

# PLANTING MANUAL AND LANDSCAPE REGULATION GUIDELINES

## I. INTRODUCTION

The following charts, graphic details, specifications and guidelines are provided to assist persons in conforming to the Landscape Ordinance, of the Zoning Regulations. The plant lists that are provided are suggested plant materials for the various use groups and are plants that have been successful in this region for urban landscaping. The plant list is not limited to the plant materials indicated in this manual. The graphic details and planting specifications are not mandatory but are the guidelines that are helpful in completing a landscape project in a proper manner. The plan submission guidelines should be helpful to the Zoning/Building Inspection personnel in reviewing and approving plans.

## II. PLAN SUBMISSION REQUIREMENTS

Plans must be submitted to indicate new project conformity to the Landscape Ordinance. The plan must be a scaled drawing preferably no smaller than 1" = 100'.

A. **TREE INVENTORY:** The following information is required to be contained on each tree inventory submitted for review:

1. The disturbed and construction limits
2. Existing and proposed buildings
3. Existing and proposed utilities
4. Approximate boundary of the area beyond the disturbed limit with 50 percent canopy cover.
5. Statistical summary of acres within disturbed and construction limits, and area of site that is undisturbed.
6. Location of all trees to be preserved/protected within disturbed limits and a completed Tree Protection Schedule (See Chart A)
7. Contour lines

B. **LANDSCAPE PLAN:** The following is information required to be contained on each landscape plan submitted for review:

1. All property lines with metes and bounds shall be shown for the

- project parcel.
- 2. All adjacent property owners, land uses/zones, rights-of-way and easements must be identified on the plan.
- 3. Location of all existing and proposed buildings and structures.
- 4. Location of all driveways, parking areas, loading areas and adjacent off-site roads and streets.
- 5. Location of dumpster and trash facilities, including dumpster screening details.
- 6. Location of existing trees and vegetation.
- 7. Location of underground and overhead utility lines in addition to location of utility easements.
- 8. Proposed grading/excavation information - contour lines would be preferable.
- 9. Location of all proposed plant material keyed to a plant schedule.
- 10. Plant schedule that shall contain information as follows: Plant common and botanical name, plant size (height, spread, caliper or container size), quantity of each specie to be planted and any specific planting notes.
- 11. Indication of areas for sodding and seeding.
- 12. Statistics that contain total square footage of parking/drive areas and interior parking lot landscaping.
- 13. Plan certification that shall read as follows:

I/We do hereby certify that this landscape plan has been reviewed by me/us and do adopt this plan and all information contained herein as the plan for minimum landscape development for this project. I do further certify that all plant material will be perpetually maintained to meet the requirements of the Landscape Ordinance unless an approval to amend the landscape is granted by \_\_\_\_\_.

\_\_\_\_\_ Owner(s)  
 Date                      Witness

C. A Tree Protection/Planting Plan requires the applicant to locate all trees planned for preservation and to describe protection methods to be used during construction. This plan may be a part of the landscape plan and shall include the following information:

1. Location of trees to be preserved
2. Dbh of all trees to be protected
3. Contour lines
4. Indicate trees with dbh 22 inches or greater
5. Limits of clearing, trenching, access routes for heavy equipment, etc. that may be dangerous to the tree(s).
6. Methods of tree protection shall be noted
  - a. tree fencing
  - b. erosion control - if needed
  - c. retaining walls/tree wells - if needed
  - d. tunneling for utilities - if needed
  - e. aeration systems - if needed
  - f. transplanting - if needed
  - g. staking
  - h. Tree signing, etc.
7. Building locations and concrete features
8. Indicate material storage, concrete washout, and debris burn and burial holes where these area might affect tree protection.
9. Tree Protection/Planting Schedule

Chart A shall accompany this plan listing the tree species (genus, species, variety, cultivar), dbh, and overall quality of the tree. This quality is judged on the health of the tree and shall be marked acceptable (A) or Unacceptable (U). Determination of tree quality should be made by an arborist or someone else with appropriate training and experience. Information used to determine tree quality should include, but not be limited to insect infestation, trunk damage, and so on. If a tree is declining it should be classified as unacceptable. An unacceptable tree will not count against the applicant if it is removed and conversely, credit will not be granted if the tree is preserved. The primary consideration of this quality classification is the health of the tree.

### III. TREE DENSITY CALCULATION

This technique for measuring/defining tree density is designed to strike a balance between the needs for tree conservation and the concerns of land development. The density figure, which is the basis for this calculation, is established as 10 for city of Cold Spring (the density figure of 10, which represents 10

square feet of basal area per acre, was selected since it will provide tree canopy cover of approximately 10 to 40 percent per acre). This figure represents the tree density, measured in basal area, which is desired for the urbanized and developing areas within Kenton County.

### Step 1

Calculate the **density factor for the site (DSF)** using the formula below:

This number tells how much tree density is required for the given site.

total acreage of site x density figure = Density Factor of Site (DFS)

Example: 2.2 acres x 10 = 22

### Step 2

Calculate the **existing density factor (EDF)**.

This represents the trees that you are proposing to save and are going to protect during the construction process. These and trees with a 22 inch DBH or greater are the only trees that must be included on the tree inventory for a site.

