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# Tree Protection Plan Requirements

## Commercial Development

When applying for grading, building, or demolition permits, a tree protection plan is also required if there are existing trees 8 inches DBH (diameter breast height) or greater, measured at 4.5 feet off the ground, in the tree protection zone and/or existing trees in the right-of-way. The tree protection zone, equal to the building setback where the property abuts the public right-of-way, and not exceeding 40 feet, identifies trees for which preservation measures are required.

During demolition, grading, or construction, the site will be inspected for conformance with tree protection standards. Violations are subject to a fine and/or corrective action (mitigation).

Tree protection plans must be incorporated into the site plan(s) and/or grading plan(s), and must include the following:

- Show accurate location, size and species of existing trees that are 8" DBH (diameter breast height) or larger, in the tree protection zone and any tree 2" or more in caliper in the right-of-way.
- Show the boundaries of the tree protection barricade around the tree(s) to be preserved. Trees may be barricaded in groups, if appropriate. Indicate a minimum dimension from the tree trunk to the barricade and/or any proposed structures or other disturbances (such as grading limits, utilities, trenches, back of curb, sidewalk, or walls).
- Label the tree protection barricades and indicate that they will meet or exceed CMLDS 40.02.
- Indicate grade changes, location of any existing or proposed structures, sediment basins, drainage pipes, underground utility lines, paved areas, and any other land disturbing activity. This information may be provided on separate plans.

Show the following notes on the tree protection plan:

- No soil disturbance or compaction, construction materials, traffic, burial pits, trenching or other land disturbing activity allowed in the tree protection zone, except as shown on approved plans.
- Tree barricades must be installed before any demolition, grading, or construction and not removed until after final inspection by Urban Forester.
- Tree protection barricades must meet or exceed Tree Ordinance Standards (CMLDS 40.02).
- Before demolition, grading, or construction begins, call Urban Forestry Specialist for inspection of tree protection barricades.
- 

**Violations of tree protection requirements are subject to fines and/or immediate corrective action/mitigation. See Section 21-124 of the Tree Ordinance for details.**



# Tree Protection Checklist-Commercial

Project/Site Address: \_\_\_\_\_

On the site or grading plan, please include the following marked items:

1.  Existing healthy trees within 25 feet of the right-of-way line (front property line) may be credited toward the perimeter tree requirements.
2.  Provide a survey of existing trees (show size and species):
  - Within the right-of-way, 2 inch caliper or larger (city-maintained trees only)
  - Within the setback ("tree protection zone"), 8 inches diameter or larger
  - Other existing healthy trees to be preserved for credit
3.  Show on plan the location of tree protection barricades, with boundaries and dimensions (per the Charlotte-Mecklenburg Land Development Standard 40.02) for:
  - Existing City maintained trees in the right-of-way, 2 inch or larger
  - Existing trees in the setback or right-of-way, 8 inches or larger
  - Other existing healthy trees to be preserved for credit

Add the following notes to the site or grading plan:

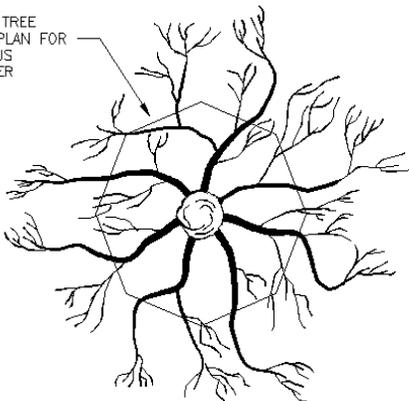
All trees on public property are protected by ordinance and removal must be approved by the city arborist (704) 336-4262.

- No soil disturbance or compaction, construction materials, traffic, burial pits, trenching or other land disturbing activity allowed in the tree protection zone.
- Tree barricades must be installed before any demolition, grading or construction begins, and not removed until final inspection.
- Tree protection barricades must meet or exceed Tree Ordinance Standards in City of Charlotte Land Development Standards Manual 40.02.
- Before grading/clearing/construction begins, call 704-for \_\_\_\_\_ inspection of tree protection barricades by Urban Forester.
- No grubbing within tree protection zone. Leave soil and leaf litter undisturbed. Supplement with 1-2 inches of mulch. Re-seed with grass only in disturbed/graded areas.
- Brush, vines, and small trees (< 8 in. diameter, or as small as 2 in. caliper) may be hand-cleared only, cut flush with ground surface. Existing trees may be limbed up 6 feet (leaving at least  $\frac{2}{3}$  of the branches) to improve visibility.
- Exposed tree roots must be cleanly cut with a sharp pruning tool; backfill ASAP to minimize exposure to the air.
- Tree barricades must be installed before any demolition/clearing/grading/construction, and not removed until after final inspection by Urban Forester.
- Please submit utility plans so that they can be reviewed for utility conflicts with existing and proposed trees: electrical, telephone, gas, sewer, water, and site lighting.
- Tree protection fence is to be located 1 foot per tree diameter inch away from the tree in the setback or right-of-way. Please show dimension on site/ grading plan.
- Show all (marked) proposed utilities (not to pass through tree protection zone):
  - Water                       Storm Drainage                       Gas                                       Irrigation
  - Telephone                       Sewer                                       Backflow Preventer
  - Site Lighting                       Fire Hydrant                               Electrical
- Additional comments - see red lined plans.

Reviewer \_\_\_\_\_

# Tree Protection Detail

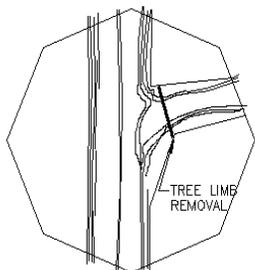
SEE APPROVED TREE PRESERVATION PLAN FOR REQUIRED RADIUS OF TREE BARRIER



PLAN VIEW OF ROOT ZONE

**NOTES:**

1. REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
2. LANDSCAPING PLANS SHALL SHOW THE LOCATIONS OF ALL TREE PROTECTION FENCES.
3. REFER TO CITY OF CHARLOTTE LANDSCAPE CONSTRUCTION STANDARDS SECTION 01000 FOR GENERAL SPECIFICATION REGARDING TREE PROTECTION.

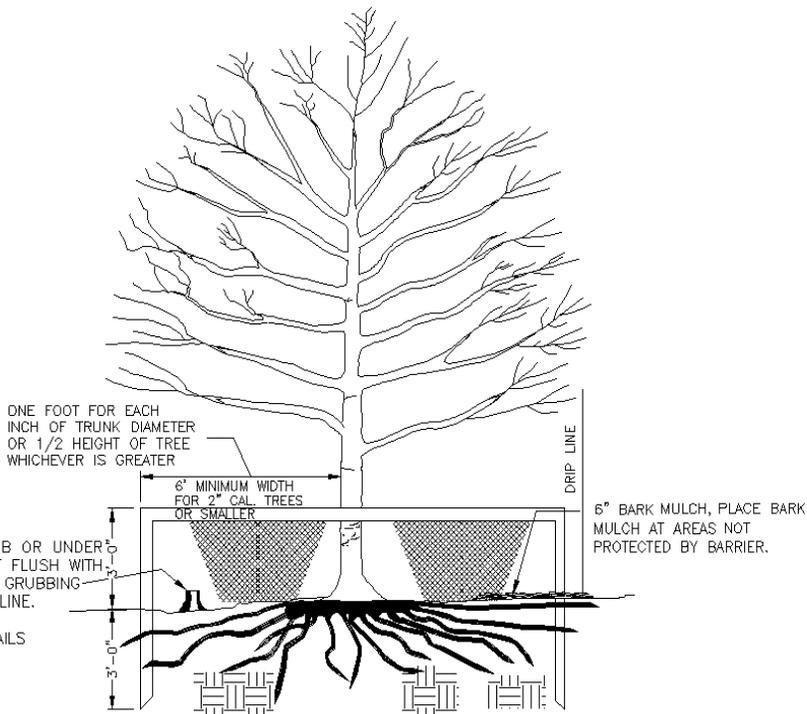


TREE LIMB REMOVAL

FOR PRUNING SEE NATIONAL ARBORIST ASSOCIATION SPECS.

DEAD TREES AND SCRUB OR UNDERGROWTH SHALL BE CUT FLUSH WITH ADJACENT GRADE. NO GRUBBING ALLOWED UNDER DRIP LINE.

2"x4" STANDARDS + 1"x4" RAILS OR ORANGE SAFETY FENCING MAY BE USED.



Orange safety fence on metal posts or 2" x 4" standards and 1" x 4" rails or 3' high silt fence with flagging

APPROVED DATE \_\_\_\_\_

REVISIONS		
NO.	DATE	DESCRIPTION

**CHARLOTTE - MECKLENBURG  
LAND DEVELOPMENT  
STANDARDS**

TREE PROTECTION DETAIL

STD. NO.	REV.
40.02	

**General Notes — Tree Protection:**

1. In some cases, permits may be issued to allow temporary (30 days) access across the tree protection zone. Mulch, 4" to 6" deep, will be required to act as a cushion to prevent soil compaction. Do not store materials or park machinery in the protected root zone.
2. Trees located within the street right-of-way and the tree protection zone (building setback where property abuts the public right-of-way) shall be protected from damage or removal per the City of Charlotte Tree Ordinance (Chapter 21, City Code).
3. City Urban Forestry Staff and/or the City Arborist must approve any proposed construction or grading adjacent to trees or their root system. This includes the following: storm drainage, underground utilities, driveways, sidewalks, etc. Utilities may be tunneled in the root zone at a 24" minimum depth if plans have been approved showing the location and method.
4. No fill dirt deeper than one inch (1") shall be allowed under the drip line of the tree. No grubbing is permitted in the protected root zone. Stumps, dead trees and any shrub growth to be removed shall be cut flush or ground out.
5. Do not remove barriers until final completion of project.
6. Root pruning shall be kept to an absolute minimum. The cut shall be made no more than six inches (6") behind the back of the curb and to a depth of two feet (2') below the soil surface. Root pruning equipment shall be kept sharp to ensure that roots are cut cleanly and are not broken or torn by dull or unsuitable equipment. Any exposed roots shall be covered with soil as soon as possible to minimize exposure to air.
7. Pruning of existing trees shall be done according to the latest edition of National Arborist Association (NAA) standards in a manner that preserves the natural character of the crown. A permit is required for pruning trees in the street right-of-way and tree protection zone.
8. Any damage to the tree stem or tree roots will require corrective action per the Urban Forestry Specialist and/or City Arborist.



# Tree Planting Checklist - Commercial

Site Address: \_\_\_\_\_

On the site or landscape plan(s), please include the following marked items:

**TREE SAVE**

Perimeter Planting Requirement:

1. Show a continuous planting strip behind the right-of-way line, indicating a minimum average width of 8'.
2. Show perimeter trees along frontage where the property abuts the public right-of-way. Number required:  
 Overhead power line (distribution or transmission line, 240+ volts):  
\_\_\_\_\_ Small-maturing trees required  
 No overhead power line:  
\_\_\_\_\_ Large-maturing trees, **or** \_\_\_\_\_ Small-maturing trees (or equivalent combination)

(Preferred spacing is: 30 ft. for small maturing trees and 40 ft. for large maturing trees)

3. Show calculations for the perimeter planting strip(s) where the site abuts maintained motor vehicle rights-of-way. Include the length of the linear frontage, the number of trees required, tree type(s), and the number of trees shown.

Internal Planting Requirement:

4. Provide minimum landscape area, as a percentage of total impervious area for the entire site:  
 New site: 10%                       Renovated Site: 5%
5. Show calculations:  
Impervious area = \_\_\_\_\_ sq. ft. \*  
Landscape area = \_\_\_\_\_ sq. ft. \_\_\_\_\_ %  
Total site area = \_\_\_\_\_ sq. ft.

*\*Internal tree requirement: Impervious area / 10,000 square feet = \_\_\_\_\_ trees*

6. Provide at least 274 square feet of unobstructed landscape space per tree with a minimum width of 8 feet, indicating dimensions from back of curb to back of curb (dimension on site/staking plan).

General Requirements:

7. Show that all automobile parking spaces are within 60 feet of a tree
8. Clearly indicate limits of all landscaped and impervious areas
9. Indicate curb stops (pre-cast wheel stops, concrete curb, or landscape timbers) or other devices (e.g. bollards, fence) to prevent vehicular damage to Ordinance-required trees
10. Label new trees to be planted. Use tree species selected from the approved planting list or approved by Urban Forestry staff. At least 75% of new trees must be large-maturing.
11. Show and label existing perimeter and internal trees on landscape plan for credit toward Tree Ordinance requirements.
12. Existing healthy trees within 25' of the right of way may be credited toward the perimeter requirement if shown on landscape plan and preserved healthy.
13. Show Tree Planting Detail 40.01 and Show or call out Detail 40.09 and/or any other pertinent detail.
14. Show all (marked) proposed utilities (not to pass through tree protection zone):  
 Water                                       Sewer                                       Electrical  
 Telephone                                       Fire Hydrant                                       Irrigation  
 Site Lighting                                       Gas  
 Storm Drainage                                       Backflow Preventer



## Tree Planting Checklist (Continued)

### Add The Following Notes To The Site Or Landscape Plan(s):

15. Minimum tree size at planting is 2-inch caliper (for single stem trees). All multi-stem plants must be tree form, maximum 3 to 5 trunks, and minimum 8 feet tall.
16. All strapping and top 2/3 of wire basket must be cut away and removed from root ball prior to backfilling planting pit. Remove top 1/3 of the burlap from root ball.
17. For new planting areas, remove all pavement, gravel sub-base and construction debris; remove compacted soil and add 18" new topsoil, or till and amend the top 18" of existing soil to meet topsoil/planting mix standards for trees (within entire minimum area of 274 square feet per tree).
18. Large maturing trees may not be planted where there are overhead distribution or transmission lines. If trees conflict with power lines or signs, call Urban Forester to resolve **BEFORE** planting.
19. Adjust tree planting locations to avoid underground utilities. Plant 15' from all underground utilities (sewer and storm drainage, gas, water, phone, and electrical lines.)
20. Attention Landscaper: Notify Urban Forester of any sign, power line, or other conflicts **BEFORE** planting new trees.
21. Please call 704- \_\_\_\_\_ for an inspection of tree protection and/or tree planting areas, 1 to 2 days before the temporary or final Certificate of Occupancy is needed.
21. All trees on public property are protected by ordinance and removal must be approved by the city arborist (704) 336-4262

**Submit four (4) copies of tree planting/landscape plan to City Engineering and Property Management Department.**

### Additional Comments:

Reviewer: \_\_\_\_\_

Telephone: 704 \_\_\_\_\_ Date: \_\_\_\_\_

**Please note** that this checklist pertains only to requirements for tree ordinance compliance with Chapter 21 of the City Code. Other reviews and approvals are required for your project.



