

Planning Department
Landscaping Manual



Life. Well Crafted.

Landscaping

DIVISION 700 LANDSCAPING

A. GENERAL NOTES

1. Areas within buffers not covered by screening devices shall have permanent ground cover established. Ground cover shall include seeded grass or sod, low growing evergreen or shrubs, rock, brick or wood mulch or any combination.
2. All planting which materially impairs vision between 2 ½ and 8 feet in height shall be sited outside of intersection sight triangles.
3. Areas within easements or right-of-way limits that are unpaved shall have permanent ground cover established prior to the City accepting the construction or development. Seeded vegetation shall be established on a mowable surface. Areas presently wooded shall be retained and restored.
 - (a) Seeding specs shall be based on proposed planting season and vegetation needs.
 - (b) Soil tests should be performed to determine the proper amount of fertilizer and soil amendments required.
 - (c) Areas shall be ripped and spread with available topsoil minimum 3" deep. Total seedbed prepared depth shall be 4" to 6" deep or as required.
4. The planting season for the Hickory Area generally extends from November 15th until April 15th of the following year.
5. The following list is the recommended distances for planting trees around obstacles.

Plant Tree: 5 feet from water meters
 15 feet from fire hydrants
 20 feet from utility poles
 25 feet from driveways
 Outside the required intersection sight triangle

When planting directly under overhead power lines use a tree with a mature height of less than 20 feet.

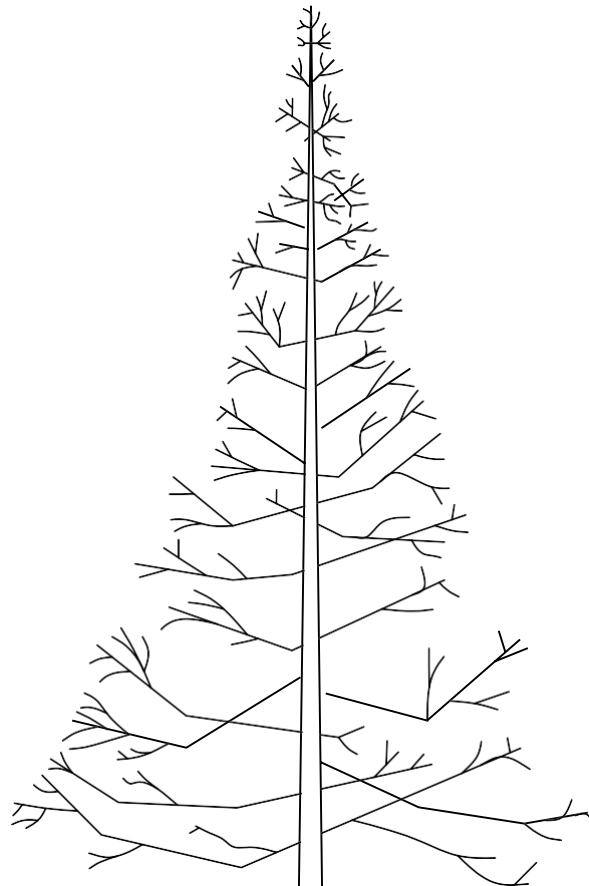
B. PLANTING LIST

This list indicates plantings which will meet the screening and buffer requirements of the zoning ordinance. This list is by no means comprehensive and is intended merely to suggest the types of flora which would be appropriate for screening and buffer purposes. Plants were selected for inclusion of the list according to three principal criteria: general suitability for the climate and soil conditions of the area, ease of maintenance, and availability from area nurseries.

NOT TO SCALE

HICKORY

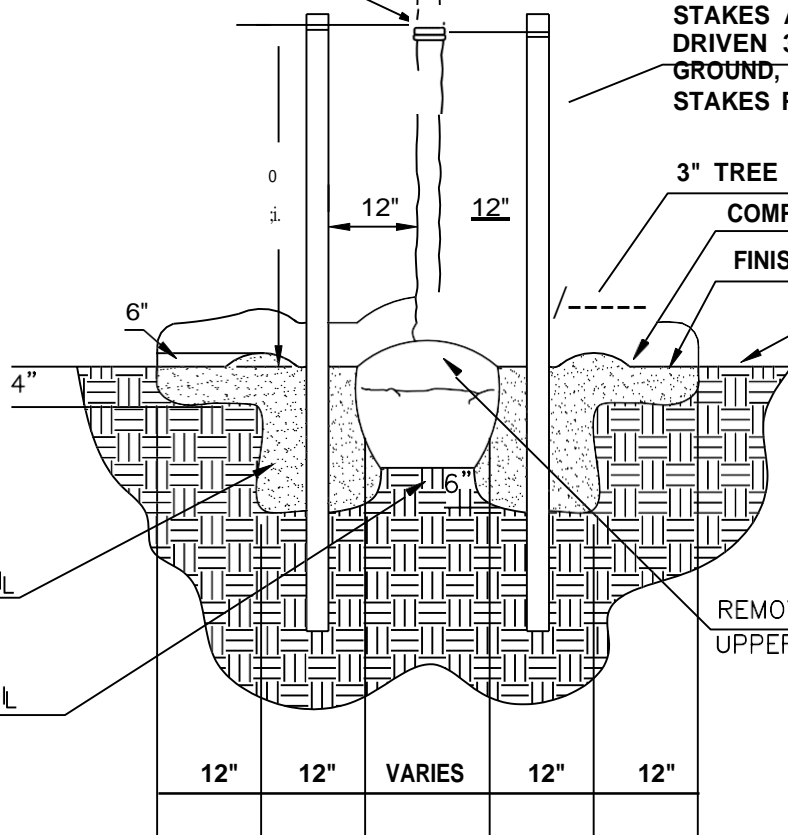
C I T Y O F H I C K O R Y ----- <



RUBBER HOSE
 SECURED WITH NO.12 GAUGE
 PLIABLE DOUBLE STRAND WIRE
 (AS NEEDED)

STAKES AS SPECIFIED
 DRIVEN 3'-0" IN
 GROUND, TWO
 STAKES PER TREE

3" TREE BARK MULCH
 COMPACTED EARTH SAUCER
 FINISHED GRADE
 ORIGINAL GRADE



AMENDED TOPSOIL

UNDISTURBED SOIL
 PEDESTAL

REMOVE BURLAP
 UPPER 1/3 ROOT BALL

12" 12" VARIES 12" 12"

NOT TO SCALE



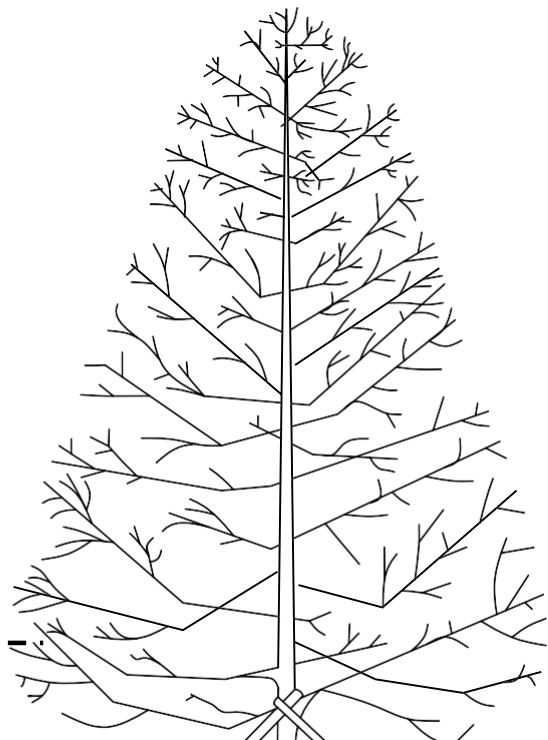
CITY OF HICKORY

PLANTING SMALL TREES
 UP TO AND INCLUDING 2 INCH CALIPER

SHEET 1 OF 1

DATE:
 2-1-07

STD. NO.
 702



RUBBER HOSE
SECURED WITH
NO. 12 GAUGE PLIABLE
DOUBLE STRAND WIRE
(AS NEEDED)

ORANGE PLASTIC FLAGS

THREE 2" X 2" X 24"
TREATED WOOD STAKES
EQUALLY SPACED DRIVEN
18" INTO UNDISTURBED SOIL

TURNBUCKLE

3" TREE BARK MULCH

COMPACTED EARTH SAUCER

FINISHED GRADE

ORIGINAL GRADE

4"

6"

6"

AMENDED TOPSOIL

REMOVE BURLAP
UPPER 1/3 ROOT BALL

UNDISTURBED SOIL
PEDESTAL

12"

12"

VARIES

12"

12"

NOT TO SCALE



CITY OF HICKORY

PLANTING LARGE TREES
GREATER THAN 2 INCH CALIPER

SHEET 1 OF 1

DATE:
2-1-07

STD. NO.
703

Tree Preservation

10.11.4 Tree Preservation

(a) The preservation of existing trees on a site can improve the aesthetic quality of the site, improve property values, provide environmental benefits, and mitigate the impacts of development. Existing vegetation shall be preserved whenever feasible and must be preserved in certain circumstances as outlined below.

