - will receive maintenance attention for the predominate mix and allow new species to intermix.

Unplanted neighborhoods - will be planted according to the resident citizens' preference of species as listed by the Urban Forester.

Special Highway Overlay District area (beltline) development and landscaping is governed by Chapter 10, Planning and Development, Section 10-2051 and Section 10-2052, Special Highway Overlay District I & II. The preservation of a mixed evergreen and deciduous buffer is required. More specific information can be obtained from the Inspection Department.

Tables 1, 2, 3, and 4 will be used as a guide for the trees the City will be planting on City property and what the City is recommending for use in the street yard of private property along the thoroughfares. The tree list is expandable to allow for additions to the species and cultivars of the genera listed. In addition, the use of individual species from the list will be tempered by the availability of these trees from the nursery industry, insect and disease problems, and other factors that may require the reduction in their emphasis. The listing will be updated periodically as experience dictates.

## **CHAPTER 3: PLANTING STANDARDS**

### **DEFINITIONS**

**SHADE TREE** - Evergreen or deciduous woody plant having one straight, well defined stem, and attaining a minimum height and crown spread at maturity of thirty-five feet (35'), and thirty feet (30') respectively. In addition, it must not have an offensive odor, or require excessive maintenance such as but not limited to: frequent treatments to keep it free of insects or disease, or cleanup due to litter. Trees with multiple stems (such as birch) may be used by permission of the Urban Forester.

**ORNAMENTAL TREE** - A woody plant attaining a mature height of not more than thirty-five feet (35') and possessing one or more of aesthetically attractive qualities such as beautiful flowers, ornamental fruit, or pleasing foliage, bark, or form; ornamental trees must conform to the same requirements as shade trees.

**CITY PROPERTY** - City owned or controlled property.

**STREETSIDE RIGHT OF WAY** - Planting strip running parallel to the street between the curb and property line of private property.

**MEDIAN, PLANTING** - That portion of public right-of-way lying between two (2) roadways and used for the separation of vehicular traffic. A planting median is unpaved and may or may not have a raised curb.

**CONTAINER** - Any receptacle which holds soil and plants.

**PLANTING BED** - A designated area where the soil profile is discontinuous with that of the surrounding native soil and has been made so by soil amendments.

**PLANTING VAULT** - An in-ground container, usually concrete or metal, set below grade to hold landscape plants; for the purposes of this document, subject to all provisions for containers.

## PERMIT REQUIREMENTS

A permit must be applied for at least ten (10) working days in advance of planting; planting projects of five (5) or more trees should be submitted for review well in advance of the start up date.

All requests to plant five (5) or more trees on city property shall be accompanied with a planting plan in duplicate. The Urban Forester shall review and approve the plan before issuing a permit.

All planting plans shall show accurately:

- The proposed street width together with its subdivision of pavement, curb and gutter, parking strip and sidewalk areas to a definite indicated scale.
- The location, size and variety of each and every proposed street line in scaled relation to the other features of the plan.
- The nature of the soil in the planting space to a depth of two feet (2') and all existing and proposed surface and subsurface drainage systems.
- The location of all existing and proposed utility poles, fire hydrants, storm drains, water meters, junction boxes, phone and power panels, or ground mounted devices, and above and below ground utility lines.

To plant five (5) or more trees on City property, in addition to the “Tree Permit” a “Development and Construction Permit Application - Right-of-Way” must be obtained from the Inspection Department. This “Right-of-Way” permit requires proof of insurance and a bond.

On State Highway rights-of-way, (List can be obtained from the Urban Forester) the State requires that planting plans be submitted to the City for its approval. Then the City will submit the plan to the State for its approval. Planting plans must follow the North Carolina Department of Transportation’s “Guidelines for Planting within Highway Right-of-Way”, prepared by: Landscape Unit, Division of Highways, P.O. Box 25201, Raleigh, NC 27611. On State rights-of-way the State Guidelines shall supersede the City’s standards when in conflict.

Violation of or deviation from any element of a permit shall be considered sufficient grounds for the suspension or revocation of the entire permit. Resumption of work shall be at the discretion of the Urban Forester.

Any permit or authorization granted by the Urban Forester may be withdrawn by him, or his designated representative, at his discretion.

## **PERMIT REQUIREMENTS**

All excess waste material shall be continuously and promptly removed.

All reasonable precautions must be taken to avoid damage to existing structures, plants and lawns.

Permit holder shall not allow vehicles, heavy equipment, or stored materials in areas where they might cause compaction of soil over tree roots, lawns, or damage to paved areas. Stored material and equipment must be arranged so as not to impede the passage of pedestrian or vehicular traffic. Intended material and equipment storage areas shall be indicated in the plans submitted for approval by the Urban Forester.

All pavement, sodded or planted areas, structures, and substructures which are disturbed during the execution of the work shall be restored, or caused to be restored, to their original condition, or better, by the permit holder.

The permit holder shall be responsible for the prevention of the dropping, tracking, and/or accumulation of dirt, mud or other loose material on the public streets or into public buildings. (ref. City Code Sec. 12 - 1035, Hauling refuse; tracking mud)

Should any damage or unauthorized disturbance to any public property (including pavements or sidewalks) or utility facility occur, the contractor shall immediately notify the Urban Forester.

Plant material shall be maintained and guaranteed by the permit holder for a period of one year from substantial completion of the project against defects including but not limited to: death or unsatisfactory growth--exceptions include damage as a result of abuse or unusual phenomena by forces beyond the permit holder's control.

The permit holder shall remove and replace any plant found to be dead or unhealthy during the warranty period as soon as possible during the appropriate planting season. A full inspection at the end of the warranty period shall be made by the Urban Forester, to determine if any further

action or replacements are warranted.

For soil testing requirements, see Chapter 3: "Planting"

## **PLANT MATERIAL**

All plant material shall be subject to the approval of the Urban Forester for quality, size, color, and health, and no substitution shall be permitted without written permission of the Urban Forester. Any plant, rejected for any reason by the Urban Forester, shall be removed immediately, and replaced by a plant of the same designated cultivar, size, and root, by and at the expense of the permit holder, at a time specified by the Urban Forester.

All nursery stock shall be grown in hardiness zones 6, 7, or 8 as defined by the Arnold Arboretum Hardiness Map of May 1, 1967 (also USDA Hardiness Zones 6,7,8).

Specified varieties or cultivars of any species shall be specimen type trees or shrubs and must meet all requirements of the American Standards for Nursery Stock, sponsored by the American Association of Nurserymen Inc, currently in effect (ANSI Z60.1 — 1986 or current).

At least one of each species or cultivar of plant material shall have securely attached a waterproof label bearing the botanical and common names.

Plants shall have normal, well-developed branches, be uniformly and fully branched as seen from all sides, have good crotch angles, and a vigorous root system.

All plants must be alive and healthy, free from dead or broken branches, blemishes, scars, decayed spots, frost cracks, disfiguring knots, bruises, broken bark, or mutilation of any nature.

All pruning wounds shall be well healed with no evidence of decay.

Shade trees shall be free from branches to a minimum height of four feet (4') or to half their height (from the ground to the average growth of the main part of the crown) up to eight feet (8') whichever is greater. Shade trees must be at least 1 1/4" - 1 1/2" in diameter, measured six inches (6") above the ground.

Ornamental trees shall be at least five to six feet (5'-6') in height.

Balled and burlapped shade trees shall be nursery grown in a similar (or a heavier) USDA soil textural class to that of the planting site.

No plants shall be bound with rope or wire at any time so as to damage bark, branches, or foliage, or destroy its natural shape.

All plants shall be properly protected by a tarpaulin or other suitable covering during shipment to protect from desiccation or sun scorch. Evergreen plants should be sprayed with an anti-transpirant prior to digging.

Plants shall not be stored more than twenty-four (24) hours on site, from delivery until planting. While being held, they must be arranged so as not to impede pedestrian or vehicular traffic or safety, and must be protected from desiccation or any other damage by being kept in the shade, well-heeled in mulch, and watered.

The Urban Forester shall have the option to inspect the plants while they are growing in the nursery, before digging, at the permit holder's expense.

The permit holder shall notify the Urban Forester, at least three (3) working days in advance, of the expected time and manner of shipment and furnish an itemized list of the plants shipped, showing their quantity and size, at that time.

All plants shall meet the requirements of the state and federal law with respect to disease and insect infestation. Any necessary State or Federal certification of inspection by governing authorities for landscape materials shall be obtained by the permit holder, and furnished for review of the Urban Forester along with an itemized list of the plants in the actual shipment.

Final acceptance of the job shall not be given by the Urban Forester until 90% of the work is completed.

## PLANT MATERIAL

### Problem Trees; use restricted

<i>Acer negundo</i>	box elder
<i>Acer saccharinum</i>	silver maple
<i>Ailanthus altissima</i>	tree of heaven
<i>Albizia julibrissin</i>	mimosa
<i>Betula papyrifera</i>	paper (white) birch
<i>Crateagus spp.</i>	hawthorn
<i>Eleagnus angustifolia</i>	Russian olive
<i>Ginkgo biloba</i> , female	ginkgo - female only
<i>Malus spp.</i>	crabapple
<i>Metasequoia glyptostroboides</i>	dawn redwood
<i>Morus spp.</i>	mulberry
<i>Prunus spp.</i>	cherry, plum
<i>Pyrus calleryana</i> 'Bradford'	Bradford pear
<i>Salix spp.</i>	willow
<i>Ulmus spp.</i>	elm

The use of listed trees shall be restricted on City property. Exceptions may be granted by the Urban Forester if the permit holder can provide satisfactory evidence that a special selection or cultivar does not have objectionable characteristics.

## **PLANTING:**

For optimal survival, planting should begin in autumn after leaf fall, continuing until early spring before bud break.

Coniferous trees must be planted balled and burlapped.

The root ball must be protected from drying out or physical damage, and be intact when planted.

Planting shall be done only when the soil is not excessively wet or frozen.

No balled and burlapped plant shall be planted if the ball is cracked or broken either before or during the planting process.

Processed balled plants (as defined by ANSI Z60.1 - 1986) shall not be accepted as balled and burlapped. Burlapping materials shall be biodegradable.

All wire, plastic, string, or other binding material must be removed from around the trunk and upper 1/3 of the root ball, and the burlap or wrapping material pulled down around the ball once it is in the planting hole so that it will be completely covered by backfill.

Plants shall be planted such that the original grade at which they were grown is at the same level as the finished grade when planted, or no more than one inch (1") higher unless special drainage provisions are required, with allowances incorporated for settling. No air pockets should remain in the planting hole and good contact between the soil and roots should be established. All construction materials and/or debris shall be removed from the planting holes and beds prior to planting. Pedestal planting is recommended.

The planting hole shall be at least one and a half times the diameter of the root ball. The sides of the hole shall be vertical, and shall be scored with a sharp tool to promote root growth into the surrounding soil.

An acceptable alternative planting method: turn over the soil in planting area five (5) times the diameter of the root ball. Set the tree on undisturbed solid ground in the center of the area so that the upper surface of the root ball is level with the surrounding soil.