Example: A total of 14 trees will remain on the 2.2 acre site. These trees include:

Number of Trees	DBH (in.)	Species
7	12	Oaks
3	14	Maples
3	18	Hickory
1	20	Maple

These must then be converted into a **density factor** using Table 1.

	No. Trees	Units/Tree	Density Factor
12" Oaks	7	.8	5.6
14" Maples	3	1.1	3.3
18" Hickory	3	1.8	5.4
20" Maples	1	2.2	2.2

16.5

Total density for existing trees      16.5 EDF

**Step 3**

Calculate the required **Replacement Density Factor (RDF)**.

This number represents the density factor of trees that must be planted on the 2.2 acre site. Step 4 explains how this process works.

**DFS - EDF = RDF**

Example:  $22 - 16.5 = 6.7$       **RDF = 5.5**

**Step 4**

At this point you must calculate the density factor of your proposed trees as per Table 2.

Example:	NUMBER	SIZE	SPECIES	DENSITY FACTOR
	12	1"	Pines	(12 x .4) = 4.8
	10	2"	Red Maples	(10 x .5) = 5.0
	2	6"	Oaks	(2 x 1.0) = 2.0
	5	4"	Maples	(3 x .7) = 2.1
				<b>13.9</b>

This number is then added to the **EDF** and if it equals or exceeds the **DFS** then you are in compliance.

Example:  $13.9 + 16.5 = 25.5$     The plan is in compliance.

**IV. TREE PRESERVATION GUIDELINES**

Trees provide many benefits to people and they help to maintain the quality of life in our city. Although people receive many benefits from trees, they seldom realize that their activities may injure or kill a tree. Healthy trees contribute to man's enjoyment but an unhealthy tree is both unsightly and dangerous. Since trees are easily disturbed by changes in their environment, one should

consider the following before disrupting the tree surroundings.

#### Evaluation

Decide which of your trees to save by evaluating each one of them carefully. Analyze the location, species, size, age, and vigor of each tree and then consider the costs and benefits involved in protecting the tree. If additional information on tree preservation is needed, consult the Urban Forestry Resource Evaluation Study (Bibliography Page).

#### Location of Trees

The location of each tree should be analyzed with respect to its relative location in the landscape. Before building a structure near trees ask yourself these questions.

- Will the tree provide shade where it is wanted or will it block out desired sunlight?
- Will the tree protect the structure from winter winds or will it block out the summer breezes?
- Will the tree screen an unpleasant view or will it block out a desirable view?

#### Species

The tree species is considered to determine if its characteristics are desirable for the proposed situation. Shallow rooted trees hinder the growth of lawns and gardens while deep rooted trees are notorious for blocking storm and sanitary sewer lines. Some trees are susceptible to diseases and insects, which may make saving them uncertain. So consult the tables in this manual or ask a specialist before deciding which trees to retain.

#### Size, Age, and Vigor

When considering the size, age, and vigor of a tree, keep these points in mind.

- Large and old trees do not adapt well to changes in their environment, hence should have minimal changes.
- A small tree can be replaced easily and replacing it may be cheaper than preserving it.

- Annual twig growth, amount of dead material, and the size and color of leaves are indications of health and vigor. Compare the tree with other trees of the same species.

After deciding which trees to keep, remove the undesirable trees before construction begins. Use a professional with experience in tree removal so that the remaining trees will not be damaged. The trees chosen to be saved will have to be protected from one or more of the following:

- Construction equipment
- Grade changes
- Excavation for utilities
- Paving
- Footers for the house or wall

#### Protection From Machinery

Most of the damage caused by machinery occurs to the root system from compaction. Some damage by machinery may also occur to the trunk and low hanging branches. Construct a simple fence or barrier which encloses the entire area beneath the tree canopy. Be sure that all exposed roots are enclosed in this area. As an added note of caution roots can go out much wider than the tree canopy in many cases.

#### Protection From Grade Changes

Grade changes, either raising or lowering the grade greatly affects the amount of air, water and minerals available to the tree. Air, water and minerals are necessary for the trees survival, so any alterations in the trees grade should be planned properly. If a tree is valuable enough to justify saving, get professional help from a landscape architect, arborist or the County Extension Agent.

#### Raising the Grade

Fill added around a tree prevents normal air and water circulation in the original soil and will damage the roots. Minor fills - less than 4" will not harm most species, if the fill is high in organic matter. Be sure that a particular species can survive this change before fill is added. Major fill around a tree requires that air be supplied to the roots and that excess water be removed. This is usually done by installing a tile drain system. This system has to be designed

for each tree individually so an expert should be consulted.

### Lowering the Grade

While protecting a tree from a lowered grade is less complicated than protecting it from a raised grade, it can be equally harmful unless proper attention is given to root pruning, pruning branches and stimulating root growth. Generally, protection is achieved by terracing the grade, if the space is available. Another way to protect a tree from a lowered grade is to build a retaining wall. This is an effective way of achieving a grade difference to save a tree, if it is less than 2' (see Figure 1).

### Excavating

Trees need to be protected from excavations for utilities because the soil moisture content is altered and the number of roots are decreased. If the route of the utilities can't be kept from underneath the tree, then tunneling should be done to reduce damage to the roots. Tunneling should be done from both sides. Start tunneling below the main lateral roots as soon as a 1" diameter root is encountered (see Figure 2).