(b) Where a natural perimeter buffer exists, it is to remain undisturbed, except for the removal of dead wood and invasive vines and plants. No limbing up is allowed and understory shall not be removed. The Planning Director may require the retention of other existing mature vegetation on a site wherever such vegetation contributes to required screening and buffering or for the preservation of significant trees.

(c) Existing trees and wooded areas may be counted toward buffer and screening and parking area landscape requirements. Existing trees may be counted for fulfilling parking area requirements only if they are located within one hundred (100) feet of the parking area. Existing trees shall be credited at the following rate according to the diameter measured at four and a half (4.5) feet above the ground:

6" to 12" = 2 trees

13" to 18" = 3 trees

19" to 24" = 4 trees

25"+ = 5 trees

(d) When using existing trees, they must be protected and undisturbed during the entire construction process using, at a minimum, the techniques proved in the City of Hickory Manual of Practice and as may be required by the City Arborist. Applicants shall seek the assistance of a professional urban forester or landscape architect to properly preserve existing trees for credit. If protective measures are not used during construction, existing vegetation cannot be counted toward landscape requirements.



Steps for Tree Preservation During Development

Existing trees, on a development site, should be regarded as a resource that will enhance the monetary as well as aesthetic value of the finished project. Large and small trees can be preserved on a site when an effort is made to ensure protection of the proper amount of space needed for the tree to survive. All parties involved in the project should be aware that the trees are to remain and that certain activities are not permitted within a certain area around the tree.

The following steps must be taken when preserving trees and on a construction site:

STEP 1: Inventory Existing Trees. By completing an inventory of trees on the site showing condition, size, location and species, determinations can then be made whether or not the trees can be preserved. During the inventory process, keep the following in mind:

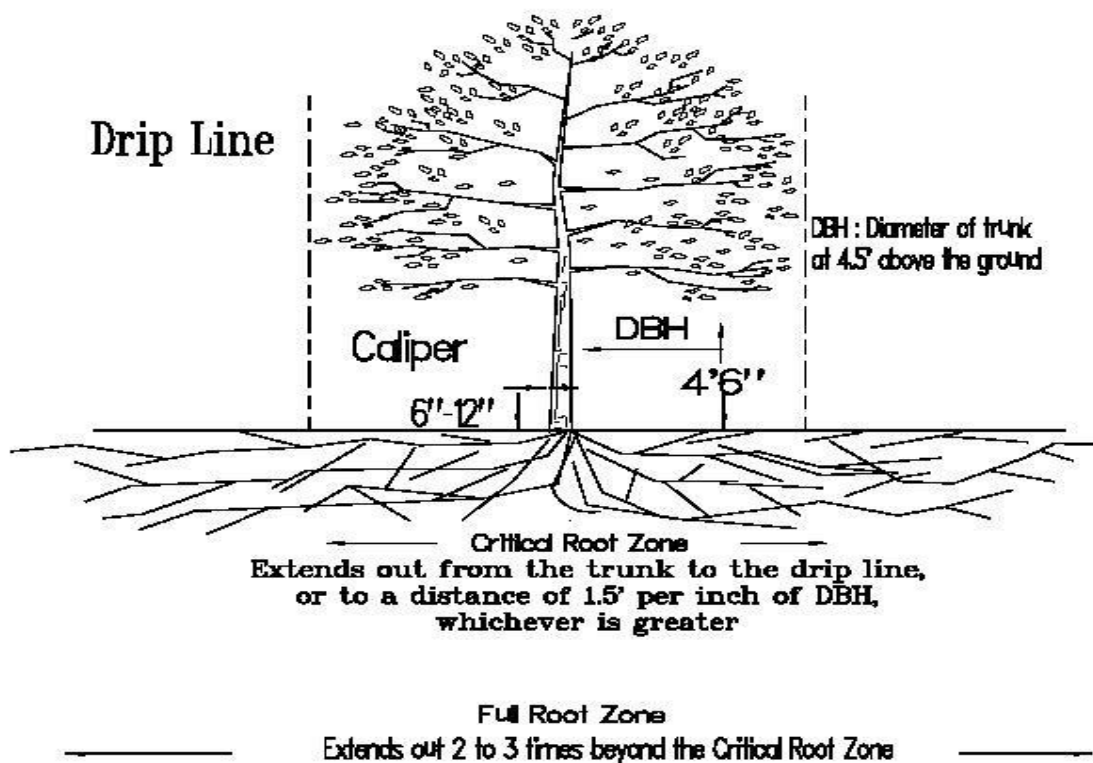
- **Move smaller caliper trees to another area on the site where they will not be subjected to construction activity.** If young trees are to be kept on site, be sure enough area is maintained for future growth.
- **Trees with defects, decay, and extensive dieback in the crown or other problems should be removed.** They most likely will not survive the damage from construction activity.
- **Trees that are in the way of utility lines, proposed building, or any grading or drainage changes that would damage a large area of the root system should also be considered for removal.**
- **Trees growing in stands or groups should be preserved together if possible.** The root systems of these trees have intertwined through their development and should not be disturbed.



Steps for Tree Preservation During Development

STEP 2: Determine the amount of space needed for the tree protection area. This is done by calculating the **critical root zone** of individual and groups of trees. A measurement of the trunk should be taken at **diameter breast height (DBH)** or 4.5 feet above the ground. Then measuring outwards from the trunk 1.25 feet for every inch of trunk diameter, the resulting area is the **critical root zone**. For example, a 20-inch diameter tree would require a 30-foot area of protection around the tree for the **critical root zone**. This is a minimum area of protection and a larger area is preferred. A minimum of 6 feet must be protected around trees regardless of diameter.

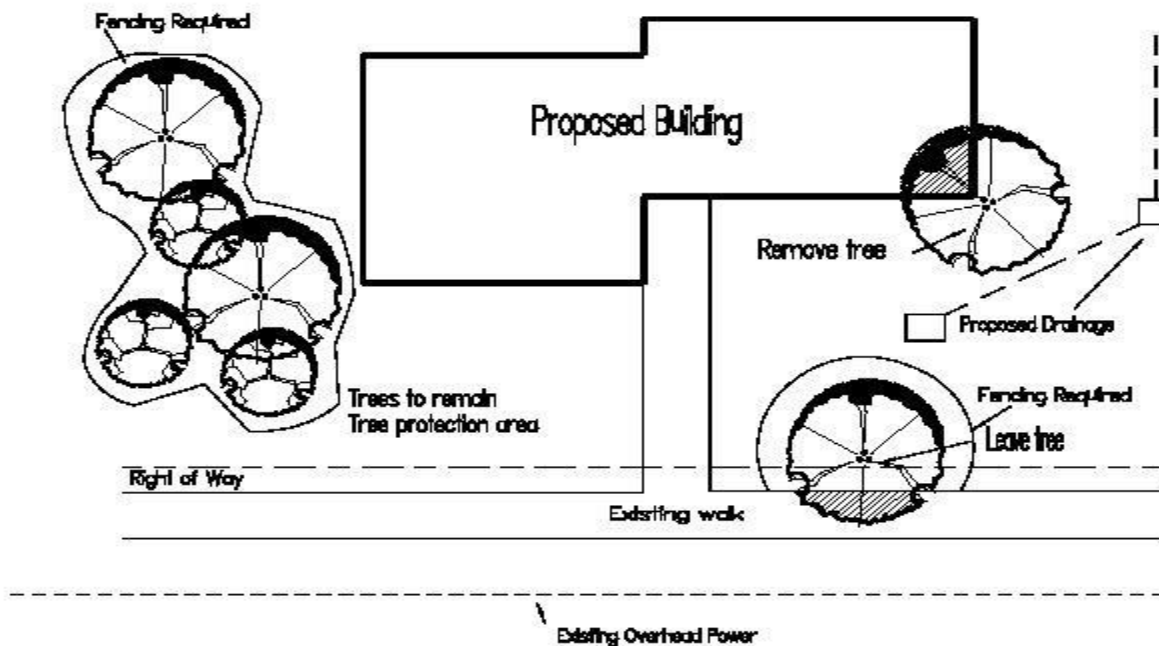
Determining Critical Root Zone



Steps for Tree Preservation During Development

STEP 3: Create a site plan showing all existing trees to be preserved, site features, property lines, utility lines, ROW, proposed building and grading and drainage. See Section 10.11.3 for full plan requirements.