# Tree Ordinance Checklist

## Single Family

**Site Address/Subdivision Name:**

- First submittal must include an aerial photo with the site layout superimposed on it indicating that trees exist in proposed tree save areas.
- Where tree save areas abut neighboring property, the actual property line must be staked/flagged in the field upon first submittal.
- Any tree save areas that are less than 20 ft in width must be staked in the field for staff verification of existing canopy upon first submittal.
- Tree save areas may not be located within utility right of way, utility construction easements, within fifty feet of the center line of any over head electrical transmission line, or within fifteen feet of the center line of any over head electrical distribution line.

*On the subdivision plan set show the following items:*

**TREE SAVE REQUIREMENT:**

1.  Show the existing tree canopy to be saved with calculations for each area
2.  Tree Save Areas must be a minimum 20 feet wide except where approved by staff. **On sites with the minimum 10%, tree save area(s) that are 20 ft wide or less must be field verified. If large tree(s) are on the edge of tree saves, then extra effort (such as adjusting grades, additional protection, or retaining walls) may be required in order to count them as tree save.**
3.  Show calculations:

Gross total site area	=
Net total site area*	=
Percent tree save area	=

\*Net total site area = Gross total site area – square footage for existing and dedicated road rights-of-ways (State or City imposed), utility easements (maintained/disturbed--includes overhead power lines), and existing ponds/lakes being preserved

  - If existing canopy is less than 10% see supplemental planting section.
4.  Provide a tree survey of existing Heritage Trees (show size, species, and location)-OR- a note on plans stating site has been inspected and no 'Heritage' trees are present.
5.  Provide a tree survey of any existing Specimen Trees being preserved for credit.
6.  Show existing and proposed utilities which impact tree save areas (Tree save areas will not be credited for any area disturbed by the utilities).
7.  Show Tree Save Area(s) with tree protection measures on erosion control, existing conditions and landscape sheets.

**ADD THESE TREE PROTECTION NOTES TO SUBDIVISION PLAN**  
**(Erosion control sheets)**

- Tree Protection fence/barricades must meet or exceed tree ordinance standards
- Tree protection fence/barricades must be installed before any demolition/clearing/grading/ construction, and not removed until after an inspection by Urban Forestry staff.
- No soil disturbance or compaction, construction materials, traffic, burial pits, trenching or other land disturbing activity allowed in tree save areas.
- Violations of the tree protection requirements are subject to fines, and/or immediate corrective action/mitigation.
- All trees on public property are protected by ordinance and removal must be approved by the City Arborist (704) 336-4262.
- Add note to construction sequence: Urban Forestry Specialist, \_\_\_\_\_ at \_\_\_\_\_ must be notified of the pre-construction meeting.

**STREET TREE PLANTING REQUIREMENT:**

- 11.  Show trees on site/landscape plan within 20 feet of the back of curb. Planting strip must be 6 feet wide if trees are planted between sidewalk and curb.
- 12.  Plant large maturing shade trees on 40-50 ft. spacing when overhead power lines are not present, and 40 ft spacing when across the street from commercial or multi-family development.
- 13.  Plant small maturing shade trees on 30 ft. spacing only when overhead power lines are present.
- 14.  75% of new trees must be large maturing shade trees from the approved species list.
- 15.  Show CMLDS Detail 40.01 and Detail 40.09 on plans

**ADD THESE TREE PLANTING NOTES TO THE SUBDIVISION PLAN (Site/landscape sheets)**

All trees shall be planted per CMLDS 40.01 and 40.09.

- All strapping and top 2/3 of wire basket must be cut away and removed from the root ball prior to backfilling planting pit. Remove top 1/3 of the burlap from root ball.
- Large maturing trees may not be planted where overhead distribution or transmission lines exist. If trees conflict with power lines or signs, call the Urban Forester to resolve **BEFORE** planting.
- Adjust tree-planting locations to avoid underground utilities.
- New trees shall be a minimum 2” caliper for street tree requirements.
- See tree preservation notes on grading and erosion control sheets

**SUPPLEMENTAL PLANTING REQUIREMENT:**

*(Rarely applicable)*

- 8.  Less than 10% tree canopy area but, more than 5%, save area in entirety and supplement as needed to meet 10% minimum at 18 trees per acre.
- 9.  Less than 5% tree canopy area save area in entirety and supplement as needed to meet 5% at 18 trees per acre.
- 10.  Supplemental trees must be 75% large maturing shade trees from approved species list.

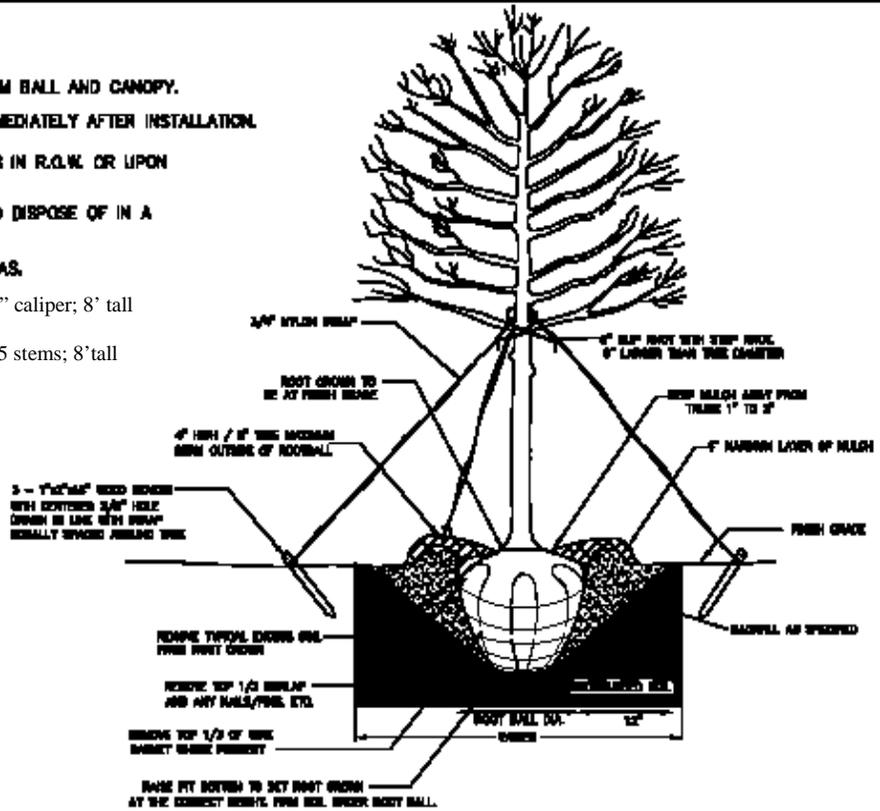
**ADDITIONAL COMMENTS:**

Urban Forester: \_\_\_\_\_ Phone: \_\_\_\_\_ Date: \_\_\_\_\_

# Planting Detail—Single & Multi Stem Trees

## NOTES:

1. REMOVE WIRE AND NYLON TWINE FROM BALL AND CANOPY.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
3. STAKING IS REQUIRED FOR ALL TREES IN R.O.W. OR UPON REQUEST OF ARBORIST.
4. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.
5. RESEED UNMULCHED, DISTURBED AREAS.
5. Minimum Tree Size: Single Stem 2" caliper; 8' tall
6. Minimum Tree Size: Multi-stem 3-5 stems; 8' tall



ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004)

FOR EXAMPLE:

CALIPER	HEIGHT (RANGE)	MAX HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
2"	12-14'	16'	24"	16"
3"	14-16'	18'	32"	21"

NOT TO SCALE



**CITY OF CHARLOTTE**  
**LAND DEVELOPMENT STANDARDS**  
 INCLUDES CHARLOTTE STD

## TREE PLANTING (FOR SINGLE AND MULTI-STEM TREES)

STANDARD NO.	REV.
40.01	

### General Notes — Single-Stem Tree:

1. All trees are to be nursery grown, ball and burlap (B & B) preferred. Minimum tree size is 2" caliper (measured 6" above root ball), 8' minimum height.
2. Staking is optional. Rubber hose and rope or wire for staking is not recommended. No wire or rope is to be in direct contact with trunk. Remove all trunk wrap, tree straps, and staking wire or rope after one growing season.
3. Guy wires are not permitted in the street right-of-way.
4. All trees shall meet American Standard for Nursery Stock (ANSI, 1990, Part 1, "Shade and Flowering Trees"). For example:

Caliper	Height (Range)	Max. Height	Min. Root Ball Diameter	Min. Root Ball Depth
2"	12-14'	16'	24"	16"
3"	14-16'	18'	32"	21"

# Perimeter Tree Requirements

A continuous perimeter-planting strip is required to be in the setback with a minimum width of eight (8) feet where the property abuts the public right-of-way. Pavement cutouts may be used at renovated sites; these must provide at least 274 square feet of unobstructed landscape space per tree. **Credit will be given towards perimeter planting requirements for existing healthy trees** within 8 to 25 feet of the right-of-way line. Use the following chart as a guide to determine the number of perimeter trees required. The actual number required will be determined by the Urban Forestry staff, which may vary slightly from those shown below depending upon site conditions and conflicts, such as utilities or multiple driveways.

## Large-maturing Trees <sup>A</sup>

Frontage in linear feet	Number of trees required
0 to 40	1
40+ to 80	2
80+ to 120	3
120+ to 160	4
160+ to 200	5
200+ to 240	6
240+ to 280	7
280+ to 320	8
320+ to 360	9
360+ to 400	10
400+ to 440	11
440+ to 480	12
480+ to 520	13
520+ to 560	14
560+ to 600	15
600+ to 640	16
640+ to 680	17
680+ to 720	18
720+ to 760	19
760+ to 800	20
800+ to 840	21
840+ to 880	22
880+ to 920	23
920+ to 960	24
960+ to 1000	25
1000+ to 1040	26
1040+: [Linear feet / 40] <sup>C</sup>	

## Small-maturing Trees <sup>B</sup>

Frontage in linear feet	Number of trees required
0 to 30	1
30+ to 60	2
60+ to 90	3
90+ to 120	4
120+ to 150	5
150+ to 180	6
180+ to 210	7
210+ to 240	8
240+ to 270	9
270+ to 300	10
300+ to 330	11
330+ to 360	12
360+ to 390	13
390+ to 420	14
420+ to 450	15
450+ to 480	16
480+ to 510	17
510+ to 540	18
540+ to 570	19
570+ to 600	20
600+ to 630	21
630+ to 660	22
660+ to 690	23
690+ to 720	24
720+ to 750	25
750+ to 780	26
780+: [Linear feet / 30] <sup>C</sup>	

<sup>A</sup>

**Large-maturing trees** grow to more than 35 feet in height at maturity. They may not be planted directly under overhead power lines (Appendix 15) or where overhead power lines are on the same side of the street. It is acceptable to plant them under streetlight, telephone or service drop wires running to buildings. **Spacing between trees:** 40' typical; 25' minimum if planted in groups.

<sup>B</sup>

**Small-maturing trees** grow to less than 35 feet in height at maturity. Use these when planting under (or within 20-25' of) overhead power lines. **Spacing between trees:** 30' typical; 20' minimum if planted in groups.

<sup>C</sup>

Round any portion there-of **up** to the nearest whole number.

# Approved Species List

Large-Maturing Trees	Max Height (ft)	Max Width (ft)	Shape	Shade Tree	Tolerates Poor Drainage	Comments/ Features
<b>Deciduous</b>						
(Common Name/ Latin Name)						
Baldcypress/ <i>Taxodium distichum</i>	70	30	P	N	Y	Monarch of Ill.', 'Shawnee Brave'
Beech, American/ <i>Fagus grandiflora</i>						
Birch, River/ <i>Betula nigra</i>	50	35	O	Y	Y	'heritage'; drought sensitive,'Dura-Heat'
Black Gum/ <i>Nyssa sylvatica</i>	50	35	P	Y	Y	Good fall color
Dawn Redwood/ <i>Metasequoia glyptostroboides</i>	80	25	P	N	N	Good in wet areas
Elm, Lacebark/ <i>Ulmus parvifolia</i>	50	50	G	Y	Y	'Allee', 'Athena', 'Drake'
Gingko/ <i>Ginkgo biloba</i>	65	50	BP	Y	Y	'Lakeview', 'Princeton Sentry'
Hackberry, Common/ <i>Celtis occidentalis</i>	60	50	O	Y	Y	
Hackberry, Sugar/ <i>Celtis laevigata</i>	50	40	G	Y	Y	'All Seasons'
Hornbeam,European/ <i>Carpinus betulus</i>	60	40	O	Y	--	'Fastigiata'
Linden, Little leaf/ <i>Tilia cordata</i>	70	40	BP	Y	Y	'Glenleven', 'Greenspire'
Kentucky Coffeetree/ <i>Gymnocladus dioicus</i>	75	65	O	Y	N	Has pods
Maple, Freeman/ <i>Acer x fremanii</i>	65	50	O	Y	N	'Jeffsred' Autumn Blaze (NCSU Top 10 List)
Maple, Red/ <i>Acer rubrum</i>	60	50	O	Y	Y	'Autumn Flame', 'Bowhall', 'October Glory', 'Red Sunset', 'Armstrong'
Maple, Sugar/ <i>Acer saccharum</i>	70	40	BP	Y	N	'Commemoration', 'Green Mountain', 'Bonfire', 'Legacy'
Oak, Laurel/ <i>Quercus laurifolia</i>	70	60	O	Y	N	
Oak, Overcup/ <i>Quercus lyrata</i>	50	40	O	Y	Y	
Oak, Sawtooth/ <i>Quercus acutissima</i>	45	45	G	Y	Y	Holds brown leaves in winter
Oak, Shumard/ <i>Quercus shumardii</i>	60	50	G	Y	N	
Oak, Southern Red/ <i>Quercus falcata</i>	70	60	G	Y	N	
Oak, Willow/ <i>Quercus phellos</i>	60	40	G	Y	Y	
Sweetgum/ <i>Liquidambar styraciflua</i>	70	50	O	Y	Y	'Rotundiloba' is fruitless variety
Tulip Poplar/ <i>Liriodendron tulipifera</i>	80	40	O	Y	Y	
Zelkova, Japanese/ <i>Zelkova serrata</i>	70	55	V	Y	N	'Green Vase', 'Village Green'
<b>Evergreen</b>						
Cedar, Deodar/ <i>Cedrus deodara</i>	50	30	P	N	--	For large lawn areas only
Cryptomeria, Japanese/ <i>Cryptomeria japonica</i>	45	20	C	N	Y	
Cypress, Leyland/ <i>X Cupressocyparis leylandii</i>	70	15	C	N	Y	
Magnolia, Southern/ <i>Magnolia grandiflora</i>	50	30	P	N	N	'Bracken's Brown Beauty'
Oak, Live/ <i>Quercus virginiana</i>	50	60	S	Y	Y	
Pine, Austrian/ <i>Pinus nigra</i>	55	30	BP	N	Y	
Pine, Loblolly/ <i>Pinus taeda</i>	60	40	O	N	Y	
Pine, Virginia/ <i>Pinus virginiana</i>	40	25	BP	N	--	