### Protection From Paving

When paving is installed over the roots of the tree, it is necessary to insure the proper aeration of the root zone. This can be accomplished with a tree well as described in the grade changes section. If paving is laid directly over the roots, soil should be removed to the bottom of the lateral roots. Gravel should be filled in around the roots and 4" layer of Styrofoam should be laid over the roots to allow for root expansion.

### Protection From Foundations

When constructing foundations, tree roots can be dealt with in two ways; by cutting the roots or by bridging over them. When a basement is to be installed, roots have to be cut and a 3' deep trench should be dug between the roots and the foundation. After the roots are properly pruned, the trench should be filled with decomposed organic matter. Treatment of the roots should be done prior to the installation of the forms.

The second method, bridging, should be used when a foundation is placed



over the roots. Roots should be exposed and the desired depth of the footers should be dug between the roots. 4" of Styrofoam should be wrapped around the roots where the concrete is placed over them.

### Procedures

Whenever a trees' environment is disturbed, the following procedures should be observed.

### Root Pruning

When it becomes necessary to cut roots, it should be done by the following procedure. Uncover the shattered end of the roots so that the root can be cut off squarely. Do not allow roots to remain exposed for an extended period of time. The ends of the cut roots should be covered with decomposed organic matter and the tree should be fertilized. The amount and frequency of fertilization will be determined by the extent of the root cutting. If possible the affected tree should be fertilized a year in advance.

### Compensatory Trimming

After root trimming is completed, trimming of the tree should be done to reduce the physiological demands on the remaining roots, and to reduce the possibility of the tree being uprooted by wind. Refer to the pruning section of this manual for further details.

### Limb Pruning

If a tree has been construction damaged, pruning should be delayed 1 - 3 years or until the deadwood near and at the tree crown becomes evident. Removing these limbs before this time could endanger the health of the tree and possibly kill it.

Topping trees or cutting of limbs to stubs is not considered proper for the maintenance of trees as required by these Regulations. Tree pruning cuts shall be made sufficiently close to the trunk or parent limb without cutting into the branch collar or leaving a protruding stub so that closure can readily start under normal conditions. All branches should be precut so as to avoid bark splitting or peeling.

## Watering

If drainage patterns are altered, be sure that the tree is not damaged. If a tree's normal moisture level is changed some form of mitigation will be required. Trees will also have to be watered when their roots are cut. This should be done by setting a sprinkler on at low pressure and allowing it to operate until run-off occurs. Allow 4 - 8 hours to pass and reapply the water in the same manner.

## V. PLANT LISTS

The following lists of trees and plants are to be used for reference when preparing landscape plans for compliance with the (city/county) zoning ordinance. Please note that with the exception of Plant List G, Unacceptable Plants, the Plant Lists are only suggestions of use groups that have been successful in this region for urban landscaping. The choice of plant materials is not limited to those of the lists, but all plants and trees specified on landscape plans that are not included must have proven acceptable in this region.

**PLANT LIST A: SHADE TREES** (Mature height greater than 30 ft.)

**PLANT LIST B: FLOWERING AND NON - FLOWERING TREES**  
(Mature height less than 30 ft. for use under power lines.)

**PLANT LIST C: EVERGREEN/BROADLEAF TREES**

**PLANT LIST D: DECIDUOUS SHRUBS**

**PLANT LIST E: EVERGREEN/BROADLEAF SHRUBS**

**PLANT LIST F: STREET TREES**

**PLANT LIST G: UNACCEPTABLE PLANTS AND TREES**

### EXAMPLE LEGEND OF PLANT LIST:

Common Plant Name	Anglojap Yew
Plant Botanical Name	Taxus media
Specie Cultivars	x brownii

x hicksii  
x wardii

## PLANT LIST A SHADE TREES

Trees that are hardy in zones 5 - 6 are deciduous and reach a mature height of greater than 30 feet.

<b>Common Plant Name</b>	<b>Littleleaf Linden</b>	
<b>Plant Botanical Name</b>	Tilia cordata	
<b>Specie Cultivars</b>	x chancellor x greenspire x june bride	
<b>Common Plant Name</b>	<b>European Beech</b>	<b>Norway Maple</b>
<b>Plant Botanical Name</b>	Fagus sylvatica	Acer platanoides
<b>Specie Cultivars</b>		x columnaire x crimson king x summershade
<b>Common Plant Name</b>	<b>Ginkgo</b>	<b>Pin Oak</b>
<b>Plant Botanical Name</b>	Ginkgo biloba (male only)	Quercus palustris
<b>Specie Cultivars</b>	x autumn gold x fastigiata x sentry	x sovereign x crown rite
<b>Common Plant Name</b>	<b>Green Ash</b>	<b>Red Maple</b>
<b>Plant Botanical Name</b>	Fraxinus pennsylvanica lanceolata	Acer rubrum
<b>Specie Cultivars</b>	x marshall seedless	x autumn flame x october glory x red sunset
<b>Common Plant Name</b>	<b>Japanese Pagoda Tree</b>	<b>Red Oak</b>
<b>Plant Botanical Name</b>	Sophora japonica	Quercus rubra
<b>Specie Cultivars</b>	x regent	
<b>Common Plant Name</b>	<b>Japanese Zelkova</b>	<b>Scarlet Oak</b>
<b>Plant Botanical Name</b>	Zelkova serrata	
Quercus coccinea		
<b>Specie Cultivars</b>		
<b>Common Plant Name</b>	<b>London Plane Tree</b>	
<b>Plant Botanical Name</b>	Platanus acerifolia	
<b>Specie Cultivars</b>		
<b>Common Plant Name</b>	<b>Sugar Maple</b>	<b>Sweetgum</b>
<b>Plant Botanical Name</b>	Acer saccharum	Liquidambar styraciflua
<b>Specie Cultivars</b>		