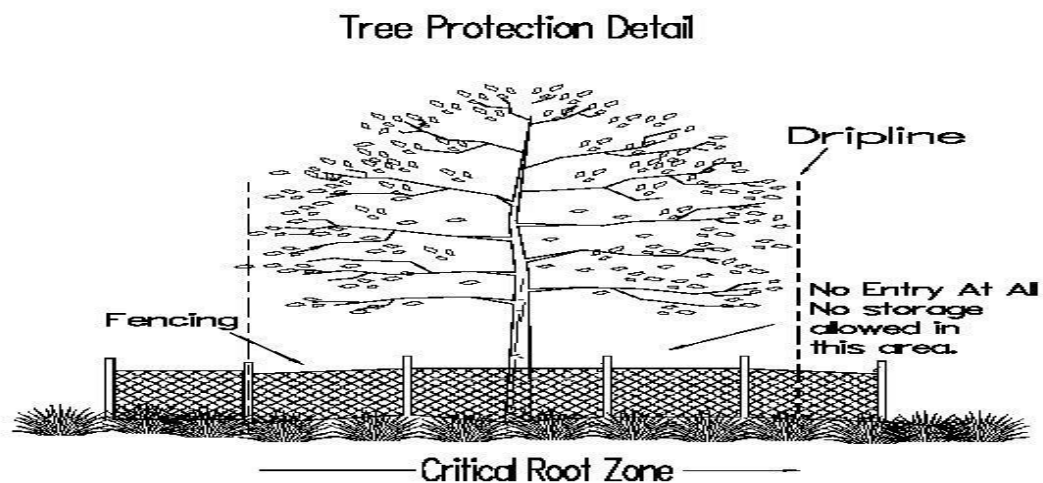
Example Site Plan



Steps for Tree Preservation During Development

Step 4: Fencing must be placed around the tree to protect the Critical Root Zone.

- Fencing must be composed of metal that is four to six feet in height - examples include hog wire and chain link. Fencing must be secured to the ground with metal posts. Flags may be placed on fencing to ensure visibility.
- Signs must then be placed noting that this is a **tree protection area** and any entry, storage, parking, cleaning of equipment, or any other construction activity is not permitted within the fencing.
- Any damage to fencing must be immediately repaired or replaced.
- If groups of trees are to be protected, fencing and signs must be placed around the perimeter of the group. This **tree protection area** is calculated by measuring the **DBH** of the outermost trees and extending out 1.5 feet per inch of diameter of trees located on the edge of the stand.
- When saving a group or cluster of trees maintain the natural undergrowth and avoid excessive pruning.
- Any trees which are dead or decayed within the group, that need removal, should be done by hand with minimal disturbance to the root zone. No heavy equipment shall be used to clean underbrush out of the area.
- Communication between all parties involved is essential in preserving trees. Penalties may be enacted to ensure the tree protection area remains undisturbed.



Tree Species Resistant To Construction Damage

Resistant

Ash - Green
Bald Cypress
Bayberry
Birch - River
Black Gum
Cypress
Eastern Red Cedar
Elm
False Cypress
Ginkgo
Hackberry
Holly
Kentucky Coffee Tree
Locust
Maple - Red
Oaks - Swamp, Overcup, Bur,
Water, Shumard, Nuttall,
Northern Red
Pawpaw
Persimmon
Pines - Loblolly, Longleaf, Slash
Sassafras
Serviceberry
Willow

Moderate

Ash - White
Carolina Silverbell
Catalpa
Crabapple
Deodar Cedar
Dogwood
Fringetree
Hawthorn
Hickory
Hophornbeam
Magnolia
Oak - Chestnut, Post, Black
White, Southern Red, Pin
Willow
Pine - Shortleaf
Redbud
Spruce
Sweetgum
Sycamore
Willow

Susceptible

Basswood (Tilia)
Birch - Paper
Beech
Black Cherry
Black Walnut
Hemlock
Katsura
Maple - Silver,
Sugar
Sourwood
Yellow Poplar
Yellowwood



Trenching and Tunneling

Whenever soil is disturbed, nearby trees can show reduced growth rates, dieback, dead branches, general reduction of vigor, loss of health, invasion by insects, infection from disease and even death.

Roots provide mechanical support for the tree and are the part that absorbs water and nutrients from the soil. Roots need oxygen to survive and this is absorbed through pores in the soil. When equipment runs over the soil, compaction occurs. Compaction is the elimination of pore space in the soil and this leads to root death.

When trenches are dug to install underground lines, there are certain guidelines to follow to ensure minimal impact to a tree's root system.

Trenching

- **The further away from the trunk of the tree the root is cut, the less the amount of root loss.** Trench outside of the drip line. The location of the roots cut determines the percentage of the tree's life system that is removed. The further away from the trunk of the tree the root is cut, the less the amount of root loss.
- **Pile excavated soil on the opposite side of the trench from the tree.** This will eliminate root disturbance when backfilling and reduce any extra fill being piled over the existing roots.
- **If roots over 2 inches in diameter are cut when trenching, the roots should be re-cut with a handsaw to remove jagged edges.** Crushed or torn roots lead to decay. By having a cleanly cut root, the tree can then re-grow new roots.
- **Backfill trenches as soon as possible.** Dried roots are dead roots. On a warm day, small roots can dry out in 10 to 15 minutes. If time does not allow for backfilling, place damp burlap, peat or similar material over the roots to keep them moist. Water the trench after it has been backfilled.
- **If trenching is the only option, try to adjust the route by curving or moving away from the tree to avoid excessive root damage.**
- **Compaction to the root zone can be minimized by placing 4 to 12 inches of wood chips over the root zone.** If equipment then runs over this, soil compaction is lessened. Another method is by placing railroad ties and steel plate over the root system, thus bridging over the root area.



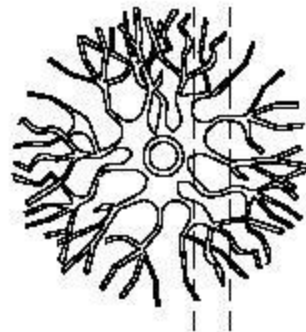
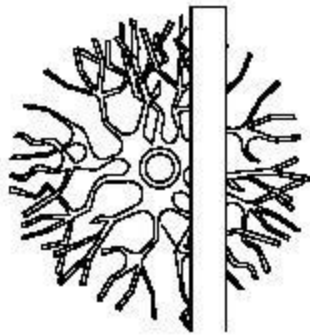
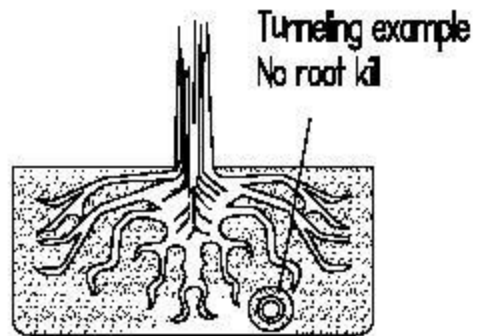
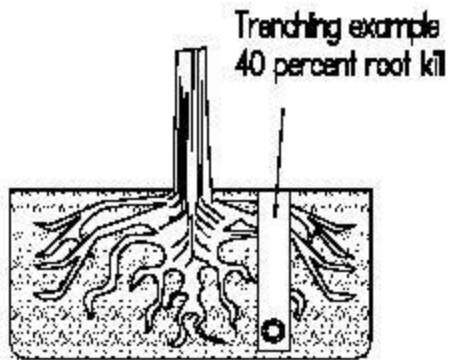
Trenching and Tunneling

Tunneling

- **Trenching near a tree can kill 40-50% of the roots. A tunnel in the same place will do minimal damage.** Most roots are in the top 18 inches of soil. A tunnel 24 inches deep will do little damage to the roots.
- **If the tree is less than 12 inches in diameter, tunnel 3 feet below the soil surface.** If the tree is over 12 inches in diameter, tunnel 4 feet below the surface. When tunneling go 1 to 2 feet on either side of the center of the tree. This will avoid cutting taproots.
- **When tunneling the trench should come no closer to the tree than the drip line.** The rest of the area through the root area should then be tunneled.
- **Compaction to the root zone can be minimized by placing 4 to 12 inches of wood chips over the root zone.** If equipment then runs over this, soil compaction is lessened. Another method is by placing railroad ties and steel plate over the root system, thus bridging over the root area.



Trenching and Tunneling



Trenching near a tree can kill as much as 40-50 percent of the roots. This generally leads to poor health, root failure or death of the tree.

A tunnel in the same place will do little damage to the tree.