Container plants may be used if being planted in a container or planting bed, with these provisions:

During planting the growth medium shall be largely removed, and any girdling or circling roots shall be either spread out or pruned.

Bareroot trees shall be planted in the original soil of the site with any girdling or circling roots either spread out or pruned.

Root ball and soil around the plant to the drip line shall be thoroughly and deeply watered at the time of planting.

A watering saucer shall be formed of soil around the planting hole when backfill is returned to planting hole, and before mulching.

Pruning at the time of planting is to be avoided unless to correct minor structural problems; no wound "paint" or "dressing" shall be applied.

Mulch shall be placed within twenty-four (24) hours of planting, to a depth of three inches (3"), using organic material or a permeable fabric with an organic material over it. Hardwood mulch shall be well composted, if used. Mulch shall be kept three to six inches (3"-6") away from the stem(s) of plants to prevent rot, disease, and insect problems. This also applies to the surface layer of gravel used in vaults, containers, or tree pits.

The permit holder may be required to submit the results of a soil test, prior to planting, from the proposed site. The sample shall have been taken from the surface to a depth of two feet (2'), and tested for pH, bulk density, soil nutrient level, texture, and organic matter content. Planting medium, native soil, or planting mix shall have the pH corrected to the 5.0 - 6.0 range, or as recommended by soil test, prior to planting.

Backfill shall consist of the original soil from the planting hole with no amendments. If the soil is found to be such that it will not support good plant growth, a vault shall be used.

Methods of fertilizer application must have the prior approval of the Urban Forester.

## **GUYING AND STAKING**

If necessary to maintain trees in an upright position, trees shall be supported by proper guying and staking, within forty-eight (48) hours of planting, according to the following provisions:

Stakes shall be sturdy, non-rusting metal, or untreated wood installed outside of, and spaced evenly around, the rootball.

“Angle stakes” are not permitted for use along street side plantings or in pedestrian areas.

For plantings in pedestrian traffic areas, containers, and tree pits, underground guying is recommended. Only untreated wood and galvanized wire shall be used.

Guying and staking shall be done such that the tree is secured from blow-over, but shall allow movement of the trunk two inches (2") in any direction.

No wires shall touch the tree — only broad straps [minimum two inches (2") wide] or new garden hose shall be used at the trunk.

Guy wires shall have provisions for adjustment, such as turnbuckles, and be tagged for visibility and safety.

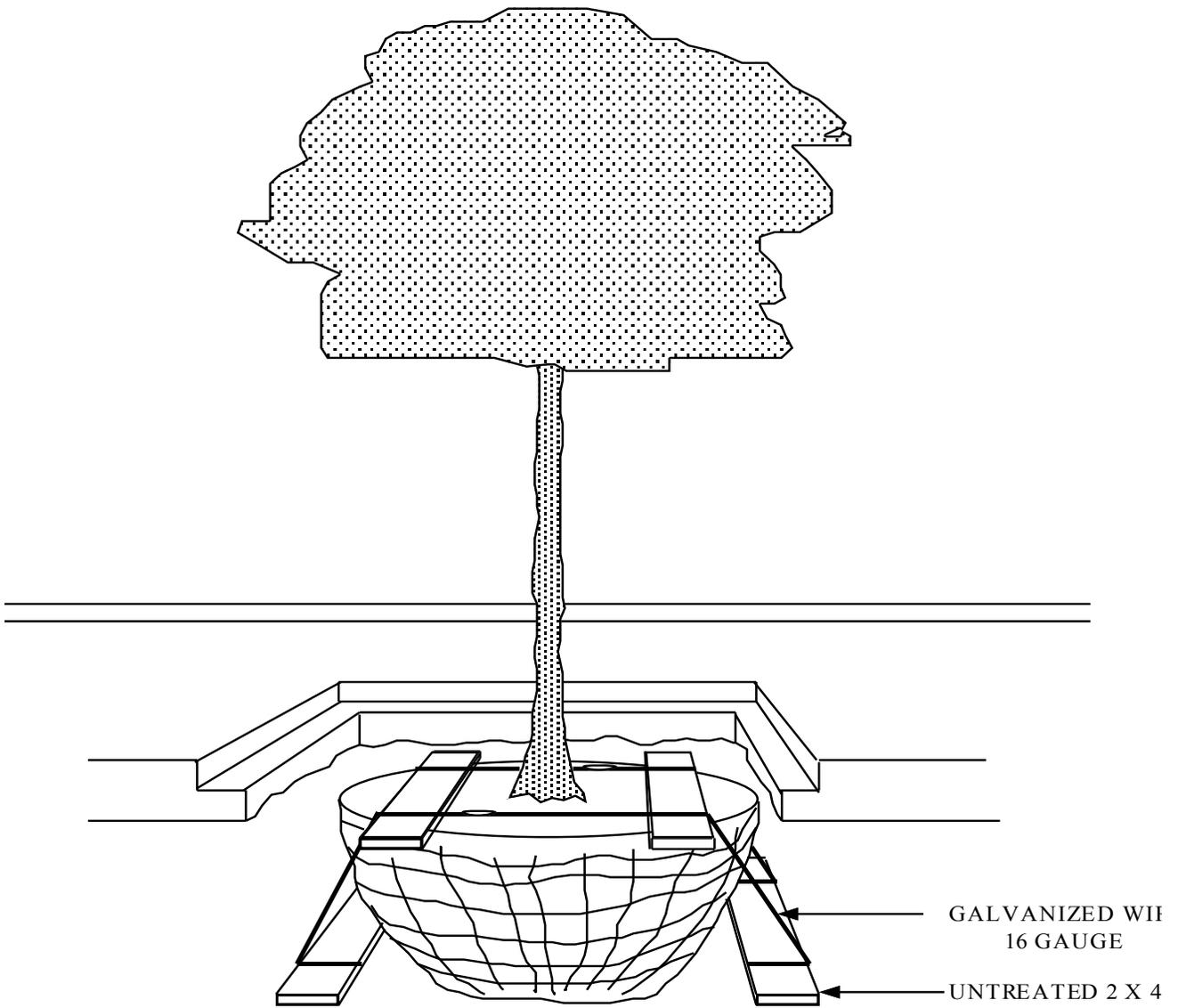


Figure 1. Underground Guy Detail

## EARLY MAINTENANCE

Guying, staking, and wrapping materials shall be removed from the tree at the end of the first year and disposed of lawfully.

From April to October of the first year, newly planted trees shall be watered at least once each week when rainfall is less than one inch (1") for that week so that the combination of rainfall and applied water is equal to one inch (1") of rainfall. Watering shall be sufficient to soak the top eighteen inches (18") of the soil.

Selective pruning shall be restricted to dead, dying, diseased, or broken branches, structural problem, or to suppress rank growth such as water sprouts, using only sharp, clean tools. No "rounding" or "topping" shall be done.

For the first year frequent and thorough inspections shall be made for insect and disease problems and indicated remedies applied promptly. When treatment is necessary, a permit must be obtained from the Urban Forester prior to treatment.

Fertilizer maintenance plans shall have the prior approval of the Urban Forester.

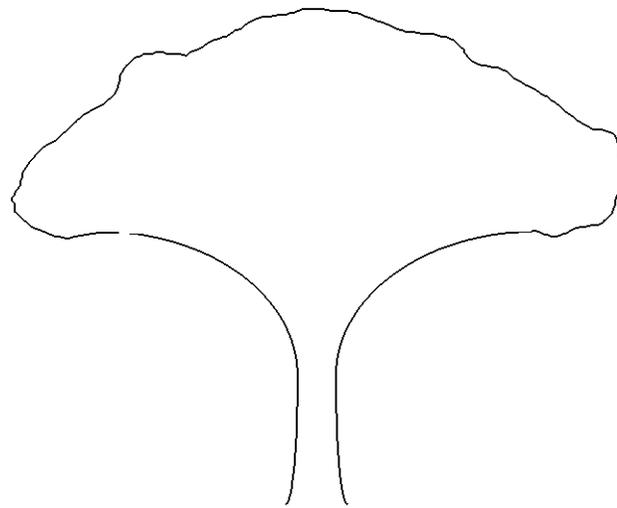
Mulch (organic) shall be maintained at a depth of three inches (3"), or, at sites where a tree has a grate around the base, gravel shall be maintained to the surface of the grate (see Tree Pits).

# LINEAR SPACING

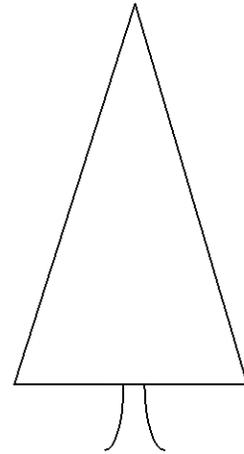
Trees with the following crown forms shall be spaced as follows:

Tree Form	Crown Form *		
	Spreading	Global/Pyramidal	Fastigate/Columnar
Shade Tree	40'	35'	20'
Ornamental Tree	25'	15'	10'

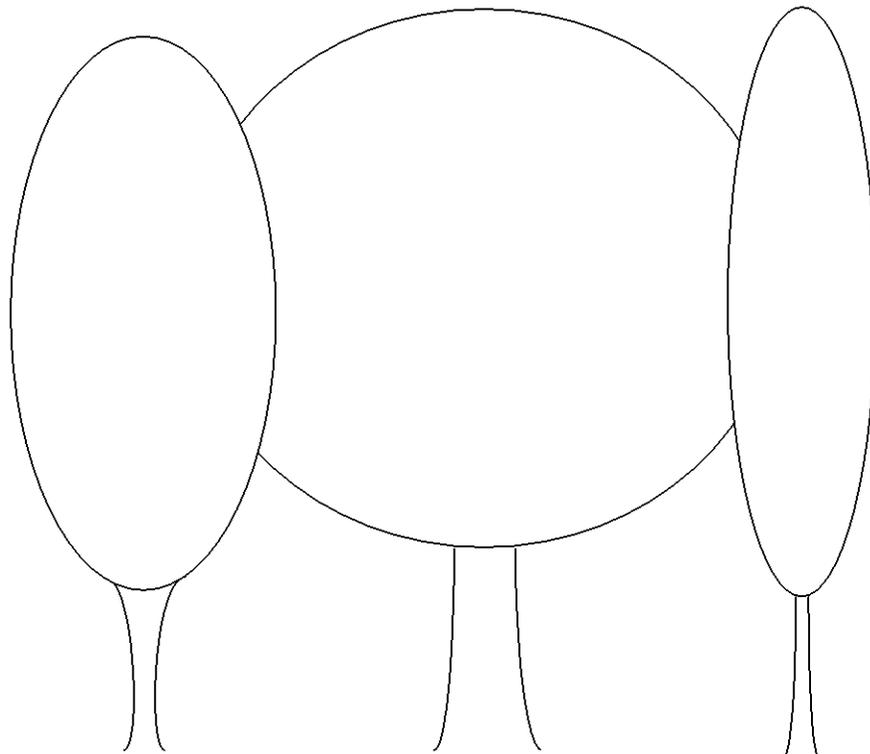
\*See figure 2.