**PLANT LIST A (continued)**  
**SHADE TREES**

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Thornless Honey Locust**  
Gleditsia triacanthos  
x moraine  
x shademaster  
x skyline  
x imperial

**Tulip Poplar**  
Liriodendron tulipifera

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Willow Oak**  
Quercus phellos

**Yellowwood**  
Cladrastis lutea

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Black Maple**  
Acer saccharum  
x nigrum

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Katsura Tree**  
Cercidiphyllum japonicum

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Hardy Rubber Tree**  
Eucommia ulmoides

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**American Beech**  
Fagus grandifolia

## PLANT LIST B FLOWERING TREES

Trees that are hardy in zones 5 - 6 are deciduous and reach a mature height not exceeding 30 feet.

<b>Common Plant Name</b>	<b>Callery Pear</b>
<b>Plant Botanical Name</b>	<i>Pyrus calleryana</i>
<b>Specie Cultivars</b>	x aristocrat x chancellor

<b>Common Plant Name</b>	<b>Crabapple</b>
<b>Plant Botanical Name</b>	<i>Malus varieties</i>
<b>Specie Cultivars</b>	x bob white x sargeant x snowdrift x white angel

<b>Common Plant Name</b>	<b>Eastern Redbud</b>
<b>Plant Botanical Name</b>	<i>Cercis canadensis</i>
<b>Specie Cultivars</b>	x flame x forest pansy x royal

<b>Common Plant Name</b>	<b>Flowering Dogwood*</b>
<b>Plant Botanical Name</b>	<i>Cornus florida</i>
<b>Specie Cultivars</b>	x cherokee chief x cherokee princess x rubra x white cloud

<b>Common Plant Name</b>	<b>Kousa Dogwood*</b>
<b>Plant Botanical Name</b>	<i>Cornus kousa</i>
<b>Specie Cultivars</b>	x milky way

<b>Common Plant Name</b>	<b>Pagoda Dogwood*</b>
<b>Plant Botanical Name</b>	<i>Cornus alternifolia</i>
<b>Specie Cultivars</b>	

<b>Common Plant Name</b>	<b>Golden Raintree</b>
<b>Plant Botanical Name</b>	<i>Koelreutaria paniculata</i>
<b>Specie Cultivars</b>	

<b>Common Plant Name</b>	<b>Green Hawthorne</b>
<b>Plant Botanical Name</b>	<i>Crataegus viridis</i>
<b>Specie Cultivars</b>	x winter king

**PLANT LIST B (continued)  
FLOWERING TREES**

Common Plant Name	<b>Sargent Cherry</b>
Plant Botanical Name	<i>Prunus sargentii</i>
Specie Cultivars	x columnaris x kwanzan
Common Plant Name	<b>Saucer Magnolia*</b>
Plant Botanical Name	<i>Magnolia soulangiana</i>
Specie Cultivars	
Common Plant Name	<b>Star Magnolia*</b>
Plant Botanical Name	<i>Magnolia stellata</i>
Specie Cultivars	
Common Plant Name	<b>Fringe Tree</b>
Plant Botanical Name	<i>Chionanthus virginicus</i>
Specie Cultivars	
Common Plant Name	<b>Higan Cherry</b>
Plant Botanical Name	<i>Prunus subhirtella</i>
Specie Cultivars	
Common Plant Name	<b>Downy Serviceberry</b>
Plant Botanical Name	<i>Amelanchier arborea</i>
Specie Cultivars	
Common Plant Name	<b>Sweet Bay*</b>
Plant Botanical Name	<i>Magnolia virginiana</i>
Specie Cultivars	
Common Plant Name	<b>Sourwood</b>
Plant Botanical Name	<i>Oxydendron arboreum</i>
Specie Cultivars	
Common Plant Name	<b>Eastern Redbud</b>
Plant Botanical Name	<i>Cercis canadensis</i>
Specie Cultivars	
Common Plant Name	<b>Washington Hawthorn</b>
Plant Botanical Name	<i>Crataegus phaenopyrum</i>
Specie Cultivars	
Common Plant Name	<b>Green Hawthorn</b>
Plant Botanical Name	<i>Crataegus virides</i>
Specie Cultivars	x winter king

**PLANT LIST B (continued)**  
**FLOWERING TREES**

Common Plant Name	Japanese Flowering Crabapple
Plant Botanical Name	Malus floribunda
Specie Cultivars	

Common Plant Name	Japanese Flowering Cherry
Plant Botanical Name	Prunus serrulata
Specie Cultivars	

\* These trees survive better in shady, sheltered conditions and would not be acceptable unless planted on the north or east of buildings.