Stop! Don't Top That Tree

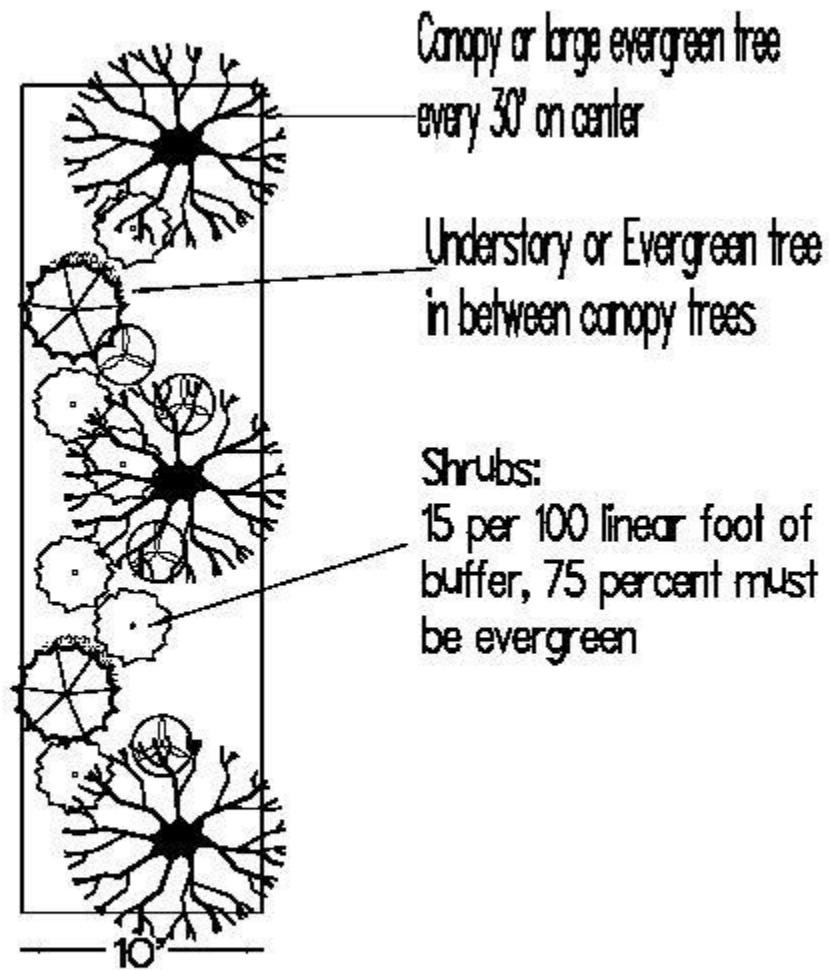
Tree topping is the removal of all if not most of the large limbs on a tree. This practice leaves large stubs and a trunk. The result is a tree, which over time, if it does not die, will become dangerous. There are many reasons why topping is a bad practice, some of them are as follows:

- **Topping does not reduce the size of the tree.** After deciduous trees are topped, they actually replace the lost growth with rapidly growing sprouts. Within several years, the tree can actually be larger than its original size when topped.
- **Topping is expensive.** If the tree does not have to be removed because it died, it will have to be pruned again to control growth. A nice landscape can add up to 20% to the value of your property. A topped tree actually reduces that value.
- **Topping is dangerous.** After trees are topped, the rapid growth, which forms, has weak branch attachment. The limbs generally fail and fall from the tree especially during wind. The decay in the limb from the incorrect pruning also causes branch failure. Topping can also kill a tree since it removes all of the trees ability to manufacture food. This places the tree under stress and the result is a struggling tree that is more susceptible to insects and disease.
- **Topping is not the proper way to prune crape myrtles.** These small trees have been bred to grow in a variety of sizes. Pick the correct cultivar for the particular need. Pruning these trees severely is topping and is not the correct way to prune them.
- **Topping is ugly.** A topped tree is a disfigured tree. Even with its regrowth, it never regains the grace and character of its species.

NO TOPPING!

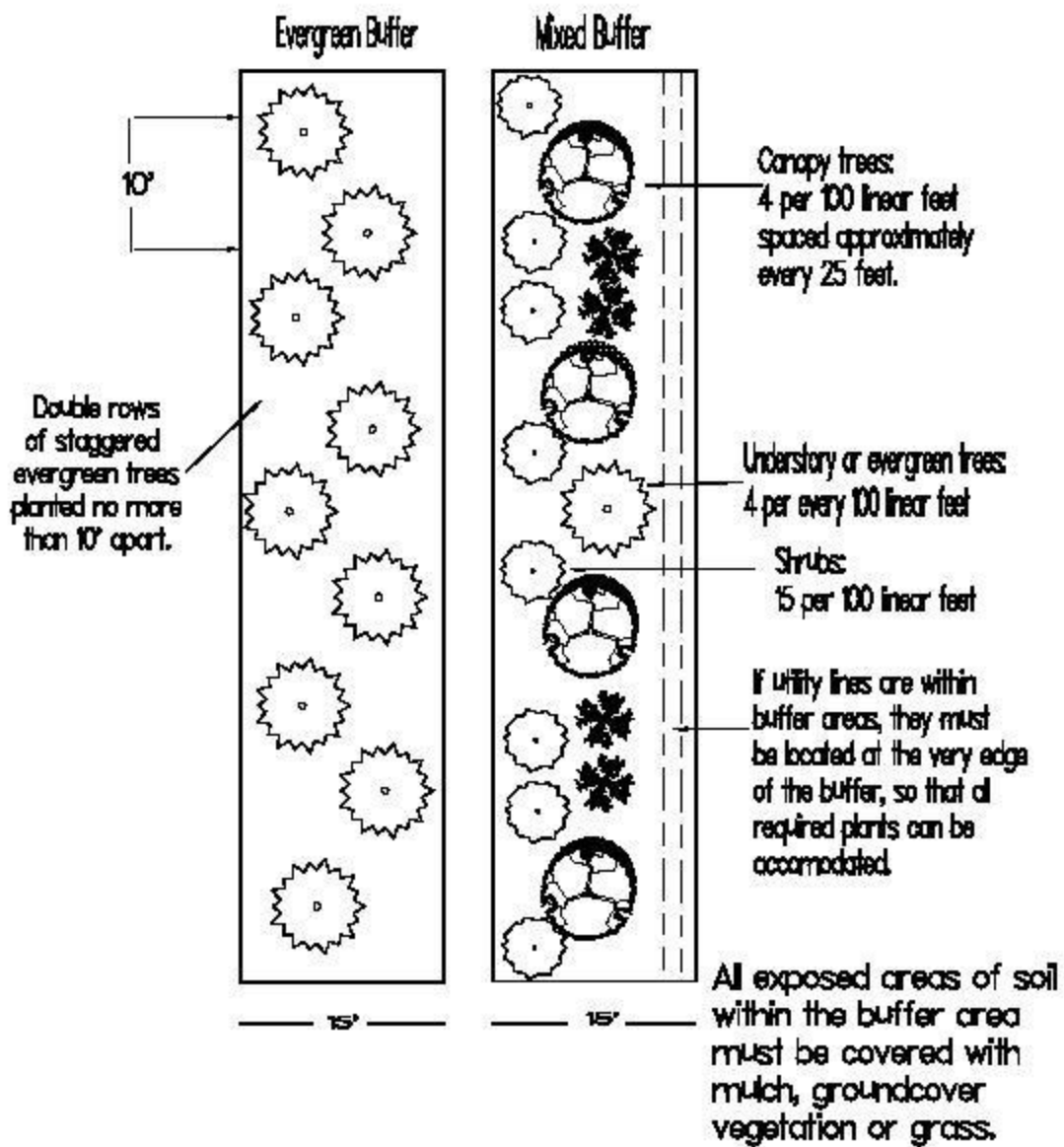


Conceptual Landscape Buffer Example



All exposed areas of soil within the buffer area must be covered with mulch, groundcover vegetation or grass.