# Approved Species List

<b>Small-Maturing Trees</b>	Power line use	Max. Height	Shape	Shade Tree	Tolerates Poor Drainage	Comments/Features
<b>Deciduous</b>						
Common Name/ Latin Name						
Carolina Silverbell/ <i>Halesia carolina</i>	Y	30'	BP	Y	--	
Cherry, Kwanzan/ <i>Prunus serrulata</i> 'Kwanzan'	Y	18'	S	N	N	
Cherry, Yoshino/ <i>Prunus X yedoensis</i>	Y	40'	S	N	N	
Chinese Pistache/ <i>Pistacia chinensis</i>	N	40'	S	Y	Y	
Chinese Flame Tree / <i>Koelreuteria bipinnata</i>	N	30'	C,S,	Y	N	
Dogwood, Flowering/ <i>Cornus florida</i>	Y	30'	S	Y	N	
Dogwood, Kousa/ <i>Cornus kousa</i>	Y	30'	G	Y	N	
Fringetree, Chinese/ <i>Chionanthus retusus</i>	Y	30'	G	Y	N	
Hawthorne, Green/ <i>Crataegus viridis</i> 'Winter King'	Y	30'	V	N	Y	
Hawthorne, Washington/ <i>Crataegus phaenopyrum</i>	Y	25'	O	N	Y	
Magnolia, Saucer/ <i>Magnolia X soulangiana</i>	Y	25'	BP	N	Y	
Magnolia, Star/ <i>Magnolia stellata</i>	Y	20'	O	N	Y	
Purpleleaf Plum/ <i>Prunus cerasifera</i> 'Atropurpurea'	Y	25'	S	N	N	
Redbud, Chinese/ <i>Cercis chinensis</i>	Y	15'	V,S	N	Y	
Redbud, Eastern/ <i>Cercis canadensis</i>	Y	25'	V,S	Y	Y	
Serviceberry/ <i>Amelanchier arborea</i>	Y	25'	G,S	N	--	
<b>Evergreen</b>						
Holly, Foster/ <i>Ilex X attenuata</i> 'Fosteri'	Y	25'	P	N	Y	
Holly, Savannah/ <i>Ilex X attenuata</i> 'Savannah'	Y	25'	P	N	Y	
Hornbeam, American/ <i>Carpinus caroliniana</i>	Y	35'	S	Y	Y	
Magnolia, 'Little Gem'/ <i>Magnolia grandiflora</i>	Y	25'	C,P	N	Y	
Maple, Hedge/ <i>Acer campestre</i>	Y	40'	G	Y	N	
Maple, Japanese/ <i>Acer palmatum</i>	Y	25'	S	Y	N	
Maple, Trident/ <i>Acer buergerianum</i>	Y	30'	G	Y	N	
Myrtle, Wax/ <i>Myrica cerifera</i>	Y	25'	G	N	Y	

## Notes and Legend:

- Use only cultivars or varieties specified for compliance with Tree Ordinance.
- Shape:      **BP**=Broadly Pyramidal      **G**=Globular      **S**=Spreading      **O**=Ovate  
                  **P**=Narrowly Pyramidal      **C**=Columnar      **V**=Vase-shaped
- The following species are prohibited:  
     Pear, Bradford/ *Pyrus calleryana* 'Bradford'      Pine, Eastern white/ *Pinus strobus*  
     Elm, Siberian/ *Ulmus pumila*      Maple, Silver/ *Acer saccharinum*  
     Oak, (Northern) Red/ *Quercus rubra*
- The following species are not recommended:  
     Catalpa/ *Catalpa speciosa*      Maple, Norway/ *Acer platanoides*  
     Princess tree/ *Paulownia tomentosa*      Tree-of-Heaven/ *Ailanthus altissima*  
     Honeylocust/ *Gleditsia triacanthos*      Oak, Pin/ *Quercus palustris*  
     Oak, Scarlet/ *Quercus coccinea*      Sycamores/ *Platanus sp.*  
     Crape Myrtle/ *Lagerstroemia indica*
- Other species may be used if approved in advance by Urban Forestry staff.

# Chapter 21 City Tree Ordinance Code Summary

(Reproduce the following data on site/landscape plan)

## **TREE SAVE:**

### **PERIMETER TREE REQUIREMENTS**

Linear feet of road frontage along maintained right of way including driveways

Street: \_\_\_\_\_ / \_\_\_\_\_ ft. = \_\_\_\_\_ trees required / \_\_\_\_\_ trees provided

Street: \_\_\_\_\_ / \_\_\_\_\_ ft. = \_\_\_\_\_ trees required / \_\_\_\_\_ trees provided

Street: \_\_\_\_\_ / \_\_\_\_\_ ft. = \_\_\_\_\_ trees required / \_\_\_\_\_ trees provided

If overhead distribution power lines exist, only small maturing trees are allowed within 30 ft. of lines. Otherwise 75% of new trees must be large maturing.

### **INTERNAL TREE REQUIREMENTS:**

One tree per 10,000 sq. ft. of impervious area. All parking spaces must be within 60 ft. of the trunk of a tree. Minimum landscape area as a percentage of entire site is 5% for renovated sites and 10% for new sites.

Calculations:            Impervious area = \_\_\_\_\_ sq.ft.\*  
(entire site)            Landscape area = \_\_\_\_\_ sq.ft. = \_\_\_\_\_ % of total impervious area  
                                 Total Site Area = \_\_\_\_\_ sq.ft.

\*Internal tree requirement: Impervious area/10,000 = \_\_\_\_\_ trees.

### **ATTENTION CONTRACTOR / LANDSCAPER**

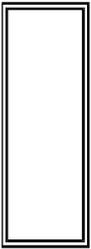
IT IS THE RESPONSIBILITY OF THE CONTRACTOR / LANDSCAPER TO NOTIFY THE URBAN FORESTER OF ANY SITE CONFLICTS THAT AFFECT TREE SPECIES OR LOCATIONS PRIOR TO PLANTING TREES. CALL 336-3599 OR THE URBAN FORESTER NAMED ON THE APPROVED PLAN FOR ANY CONFLICTS REGARDING SIGHT, SIGNS, OVERHEAD POWERLINES OR OTHER UTILITIES.

# Planting Area Requirements And Recommendations

## Minimum Landscape Area Requirements:

The minimum landscape area per tree is based on arboricultural research showing that, to approach its normal size at maturity, a tree requires an absolute minimum soil volume of 400 to 600 cubic feet. Assuming the soil is 18 to 24" (1 ½ to 2 feet) deep, 274 square feet is the minimum area allowed per tree. The minimum width of the planting area is 8' at the trunk of the tree. Some examples for planter beds meeting this minimum standard are shown below. **All planters are measured from back of curb to back of curb.**

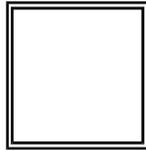
(Dimensions for approximately 274 square foot landscape islands)



**Minimum width**  
Rectangle  
8' x 35'



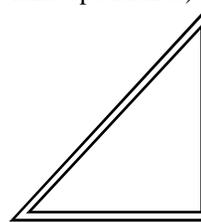
Rectangle  
10' x 28'



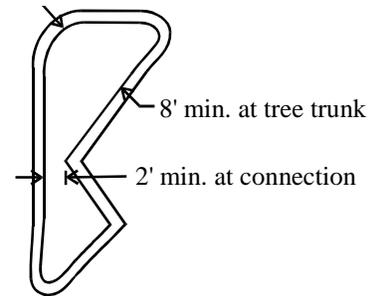
Square  
16.5' x 16.5'



Semicircle  
26.4' diameter



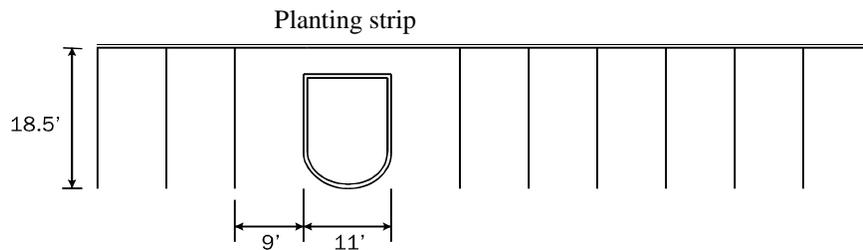
Triangle  
20' x 27.4'



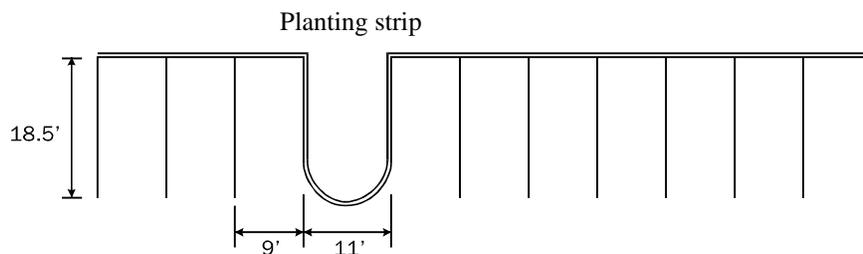
Irregular shape  
(Min. Area 274 SF)

Also avoid having planters cut from planting strips:

### Wrong



### Right



# Planting Area Requirements And Recommendations (Continued)

## Topsoil/planting mix—Minimum Requirements:

Where pavement cutouts on renovated sites are required and/or where new planting strips or islands are required, all pavement, construction debris and gravel sub-base must be removed before preparing soil and planting trees. Existing compacted soil must be removed and replaced with 24" of topsoil/planting mix -OR- existing soil may be uncompacted to a depth of 24" and amended to meet topsoil standards for the entire planting area.

Soil in all planting strips or islands, whether existing or new (on new or renovated sites), must meet the minimum topsoil/planting mix specifications. Soil amendments or fresh topsoil/planting mix are often needed for planting areas at sites where original topsoil is of poor quality, heavily compacted or where topsoil has been completely removed during grading.

Topsoil/planting mix should be natural, fertile, agricultural soil capable of sustaining vigorous plant growth. It should be uniform composition throughout, with admixture of subsoil. It should be free of stones, lumps, live plants and their roots, sticks and other extraneous matter. Topsoil should not be used while in a frozen or muddy condition.

Topsoil/planting mix shall have an acidity range of pH 5.5-7.0 and the following composition:

Clay (red clay, well pulverized)	Minimum 10%; maximum 35%
Compost*/organic	Minimum 5%; maximum 10%
Silt	Minimum 30%; maximum 50%
Coarse sand (free of rocks, 0.5 to 1.0 mm)	Minimum 30%; maximum 45%

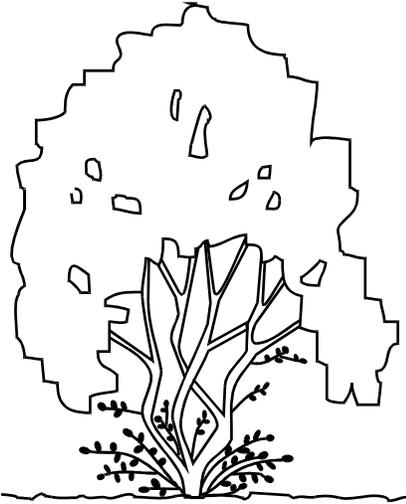
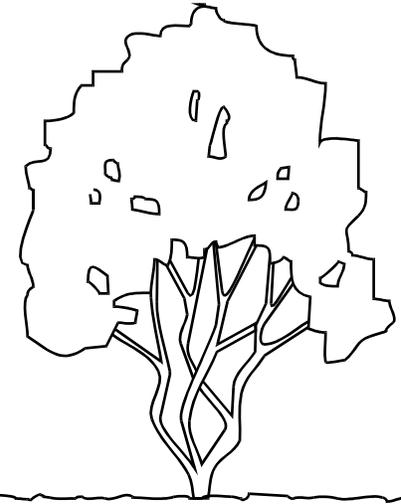
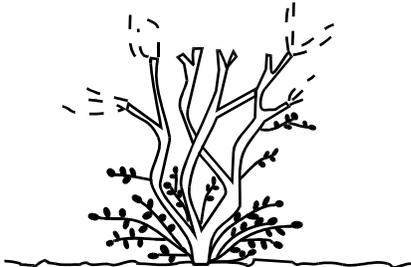
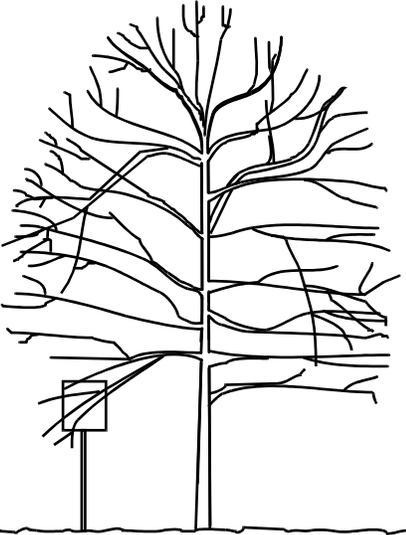
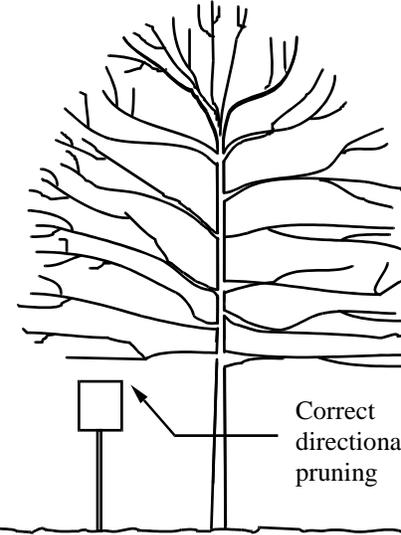
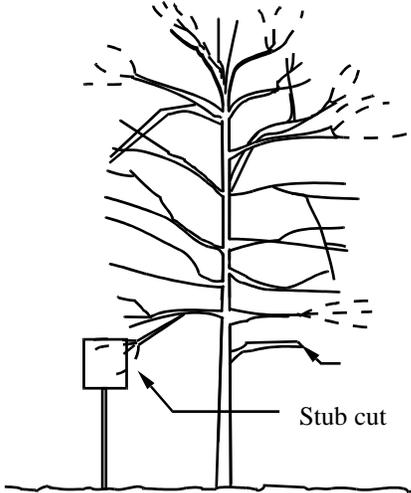
\* Organic material such as sawdust or leaf mold that has completed the decomposition process

## Recommendations:

All planting areas should be tested for proper drainage. Drainage should be corrected as necessary to insure proper tree growth and survival. The following level of nutrient elements is recommended for proper growth:

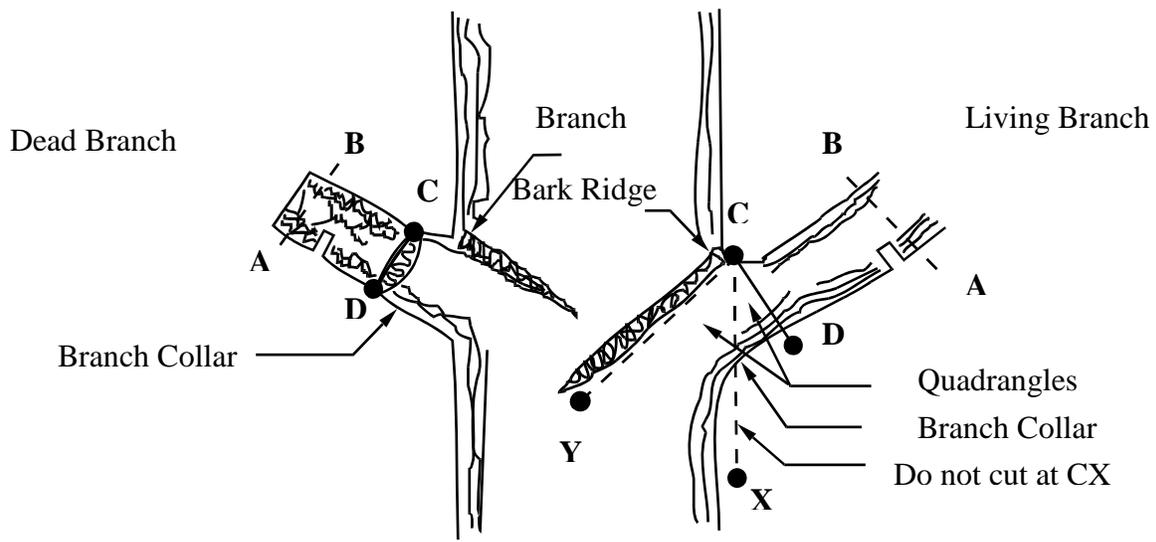
Calcium	55 - 80%
Magnesium	10 - 30%
Potassium	5 - 8%

# Basic Pruning Standards

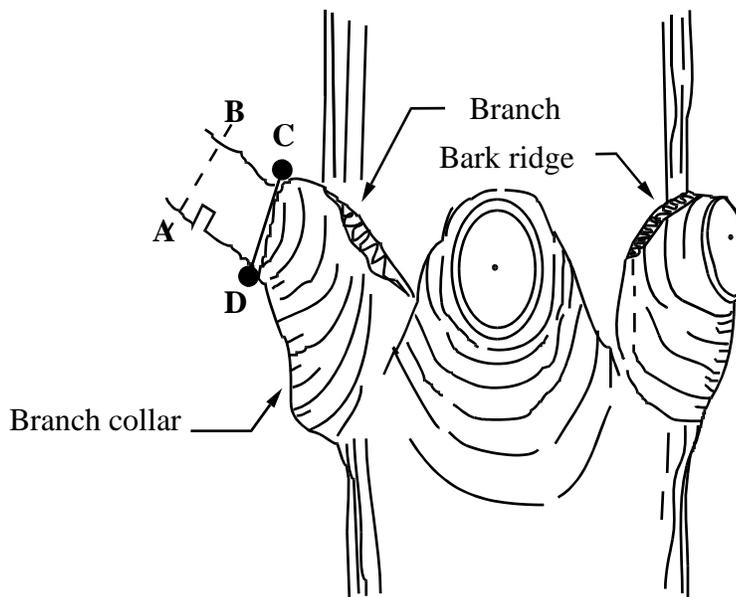
Before Pruning	After Pruning	
	RIGHT	WRONG
		
Multi-Stem Tree (Overgrown)	Prune To Maintain Tree Form	Do not round over (Promotes sprouts)
	 <p>Correct directional pruning</p>	 <p>Stub cut</p>
Single stem tree with dense crown, dead limbs or low branches	Prune to Arborist Standards. ANSI A300. (See next page for example)	Do not top or stub cut Incorrect pruning - promotes sprouts

# Basic Pruning Standards (Continued)

## (ANSI A300)



### Hardwood



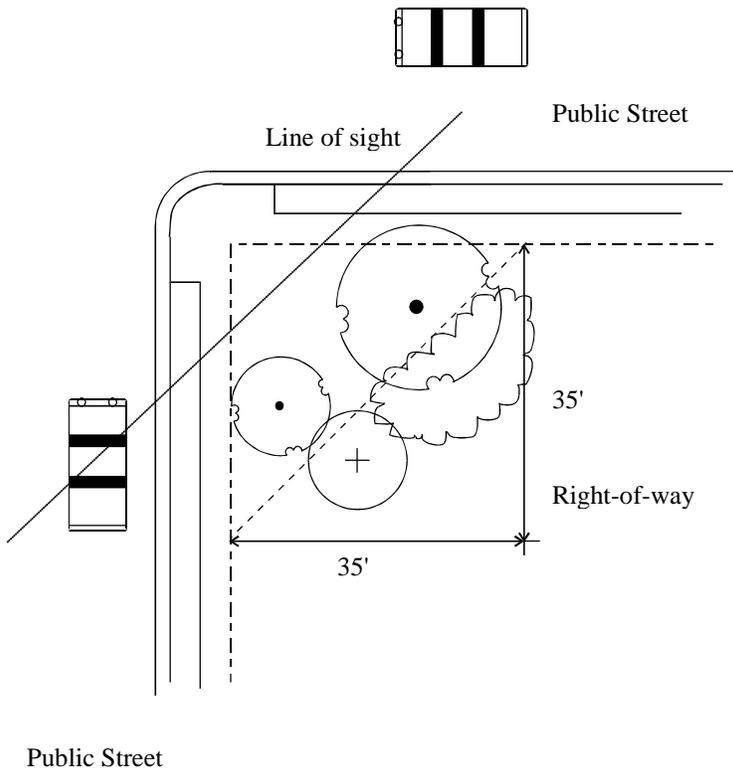
### Conifer

For living or dead branches

#### Pruning A Branch

1. Remove branch weight by undercutting at A; remove limb by cutting through at B.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar).
3. If line CD is difficult to find on hardwoods, drop vertical line from C. The angle formed by YCX is equal to angle DCX. Cut at CD (proper cut), not at CX ("flush" cut).
4. Do not use tree paint (may cause decay).

# Avoid Sight Conflicts

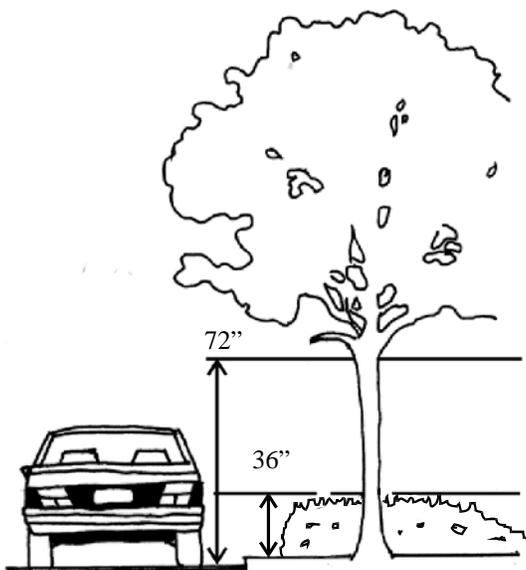


Type II driveways do not require sight triangle to be shown on plans, but safe lines of sight must be maintained.

Adjust tree placement to avoid obstruction of sight triangle at intersection by AASHTO standards.

New and existing trees are permitted within sight triangle, but must be limbed up to 6' height clearance.

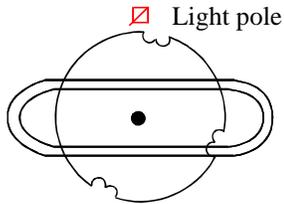
Note: Similar criteria for tree placement and pruning up should be considered at driveway/street intersections.



Maintain clear level between 30" and 72" above street. Area must be free of limbs and foliage for safe cross visibility.

# Prevent Site Conflicts

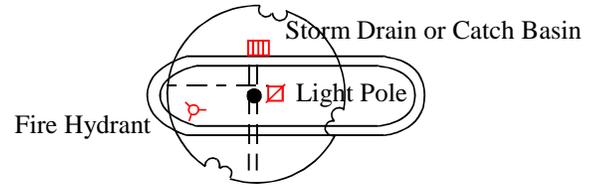
## Standards For Landscape Islands With Light Poles



**YES**

Storm Drain or Catch Basin

- Coordinate utility items and service lines to avoid tree-planting area.
- Light poles must be placed in “Parking Area” and out of tree islands.



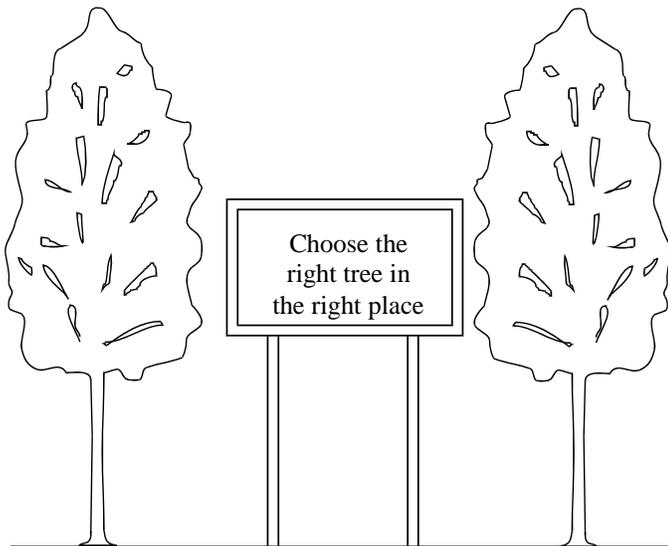
**NO**

List of potential utility conflicts:

- Storm drainage structures and lines
- Water lines, meters, and vaults
- Telephone lines
- Site lighting, poles and lines
- Sewer lines
- Fire hydrant(s) and lines
- Gas lines
- Electrical lines
- Backflow preventer
- Irrigation lines

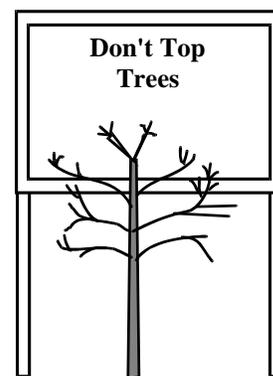
(For assistance in locating existing utilities, contact ULOCO at 1-800-632-4949)

## Avoid Tree/Sign Conflicts



**YES**

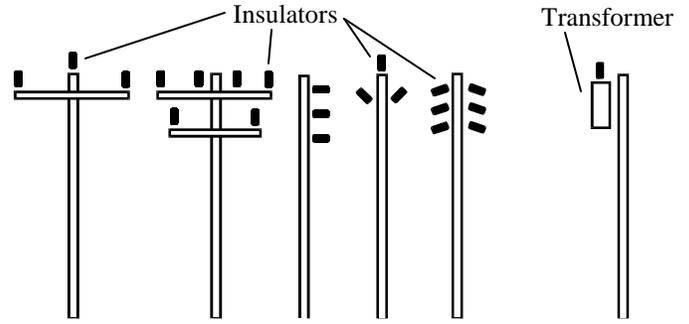
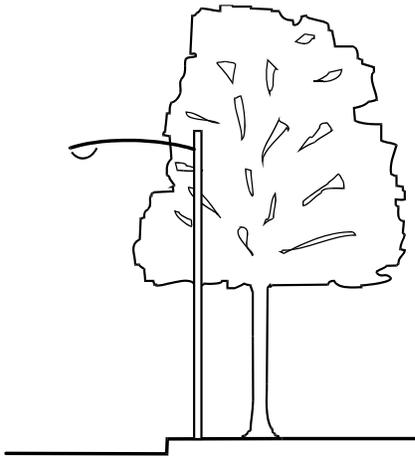
The proper placement of trees can aid in framing signs or directing sightlines. Prior to planting, choose the proper tree type, i.e. a columnar shape variety for framing or a small growing species under a tall sign.



**NO**

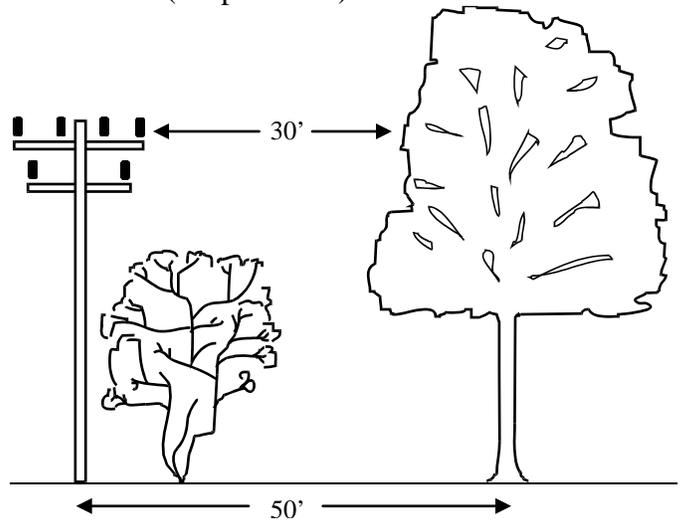
The wrong tree in the wrong place with improper pruning leads to continuing problems. Stub-cutting promotes vigorous sprout growth which further obstructs visibility and harms the tree.

# Overhead Power Lines



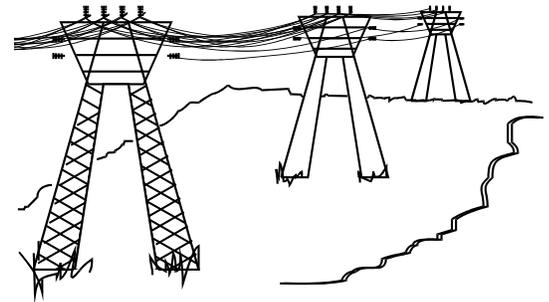
## Types Of Power Lines

Large Maturing trees minimum 30' clearance from outside line (35' preferred)



## Distribution Lines

Only small-maturing tree species may be planted within 50 ft. of distribution lines.



## Transmission Lines

No large-maturing trees.

Plantings under transmission lines must be approved by Duke Energy—coordinate through City Urban Forestry.

## Street Light Lines

Large-maturing tree species may be planted near service lines or street light lines, but not directly underneath lines.

### Notes:

Look up and around before planting. Coordinate tree location and species with utility lines.

Small-maturing species that do not grow over 20' in height are acceptable under distribution lines.

### Examples:

- Crape myrtle
- Dogwood
- Eastern Redbud
- Yoshino cherry
- Tree-form wax myrtle

Large-maturing species (trees that exceed 35' height) should be offset 50' from power lines.