**PLANT LIST B (continued)**  
**NON-FLOWERING ORNAMENTAL TREES**  
**AND OTHER TREES SUITABLE FOR USE UNDER POWER LINES**

<b>Common Plant Name</b>	<b>Japanese Maple</b>
<b>Plant Botanical Name</b>	<i>Acer palmatum</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>Camperdown Elm</b>
<b>Plant Botanical Name</b>	<i>Ulmus galbra camperdownii</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>Paperbark Maple</b>
<b>Plant Botanical Name</b>	<i>Acer griseum</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>River Birch</b>
<b>Plant Botanical Name</b>	<i>Betula nigra</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>Trident Maple</b>
<b>Plant Botanical Name</b>	<i>Acer buergerianum</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>Hedge Maple</b>
<b>Plant Botanical Name</b>	<i>Acer campestre</i>
<b>Specie Cultivars</b>	
<b>Common Plant Name</b>	<b>Amur Maple</b>
<b>Plant Botanical Name</b>	<i>Acer ginnala</i>
<b>Specie Cultivars</b>	

**PLANT LIST C  
EVERGREEN/BROADLEAF TREES**

Trees that are hardy in zones 5 - 6 are evergreen, can reach a mature height over 30 feet and if not limbed - up can create a screen from the ground level up.

**Common Plant Name** American Holly  
**Plant Botanical Name** Ilex opaca  
**Specie Cultivars** x xanthocarpa

**Common Plant Name** Austrian Pine  
**Plant Botanical Name** Pinus nigra  
**Specie Cultivars**

**Common Plant Name** Canadian Hemlock  
**Plant Botanical Name** Tsuga canadensis  
**Specie Cultivars**

**Common Plant Name** Carolina Hemlock  
**Plant Botanical Name** Tsuga caroliniana  
**Specie Cultivars**

**Common Plant Name** Eastern Red Cedar  
**Plant Botanical Name** Juniperus virginiana  
**Specie Cultivars**

**Common Plant Name** Colorado Blue Spruce  
**Plant Botanical Name** Picea pungens  
**Specie Cultivars** x glauca

**Common Plant Name** Norway Spruce  
**Plant Botanical Name** Picea abies  
**Specie Cultivars**

**Common Plant Name** Scotch Pine  
**Plant Botanical Name** Pinus sylvestris  
**Specie Cultivars**

**Common Plant Name** White Fir  
**Plant Botanical Name** Abies concolor  
**Specie Cultivars**

**Common Plant Name** White Pine  
**Plant Botanical Name** Pinus strobus  
**Specie Cultivars**

**PLANT LIST C (continued)**  
**EVERGREEN/BROADLEAF TREES**

**Common Plant Name** Japanese Red Pine  
**Plant Botanical Name** Pinus densiflora  
**Specie Cultivars**

**Common Plant Name** Lacebark Pine  
**Plant Botanical Name** Pinus bungeana  
**Specie Cultivars**

## PLANT LIST D DECIDUOUS SHRUBS

Perennial woody plants that grow at least 3 feet in height, are tolerant in zones 5 - 6 and are deciduous.

Common Plant Name	<b>Burning Bush</b>
Plant Botanical Name	Euonymus alata
Specie Cultivars	x compacta
Common Plant Name	<b>Doublefile Viburnum</b>
Plant Botanical Name	Viburnum plicatum tomentosum
Specie Cultivars	
Common Plant Name	<b>Forsythia Species</b>
Plant Botanical Name	
Specie Cultivars	
Common Plant Name	<b>Glossy Abelia</b>
Plant Botanical Name	Abelia grandiflora
Specie Cultivars	
Common Plant Name	<b>Quince</b>
Plant Botanical Name	Chaenomeles specina
Specie Cultivars	
Common Plant Name	<b>Shrub Cinquefoul</b>
Plant Botanical Name	Potentilla fruticosa
Specie Cultivars	
Common Plant Name	<b>Spiria Species</b>
Plant Botanical Name	
Specie Cultivars	
Common Plant Name	<b>Spreading Cotoneaster</b>
Plant Botanical Name	Cotoneaster divaricata
Specie Cultivars	
Common Plant Name	<b>Wintergreen Barberry</b>
Plant Botanical Name	Berberis julianne
Specie Cultivars	
Common Plant Name	<b>Cornelian Cherry Dogwood</b>
Plant Botanical Name	Cornus mas
Specie Cultivars	

**PLANT LIST D (continued)  
DECIDUOUS SHRUBS**

Common Plant Name	<b>Large Fothergilla*</b>
Plant Botanical Name	Fothergilla major
Specie Cultivars	
Common Plant Name	<b>Arnold Promise Witchhazel*</b>
Plant Botanical Name	Hamamelis intermedia
Specie Cultivars	x arnold promise
Common Plant Name	<b>Vernal Witchhazel</b>
Plant Botanical Name	Hamamelis vernalis
Specie Cultivars	
Common Plant Name	<b>Snowball Hydrangea</b>
Plant Botanical Name	Hydrangea paniculata
Specie Cultivars	x grandiflora
Common Plant Name	<b>Winterberry</b>
Plant Botanical Name	Ilex verticullata
Specie Cultivars	
Common Plant Name	<b>Panicle Hydrangea</b>
Plant Botanical Name	Hydranga paniculata
Specie Cultivars	
Common Plant Name	<b>Beauty Bush</b>
Plant Botanical Name	Kolkwitzia amabilis
Specie Cultivars	
Common Plant Name	<b>Spicebush</b>
Plant Botanical Name	Lindera benzoin
Specie Cultivars	
Common Plant Name	<b>Cutleaf Buckthorn</b>
Plant Botanical Name	Rhamnus frangula
Specie Cultivars	x asplenifolia
Common Plant Name	<b>Burkwood Viburnum</b>
Plant Botanical Name	Viburnum burkwoodii
Specie Cultivars	
Common Plant Name	<b>Fragrant Viburnum</b>
Plant Botanical Name	Viburnum carlcephalum
Specie Cultivars	