**SPREADING HABIT**



**PYRAMIDAL**



**COLUMNAR**

**GLOBULAR**

**FASTIGIATE**

Figure 2. Tree Crown Forms

**Width of Planting Area Within City Right-Of-Way** ( i.e. distance between the curb and sidewalk):

No tree will be planted where the rooting space is less than four feet (4') in width without approval from the Urban Forester.

The minimum width of a planting site shall be governed by the following formula where **dbh** is the average mature trunk diameter (at 4.5' from the ground) of a given species/cultivar measured in inches and the **width** is the distance, in inches, between the curb and the sidewalk:

$$\text{width/dbh} \times 1.5$$

If the result is less than 1.5 then that species/cultivar cannot be planted at that site.

- *No trees that commonly produce a large buttress root system shall be planted in a site less than seven feet (7') wide (i.e. Quercus phellos).*

**Width of Medians:**

No tree shall be planted in any median that is less than ten feet (10') in width without approval from the Urban Forester and NCDOT. On State rights-of-way, North Carolina Department of Transportation's "Guidelines for Planting within Highway Right-of-way" apply.

## LOCATION STANDARDS

### Trees Planted in the Streetside Right-of-Way

On public streets without sidewalks or on major thoroughfares with no or only one sidewalk, trees will be located to accommodate future sidewalk placement.

Trees will be located in the street right-of-way with regard to current and future utility line corridors.

Trees and shrubs [which may attain a height of three feet (3') or more] which may form a hedge or screen shall not be allowed within the “sight triangle” so as to obscure the sight distances at intersections. The minimum dimensions of the sight distance triangle are: measure fifteen feet (15') back from the intersection along the approach street, then two hundred feet (200') from the intersection, along the property line of the right-of-way, on the cross street (See figure 3, Dimension D1). Curves in the road, hills, and other site-specific factors may require extensions of these dimensions. A complete definition of required sight distances is given in the Sight Distance Policy available from the City of Raleigh Department of Transportation.

Minimum distances from intersections, alleys, and driveways shall be measured from the property line and along the property line (See figure 3).

**Intersections:** No tree shall be located within thirty feet (30') on the near side and within twenty-five feet (25') on the far side (See figure 3). Consideration of the mature size and form of the trees planted nearest the intersection shall be given so that the trees will not constitute a visual obstruction. Trees in medians shall be located a minimum of fifty feet (50') from intersections.

**Alleys:** No tree shall be located within twenty feet (20') on the near side and ten feet (10') on the far side.

**Driveways:** Commercial - no trees shall be located within twenty feet (20') on the near side and ten feet (10') on the far side.

Residential - no trees shall be located within ten feet (10').

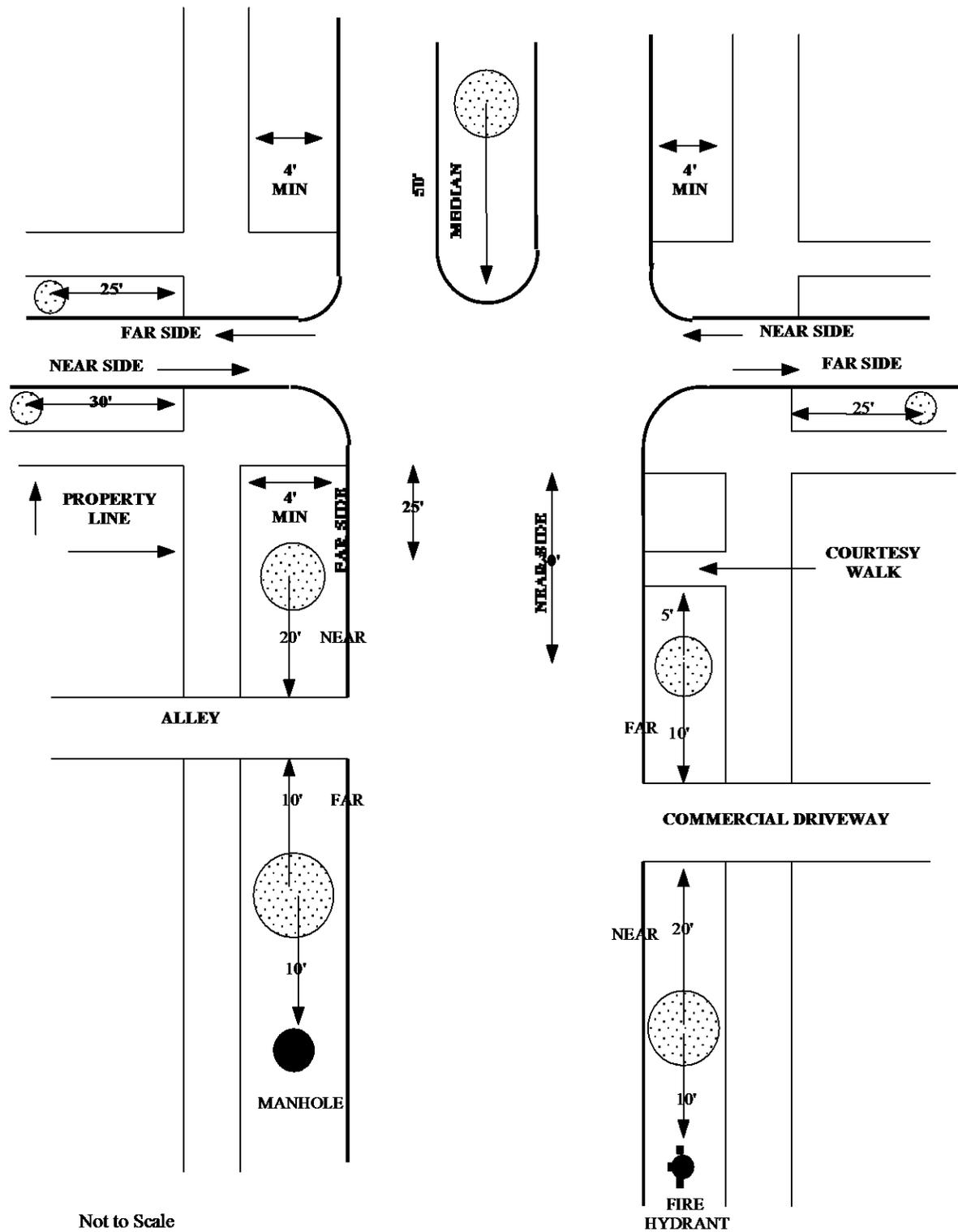
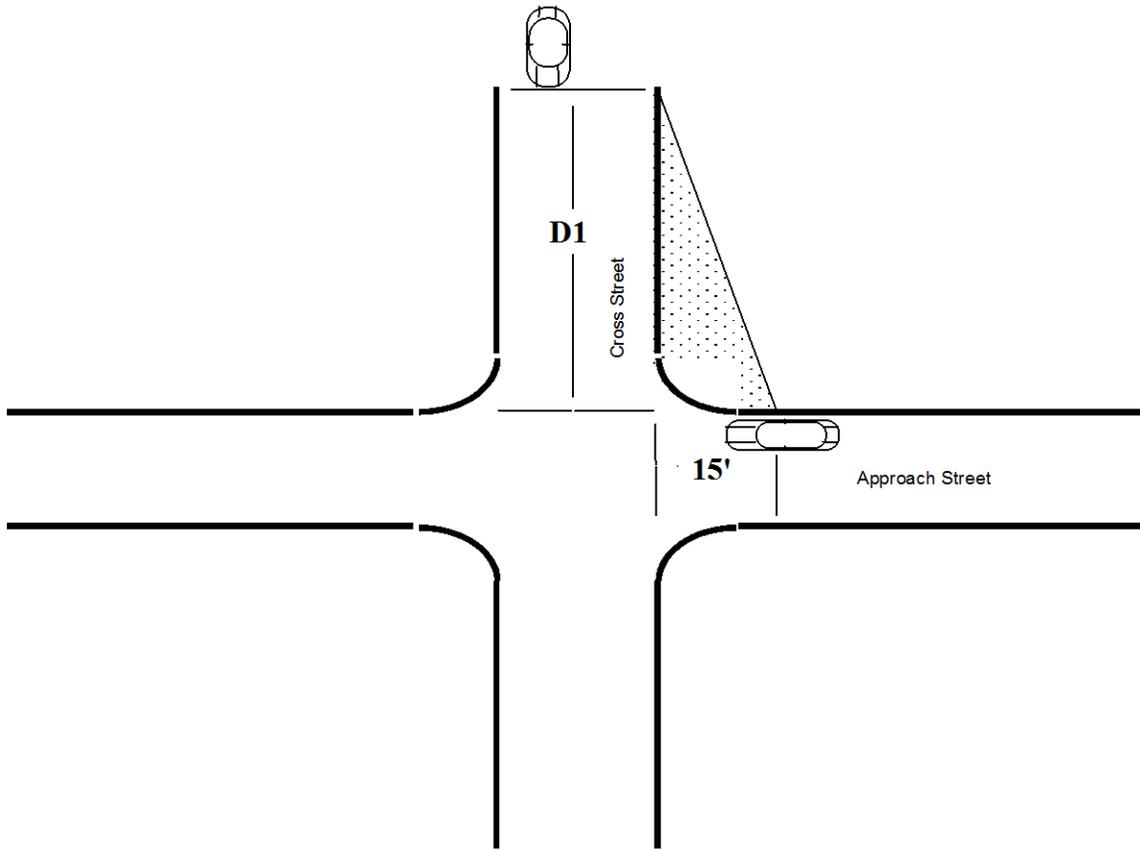


Figure 3. Location Standards



### Sight Triangle

Figure 4. Restricted Vegetation Zone

### Intersection Sight Distance

Speed Limit	Minimum Intersection Sight Distance (feet)	Desirable Intersection Sight Distance (feet)
20	200	250
25	250	325
30	300	420
35	350	525
40	400	670
45	450	840
50	500	1035
55	550	1240

**Minimum Distance from Walks, Curbs and Utilities:**

Sidewalk	2'
Access or courtesy walk	5'
Face of curb	2'
Manholes and catch basins	10'
Fire hydrants	10'
Water meters and other utility boxes	5'□

**Buried Utility Lines that Traverse the Planting Strip:**

< 10" water & sewer	10'
< 16" water & sewer	15'
> water & sewer	20'
All other services	10'

**Overhead Utility Lines:**

No tree with the potential of reaching a mature height of more than thirty-five feet (35') shall be planted in the right-of-way under “primary” overhead wires.

**Minimum Distance from Structures:**

Shade trees	ten feet (10')
Ornamental trees	six feet (6')
Shrubs	three feet (3')

Any tree planted ten feet (10') or closer to a structure shall have an impenetrable root barrier installed near the structure. The root barrier shall run the length of the planting area or the structure, and reach a depth of four feet (4').