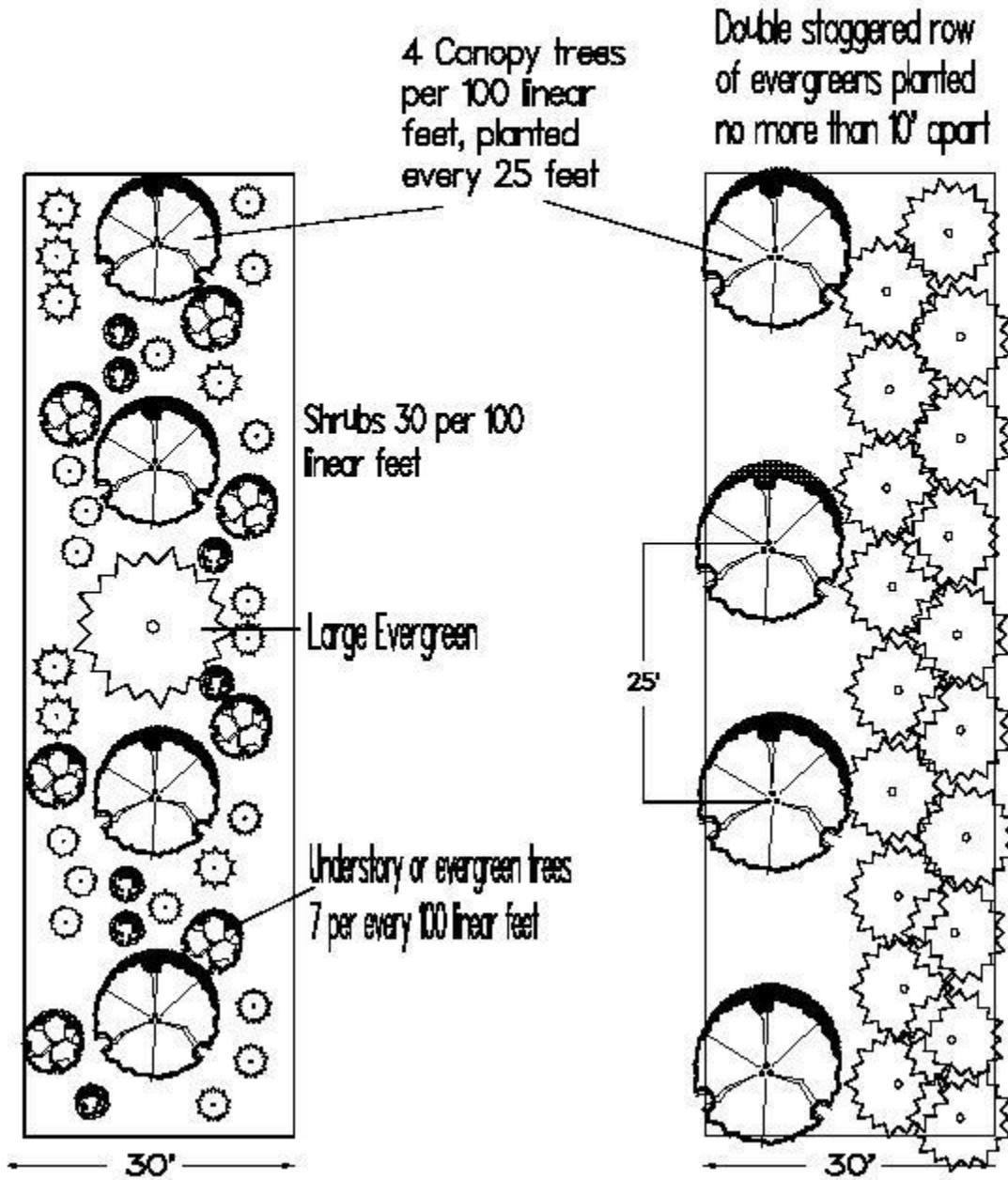
Conceptual Landscape Buffer Example



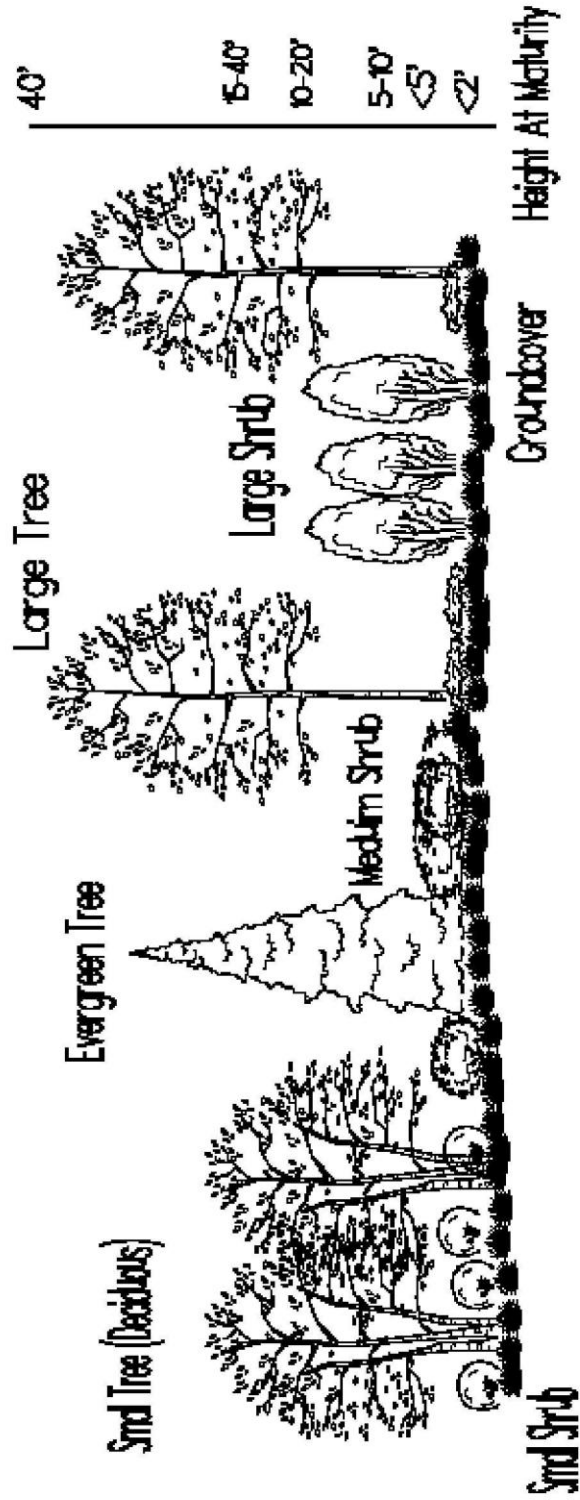
Conceptual Landscape Buffer Example

Example of Mixed Landscape Buffer

Example of Canopy Tree and Evergreen Buffer



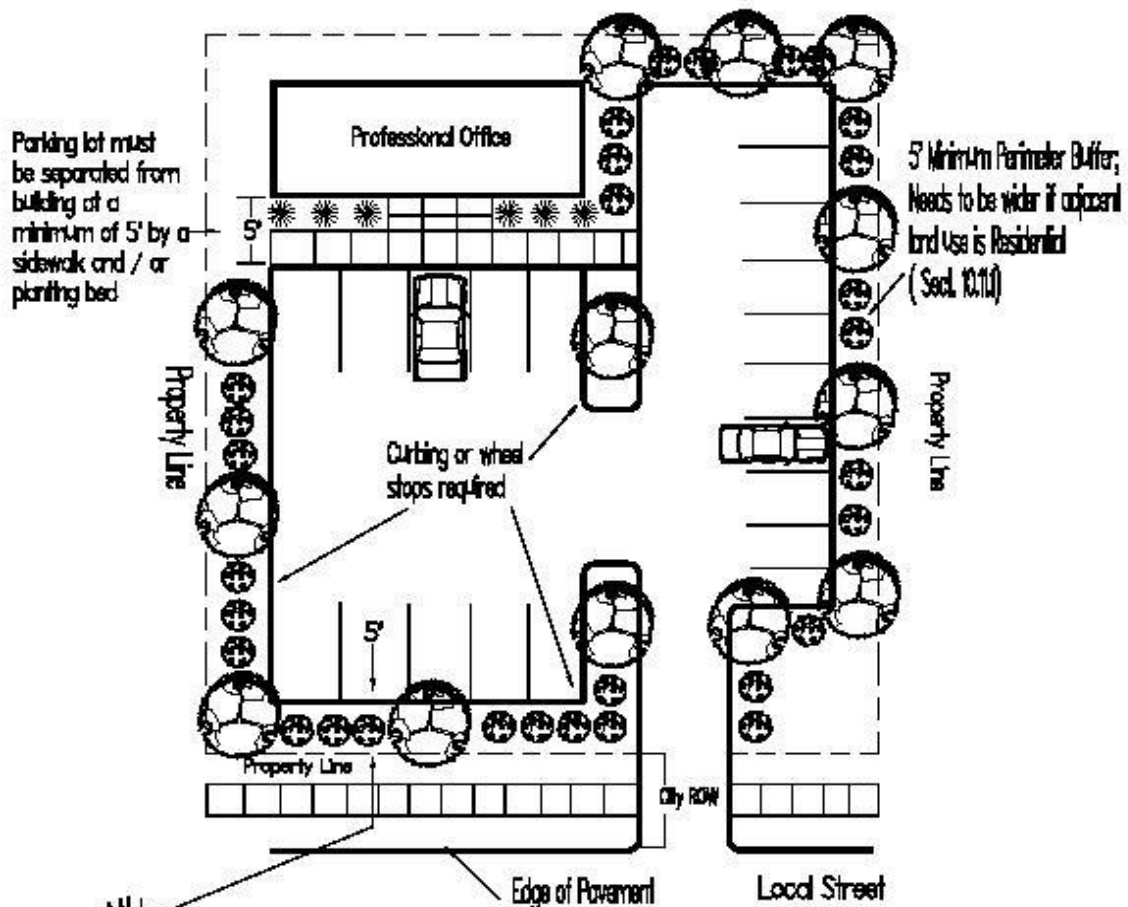
Landscape Buffer Showing Plant Diversity



This is a good example of a buffer showing a variety of landscape material in various heights.

This example provides a more aesthetically pleasing visual impact.