### Examples:

- Oaks
- Maples

# Watering of Trees

Watering is a primary concern for establishing new trees and for maintaining the health of existing (established) trees. Watering should be included as part of the overall construction or landscape contract. The following should be used as a guide. More or less water can be provided, depending on site conditions, soil types, topography, etc. **Supplemental watering is needed unless there has been two (2) inches or more of rainfall during the week.**

## New Trees

- Water thoroughly immediately after installation
- Pre-watering — water root ball thoroughly before planting (especially during summer months)
- Insure proper percolation or drainage in planting area so that tree roots do not "drown" — especially trees such as *Prunus* species (cherries and plums)
- The water ring should be filled once or twice depending on size of water ring and time of year (see below)
- Provide minimum of ten (10) gallons per watering per 2" caliper tree

**First month:** Water every day or every other day for first 7 - 10 days if planted during the summer months  
Water twice per week for the rest of the month

**First year:** Normal weather conditions: water once per week, May through October  
Drought conditions: water twice per week, May through October

**Second and Third year:** Normal weather conditions: water once every two weeks, May through October  
Drought conditions: water once every week, May through October  
More water may be needed beyond third year if extended dry periods occur (less than 2" rainfall per week)

## Existing, and Established Trees:

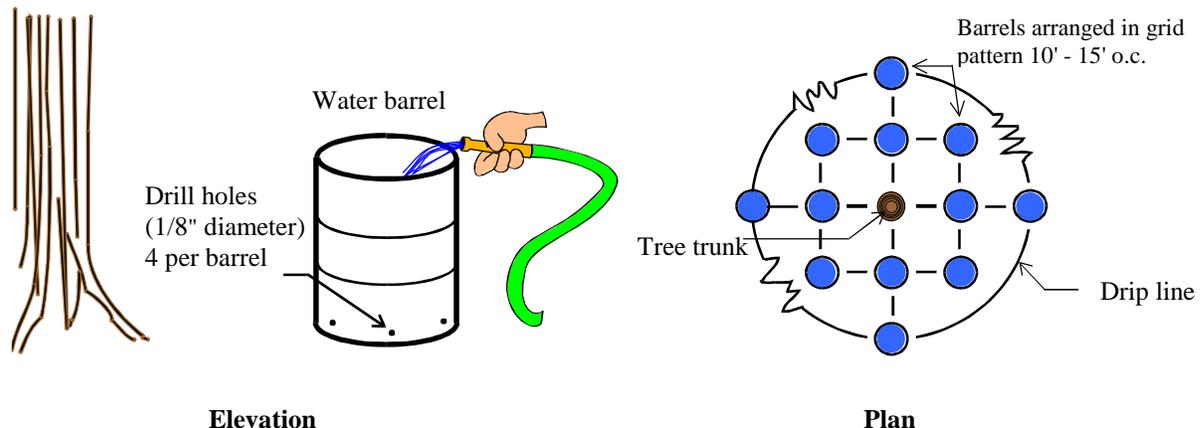
Providing watering during construction can make a difference between success and failure of tree preservation efforts. Irrigation systems, lawn sprinklers and water barrels are all effective means of supplying water.

If construction occurs between:

- October to April — provide the equivalent of ½ to 1 inch of rainfall per week
- May to September — provide the equivalent of 1½ to 2 inches of rainfall per week

Example: Water barrel method of irrigation —

- Use clean (washed out) 55 gallon drums or barrels
- Drill four holes 1/8" to 3/16" diameter around the base (bottom sides) of barrel
- Fill barrel with water once or twice a week, as necessary
- Arrange barrels in grid pattern, to the drip line (as a minimum), 10 - 15' on center, or rotate barrels at each watering





CHARLOTTE SM

# Land Development Services Planting Delay Request Form

Please read carefully, **sign original and return** to the address below. **Retain a duplicate for your files.**

Project/Site Address: \_\_\_\_\_.

Project/Site Name: \_\_\_\_\_.

Applicant (Owner): \_\_\_\_\_.

Permission is hereby requested to delay planting (#)\_\_\_\_perimeter trees and (#)\_\_\_\_internal trees for Tree Ordinance requirements due to \_\_\_\_\_.

Permission is hereby requested to delay planting (#)\_\_\_\_buffer trees (#)\_\_\_\_shrubs, and/or (#)\_\_\_\_screening shrubs per the Zoning Ordinance due to \_\_\_\_\_.

The above Tree and Zoning Ordinance plants shall be planted no later than (date)\_\_\_\_\_, 20\_\_.

Permission is hereby requested to delay planting (#)\_\_\_\_BMP trees (#)\_\_\_\_BMP shrubs, and/or (#)\_\_\_\_BMP herbaceous plants due to \_\_\_\_\_.

The above plants shall be planted no later than (date)\_\_\_\_\_, 20\_\_.

All required planting should be done in accordance with the Charlotte-Mecklenburg Land Development Standards (Std. 40.01) and according to the approved landscape plan by Urban Forestry staff on (date)\_\_\_\_\_, 20\_\_.

Any questions regarding these standards should be directed to \_\_\_\_\_ at (704) \_\_\_\_\_.

- Tree Hold Released     Site Inspected     Planting Delay Approved     Disapproved

\_\_\_\_\_  
Signature - City of Charlotte Urban Forestry Specialist and Zoning Inspector

\_\_\_\_\_  
Date

### Special Conditions:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### All Conditions Read and Accepted:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name and Title



# Permit For Tree Work (Continued)

## Regulations - Permit For Tree Work

### 1. Tree Protection

- No soil or disturbance or compaction, construction materials, traffic, burial pits trenching or other land disturbing activity allowed in tree protection zone.
- Tree protection barricades must meet or exceed Tree Ordinance Standards (in Tree Ordinance Guidelines Appendix 3). Barricades must be installed before any demolition, grading or construction activity, and not removed until after final inspection by Urban Forester.

### 2. Tree Removal

- No grubbing is permitted in the protected root zone. Stumps, dead trees and any scrub growth to be removed shall be ground out with a stump grinder or cut to ground level, unless approved otherwise.

### 3. Pruning Specifications

- All pruning and other surgery work is to be done according to National Arborist Association (1988) and ANSI A300-1995 Standards.
- No climbing spurs will be permitted in pruning. Teardowns, splits and peeling must be avoided. Proper pruning techniques must be exercised so tear downs, splits and peeling of bark does not occur.
- No topping, rounding over, stub cuts or flush cuts.
- Any tree roots exposed due to driveway or other construction must be cleanly cut with a sharp instrument and backfilled as soon as possible to minimize exposure to air.

### 4. Specifications For Planting

- Replacement trees are to be nursery grown, 3" to 3<sup>1</sup>/<sub>2</sub>" in caliper (measured six inches from the top of the root ball). Other trees planted to meet tree ordinance requirements must be not less than 2" in caliper, 8' to 12' in height. All trees must meet the American Association of Nurserymen, Inc. standards.
- Planting shall meet Standard Planting Details (Tree Ordinance Guidelines Appendix 6). Each tree shall be adequately watered and mulched. Staking and guying are optional; trunk wrap may be used but is not encouraged. No exposed wires shall directly touch tree trunk or branches.
- Fertilization is to be done according to National Arborist Association Standards (1987).

Any questions regarding these standards should be directed to the City of Charlotte Urban Forestry Specialist:

\_\_\_\_\_ at \_\_\_\_\_.

Land Development Division  
600 East Fourth Street, Charlotte, North Carolina 28202-2844  
Telephone: 704/336-6692 Fax: 704/336-6586  
<http://landpermits.charmeck.org>

## **Tree Planting Notes for Urban Zones:**

For large maturing trees, minimum tree size at planting is 3” caliper. For small maturing trees, minimum tree size at planting is 2” caliper. All multi-stem plants must be tree form, maximum 3 to 5 trunks, and minimum 8 feet tall.

All strapping and top 2/3 of wire basket must be cut away and removed from root ball prior to backfilling planting pit. Remove top 1/3 of the burlap from the root ball.

For new planting areas, remove all pavement, gravel sub-base and construction debris; remove compacted soil and add 24” new topsoil –or- uncompact and amend the top 24” of existing soil to meet topsoil/planting mix standards for trees (within entire minimum area of 274 square feet per tree for large maturing trees; or 200 square feet for small maturing trees). In urban zones, large maturing trees can also be planted in 200 square foot planters if a specific soil mix is used.

Large maturing trees may not be planted under overhead distribution or transmission lines. If trees conflict with power lines or signs, call Urban Forester to resolve before planting.

Site lighting may not be placed in tree islands. Plan site lighting accordingly.

Please call 336-4255 for an inspection of tree protection and/or tree planting areas, 7 to 10 days before the temporary or final Certificate of Occupancy is needed.

### List of Urban Zoning Classifications:

Urban Residential Districts – UR-1, UR-2, UR-3, and UR-C

Uptown Mixed Use District – UMUD, UMUD-O

Urban Industrial District – UI

Neighborhood Services District – NS

Mixed Use Development District – MUDD, MUDD-O

Pedestrian Overlay District – PED

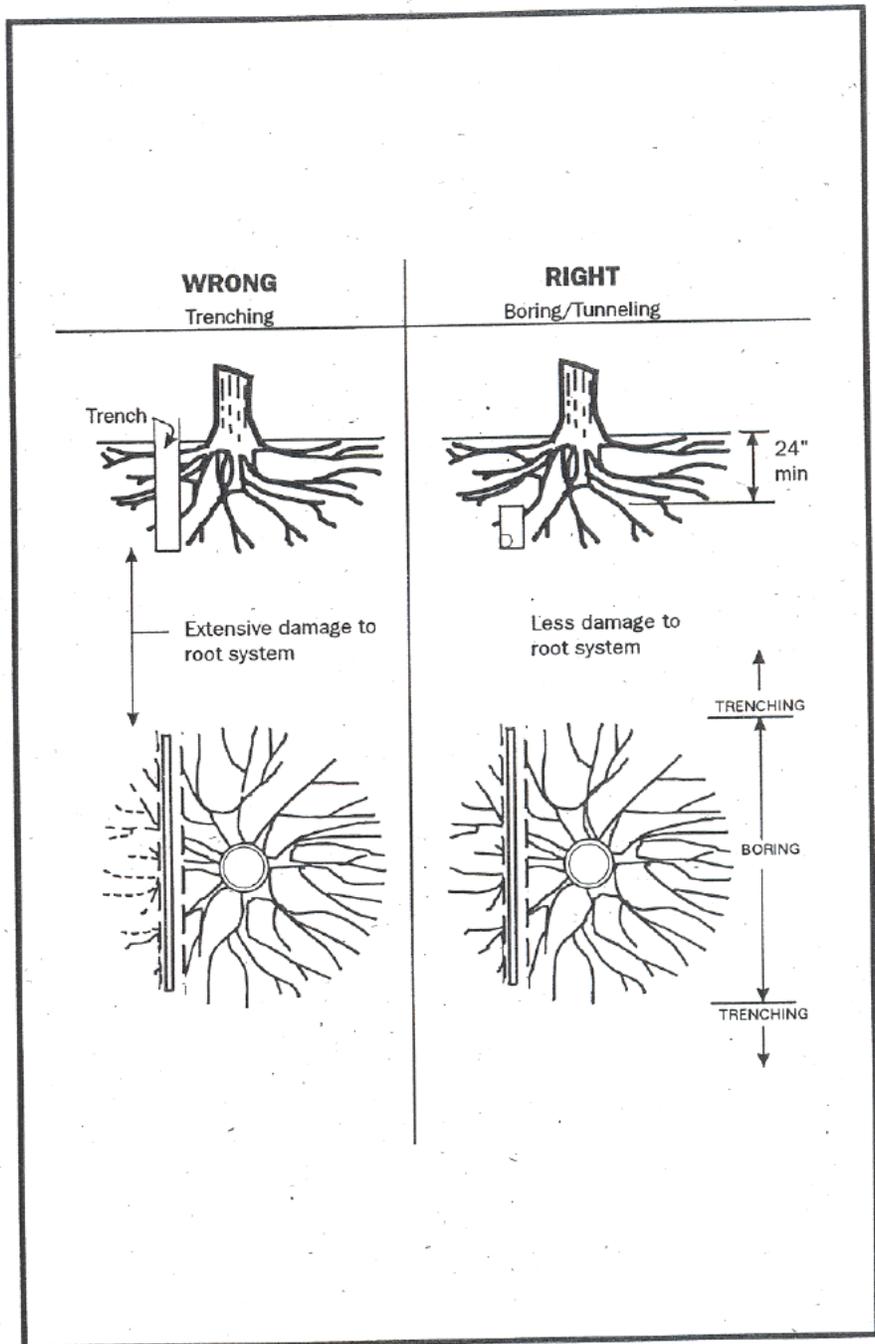
Commercial Center - CC

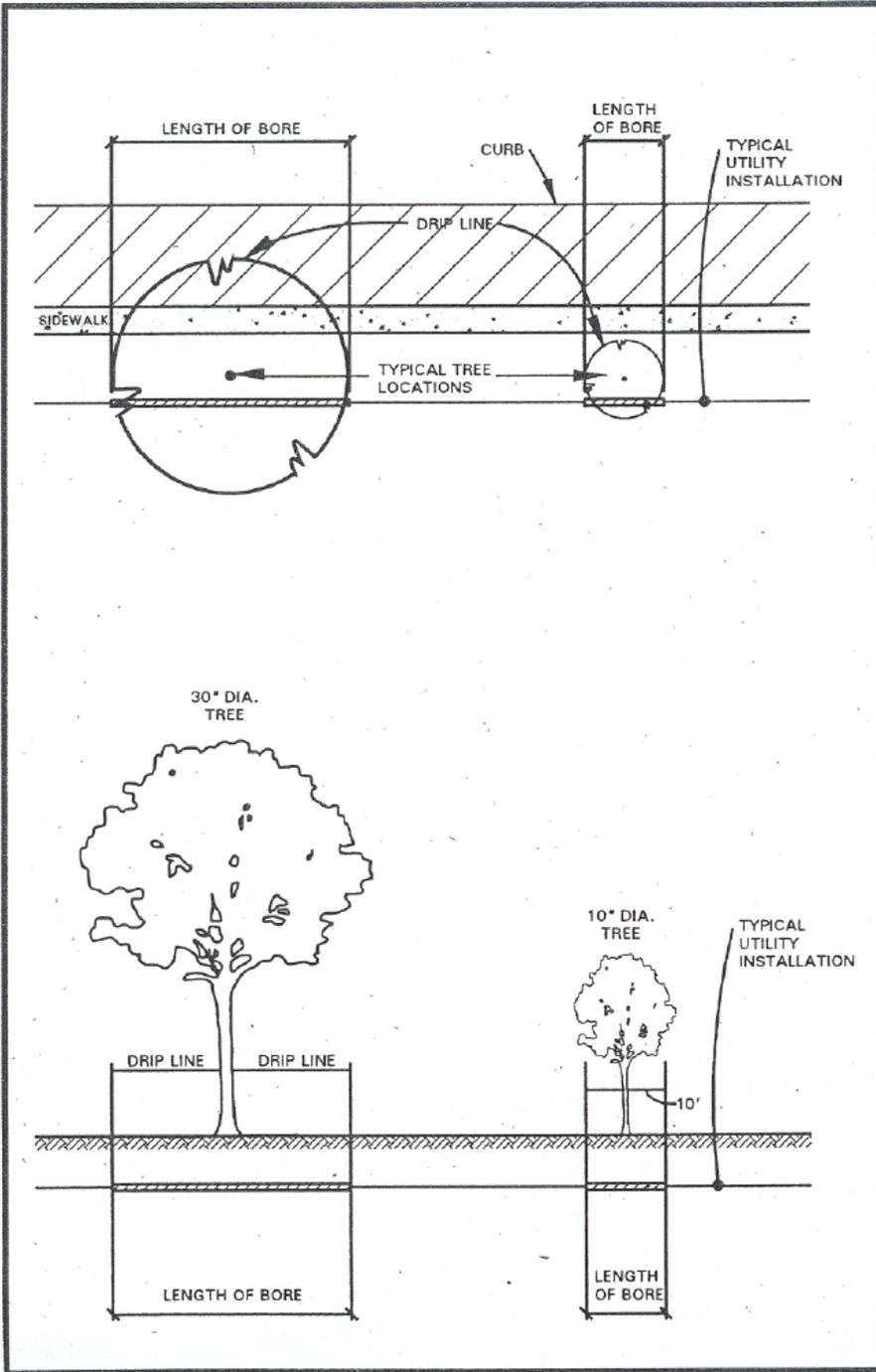
# Boring/ Tunneling Under Existing Trees

Utility lines should be bored or tunneled under tree root systems if utility lines are to be located within the root protection zone.