**Minimum Distance from Streetlights:**

**Shade tree:**

spreading crown	twenty feet (20')
global/pyramidal	sixteen feet (16')
fastigate/columnar	ten feet (10')□

**Ornamental trees:**

all	ten feet (10')□
-----	-----------------

**Vehicular Area:**

In or adjacent to any vehicular area, provisions shall be made to prevent any parts of the vehicles from touching plants; in addition provision shall be made to protect plants from noxious fumes or chemicals, by providing sufficient distance or by not allowing back-in parking.

**Shrubs Planted in the Streetside Right-of-Way:**

Shrubs shall follow minimum distance requirements for trees for curbs, sidewalks, and utilities. No shrub shall be planted within three feet (3') of a structure.

## TREE PITS

### **Size, Depth, and Design Standards:**

Tree pits in curb attached sidewalks that are twelve feet or greater in width shall have no less than twenty-four square feet (24 sq. ft.) of surface area for root growth. Tree pits must have a minimum depth of three and one half feet (3 1/2') of soil that will support good plant growth.

If an unsatisfactory subgrade soil — as determined from a soil test and at the discretion of the Urban Forester — is encountered, a vault must be installed, using size standards for tree pits, and a sandy loam as a growth medium in the vault (see “Containers ..”). All such work is subject to approval and inspection of the Raleigh Public Works (Encroachment Agreement) and Inspections Departments (Right-of-Way Permit) (Part 7 of the City Code, Chapter 1, Section 7-2001 “Permits and regulation for working in, upon, over, under or adjacent to the streets and sidewalks.”

Drainage shall be provided such that water can flow out of the vault or pit. Test the pit for drainage capacity by filling it with water, which must drain out of the pit within twenty-four (24) hours. To test the site prior to planting, a hole must be dug as deep as the planned tree pit and filled with water, which must drain in the allotted time. The pit shall be barricaded or covered over for public safety. If the soil does not have this drainage capacity, or if a vault is used, constructed drainage shall be supplied. Drainage work is subject to permits from the City departments of Public Works and Inspections, and any regulations in existing City ordinance.

Any tree pit located in the pedestrian way or near a vehicular way where there is a likelihood of de-icing chemicals or salts being used shall have a rim or other provision for preventing such chemicals or salts, runoff, or cleared ice or snow from entering the pit.

Tree pits may have the shape of a rectangle or a circle; other designs will not be allowed except by written permission of the Urban Forester.

Tree pits located on city property shall follow the same standards for spacing, location, and minimum distances from structures as outlined in “Locations Standards” and “Linear Spacing”.

Tree grates shall have provision for trunk expansion of the tree, such as pop out concentric rings in the grate around the trunk.

The area between the soil surface to the top of the tree grate shall be filled with washed #67 crushed granite or #67 “river wash” stone and not an organic mulch.

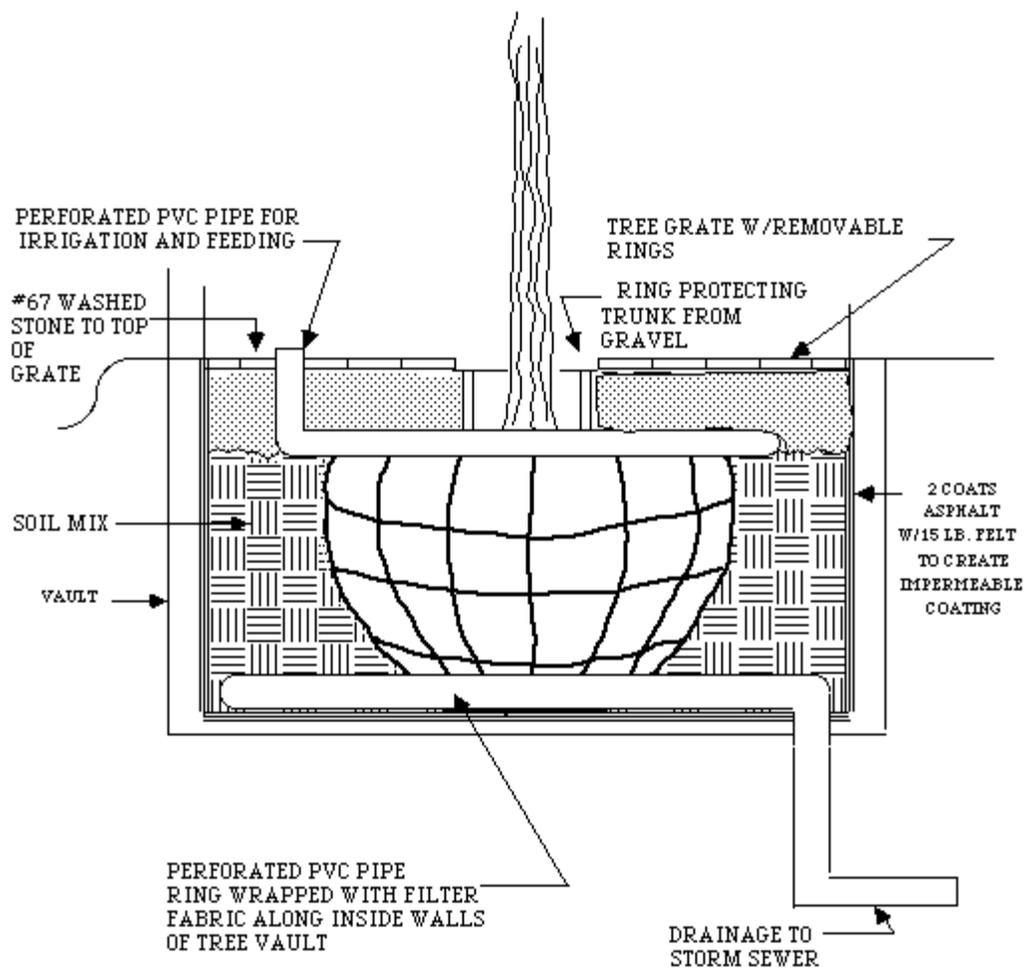
Trees shall be planted at the center of the pit.

Paving of tree pits requires the prior approval of the Urban Forester. Only modular pavers laid without mortar or sealant of any kind, so that air and water can reach the roots, shall be used.

**Excavation of Tree Pits:**

No tree pit shall be dug or prepared until its location is approved by the Urban Forester.

Trees in tree pits may be underplanted with groundcover at the time of planting, and such groundcover may be partially replaced as necessary to maintain it properly. Annuals may not be planted in tree pits, unless permit holder can devise a system whereby the annuals can be planted and maintained without competing with or disturbing trees; such a system must have prior permission of the Urban Forester.



## TREE VAULT DETAILS

Figure 5

## CONTAINERS, PLANTING BEDS, AND VAULTS

### General Requirements:

Containers, planting beds, or vaults must have sufficient volume to allow trees proper root growth. (Note that the intent of these provisions is to keep plants in containers and bed systems with limited root space from competing with each other to the detriment of both.)

From April to October of the first year, newly planted trees shall be watered at least once each week when rainfall is less than one inch (1") for that week so that the combination of rainfall and applied water is equal to one inch (1") of rainfall. Watering shall be sufficient to soak the top eighteen inches (18") of the soil throughout the container.

### Irrigation:

Irrigation systems are subject to approval and inspection of the Raleigh Public Works (Encroachment Agreement) and Inspections Departments (Right-of-Way Permit) Part 7 of the City Code, Chapter 1, Section 7-2001 "Permits and regulation for working in, upon, over, under or adjacent to the streets and sidewalks."

### Minimum Distance from Structures:

Shade trees	ten feet (10')
Ornamental trees	six feet (6")
Shrubs	three feet (3') □

Plants shall not be placed in front of any building exit (so as to impede clear exit or entry) wall hydrant, or stand pipe connection, or over any manhole or other access, or drain or catch basin.

Plants located in the pedestrian way, or near a vehicular way where there is likelihood of de-icing chemicals or salts being used, shall have provisions for preventing such salts, meltoff, or cleared snow or ice from entering the container, bed, or vault.

Special care must be taken to insure that a sufficiently wide, clear, and safe pedestrian and vehicular way is provided, no less than six feet (6') wide for pedestrians, and ten feet (10') wide for vehicles.

**Minimum Depths of Soil:**

Shade trees	3.5 feet
Ornamental	3.0 feet
Shrubs	2.0 feet

**Minimum Square Footage of Soil Surface Area:**

Shade trees	100 square feet per tree
Ornamental trees	64 square feet per tree
Med-large shrubs	9 square feet per shrub
Small shrubs	4 square feet per shrub

**Trees in Containers or Planting Beds Shall be Spaced as Follows:**

Crown Form*	Shade Tree	**Ornamental Tree
Spreading	30'	15'
Globular or pyramidal	20'	10'
Fastigate or columnar	15'	8'

\* See figure 2.

\*\* distance from each other or from a shade tree

**Soil Mixture Used in Containers or Vaults:**

- soil shall be a sandy loam as defined by USDA soil classification.
- soil acidity must fall within the range of 5.0 — 6.0 pH.
- the soil must be low in woody material, iron and sulfate content.
- drainage shall be provided by:
  - a four inch (4") thick layer of coarse gravel at the bottom of the container, separated from the soil by a semi-permeable fabric (See figure 5) either constructed drainage, such as pvc pipe, tiles, or drainage holes, allowing water to pass freely from the container and into proper drainage channels. Pipe or holes shall be prevented from clogging up by wrapping or covering with a filter fabric.

**Container Requirements:**

Containers must be constructed:

- To withstand wetting and drying out.
- To withstand freezing and thawing.
- To resist decay.
- To withstand abuse.
- In a manner that renders containers conveyable as determined by the Urban Forester.
- Fixed planters must have the prior approval of the Urban Forester.
- In a manner that renders them feasible to maintain as determined by the Urban Forester.
- To retain moisture for proper plant growth, yet provide a means to drain excess moisture out of the container.
- With no sharp projections, rough edges, or splinters.
- Containers of masonry or wood must be lined with an impermeable material such as an asphalt or resin based coating, or plastic or fiberglass liner. Water must be able to drain through liner via constructed drainage or weepholes.

### **Plants Suitable for Containers:**

Trees and shrubs must be able to withstand:

- freezing and thawing
- drought
- urban conditions (including but not limited to: drying winds, reflected heat, and pollution)
- Tree and shrubs must have a healthy, fibrous root system.
- Trees and shrubs must be root hardy to above ground temperature extremes of the Raleigh area (0°F).

The permit holder must maintain containers and container grown plants and agree to do so in writing prior to final approval. Containers shall have preserved their original structural and aesthetic integrity, and be repaired or replaced (as determined by the Urban Forester) as needed by the permit holder.

**Soil Treatment for Planting Beds:**

The existing soil shall be excavated (and saved) to a depth of eighteen to twenty-four inches (18"-24"), the bottom roto-tilled to break up any possible hardpan, and rocks and debris removed. The saved soil shall be amended as follows — to four (4) parts soil, add two (2) parts well composted leaf mold [composted for at least one (1) year] and one (1) part coarse angular sand, and thoroughly homogenized. If the soil is heavy clay, substitute the sand to another part leaf mold. Replace in the bed as growth medium for the scheduled plants. Mounded or raised beds are recommended. The trees and shrubs shall not be planted in drainage ditches.