Conceptual Perimeter Parking Area Buffer Example

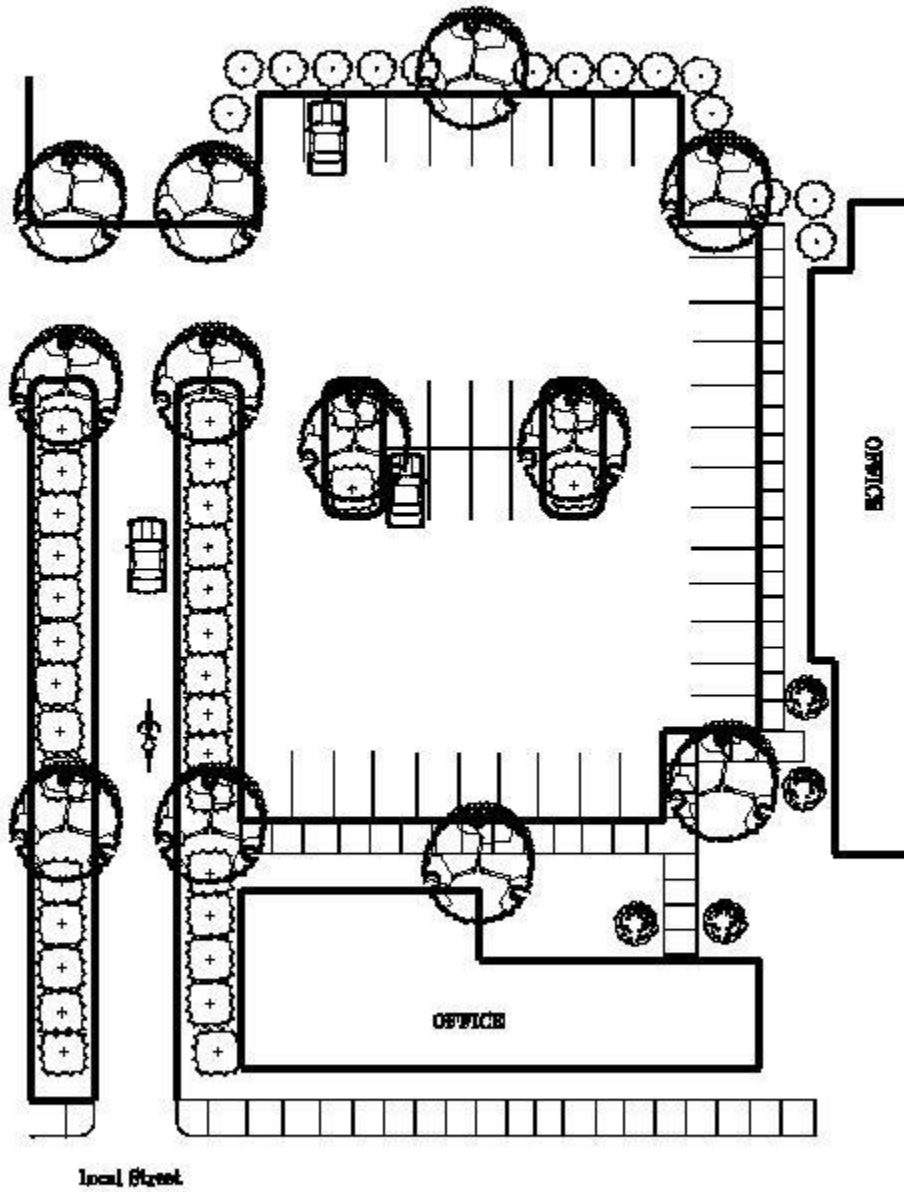


Note

5' minimum landscape area on local streets

10' minimum landscape area on minor and major streets, on the transportation plan

Conceptual Interior Parking Area Landscaping Example



Right Tree Right Place

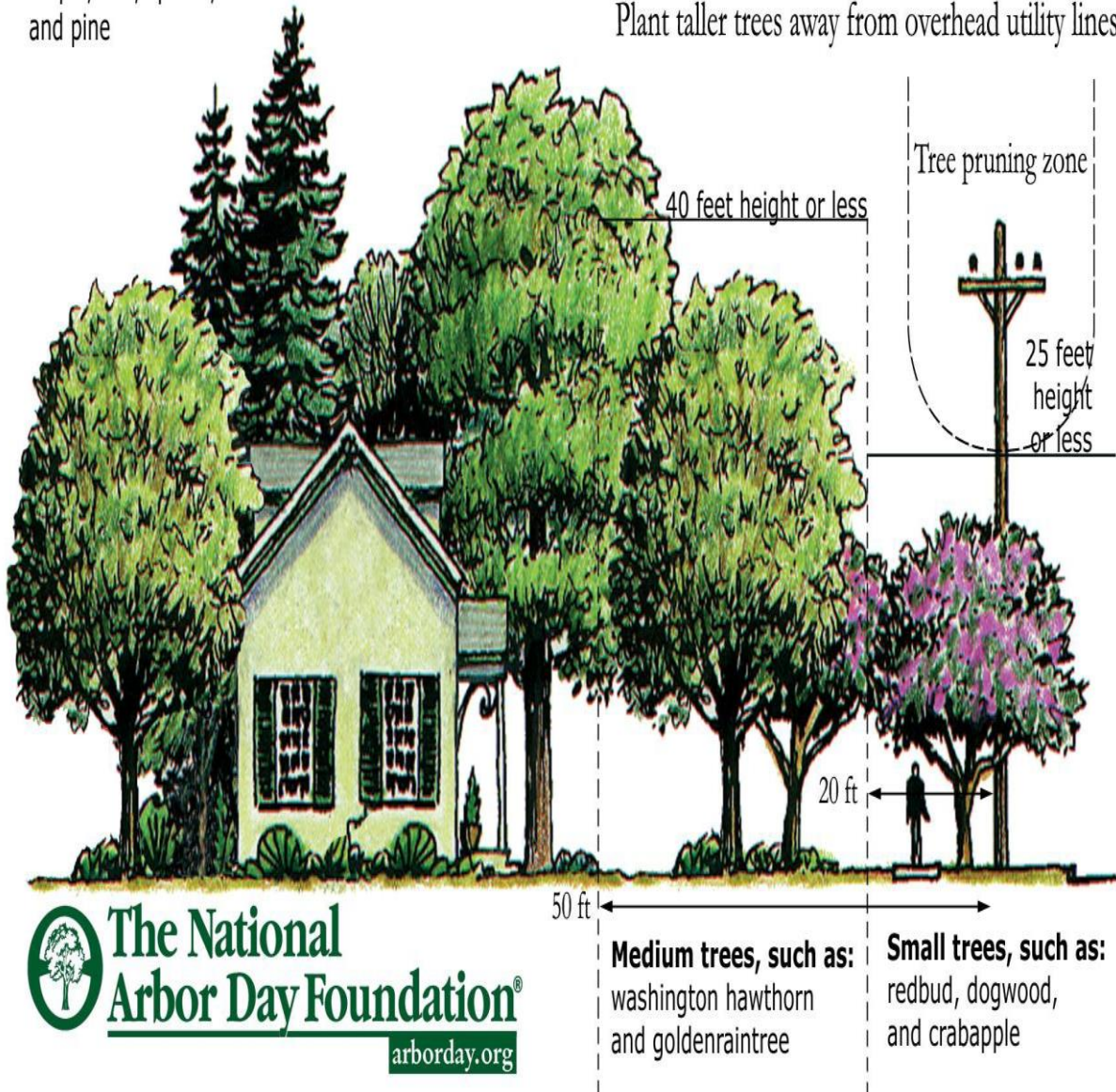
When determining where to plant trees be sure that utility lines are located. In order to eliminate future conflicts with utility lines choose proper species to plant in certain areas.

The diagram below illustrates the proper placement of trees around buildings and under utility lines. The plant list in this booklet gives approximate mature size as well as examples recommended for planting under power lines.

Tall trees, such as:
maple, oak, spruce,
and pine

Plant the right tree in the right place

Plant taller trees away from overhead utility lines



UNDERSTORY TREES (Small Deciduous Trees)					
Scientific Name	Common Name	H ² O Wise	Height	Exposure	Cultivars/ Notes
<i>Acer buergeranum</i>	Trident Maple	Yes	25-35'	Sun	
<i>Acer campestre</i>	Hedge Maple	Yes	25-35'	Sun/Lt. Shade	
<i>Acer griseum</i>	Paperbark Maple	No	20-30'	Sun/Part Shade	Specimen Tree
<i>Acer palmatum</i>	Japanese Maple	No	15-25'	Sun/Part Shade	Specimen Tree
<i>Amelanchier alnifolia</i>	Serviceberry	No	15-25'	Sun/Part Shade	Grown as small tree or large shrub
<i>Amelanchier canadensis</i>***	Shadblow Serviceberry	No	6-15'	Sun/Part Shade	Grown as small tree or large shrub
<i>Amelanchier x grandiflora</i>	Apple Serviceberry	No	20-25'	Sun/Part Shade	Autumn Brilliance'
<i>Cercis canadensis</i>	Eastern Redbud	Yes	20-30'	Sun/Part Shade	
<i>Chionanthus retusus</i>	Chinese Fringe Tree	Yes	15-25'	Sun/Part Shade	
<i>Cornus florida</i>	Flowering Dogwood	No	15-20'	Part Shade	
<i>Cornus kousa</i>	Kousa Dogwood	No	20-30'	Sun/Part Shade	
<i>Cornus mas</i>	Cornelian Ch. Dogwood	Yes	20-25'	Part Shade	
<i>Cotinus coggygria</i>***	Smoketree	Yes	13-15'	Sun	
<i>Crataegus phaenopyrum</i>	Washington Hawthorne	Yes	25-30'	Sun	
<i>Halesia carolina</i>	Carolina Silverbell	No	20-40'	Sun/Part Shade	
<i>Koelreuteria paniculata</i>	Golden Raintree	Yes	20-40'	Sun	
<i>Lagerstroemia indica</i>***	Crape Myrtle	Yes	18-30'	Sun	Under power lines choose cultivars that do not exceed 15': Acoma, Apalachee, Caddo, Comanche, Hopi, Lipan, Osage, Pecos, Sioux, Tonto, Yuma, Zuni
<i>Magnolia stellata</i>	Star Magnolia	No	13-20'	Sun	
<i>Magnolia soulangeana</i>	Saucer Magnolia	No	15-25'	Sun/Part Shade	
<i>Malus hybrid</i>	Flowering Crabapple	Yes	15-25'	Sun	
<i>Ostrya virginiana</i>	American Hophornbeam	Yes	25-40'	Sun/Part Shade	
<i>Oxydendrum arboreum</i>	Sourwood	Yes	20-30'	Sun/Part Shade	
<i>Parrotia persica</i>	Persian Ironwood	No	20-40'	Sun/Light Shade	
<i>Pistachia chinensis</i>	Chinese Pistache	Yes	25-40'	Sun	
<i>Prunus species</i>	Flowering Cherry	No	15-30'	Sun	
<i>Prunus 'Hally Jolivette'</i>***	Hally Jolivette Cherry	Yes	10-15'	Sun/Part Shade	
<i>Stewartia pseudocamellia</i>	Japanese Stewartia	No	20-40'	Sun/Part Shade	
<i>Styrax japonica</i>	Japanese Snowbell	No	20-30'	Sun/Part Shade	
<i>Viburnum prunifolium</i>***	Blackhaw Viburnum	Yes	12-20'	Sun/Part Shade	
*** These trees have been approved by Duke for planting under utility lines.					