Minimum depth of bore is 24 inches from the surface of the soil, but a depth of 36 inches is preferred. At a minimum, bore should be offset from the trunk of the tree at the distances indicated in the table (on facing page). The length of the bore should be equal to the width of the tree canopy (dripline to dripline), or root protection zone.

If roots are damaged, roots should be pruned to the uninjured tissue of the severed root. Refer to Root Pruning detail (p.14).





**Boring or Tunneling Distances**

dbh	Distance from Tree
6-9"	5 ft.
10-14"	10 ft.
15-19"	12 ft.
> 19"	15 ft.

**Trenching Specifications**

Trunk dbh	Distance from Trunk
2"	3 ft.
3"	6 ft.
6"	10 ft.
12"	12 ft.
24"	24 ft.
36"	36 ft.
42"	42 ft.

# General Fertilization

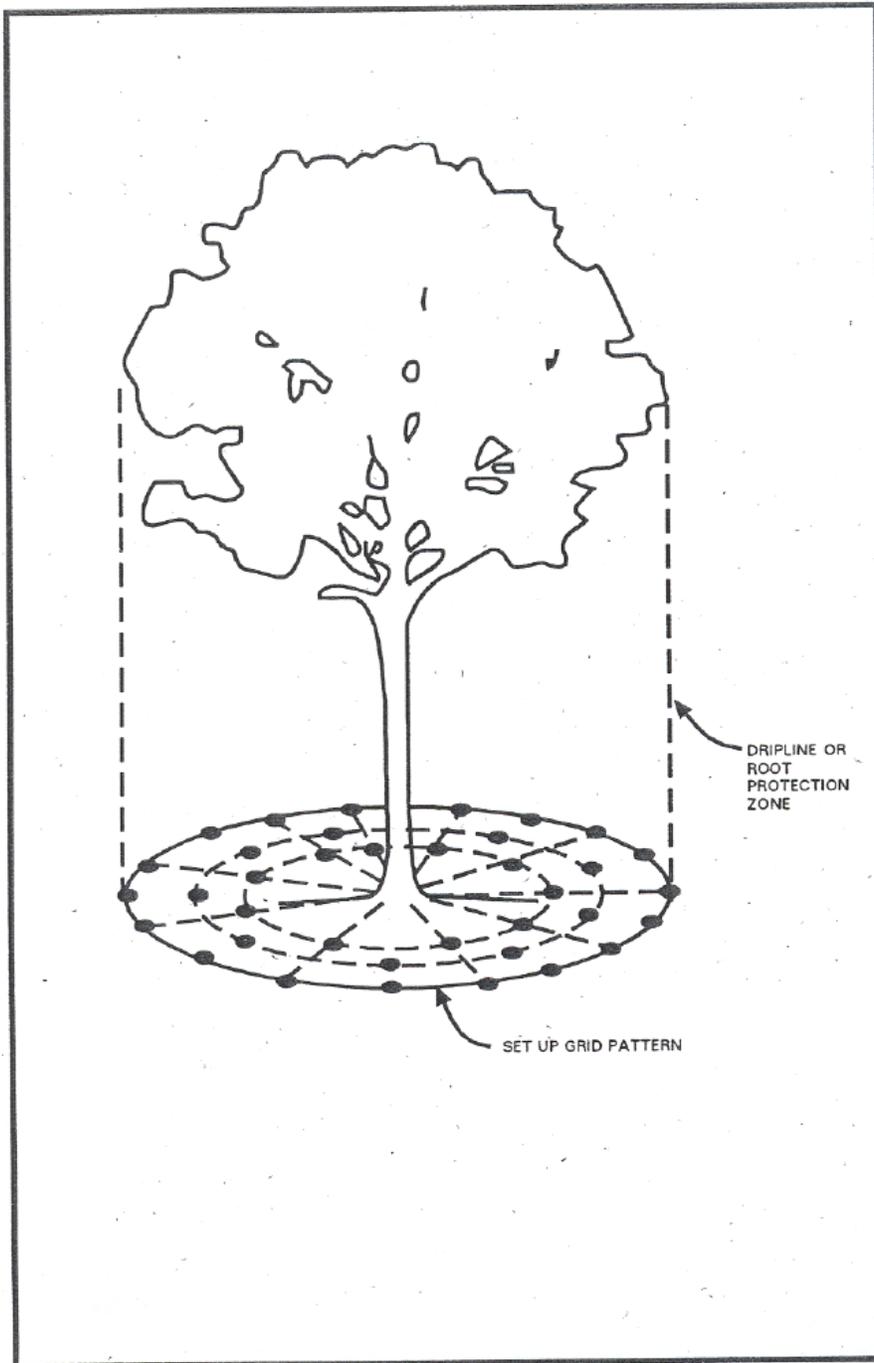
(Granular or Liquid)

## Fertilization steps:

1. Measure the dripline or root protection zone.
2. Determine the best application rate and ratio for the type of tree and its size. Refer to ANSI A300 Fertilization Standards for Tree and Shrub Care (or equivalent) for specifics.
3. Fertilize the root system that will remain, and along the edge of disturbance.
4. Start 3-4' from the trunk and expand with grid pattern through the root protection zone.
5. Holes should be spaced in a grid 2'x2' or 3'x3'.
6. For granular fertilization, holes should be drilled to a depth of 4-8" and a diameter of 1-2".

If soil is compacted, peat or other organic mixture should be used to backfill the holes.

For deep root fertilization, a ground injected liquid fertilization at 150-200 psi is preferred. This should be performed by an arborist or tree care professional.



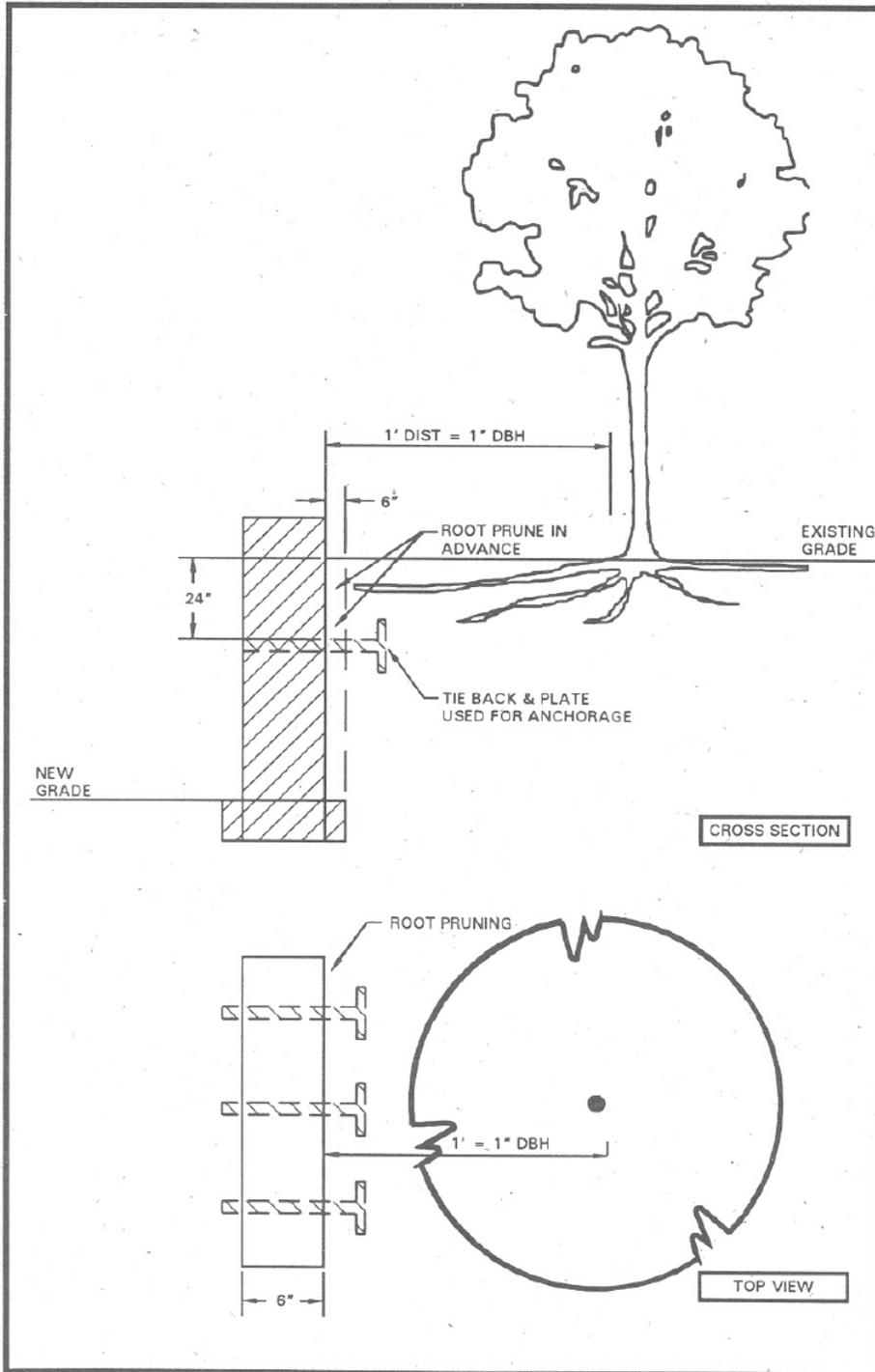
# Retaining Wall Next to Existing Tree (Grade Reduction/Cut)

Prior to construction, roots should be pruned 6" from final wall location (see Root Pruning detail, p.14).

To minimize root disturbance, the anchorage systems should be located 24" below the existing grade.

**Note to commercial developers within the City of Charlotte:**

Please contact a City Urban Forester if the wall is to be located within the required root protection distance, (example: 30" DBH oak and wall is 15').

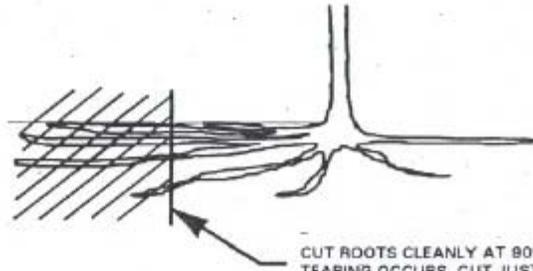


# Root Pruning

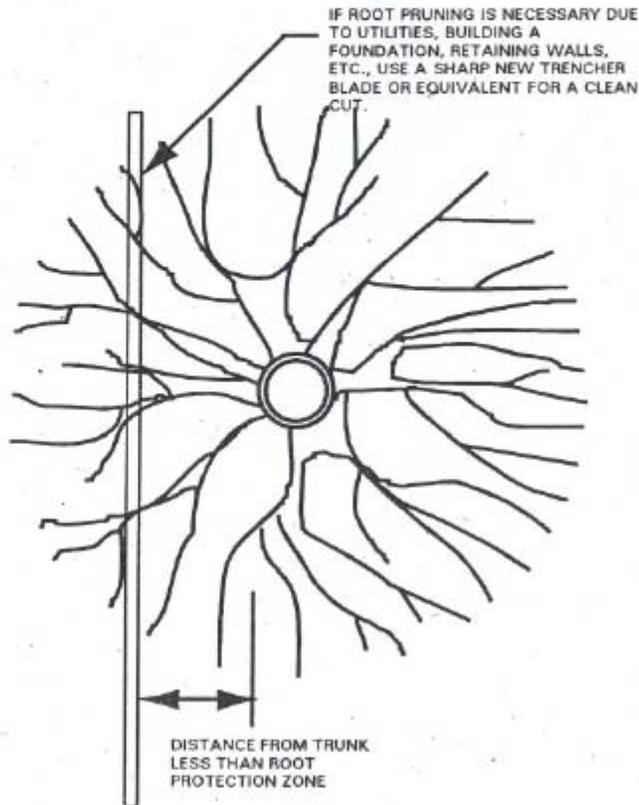
If disturbance line comes within the root protection zone, then root pruning is preferred.

Only root prune to a depth that is required per development to a maximum of 24".

Root prune prior to the removal of soil (lowering of grade) and backfill/cover all newly cut roots.