## **CHAPTER 4: TREE PROTECTION STANDARDS**

### **DEFINITIONS**

**CRITICAL ROOT ZONE:** Generally a circular area surrounding a tree, the center of which is the center of the tree trunk and the radius is the distance from the outside of the trunk to any point 12 times the diameter, as measured at four and one-half feet from the ground on the low side of the trunk, which points constitute the circumference of the critical root zone.

**ZONE OF PROTECTION:** The area of the critical root zone that shall be fenced, with no construction related activities allowed within this zone of protection. The restricted activities are, but not limited to, storage, paving, grading, cutting, filling, travel within, dumping, or spilling of any solid or liquid, and parking of vehicles.

### **TREE PERMIT**

A permit is required when any construction, demolition, or renovation activities takes place within the unpaved area of the critical root zone. Examples of these activities are, but not limited to, any vehicular travel, storage, demolition, cutting, filling, or change in the drainage pattern within this zone, or attaching anything to the tree.

### **TREE PERMIT REQUIREMENTS**

A permit must be applied for at least ten (10) working days in advance of commencement of work; projects that abut or may impact the critical root zones of ten (10) or more trees should be submitted for review well in advance of the start up date.

All requests to impact ten (10) or more trees on City property shall be accompanied with a work plan in duplicate. The Urban Forester shall review and approve the work plan before issuing a permit. All work plans shall show accurately:

1. The street width together with its subdivision of pavement, curb and gutter, parking strip, and sidewalk areas to a definite indicated scale.
2. The location, size, and variety, of each and every existing tree or shrub.

3. The nature of the impact on the critical root zone.

Violation of or deviation from any element of a permit shall be considered sufficient grounds for the suspension or revocation of the entire permit. Resumption of work shall be at the discretion of the Urban Forester.

## **METHODS OF TREE PROTECTION**

There are three basic fence layouts and two materials acceptable for protecting a tree. The zone that will be fenced will be the unpaved area that is within the critical root zone surrounding the tree with a maximum of a 15' radius for trees 30" in diameter or less. Trees greater than 30" in diameter will be assigned protective zones on an individual basis.

The fence shall surround the tree except when the zone of protection encompasses an area on the non-work side of the tree that is street or major structure (e.g. a house) (Figure 6).

The fence layouts shall be either circular or rectangular (Figure 6).

This protective fence may be constructed of wood, 2"x 4" or construction fencing (Figure 7). The Urban Forester may direct the use of one material over the other.

### **Pre-Construction Requirements:**

1. The protective fence shall be erected prior to commencement of any work on the site.
2. The roots on the construction side of the zone of protection shall be pruned back six inches (6") from the perimeter of the zone of protection by an approved root pruning device as determined by the Urban Forester.
3. The area within the zone of protection shall be watered so that the combination of rainfall and applied water equals one inch (1") of rainfall per week.
4. The Urban Forester may also require the application of fertilizer within this zone.

**During and Post-Construction Requirements:**

1. The protective fence shall be maintained and not be disturbed or removed until all exterior construction has been completed.
2. Water shall be applied for one year after the completion of all exterior construction as described above.
3. The Urban Forester may require the application of fertilizer within this zone.
4. No rototilling or other major soil disturbance shall take place within this zone of protection, before, during, or after the construction.

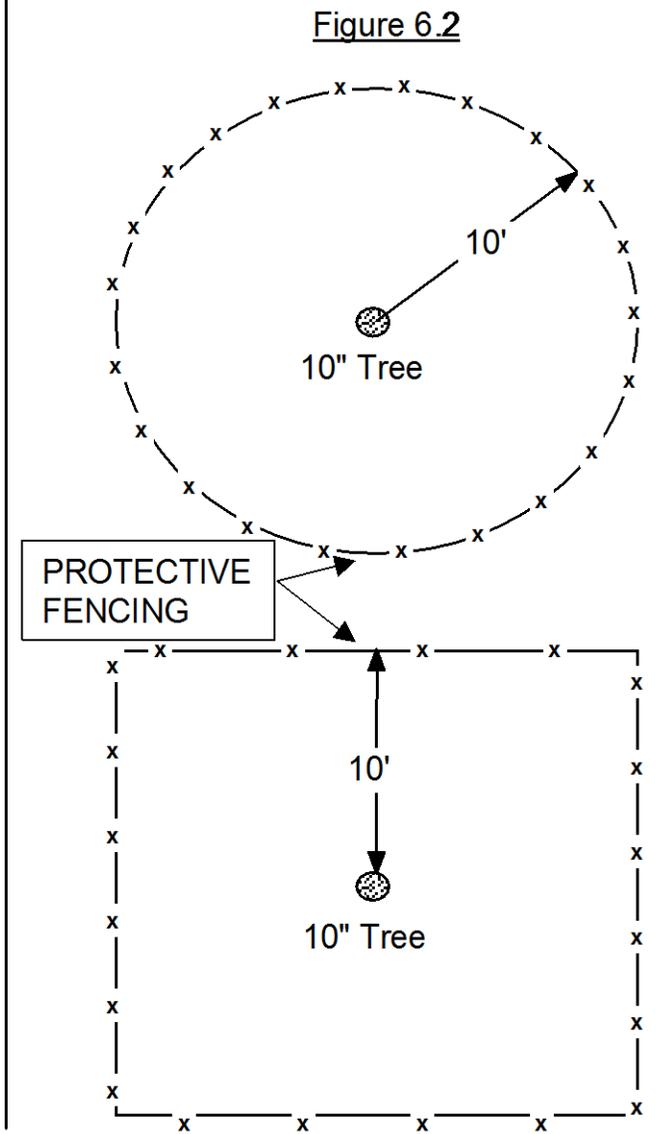
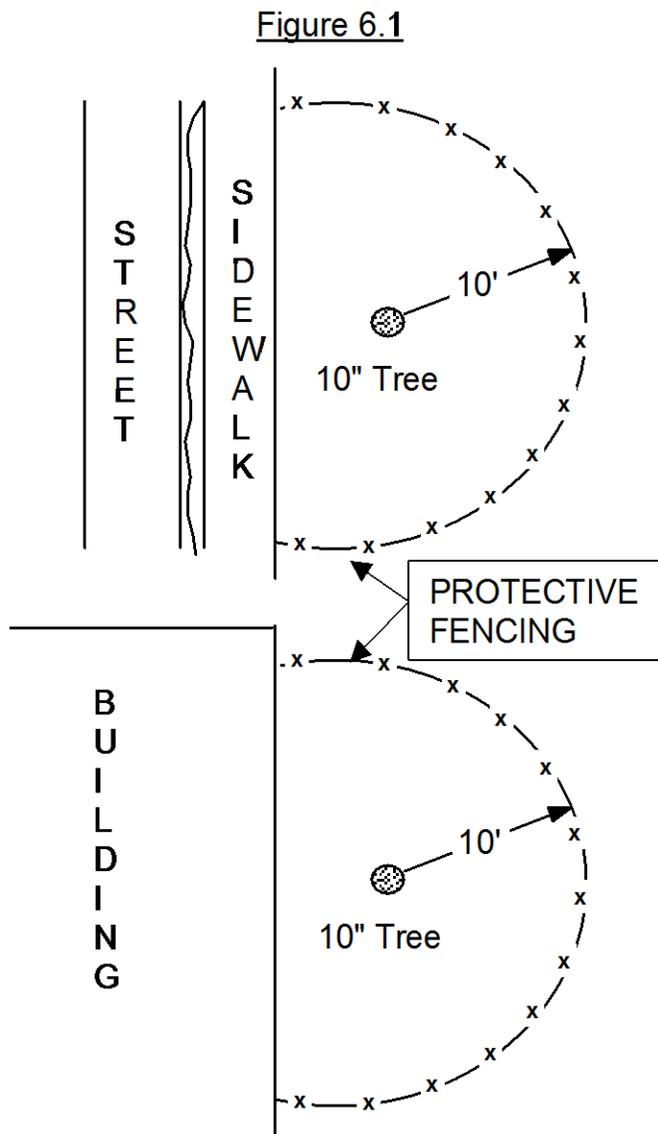
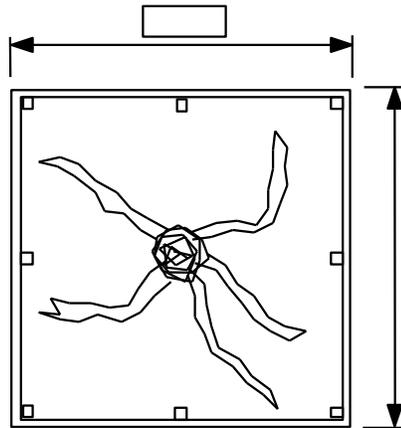
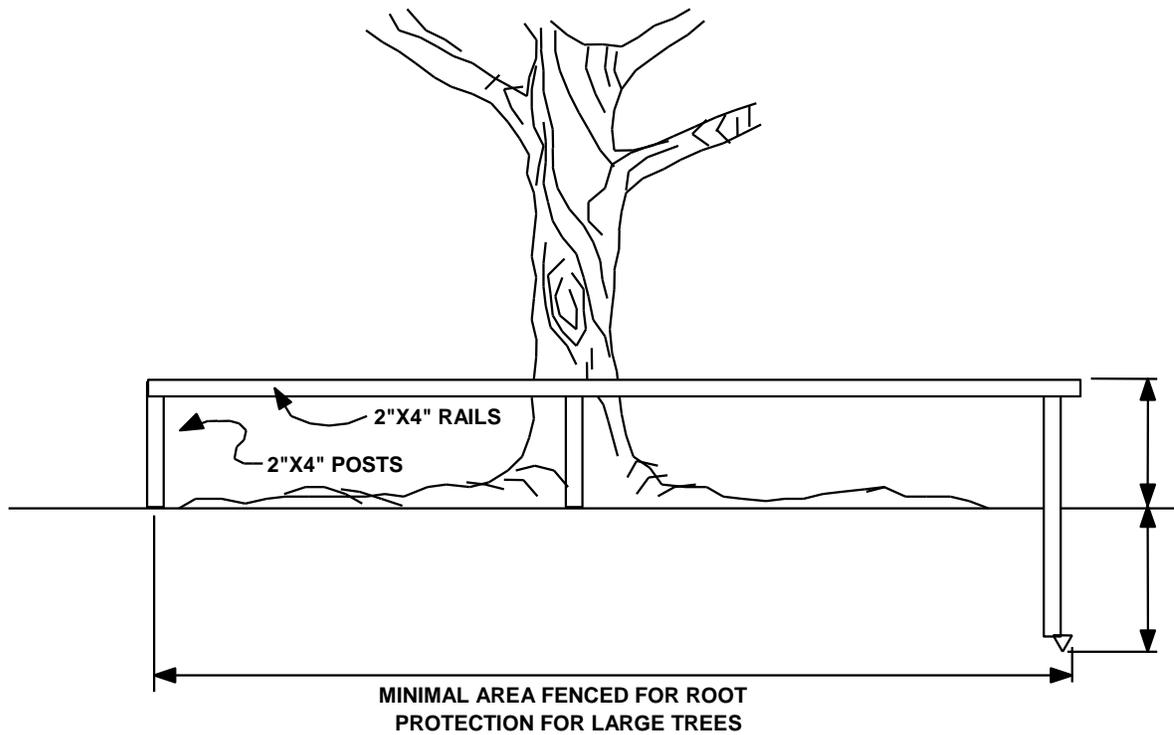


Figure 6. Zones of Protection



**NOTES:**

- \* All fences and tree guards to be installed prior to heavy equipment being on the project
- \* No equipment or materials to be stored on the roots or in the fenced area around the trees
- \* Added precaution should be taken when working in the area of all trees to limit damage to the tree branches.
- \* Tree fences to remain in place through entire term of the project

Figure 7. Tree Fence Protection For Existing Trees

## **CHAPTER 5: TREE PRUNING STANDARDS**

### **Purpose:**

The City Code - Chapter 8 - Trees and Vegetation, Section 9-8004 (10) requires that the Urban Forester provide “Objective standards, criteria and procedures for trimming, pruning, cutting, removal, moving, fencing, and protection of vegetation. Criteria shall include sight distances required at intersections and other places. Specific procedures and criteria for utility companies and building contractors shall be prepared”.