EVERGREEN TREES RECOMMENDED FOR SCREENING (Also see shrub list)					
Scientific Name	Common Name	H2O Wise	Height	Exposure	Cultivars/Notes
Large Evergreen Trees					
Cedrus deodara	Deodar Cedar	Yes	40-70'	S/PS	
Cryptomeria japonica	Japanese Cedar	Yes	50-60'	S	
X Cupressocyparis leylandii	Leyland Cypress	Yes	50-60'	S/PS	Over-used, give other plants a try
Ilex opaca	American Holly	Yes	20-40'		
Juniperus virginiana	Eastern Red Juniper	Yes	30-50'	S/PS	Tough, tolerates drought
Magnolia grandiflora	Southern Magnolia	Yes	40-80'	S/PS	Little Gem'; 'Margaret Davis'
Pinus taeda	Loblolly Pine	Yes	30-40'	S/PS	
Pinus virginiana	Virginia Pine	Yes	40-60'	S	
Tsuga canadensis	Canadian Hemlock	No	30-80'	S/PS	problem with adelgids
Medium Evergreen Trees					
Ilex x attenuata 'fosteri'	Fosters Holly	Yes	20-30'	S/PS	
Magnolia virginiana	Sweetbay Magnolia	No	20-30'	S/PS	
Small Evergreen Trees					
Illicium parviflorum	Anise	Yes	10-15'	S/SH	Grown as shrub or small tree
Ilex x 'Nellie R. Stevens'	Nellie Stevens Holly	Yes	15-25'	S/PS	
Ilex vomitoria	Yaupon Holly	Yes	10-20"	S/PS	
Thuja species	Arborvitae	Yes	15-25'	S	Many species available; can be grown as small tree or large shrub; bagworms can be a problem

SHRUB LIST					
Scientific Name	Common Name	H2O		Site Requirements	Cultivars/Notes
		Wise	Height		
DECIDUOUS					
Abelia grandiflora	Glossy Abelia	Yes	3-6'	Sun	Many cultivars available; deciduous & evergreen
Callicarpa dictoma	Beautyberry	Yes	3-5'	Sun/Part Shade	
Caryopteris x clandonensis	Blue Spirea	Yes	2-3'	Sun	
Clethra alnifolia	Summersweet Clethra	Yes	3-8'	Sun/Shade	
Forsythia x hybrids	Forsythia	Yes	Varies	Sun/Part Shade	Many cultivars available
Hamamelis species	Witch hazel	Yes	Varies	Sun/Part Shade	Many cultivars available
Hydrangea species	Hydrangea	Yes	4-6'	Sun/Part Shade	Many cultivars available
Itea virginica	Virginia Sweetspire	Yes	3-15'	Sun/Part Shade	
Viburnum acerfolium	Mapleleaf Viburnum	Yes	4-6'	Shade	
EVERGREEN (These shrubs are recommended for screening; also see Evergreen Tree List)					
Aucuba japonica	Aucuba	Yes	6-10'	Part Shade/Shade	
Camellia japonica	Camellia	Yes	6-15'	Part Shade/Shade	Many cultivars available
Camellia sasanqua	Camellia	Yes	5-10'	Sun/Part Shade	Many cultivars available
Cephalotaxus harringtonia	Japanese Plum Yew	Yes	5-10'	Part Shade	
Chamaecyparis pisifera	Japanese False Cypress	Yes	4-15'	Sun	Many cultivars available
Ilex species	Hollies	Yes	Varies	Sun	Many cultivars available
Ilex cornuta 'burfordi' ***	Compact Burford Holly	Yes	10-15'	Sun/Part Shade	
Illicium parvifolium	Anise	Yes	8-15'	Sun/Part Shade	
Juniperus species	Juniper	Yes	Varies	Sun	Many cultivars available
Loropetalum species	Loropetalum	Yes	4-12'	Sun/Part Shade	
Mahonia species	Mahonia	Yes	3+	Part Shade	
Osmanthus x fortunei	Osmanthus	Yes	15-20'	Sun/Shade	
Picea species	Dwarf Spruce	Yes	Varies	Sun	
Prunus laurocerasus	English Laurel	Yes	3-6'	Sun/Shade	
Rhaphiolepis hybrids	Hawthorn	Yes	3-6'	Sun	Gulfgreen'
Rhaphiolepis x delacourii	Indian Hawthorn	Yes	3-4'	Sun/Part Shade	
Spirea species	Spirea	Yes	2-8'	Sun/Part Shade	Many cultivars available
Taxus canadensis	American yew	Yes	3-6'	Sun/Part Shade	
Thuja occidentalis	Arborvitae, White-cedar	Yes	varies	Sun/Part Shade	Many cultivars available; sizes vary widely
Viburnum species	Viburnum	Yes	Varies	Sun/Part Shade	Many species available; choose natives
*** This large shrub is approved by Duke to plant under powerlines					

Plant Species Not Recommended For Planting		
Scientific Name	Common Name	Problems
Acer ginnala	Amur Maple	Non-native invasive
Acer negundo	Box Elder	Weak wood, weedy
Acer platanoides	Norway Maple	Invasive
Acer saccharinum	Silver Maple	Weak wood, shallow roots
Ailanthus altissima	Tree of Heaven	Weak wood, weedy, invasive
Eleagnus angustifolia	Russian Olive	Diseases, invasive
Eleagnus umbellata	Autumn Olive	Invasive
Fraxinus pennsylvanica	Green Ash	Anthrachnose, borers
Gleditsia species	Honeylocust	Too hot for this species
Hedra helix	English Ivy	Invasive
Lespedeza species	Lespedeza	Invasive
Ligustrum japonicum	Japanese Privet	Invasive, seeds spread to natural areas and form thickets.
Ligustrum sinense	Chinese Privet	"
Ligustrum obtusifolium	Border Privet	"
Ligustrum vulgare	Common Privet	"
Lonicera japonica	Japanese Honeysuckle	Invasive
Lonicera maakii	Amur Bush Honeysuckle	Invasive
Morus species	Mulberry	Messy fruit, shallow roots
Paulownia tomentosa	Paulownia	Weak wood, weedy
Pyrus calleryana 'Bradford'	Bradford Pear	Poor form, splits
Spirea japonica	Japanese spirea	Invasive
Ulmus pumila	Siberian Elm	Weak wood
Viburnum dentatum	Arrowwood Viburnum	Non-native invasive, but many good native viburnums exist
Viburnum lantana	Wayfaring Tree	Non-native invasive, but many good natives exist
<p>Invasive Exotic Plants - Many introduced plants have become naturalized in North Carolina and some are replacing our native plant species. Not all exotic species are considered harmful. Invasive plants are usually characterized by fast growth rates, high fruit production, rapid vegetation spread and efficient seed dispersal and germination. Not being native to NC, they lack the natural predators and diseases which would naturally control them in their native habitats. The rapid growth and reproduction of invasive plants allows them to overwhelm and displace existing vegetation and, in some cases, form dense one species stands. Invasive species are especially problematic in areas that have been disturbed by human activities such as road building, residential development, forest clearing, logging, grazing, mining, ditching, mowing, erosion control and fire control activities. For more information see www.ncwildflower.org/invasives or www.se-eppc.org/weeds.cfm.</p>		

Maintenance / Pruning

10.11.10 Maintenance/Pruning

(a) It shall be the responsibility of the property owner, or in the event of a property transfer, the subsequent property owner's responsibility to maintain and ensure the survival of the plant material in perpetuity. Plants and trees that do not survive planting or for some reason succumb to injury, disease and/or insect infestation must be replaced during the first planting season following the death of the plant(s) in accordance with the specifications of this Land Development Code.