**PLANT LIST D (continued)**  
**DECIDUOUS SHRUBS**

**Common Plant Name** Arrowwood Viburnum  
**Plant Botanical Name** Viburnum dentatum  
**Specie Cultivars**

**Common Plant Name** Chinese Snowball Viburnum  
**Plant Botanical Name** Viburnum macrocephalum  
**Specie Cultivars**

**Common Plant Name** Black Haw  
**Plant Botanical Name** Viburnum prunifolium  
**Specie Cultivars**

## PLANT LIST E EVERGREEN /BROADLEAF SHRUBS

Perennial, woody plants that grow at least 3 feet in height are tolerant in zones 5 - 6 and are evergreen.

Common Plant Name	<b>Anglojap Yew</b>
Plant Botanical Name	Taxus media
Specie Cultivars	x brownii x densiformis x hicksii x wardii

Common Plant Name	<b>Blue Holly</b>
Plant Botanical Name	Ilex meserveae
Specie Cultivars	x blue angel x blue prince x blue princess

Common Plant Name	<b>Chinese Juniper</b>
Plant Botanical Name	Juniperis chinensis
Specie Cultivars	x hetzii x keteleeri x mint julip x robusta green x mount batten x pfizeriana

Common Plant Name	<b>Japanese Holly</b>
Plant Botanical Name	Ilex crenata
Specie Cultivars	x microphylla x rotundifolia

Common Plant Name	<b>Japanese Yew</b>
Plant Botanical Name	Taxus cuspidata
Specie Cultivars	x capitata x intermedia x nana

Common Plant Name	<b>Korean Boxwood</b>
Plant Botanical Name	Buxus microphylla koreana
Specie Cultivars	x koreana

Common Plant Name	<b>Leatherleaf Viburnum</b>
Plant Botanical Name	Viburnum rhytidophyllum
Specie Cultivars	

**PLANT LIST E (cont.)  
EVERGREEN /BROADLEAF SHRUBS**

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Mugho Pine**  
Pinus mugho

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Spreading Yew**  
Taxus baccata

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Mountain Laurel**  
Kalmia latifolia

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Dwarf Alberta Spruce**  
Picea glauco  
x conica

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Catawba Rhododendron**  
Rhododendron catawbiense

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Azalea (Evergreen)**  
Rhododendron



## PLANT LIST F STREET TREES

### Small trees

Recommended street trees that are hardy in zones 5 and 6. Some of these trees may also be suitable for shade trees. See Plant List A.

**Common Plant Name**                    **Trident Maple**  
**Plant Botanical Name**            *Acer ginnela*  
**Specie Cultivars**

**Common Plant Name**                    **Cockspur Hawthorn**  
**Plant Botanical Name**            *Crataegus crus-galli*  
**Specie Cultivars**                    *x lavallai*

**Common Plant Name**                    **English Hawthorn**  
**Plant Botanical Name**            *Crataegus monogyna*  
**Specie Cultivars**                    *x laevigata*

### Medium Trees

**Common Plant Name**                    **American Hornbeam**  
**Plant Botanical Name**            *Carpinus caroliniana*  
**Specie Cultivars**

**Hop Hornbeam**  
*Ostrya virginia*

**Common Plant Name**                    **\* Callery Pear**  
**Plant Botanical Name**            *Pyrus calleryana*  
**Specie Cultivars**

**Japanese Hornbeam**  
*Carpinus carolina*  
*x japonica*

**Common Plant Name**                    **European Hornbeam**  
**Plant Botanical Name**            *Carpinus betulas*  
**Specie Cultivars**

**Nikko Maple**  
*Acer maximowicziana*

**Common Plant Name**                    **Green Hawthorn**  
**Plant Botanical Name**            *Crataegus viridis*  
**Specie Cultivars**                    *x winter king*

**Mulberry spp.**  
*Morus spp.*

**Common Plant Name**                    **Hedge maple**  
**Plant Botanical Name**            *Acer camestrea*  
**Specie Cultivars**