Considerations given in the preparation of these standards:

- Public safety is paramount
- Dead, diseased and structurally unsound limbs must be removed for public safety when these limbs have a high potential for threat to life and property
- Tree limbs that obscure and obstruct views of traffic and traffic control devices must be pruned
- Tree limbs that, through the action of wind and/or precipitation, could cause damage to property will be pruned
- Limbs that impede or obstruct the free movement of pedestrians and/or vehicular traffic on City rights-of-way shall be pruned
- Trees may need to have the number of limbs reduced to retain the tree’s structural integrity
- All pruning shall be done so as to keep the detrimental impact to the tree to a minimum using the latest ISA, NAA approved methods
- Topping, rounding over, etc. is detrimental to the tree’s health

## **DEFINITION:**

**SIGHT TRIANGLE** - The area formed by a line measured back ten feet (10') from the intersection of the property corner along the approach street, then seventy feet (70') from the intersection of the property corner along the cross street (see fig. 1). These are to be considered the minimum dimensions; curves in the road, hills, and other site specific factors may require extensions of above dimensions.

## **SIGHT DISTANCE STANDARDS**

All vegetation within the sight triangle, both on City and private property shall be kept pruned so as not to substantially obstruct the view of traffic. At the safe stopping point there shall be view of oncoming cross traffic of:

- 350' for streets of 35 miles per hour.
- 450' for streets of 45 miles per hour.

Tree limbs, over two inches (2") in diameter as measured at the attachment to the main trunk, shall be pruned so as to maintain eight feet (8') of clearance above the level of the intersection. Other vegetation (e.g. grass, shrubs, flowers, etc) shall be kept pruned to no more than three feet (3') above the level of the intersection. Terrain and other sight factors may dictate that these distances be modified for public safety.

## **CLEARANCE REQUIREMENTS**

### **Pedestrian ways and yards:**

Limbs over two inches in diameter as measured at the point where the limb crosses over the pedestrian way or yard shall be kept pruned to eight feet (8') over the pedestrian way or yard.

Limbs less than two inches (2") in diameter as measured at the point where the limb crosses over the pedestrian way or yard shall be pruned so as not to substantially interfere with travel.

**Streets:**

Limbs over two inches in diameter as measured at the point where the limbs cross over the curb shall be pruned to maintain a minimum clearance over the roadway of:

- a) 16' over thoroughfares (as defined by the City's Thoroughfare Master Plan)
- b) 14' over all other streets (as defined by the City's Thoroughfare Master Plan)

Limbs smaller than two inches in diameter as measured at the point where the limbs cross over the curb shall be pruned so as not to substantially interfere with travel.

**Clearance Over Buildings:**

Tree limbs that have substantial movement shall be pruned to have five feet (5') of clearance from buildings.

**Clearance Around City Streetlights:**

Limbs shall be kept pruned around City streetlights so as to allow the illumination of the street below. Any illumination of private property is incidental to the primary function of the street light and shall not require pruning.

**Traffic Signage and Signals:**

Vegetation shall be kept pruned away from stop and yield signs and signals so as to provide a minimum of:

- a) 325' of sight distance for streets up to and including those marked 35 miles per hour limit.
- b) 475' of sight distance for streets marked from 40 to 45 miles per hour limit.
- c) 250' of sight distance for all other City signage.

**Other Structures:**

Other structures and sites shall be kept pruned as determined on an individual basis, as determined by the Urban Forester.

**PRUNING PRACTICES****Method of Pruning:**

“Natural, target pruning” shall be used according to the latest revision of standards of the National Arborist Association for shade trees and the brochures, Homeowner’s Guide for Beautiful, Safe and Healthy Trees and New Tree Health.

**Prohibited Practices:**

Topping or the use of climbing irons, spurs, or spikes.

**Liability for Damages:**

Climbing irons, spurs, or spikes are not to be used on City trees to be pruned. Any tree damage caused by the permit holder shall be repaired immediately to the satisfaction of the Urban Forester, at no expense. Trees damaged beyond repair, as judged by the Urban Forester are to be removed at no expense to the City, and replaced by a tree of the size and species designated at no expense to the City; or the dollar value of such damaged tree, as determined by the Urban Forester, shall be paid to the City. For purposes of establishing a standard to measure the value of irreplaceable trees which may be lost or damaged through neglect or error, the following manual shall be used:

A Guide to Plant Appraisal; Eighth Edition, 1992; International Society of Arboriculture, or current edition.

**Clean-up:**

All debris from tree pruning shall be cleaned up each day, unless permission is given by the Urban Forester to do otherwise. All lawn areas shall be raked, all streets and sidewalks shall be swept, and all brush, branches and logs shall be removed from the site. Areas are to be left in a condition equal to that which existed prior to the commencement of pruning.

It shall be the responsibility of the permit holder to remove and dispose of all logs, brush, and debris resulting from the tree pruning operation in accordance with City Code, Part 7, Chapter 3 “Solid Waste Management”.

## CHAPTER 6: LINE CLEARANCE STANDARDS

### Pruning Techniques:

For the removal of a limb the double cut method shall be used if there is a possibility that the limb may tear out from the trunk if a single cut is made.

### All Limb Removals Shall be Done Using the Natural Target Pruning (NTP) Method:

Start by locating the branch bark ridge (BBR). The branch bark ridge is where the bark of the tree limb meets the bark of the trunk. Place the cutting tool as close as possible to the outer edge of the BBR within the branch crotch, target A. Target B is where the branch meets the branch collar, the swollen area at the base of the limb. Always make an upward cut from B first to prevent the bark from tearing down the trunk then make your final cut from A to B. On larger branches, it may be easier to cut from B to A with power tools. On large limbs a preliminary cut to remove the excess weight of the limb, before making the final pruning cut, is needed. Do not cut inside the area of the branch collar (i.e. do not make cuts flush with the trunk). When target B can not be found, then drop an imaginary line from target A downward to target X. Angle XAC is approximately the same as XAB. It is still best to locate target B, if possible. When pruning dead branches, cut as close as possible to the swollen callus collar that surrounds the dead branch. Do not injure or remove the callus collar (called a branch collar in the diagram). See figures 8.1 and 8.2

#### Conifers

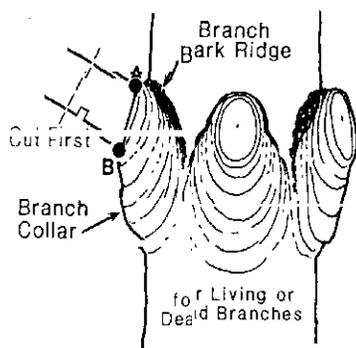


Figure 8.1-Proper pruning procedure for Conifers

#### Hardwoods

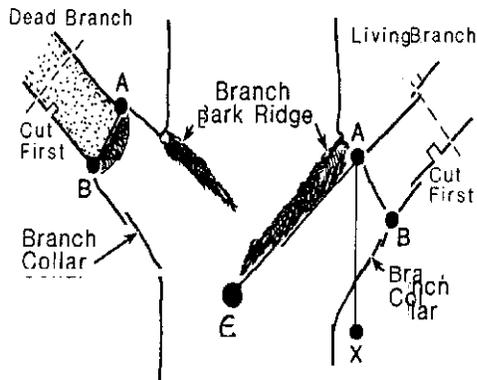


Figure 8.2-Proper pruning procedures for Hardwoods

The growth of the tree's leader may need to be regulated in tall maturing trees growing under primary wires. To reduce the height of the leader the following steps shall be taken:

Start by locating a new leader that shall be a minimum of one third ( $1/3$ ) the diameter of the previous leader. Target D is located on the upper side of the BBR at the branch crotch of the limb to become the new leader, target E is located below and opposite of target D on a line parallel to the BBR. Cut along the D - E line. See figure 9.

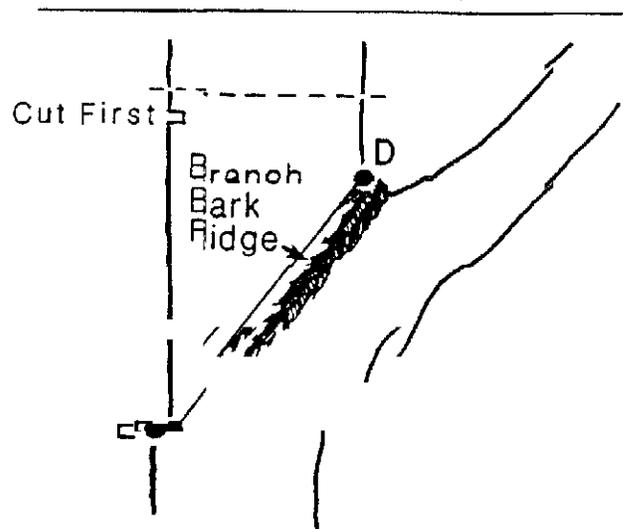


Figure 9. Height Reduction Pruning

## **GENERAL PRUNING PRACTICES**

The use of “tree paint”, “wound dressing”, and the like is not recommended; it serves no prophylactic purpose.

Growth retardants will not be used.

No more than one-third (1/3) of the tree’s crown shall be removed per year from last pruning. Utility companies shall coordinate their pruning activities.

When virulent disease is prevalent, as per written notification of the Urban Forester, steps outlined by the Urban Forester will be given to prevent the spread by line clearance activities. These steps may include and are not limited to the following:

Pruning of specified tree species in the winter, sanitizing of cutting tools between each limb removed, and the prompt disposal of potentially infected wood (in a manner as specified by the Urban Forester).