(b) Tree topping shall be prohibited on all trees that are required by the provisions of this Land Development Code, including perimeter buffer trees and parking lot landscaping. Topping is the severe cutting back of limbs larger than three (3") inches in diameter to stubs within the tree's crown so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees that interfere with or are imminent threats to utility wires or other obstructions where other pruning practices are impractical may be exempted from this ordinance at the determination of the Planning Director. All trees and shrubs shall be pruned in accordance with American National Standards Institution (ANSI) Standards. For more information about tree topping, refer to the City of Hickory Manual of Practice.

(c) If plants or other screening materials are removed to repair underground utilities they must be replaced at the next appropriate growing season at the owners' expense.



Pruning and Post Construction Tree Care

Remove all protective fencing after all construction activity is finished.

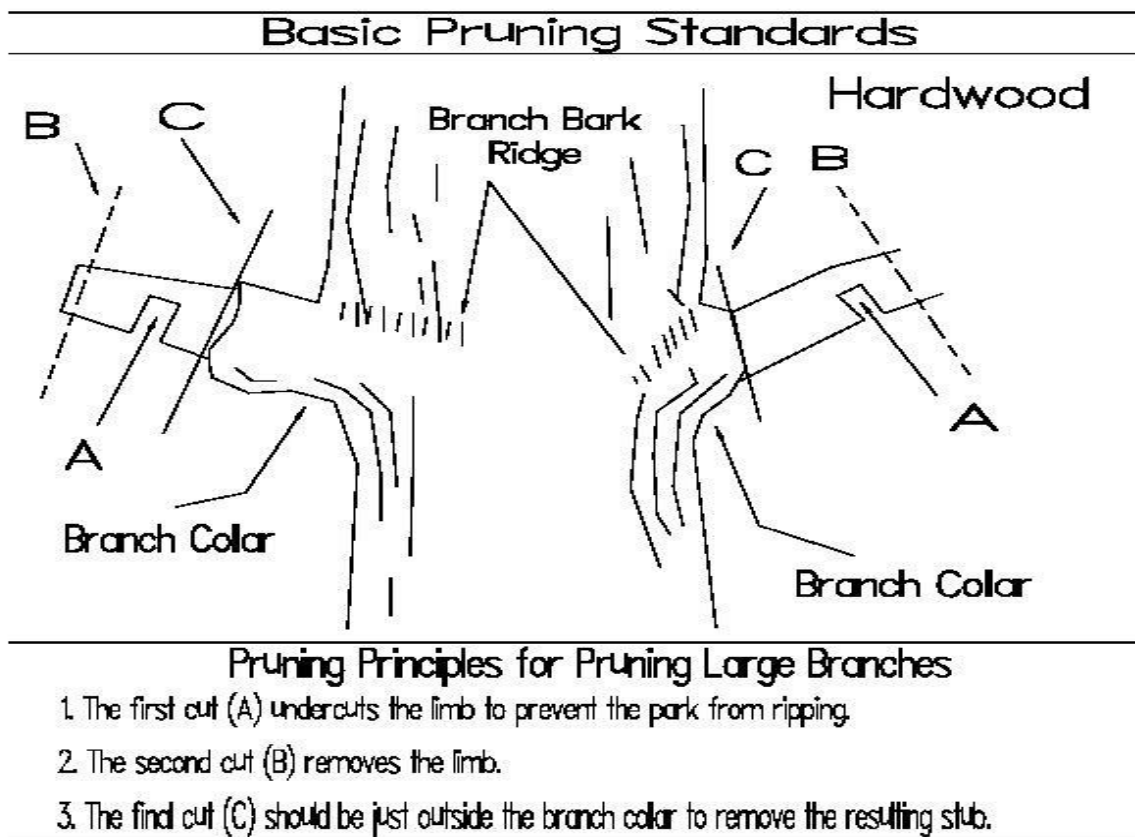
Be sure that the tree or trees have been mulched. Placing 2-4 inches of hardwood mulch around the tree as far out to the drip line as possible. Leave a space 1-2 inches away from the trunk of the tree free from mulch. You do not want to place mulch on the trunk.

Watering of the trees is essential during and after construction if there has not been adequate rainfall.

Prune any broken or dead branches from the tree.

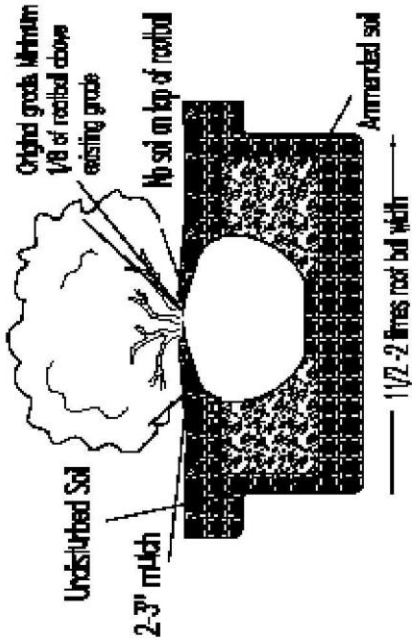
Do not prune any live limbs from the tree unless damaged.

If roots were cut or damaged during construction, be sure to prune the ends back to live tissue to ensure proper wound closure. Be sure these are then covered with soil and mulched.

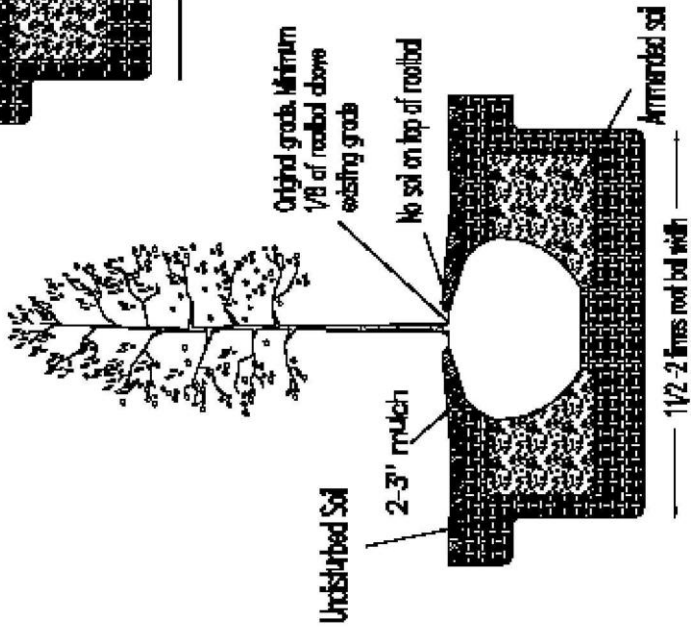


Tree and Shrub Planting Detail

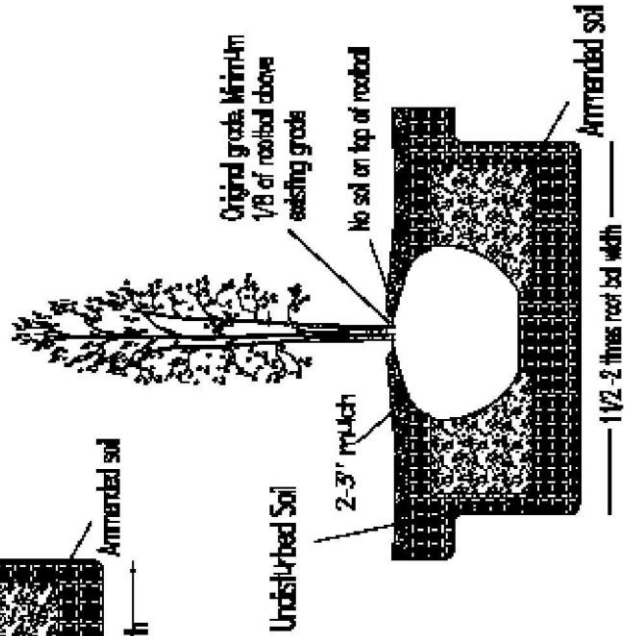
Shrub Planting Detail



Tree Planting Detail for 2 Inch Caliper and Larger



Tree Planting Detail for Up to 2 Inch Caliper or Smaller



Definitions

Caliper – A standard trunk diameter measurement for nursery grown trees. Measurement is taken 6 inches above the ground for trees up to and including 4 inches. Measurement of trees over 4-inch caliper is taken 12 inches above the ground.

Critical root zone (CRZ) – The minimum volume of roots necessary for maintenance of tree health and stability.

DBH – Diameter at breast height – The tree trunk diameter measured in inches at a height of 4.5 feet above the ground.

Deciduous – Plants that lose their leaves annually.

Drip Line – An imaginary line that extends from the outermost edge of the branches to the ground.

Evergreen – Plants that retain their foliage throughout the year.

Site survey – A map showing relevant, existing site features and vegetation on a site proposed for development.

Tree inventory – A comprehensive list of individual trees providing descriptive information on all or a portion of the project area.

Tree protection zone - A space above and below ground within which trees are to be retained and protected.

Tree protection zone barriers – Devices such as fencing, berms, or signage installed to limit access to tree protection zones.