**PLANT LIST F (continued)  
STREET TREES**

**Large Trees**

Common Plant Name	Amur Corktree	
Botanical Plant Name	Phellodendron amurense	
Specie Cultivars		
Common Plant Name	Blue Ash	* Linden spp.
Plant Botanical Name	Fraxinus quadrangulata	Tilia spp.
Specie Cultivars		
Common Plant Name	Bur Oak	*Northern Red Oak
Plant Botanical Name	Quercus macrocarpa	Quercus rubra
Specie Cultivars		
Common Plant Name	Chestnut Oak	*Norway Maple
Plant Botanical Name	Quercus prinus	Acer platanoides
Specie Cultivars		
Common Plant Name	Common Hackberry	* Pin Oak
Plant Botanical Name	Celtis occidentalis	Quercus palustris
Specie Cultivars		
Common Plant Name	* Ginkgo (male variety only)	* Red Maple
Plant Botanical Name	Ginkgo biloba	Acer rubrum
Specie Cultivars		
Common Plant Name	* Green Ash	Shingle Oak
Plant Botanical Name	Fraxinus pennsylvanica	Quercus imbricaria
Specie Cultivars	x marshall's seedless	
Common Plant Name	* Honey locust	* Sweet Gum
Plant Botanical Name	Gleditsia triacanthos	Liquidamber styraciflua
Specie Cultivars	x sunburst	
	x skyline	
	x moraine	
Common Plant Name	* Japanese Pagoda Tree	* Tulip Poplar
Plant Botanical Name	Sophora japonica	Liriodendron tulipifera
Specie Cultivars		

\* These trees are also be acceptable for shade trees.

## PLANT LIST G UNACCEPTABLE PLANTS

Trees and shrubs that are not hardy in zones 5 - 6 may have excessive fruit, leaf or limb drop, may interfere with underground utilities, attract excessive insects, are weak wooded, disease prone, pollution intolerant, noxious or require excessive maintenance.

Common Plant Name Plant Botanical Name Specie Cultivars	<b>Apple (common)</b> Malus pumila	<b>Mountain Ash</b> Sorbus species
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Black Locust</b> Robinia pseudoacacia	<b>Osage Orange</b> Maclura promifera
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Box Elder</b> Acer negundo	<b>Mulberries</b> Morus species
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Chinese Holly</b> Ilex cornuta	<b>Privet</b> Ligustrum species
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Devil's Walking Stick</b> Aralia spinosa	<b>Poplars</b> Populus species
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Elms (except Chinese &amp; American)</b> Ulmus species	
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Ginkgo (female)</b> Ginkgo biloba	<b>Silver Maple</b> Acer saccharinum
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Hickories</b> Carya species	<b>Sycamore</b> Platarius occidentalis
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Honey Locust (common)</b> Gleditsia triacanthos	<b>Tartarian Honeysuckle</b> Lonicera tartarica
Common Plant Name Plant Botanical Name Specie Cultivars	<b>Horse Chestnut</b> Aesculus species	<b>Tree of Heaven</b> Ailanthus altissima

**PLANT LIST G (continued)  
UNACCEPTABLE PLANTS**

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Kentucky Coffee Tree (female)**  
Gymnocledus dioica

**Walnut**  
Juglans species

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Mimosa**  
Albizza julibrisson

**Weigela**  
Weigela florida

**Common Plant Name**  
**Plant Botanical Name**  
**Specie Cultivars**

**Weeping Willow**  
Salix babylonica

Note: If mature trees exist on site prior to development, they may be accepted by the legislative body.

## VI. RECOMMENDED GUIDELINES FOR FIELD INSPECTION AND VERIFICATION OF CONFORMANCE TO LANDSCAPE ORDINANCE

Prior to final approval of a new development project, the requirements of the Landscape Ordinance must have been met. The following guidelines are for the benefit of the Inspector to aid in checking the requirements of the approved landscape plan. In addition to these guidelines, the Inspector shall use the "Inspection Guide for Landscape Planting", published by the American Association of State Highway Officials. A copy of this publication shall be on file at the Northern Kentucky Area Planning Commission, 2332 Royal Drive, Ft. Mitchell. "The American Standard for Nursery Stock", published by the American Association of Nurserymen shall be used in checking plant material quality. This publication will also be on file at the Northern Kentucky Area Planning Commission.

- A. Verify the location and area requirements for all interior landscaping so that conformance to Vehicular Use Area requirements will be met.
- B. Check dumpster screening requirements and determine if screening materials meet the minimum construction requirements as specified on the approved landscape plan.
- C. Check plant material quantities, species, sizes and locations to determine conformance to approved landscape plan.
- D. Verify that perimeter landscape requirements have been met and determine if there are any encroachments into landscape easements.
- E. Use the various check lists that are provided in the "Inspection Guide for Landscaping Planting".
- F. Upon completion of inspection, file a report with the project Owner. If a reinspection is necessary, schedule after adequate time has been given for corrections to be made.
- G. Place a one - year inspection into inspection schedule.

CHART A  
TREE PROTECTION/PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	DBH*	QUALITY	REPLACEMENT	CREDIT

\* See Section III

- Key = Location code as indicated on plan
- Botanical Name = Scientific name, genus, specie
- Common Name = Common lay name of tree
- DBH = Diameter at breast height (measured 4.5 feet above the ground) or caliper for replacement trees (See Table 2)
- Quality = Acceptable (A) or unacceptable (U), see text
- Replacement = Units per Table 2, Replacement Trees
- Credit = Units per Table 1, Existing Trees to Remain

The Landscape Ordinance states that the tree inventory and tree protection plan can be submitted any time before the Final Stage of a project. It is advisable, however, that you submit the inventory at the preliminary stage to insure that problems do not occur close to the construction phase. If an inventory is submitted at the later stages of the project, and there is a problem concerning a particular tree, the plan could be denied and more design work would be warranted to protect the tree, therefore, costing the developer time and money. Construction will also not be approved until the inventory is in compliance with this ordinance.