Dead wood may be trimmed or removed from trees

Climbing spikes shall not be used on a tree unless the tree is being removed.

## **CLEARANCE METHODS**

A) Trees that have not been previously pruned for line clearance shall not be topped or rounded over. The pruning of these trees shall be done using the “Natural” method; Natural pruning is making all cuts at laterals (limb junctions). These lateral limbs shall be no less than one-third (1/3) the diameter of the limb removed at the point of removal.

It is an objective of this policy to allow tree trimming at the minimum amount necessary for approximately a 2-year trimming cycle. The following standards shall be observed:

### **Tree Top Clearance:**

Limbs underneath the lines and growing up toward the lines may be pruned to achieve a clearance no greater than: six feet (6') - Primary lines, four feet (4')-Secondary lines, two (2')-service, phone, and TV cable.

### **Side Clearance:**

Trees that are growing to the side of the lines may be pruned to achieve a clearance no greater than: seven and one-half feet (7.5') - primary wires, four feet (4') - secondary lines, and two feet (2') from service, phone, and cable television wires.

### **Overhead Clearance:**

Limbs which have grown over the lines may be pruned to achieve an overhead clearance no greater than: Eight feet (8') - Primary lines, six feet (6')-Secondary lines, four feet (4')-service, phone, and TV cable, from the nearest limb to the lines.

It is understood that limbs may be cut at the first suitable laterals beyond the clearance limits described above in order to remove limbs which extend inside the clearance limits. Any cuts beyond the first suitable lateral shall be approved by the Urban Forester.

- B)** Limbs shall be pruned back to an appropriate new leader, heading away or around the lines. In no circumstance are stubs or abruptly pruned limbs to be left by the pruning.
- C)** Trees that have been rounded over or side trimmed shall be pruned to obtain an approximation of the tree's natural form. The height reduction and side clearance methods shall be used. In this process deadwood (as a result of past line clearance cutting) and many of the suckers (as deemed appropriate by the Urban Forester) shall be removed. All cuts shall be at laterals or to the trunk. The process of returning the tree's form to a natural shape may take several years.
- D)** Transmission lines that are in the public right-of-way are special cases and will be dealt with on an individual basis by the Urban Forester.

**Clean-up:**

Before leaving the job site all debris from the pruning operation shall be disposed of lawfully. No “hangers” shall be left in the trees.

**Notification of Work Location:**

Utility companies shall notify the Urban Forester of their maintenance schedule for line clearance within the City’s limits.

## **CHAPTER 7: TREE REMOVAL POLICY**

### **Purpose:**

City Council has affirmed its commitment to protecting City trees through the adoption of Chapter 8 of the City Code - the Tree And Vegetation ordinance along with the implementation and continued support of the Urban Forestry Program. To be able to protect City trees, the City Code section 9-8004 (9) states “The Urban Forester shall have the authority to review all requests for permits for any planting, removal...The Urban Forester shall also have authority to attach reasonable conditions to these permits and to grant or deny them.” In addition, the code requires that (section 9-8004 (10)) “Objective standards, criteria and procedures for ...removal...” shall be written. To these ends the following policy has been written.

### **Provisions:**

The City will remove a City tree only if it is dead, dying, carrying a virulent disease, or is endangering life and/or property as determined by the Urban Forester. In addition, City trees may be removed if their removal is specifically part of a City approved plan for construction or renovation.

Urban Forestry will permit the removal of a tree for the above reasons. In addition, if construction plans require the removal of a City tree and these plans are unalterable due to other site constraints, as determined by the Urban Forester, then the tree can be removed under the following conditions:

- a) The permit holder shall be responsible for removing the tree and stump and shall bear the cost of the same.
- b) The permit holder is responsible for grinding stumps and surface roots at least six inches (6") below grade. Chips and residue can be returned to the hole. At least a two-inch (2") thick layer of topsoil shall be placed over any chips and residue. The area shall be crowned at least two inches (2") above the surrounding grade to allow for settling and shall be raked smooth. The permit holder shall restore any damaged turf areas and grades due to vehicular or mechanical operations. The area shall be re-seeded.

- c) Debris and logs shall not block the public right of way overnight.
- d) The usable wood (4" diameter by 12" in length or greater) shall be taken to "Warmth For Wake" or other site approved by the Urban Forester. Unusable wood shall be lawfully disposed in accordance with the City Code, Part 7, Chapter 3 "Solid Waste Management".
- e) The City shall charge \$60.00 for the issuance of a Tree Removal Permit.
- f) Should any damage or unauthorized disturbance to any public or private property (including pavements) or utility facility occur, the permit holder shall immediately notify the Urban Forester and shall be held liable and responsible for damages or unauthorized disturbances.
- g) The tree(s) to be removed shall be posted with a public notice, provided by Urban Forestry, a minimum of 24 hours in advance of the tree's removal. This notice shall be placed street side of the tree, five feet from the ground.

**Appendix: Raleigh City Code Chapter 8. Trees and Vegetation**

(b) Nothing in this chapter *shall* be interpreted to exclude any *person*, firm or corporation from the necessity of obtaining any applicable license, permit or approval as *may* be required by any other provision of this Code.

(Code 1959, §27-18; Ord. No. 1977-598, §1, 8-16-77; Ord. No. 1981-559, §2, 1-6-81)

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**Sec. 9-7029.**  
**SEVERABILITY.**

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If any clause, sentence, paragraph, subsection, section or any part of this chapter *shall*, for any reason, be adjudged by any court of competent jurisdiction to be invalid or unconstitutional, such judgment *shall* not affect, impair or invalidate the remainder of this chapter, but *shall* be confined in its operation to the part thereof directly involved in said judgment. If any part or clause of this chapter *shall* be declared unconstitutional, and if such part so declared unconstitutional embraces subject matter controlled and provided for by any law, public or private, in effect at the time of the adoption of this chapter, such preexisting laws *shall* continue and remain in effect, notwithstanding any repealing clause contained herein.

(Code 1959, §27-19; Ord. No. 1977-598, §1, 8-16-77; Ord. No. 1981-559, §2, 1-6-81)

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**Sec. 9-7030.**  
**PENALTIES.**

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Any violation of this chapter *shall* be a misdemeanor, and punishable by law. Each day's continuance of such violation *shall* be a separate offense.

(Code 1959, §27-20; Ord. No. 1977-598, §1, 8-16-77; Ord. No. 1981-559, §2, 1-6-81)

**CHAPTER 8.**  
**TREES AND VEGETATION\***

Sec. 9-8001.	Purpose and intent.
Sec. 9-8002.	Definitions.
Sec. 9-8003.	Creation of position of Urban Forester.
Sec. 9-8004.	Duties of Urban Forester.
Sec. 9-8005.	Trimming, pruning, planting, and removal of trees on public property; permit required.
Sec. 9-8006.	Injuring trees or shrubbery on public places.
Sec. 9-8007.	Trees and other vegetation to be kept trimmed; responsibility of owner and Urban Forester.
Sec. 9-8008.	Authority to treat or remove trees or shrubbery on private grounds.
Sec. 9-8009.	Standards and permits.
Sec. 9-8010.	Planting plan required where more than twenty-five trees to be planted.
Sec. 9-8011.	Appeals.
Sec. 9-8012.	Exceptions.
Sec. 9-8013.	Legality of chapter or parts thereof.
Sec. 9-8014.	Violations; penalty.

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**Sec. 9-8001.**  
**PURPOSE AND INTENT.**

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The purpose of this chapter is to regulate and control the planting of trees and vegetation, to encourage the protection of existing trees and vegetation on the *streets* and public and private grounds within the *City*, and to establish the standard arboricultural specifications and practices for existing and future trees and vegetation in the *City* and on *City*-owned *property* outside the corporate limits.

(Code 1959, §21A-1)

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**Sec. 9-8002.**  
**DEFINITIONS.**

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**City-owned or -controlled property.** Property owned or leased by the *City*; or for which the *City* has a vegetation easement or planting contract; or upon which the *City* has an easement for *street*, sidewalk, greenway, park, alley, utility or other public purpose.

**Planting contract.** A two-party contract between the *City* and a *property* owner allowing the *City* to plant and maintain vegetation on private *property*, if agreeable to the *owner*.

**Right-of-way.** A strip of land upon which Raleigh has the right to construct a *street*, sidewalk, bicycle path, use for public utilities or landscape with plants or to carry out any other public purpose.

**Tree permit.** Consent given *in writing* by the Urban Forester to a *person*, firm or *agency* to alter or remove any tree or to

\*Cross references: Waiver of sidewalk construction standards for purposes of tree preservation, §7-2008; landscaping regulations, §10-2068 et seq.

do anything that would affect that *City*-owned or controlled tree, including cutting or filling the soil around the roots, or allowing any toxic pollutant to injure the tree.

**Urban Forester.** Any person qualified through formal education or practical experience in the fields of urban forestry, arboriculture or horticulture who is capable of administering a complete urban tree management program.

**Vegetation.** Any living plant or groups of plants (tree, shrub or groundcover).

**Vegetation easement.** An easement across private property authorizing the *City* to plant and maintain vegetation and prohibiting the cutting or damaging of trees without *City* approval.

(Code 1959, Sec. 21A-2; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8003.  
CREATION OF POSITION OF URBAN FORESTER.**

- (a) The position of Urban Forester shall be created within the Department of Parks and Recreation. The Urban Forester, as the agent of the Parks and Recreation Department of the *City*, shall direct, regulate and control the planting and managing of trees and shrubs on all *City*-owned or controlled land.
- (b) For the purpose of carrying out the provisions of this chapter, the Urban Forester shall have the authority, control, supervision and direction over all trees and shrubs growing on *City*-owned or controlled street rights-of-way and the planting, removal, care, maintenance and protection thereof. The Urban Forester shall advise on all *City*-initiated construction projects in an effort to plan for and manage the *City's* vegetative resources.

(Code 1959, Sec. 21A-3; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8004.  
DUTIES OF URBAN FORESTER.**

The Urban Forester shall have the authority to promulgate the rules and regulations governing the planting, maintenance, removal, fertilization, pruning and bracing of trees on *City*-owned or controlled property, and shall direct, supervise, regulate and control the planting, maintenance and removal of all the trees growing now or hereafter on said property. It shall be the duty of the Urban Forester to plan for an urban forestry program (*City* tree program), which should include:

- (a) Planting and managing trees for their functional use as well as for the aesthetic qualities.
- (b) Recycling trees and fiber.