CUT ROOTS CLEANLY AT 90°. IF TEARING OCCURS, CUT JUST BEYOND BEGINNING OF TEAR. BACKFILL ALL CUT ROOTS IMMEDIATELY! -

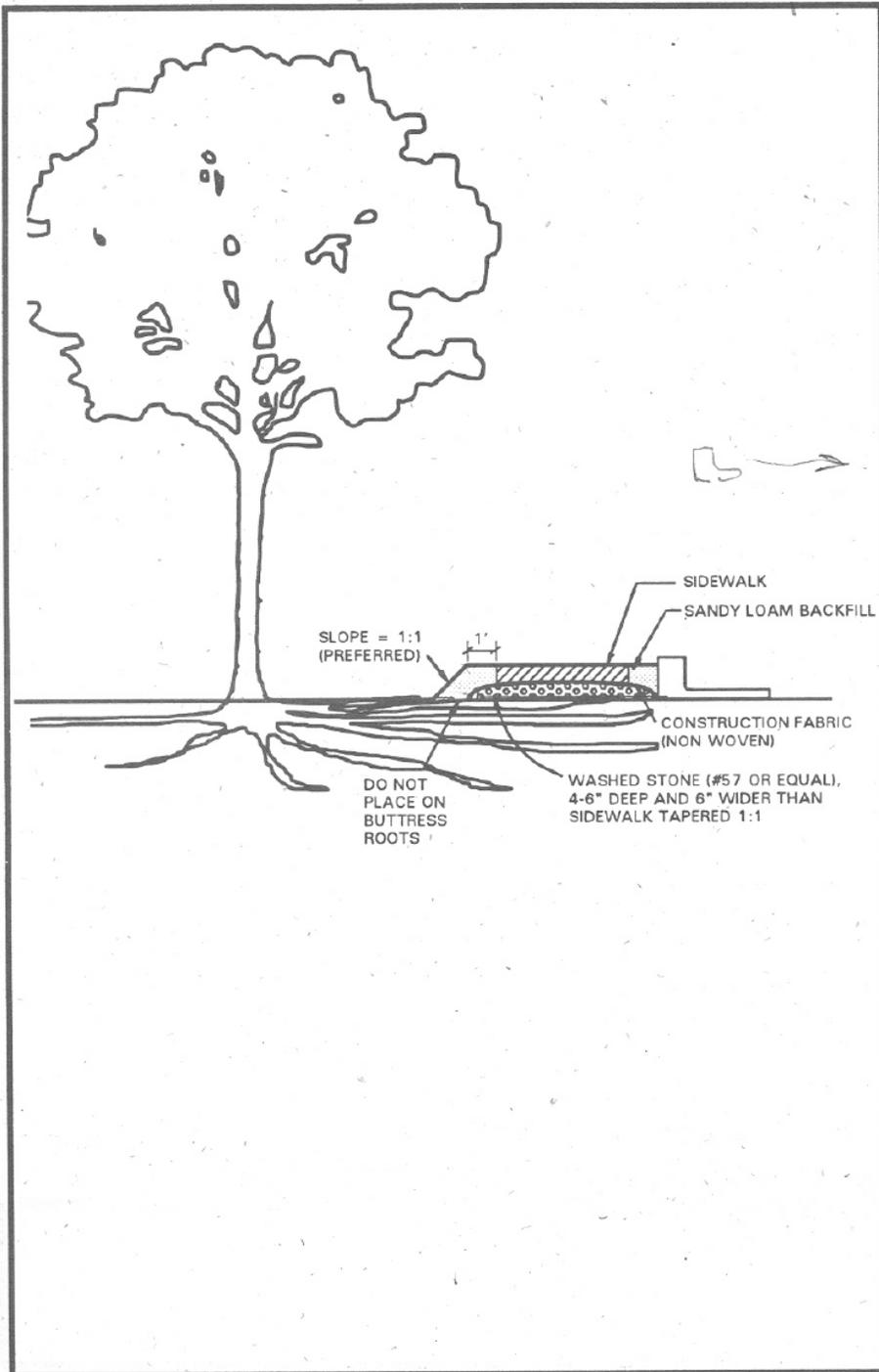


# Sidewalk above Grade Over Existing Tree Root System

To avoid damage to existing tree root systems, sidewalks can be placed above the existing grade.

This method allows root systems to be maintained while offering safe sidewalk construction.

For optional sidewalk over existing tree root system details, refer to the City's "Landscape Construction Standards."

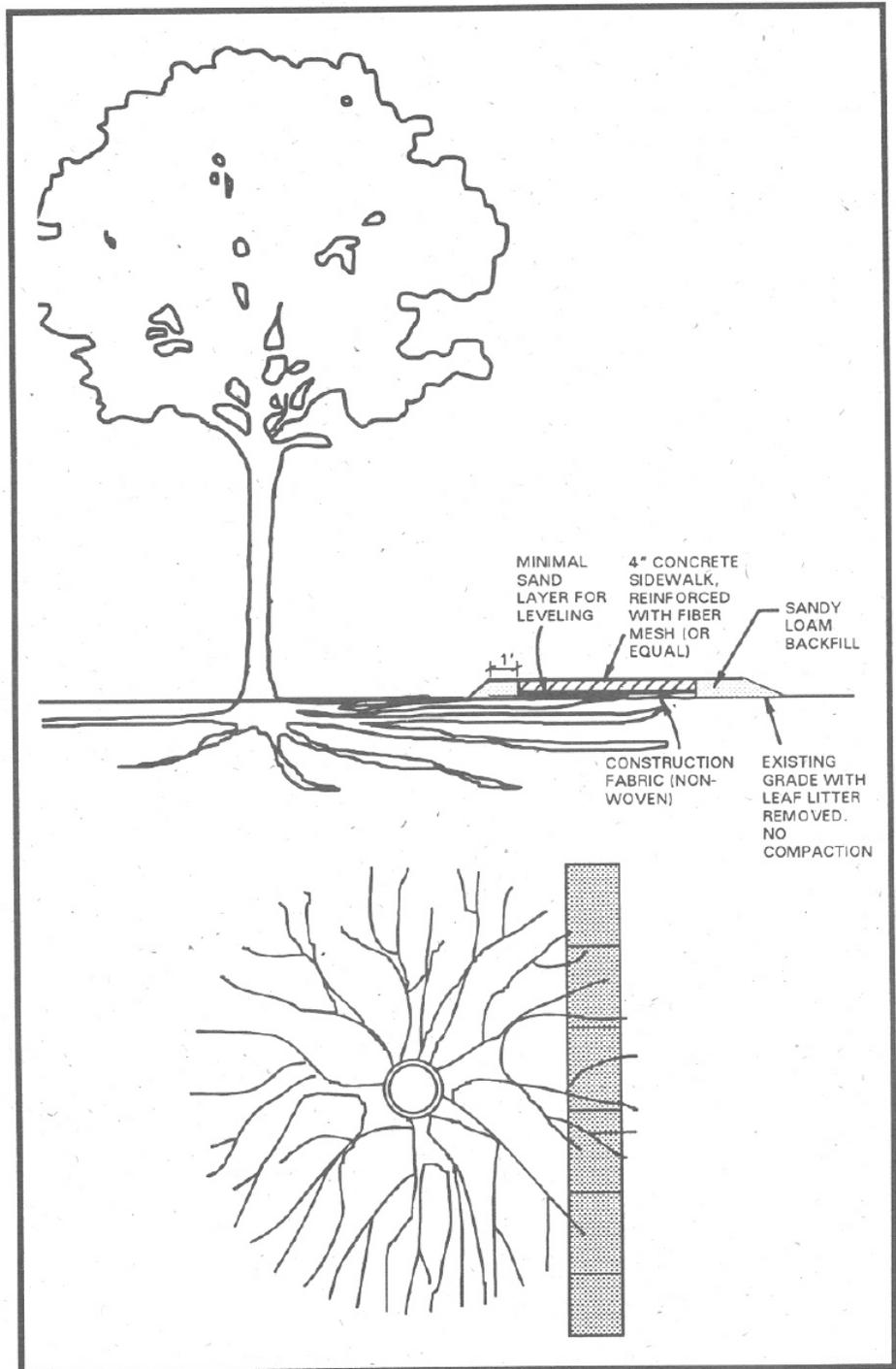


# Sidewalk at Grade Over Existing Tree Root System

To avoid damage to existing tree root systems, sidewalks should be placed on existing grade.

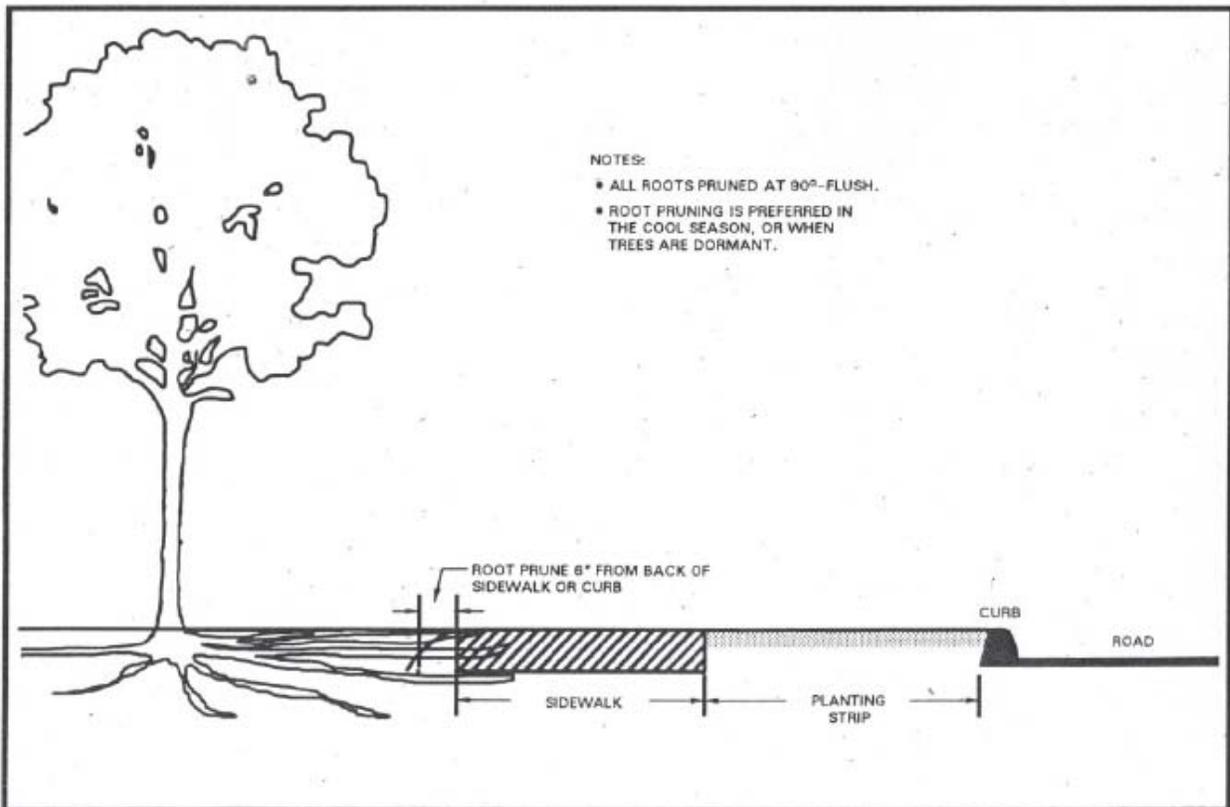
This method allows root systems to be maintained while offering safe sidewalk construction.

For optional sidewalk over existing tree root system details, refer to the City's "Landscape Construction Standards."



# Installment of Curb or Sidewalk Below Grade

If sidewalks cannot be placed on existing grade, root pruning should occur prior to sidewalk installation. Root prune to a depth required only for placement of sidewalk or curb. See Root Pruning detail (p. 14) for more information.

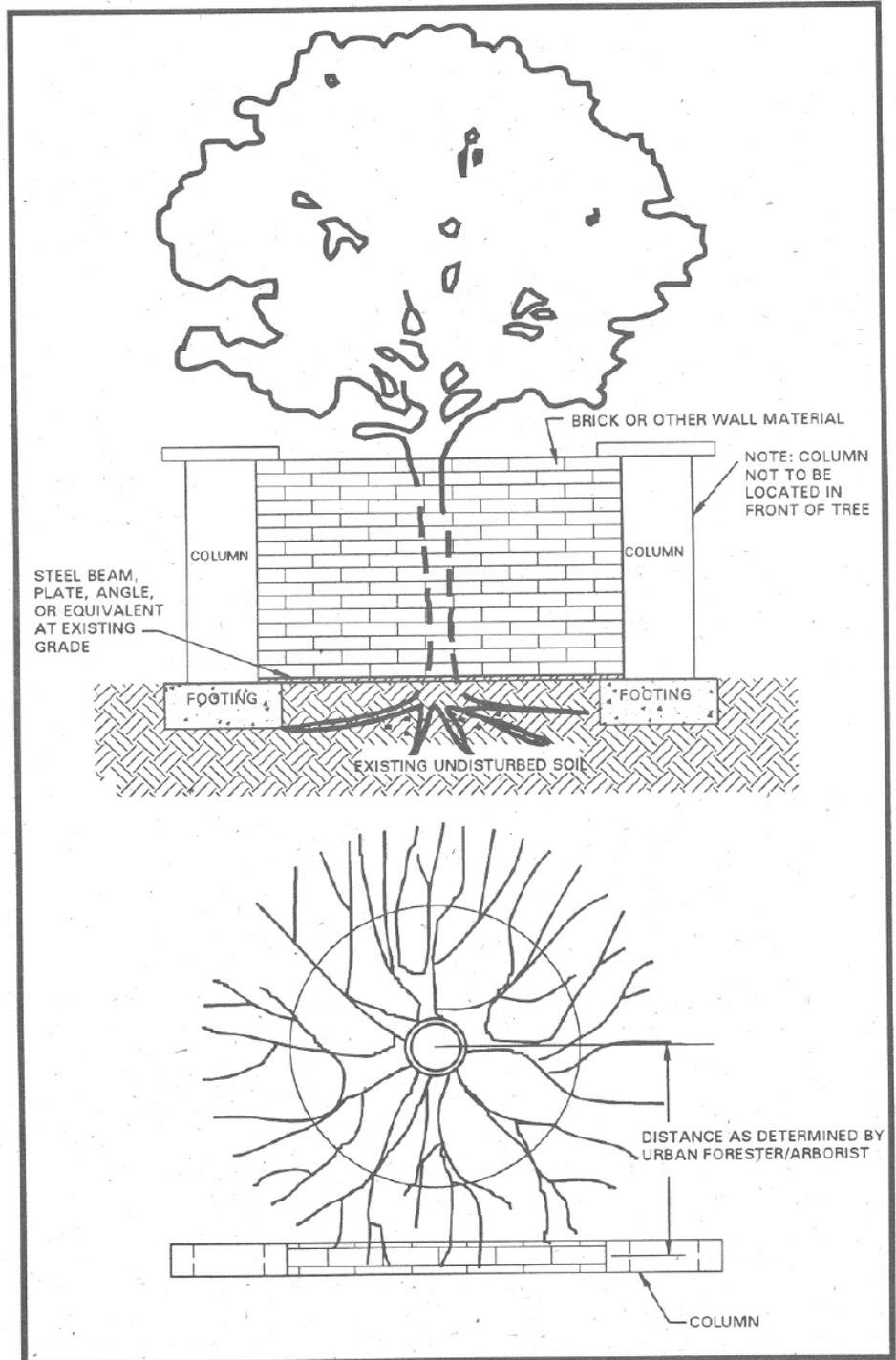


# Suspended Wall

(Privacy or Screening)

When walls are to be placed within the root protection zone, structural material should be used to span the distance between footings, as specified by a structural engineer.

Refer to Temporary Access Mulching detail (p.16) for high traffic areas.