- (c) A comprehensive tree plan for the *City* after consideration of existing and future utility and environmental factors when recommending a specific species for each of the streets and other public sites in the *City*.
- (d) Tree planting priorities.
- (e) Suggested tree list for Raleigh, with priorities, the purpose of which would be to guide the voluntary efforts of citizens in selecting trees for planting on private property or for donation to the *City*, such list to distinguish generally among the conditions or places of use.
- (f) A vegetation education program for the public, including advisory guidelines, planting and maintenance details, costs and benefits of vegetation in the *City*.
- (g) A tree and landscape inventory and analysis.
- (h) Advising other *City* departments on all projects that would affect Raleigh vegetation.
- (i) The Urban Forester shall have the authority to review all requests for permits for any planting, removal and/or trimming or cutting of trees on all *City*-owned or controlled rights-of-way. The Urban Forester shall also have authority to attach reasonable conditions to these permits and to grant or deny them.
- (j) Objective standards, criteria and procedures for trimming, pruning, cutting, removal, moving, fencing and protection of vegetation. Criteria shall include sight distances required at street intersections and other places. Specific procedures and criteria for utility companies and building contractors shall be prepared.
- (k) List and description of undesirable conditions that would probably require on-site examination by the Urban Forester and prompt treatment as described in §9-8008, such list not to be considered exhaustive.
- (l) The comprehensive tree plan, the tree list and other plans and policies recommended by the Urban Forester must be approved by the director of the Parks and Recreation Department, the Parks and Recreation Advisory Committee and/or the Greenway Commission, where the greenways are involved.

Public hearings shall be conducted by the Parks and Recreation Advisory Committee and/or Greenway Commission prior to final approval. Notice of the hearings shall be sent to the CAC.

(Code 1959, Sec. 21A-4; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8005.**  
**TRIMMING, PRUNING, PLANTING, AND**  
**REMOVAL OF TREES ON PUBLIC PROPERTY;**  
**PERMIT REQUIRED.**

Any *person* desiring to remove, destroy, cut, severely prune, including root system, treat with a view to its preservation from disease or insects, any tree or shrub in or upon any public *street* [or other] *City-owned or controlled property*, shall first obtain a *written permit* as hereinafter provided for, on forms furnished by the Urban Forester. Any work performed under such *permit* must be done in strict accordance with the conditions of the *permit* and the provisions of this chapter. Any *person* desiring to plant a tree or shrubbery upon any public *street* must also obtain a *permit* from the Urban Forester. Before issuance of a *permit* to plant, the request must also be reviewed by the Department of Transportation to determine if the planting would create a sight distance hazard.

(Code 1959, Sec. 21A-5; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8006.**  
**INJURING TREES OR SHRUBBERY ON PUBLIC**  
**PLACES.**

- (a) It shall be unlawful for any *person*, except with *written permit* hereinafter provided for, to place or maintain upon the ground in any public *street* or other *City-owned or controlled property*, any stone, cement or other impervious matter or substance in such a manner as may obstruct the free access of air and water to the roots of any tree or shrub in any *street* or place. This provision shall not apply to paving, repairing or altering *streets* or sidewalks authorized by the *City*.
- (b) It shall be the responsibility of the *person* in charge of the erection, repair, alteration or removal of any building or structure, to place a guard or protector around any tree on *City-owned or controlled property*. If the erection, repair, alteration or removal of any structure shall require the trimming, pruning or removal of any tree upon *City-owned or controlled property*, a *written permit* shall be obtained.
- (c) It shall be unlawful for any *person* to attach to any tree or shrub in or upon *City-owned or controlled property*, or the guard or stake intended for the protection of such tree, any rope, wire, chain, sign, or other device whatsoever, except for the purpose of protecting the tree or the public.

(Code 1959, Sec. 21A-6)

**Sec. 9-8007.**  
**TREES AND OTHER VEGETATION TO BE KEPT**  
**TRIMMED; RESPONSIBILITY OF OWNER AND**  
**URBAN FORESTER.**

- (a) Trees, vines, bushes, shrubbery or flowers standing in or upon any lot or land adjacent to any public *street* or public place and having branches, limbs, trunks, or other parts projecting into the public *street* or place shall be kept trimmed by the *owner* or occupant of the *property* on which such vines, trees, shrubbery or flowers are growing so as not to interfere with the free and safe passage along the public way by pedestrians and vehicular traffic.
- (b) If the *owner* or occupant of the *property* does not keep this growth from projecting into or on public ground, then the Urban Forester shall have the authority to order its removal. The order shall be acted upon within fifteen (15) days from the time of the receipt of the notice which shall be sent by registered mail, return receipt requested. If, after fifteen (15) days, the *owner* has not responded or acted to remove the projecting growth from said vines, trees, bushes, shrubbery, or flowers, then the Urban Forester or any member of his staff shall have the authority to enter upon the *owner's property* to perform the work. The cost of such action may be charged against the *property* owner pursuant to the procedures set forth in Chapter 6 of Part 12 of this Code. Cross reference: Abatement of public nuisances, §12-6001 *et seq.*
- (c) The *City*, its agents and contractors are required to adhere to all regulations of this section in the same manner as private *property* owners. They may be challenged in the same manner by the Urban Forester or his designated agent on the personal complaint of either, or by any citizen of Raleigh.

(Code 1959, Sec. 21A-7; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8008.**  
**AUTHORITY TO TREAT OR REMOVE TREES OR**  
**SHRUBBERY ON PRIVATE GROUNDS.**

- (a) When necessary for the immediate preservation of the public health or safety, the Urban Forester, under the power herein given, may cause or order the removal of any tree or part hereof on private ground which is in an unsafe condition, or which by reason of its nature is injurious to sewers or other public improvements, or which is affected with any injurious fungus, insect or other pest which may spread to public or other private *property*.

- (b) When not immediately necessary, but when still amounting to a public nuisance, unsafe trees as defined above may be removed, pruned or otherwise treated, and the cost of such action shall be charged against the subject property pursuant to the procedure set forth in Part 12, Chapter 6, of this Code.

(Code 1959, §21A-8; Ord. No. 1990-695, §1, 12-11-90)  
 State law reference: 1985 S.L., Chapter 556.

**Sec. 9-8009.  
 STANDARDS AND PERMITS.**

- (a) The parks and recreation advisory board shall, after due investigation and study, and after consideration of both aesthetic and practical utilitarian problems, promulgate a set of objective standards and criteria for the trimming, pruning, cutting and removal of trees and shrubs on City owned or controlled property.
- (b) The permits provided for herein shall be granted by the Urban Forester upon application in writing on forms supplied by his office.

(Code 1959, §21A-9; Ord. No. 1990-695, §1, 12-11-90)  
 Cross reference: Parks and greenway advisory board, §9-1011 et seq.

**Sec. 9-8010.  
 PLANTING PLAN REQUIRED WHERE MORE THAN TWENTY-FIVE TREES TO BE PLANTED.**

Any person or organization desiring to plant more than twenty-five (25) trees or shrubs on City-owned or controlled property shall, in addition to applying for a permit, submit a planting plan or written statement in duplicate to the Urban Forester, who shall return one copy to the applicant and keep one copy on file with the City. The Urban Forester shall review and approve before issuing a permit to plant. All planting plans shall show accurately:

- (a) The proposed street width together with its subdivision of pavement, curb and gutter, parking strip and sidewalk areas to a definite indicated scale.
- (b) The location and variety of each and every proposed and existing tree or shrub within the proposed street line in scaled relation to the other features of the plan.
- (c) The nature of the soil in the planting space to a depth of three (3) feet, and all existing and proposed surface or subsoil drainage systems. All statements filed in lieu of a planting plan shall contain the same information as required on the plan.

(Code 1959, §21A-10; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8011.  
 APPEALS.**

In the event any person is dissatisfied with a decision of the Urban Forester involving the application or interpretation of this chapter, such person may make a written request to the Council for review.

(Code 1959, §21A-11; Ord. No. 1990-695, §1, 12-11-90)

**Sec. 9-8012.  
 EXCEPTIONS.**

- (a) Notwithstanding other provisions of this chapter to the contrary, nothing herein shall prohibit the trimming, pruning, cutting or removal of any tree or shrub on a public street or right-of-way or upon any City-owned or controlled property, if such trimming, pruning, cutting or removal is done in the ordinary maintenance or repair of streets, sidewalks, pavement markings, existing utility lines, street signs, traffic signs, or is done in order to repair or replace the same as a result of damage or deterioration as a result of accident, casualty, or natural elements such as wind, rain, ice, electrical storm, or the like.
- (b) Provided, also, that trimming, pruning, cutting and removal of trees and shrubs is permitted in connection with the extension of utility service from existing facilities into new or additional areas without the necessity of a special permit or permission, provided that such trimming, pruning, cutting and removal shall conform to any standard or criteria adopted by the parks and recreation advisory board under the provisions of this chapter.

(Code 1959, §21A-12)

**Sec. 9-8013.  
 LEGALITY OF CHAPTER OR PARTS THEREOF.**

Should any section, clause or provision of this chapter be declared by the courts to be invalid, the same shall not affect the validity of any other provision of this chapter.

(Code 1959, §21A-13)

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**Sec. 9-8014.**  
**VIOLATIONS; PENALTY.**

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The violation of any provision of this chapter *shall* constitute a misdemeanor as provided by G.S. 14-4 and Part 14 of this Code.

(Code 1959, §21A-14)

**State law reference:** Violation of local ordinance a misdemeanor, G.S. 14-4.

**CHAPTER 9.**  
**RALEIGH TELECOMMUNICATIONS**  
**COMMISSION**

Sec. 9-9001.	Commission created.
Sec. 9-9002.	Membership.
Sec. 9-9003.	Terms of members.
Sec. 9-9004.	Powers and duties.
Sec. 9-9005.	Commission staff.

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**Sec. 9-9001.**  
**COMMISSION CREATED.**

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There is hereby created the Raleigh Telecommunications Commission, of such composition and having the powers and duties herein provided.

(Ord. No. 1983-167, §1, 8-2-83)

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**Sec. 9-9002.**  
**MEMBERSHIP.**

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The Raleigh Telecommunications Commission (hereinafter referred to as the "Commission") *shall* be composed of nine (9) members named by the City Council with the Commission Chairman elected by the Commission from among the membership. Up to three (3) members of the Commission *may* come from any areas outside the *City* limits over which the *City* exercises telecommunications administrative authority either by grant or franchise or contract with another franchising and governmental unit. The Chairman of the Commission *shall* at all times be a resident of the *City*.

(Ord. No. 1983-167, §1, 8-2-83; Ord. No. 1983-218, §1, 11-3-83; Ord. No. 1984-469, §1, 12-18-84; Ord. No. 1985-476, §1, 1-15-85; Ord. No. 1988-141, §1, 4-5-88; Ord. No. 1990-475, §1, 1-2-90)

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**Sec. 9-9003.**  
**TERMS OF MEMBERS.**

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The term of office of members of the Commission *shall* be two (2) *years*, except that of the fifteen (15) initial appointments, seven (7) *shall* be for one-*year* terms (not to include the Chairman); thereafter all appointments *shall* be for two (2) *years*.

(Ord. No. 1983-167, §1, 8-2-83; Ord. No. 1983-218, §2, 11-3-83)

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**Sec. 9-9004.**  
**POWERS AND DUTIES.**

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The responsibilities and powers of the Commission *shall* include:

- (a) Monitoring the performance of all grantees to determine whether the grantees are complying with their respective franchise obligations.