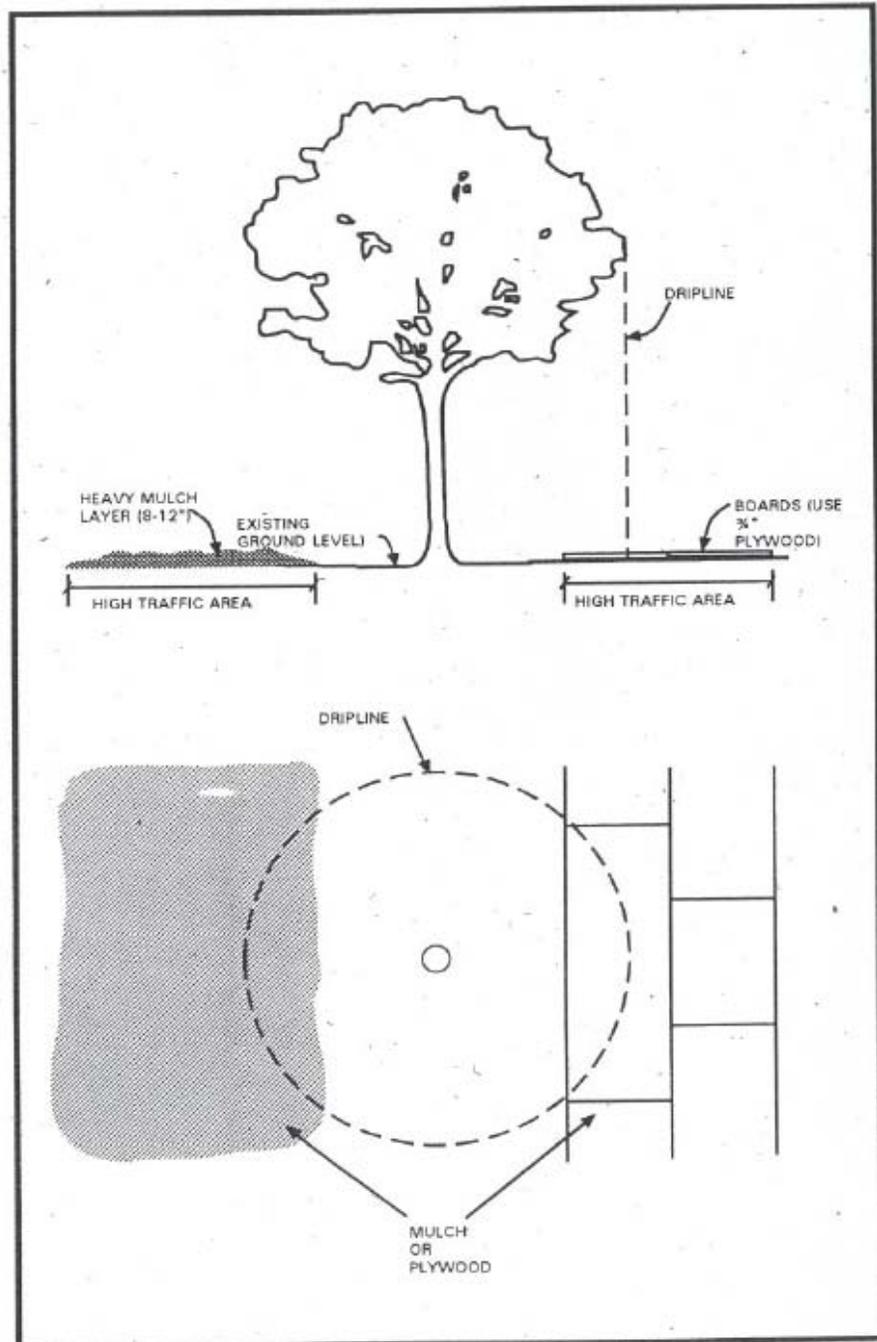


# Temporary Access Mulching (High Traffic)

In situations where temporary vehicle access through the root protection zone cannot be avoided (due to specific site constraints), a thick layer of coarse mulch (wood chips or comparable) or a layer of plywood should be placed in the root protection zone. This layer of mulch or plywood will act as a cushion to prevent soil compaction and minimize root disturbance.

Vehicle traffic should not be allowed near buttress roots under any circumstances.

Mulch or plywood should be removed from the root protection zone as soon as temporary vehicle access is no longer needed.

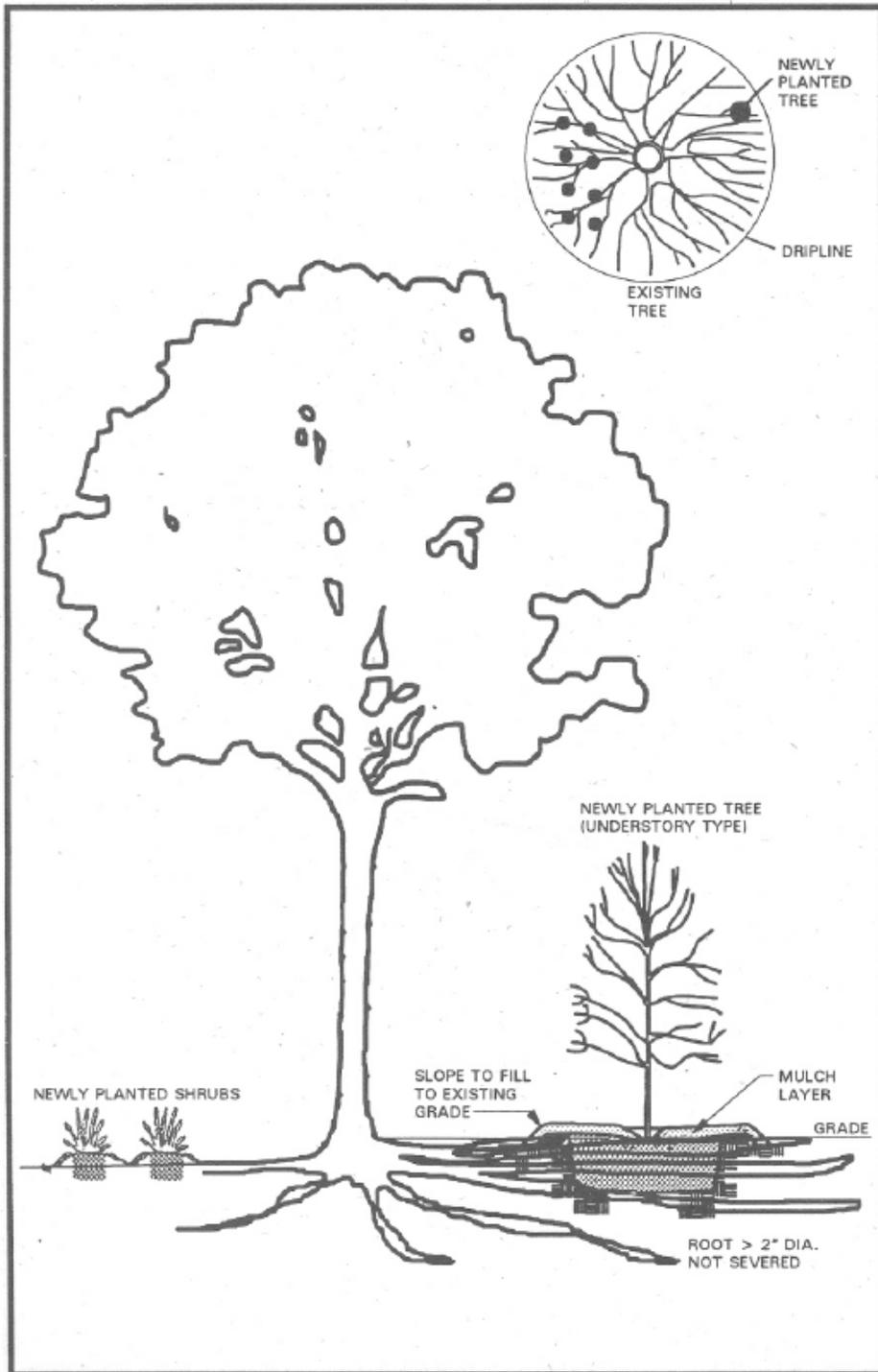


# Tree or Shrub Planting Under Dripline of Existing Tree

Avoid planting under the dripline of existing trees. If planting is necessary, "pocket plant" (raise rootball  $\frac{1}{3}$  to  $\frac{1}{2}$  of rootball height) to minimize damage to existing tree roots.

Always try to avoid cutting large roots ( $\geq 2"$  diameter)

Within dripline, choose shade loving plants—understory (small maturing) trees, or shade tolerant shrubs.

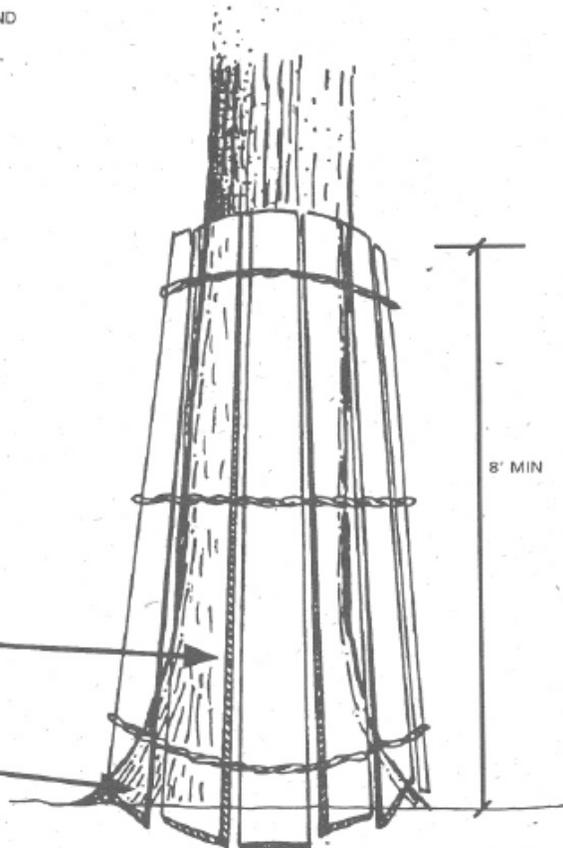


# Tree Trunk Protection

PLACE BOARDS AGAINST TREE TRUNK AND ATTACH WITH CABLE AT TOP, BOTTOM AND CENTER. BOARDS SHOULD COMPLETELY SURROUND TREE. GAPS BETWEEN BOARDS SHOULD NOT EXCEED 4 INCHES.

2" X 4" OR 2" X 6" BOARDS (OR EQUIVALENT MATERIAL) AGAINST TREE TRUNK ATTACHED WITH CABLE

ROOT COLLAR (WHERE TRUNK FLARES AT BASE OF TREE). SAND BAGS MAY BE USED TO COVER BUTTRESS ROOTS



This detail should be followed when working within 10 feet of an existing tree, or on sites where trees are located in high traffic areas.

Install trunk protection prior to beginning demolition or construction. Boards are intended to protect trunk, bark and root collar from damage from equipment and debris.

*Note: Construction debris, equipment, and fill should not be stored in the root protection zone.*

Following demolition and removal of nearby debris, boards should be removed and tree protection should be installed per CMLDS #40.04. Tree protection fence should remain in place throughout construction.

Refer to Temporary Access Mulching detail (p.16) for high traffic areas.

Additional information can be obtained from the "Landscape Construction Standards."

## **TREE ORDINANCE GUIDELINES**

### **Vegetation Removal Permits for Private Property Signage City of Charlotte Tree Management Plan - Guidelines and Specifications Charlotte Code of Ordinances, Chapter 21 (“Trees”) (September 2000, amended February 2009; amended June 2010)**

#### **Chapter 12 Clearing the Right of Way Policy**

From time to time, the City receives requests for permits to clear vegetation which obstructs signs and buildings from businesses and property owners whose properties adjoin the right of way. Whereas the City of Charlotte does not seek to obstruct or inhibit private enterprise, its policy is to protect its assets and the appearance of the community by promoting landscaping and trees along City streets and in the right of way. Based on the Tree Ordinance, codified in the Charlotte City Code, section 21-63, persons requesting to prune trees or remove trees and shrubs from a right of way within the city limits must first obtain a permit from the City Arborist or his/her designee. Trees and shrubs planted within the right of way will not be allowed to be removed.

#### **Pruning For Public and Private Property Signs, Lights, and Traffic**

The City of Charlotte will work with any private business or property owner in pruning to accommodate views of signs. Where resources are available, the City may do this work as its schedule allows. However, trees in public rights of way may not be permitted to be pruned to the point that it jeopardizes the health of the tree or violates the International Society of Arboriculture (ISA) Standards for pruning. Two thirds of such tree must be left in canopy.

Clearance of vegetation in the public right of way for Private Property signs and lights by private contractors will be at the direction of the City and by permit. This work must be performed by an ISA Certified Arborist

The City will not permit removal of trees in the right of way in order to accommodate the view of signs without a request and issuance of a permit. However, if a property owner wishes to submit a plan for tree and/or shrub removal and replacement at no cost to the City and which replacement of trees and/shrubs is of equal value to the loss, such a plan may be considered.

Clearance standards for purposes of public streetlights, sight distance, regulatory traffic signs, traffic signals, and clearance for traffic (vertical and horizontal) will be determined by City staff.

#### **Businesses and Bill Boards – Federally Designated Interstate Highways**

The City of Charlotte may permit a private business which has signs or billboards on private property to clear underbrush consisting of small trees, shrubs, weeds, and vines from the right of way if the signs are along Federally Designated Interstate Highways as designated by the DOT and/or NCDOT and which were previously exempt from enforcement under the City Zoning Ordinance. Unless otherwise allowed by the conditions of a permit, a private business or property owners must preserve all trees or shrubs that are four (4) inches or larger in caliper at time of removal. Smaller trees may be required to be preserved by City guidelines in order to maintain the streetscape. All debris, tops, branches, and trunks generated as a result of this

clearing must be removed from the right of way by the end of the same day it was removed. All debris must be disposed of in accordance with all federal, state and local laws. The pattern of the vegetation control along the right of way must be in compliance with the rules and regulations of the NCDOT. Removal of any trees and/or shrubs from the right of way which are larger than allowed in the permit is strictly prohibited. Replacement trees and/or shrubs must comply with the conditions of the permit.

Unless otherwise prohibited, pruning of the preserved trees may be allowed. This work must be carried out under the supervision of an ISA Certified Arborist. All pruning must comply with the guidelines of ISA Standards for Pruning. The permit will state the minimum/maximum height at which the pruning will be allowed. Two thirds of the tree must be left in canopy.

All operations must be carried out in full compliance with the rules and regulations of the U. S. DOT, NCDOT, CDOT, and OSHA. All operations shall also comply with the insurance and liability requirements of each these agencies. The permittee shall agree to release and hold harmless the State of North Carolina and the City of Charlotte.