TABLE 1  
EXISTING TREES TO REMAIN

DBH	UNITS	DBH	UNITS	DBH	UNITS
1 - 4	.1	22	2.6	37	7.5
5 - 7	.3	23	2.9	38	7.9
8 - 9	.5	24	3.1	39	8.3
10	.6	25	3.4	40	8.7
11	.7	26	3.7	41	9.2
12	.8	27	4.0	42	9.6
13	.9	28	4.3	43	10.1
14	1.1	29	4.6	44	10.6
15	1.2	30	4.9	45	11.0
16	1.4	31	5.2	46	11.5
17	1.6	32	5.6	47	12.0
18	1.8	33	5.9	48	12.6
19	2.0	34	6.3	49	13.1
20	2.2	35	6.7	50	13.6
21	2.4	36	7.1		

These numbers were arrived at by calculating the square footage of the basal tree area. The tree trunk area equals the trunk basal area and is computed by squaring the radius of the tree trunk at breast height and multiplying by 3.14, then converting to square footage.

TABLE 2  
REPLACEMENT TREES

CALIPER	UNITS	CALIPER	UNITS
1	.4	8	8
2	.5	9	9
3	.6	10	10
4	.7	11	11
5	.9	12	12
6	1.0	13	13
7	1.2	14	14

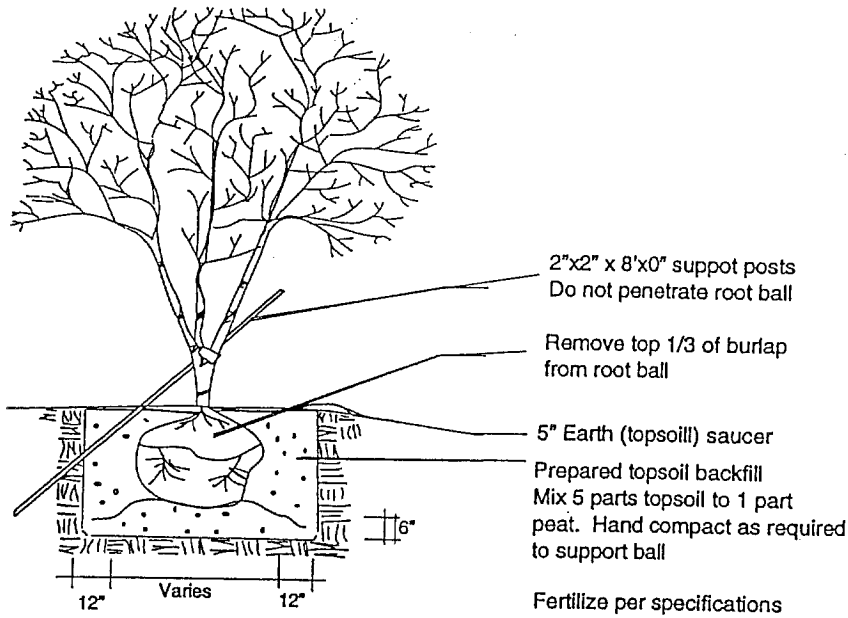
These numbers were arrived at by the same formula as in Table 1, with the exception of a growth curve. The unit numbers for these calipers were taken from the projected tree basal area in 15 years. For example, the projected tree basal area is predicted to be seven inches for a one inch tree.



## **VII. EXAMPLE DRAWINGS**

The following drawings are intended to provide further explanation for the requirements found in the Landscape Requirements Table and for typical planting of large and small trees, evergreen trees, and shrubs.

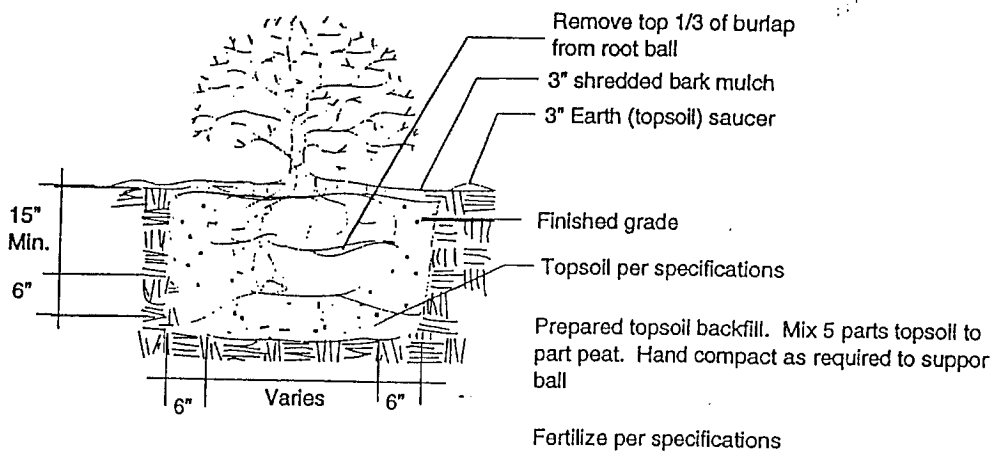
### TYPICAL SMALL TREE PLANTING



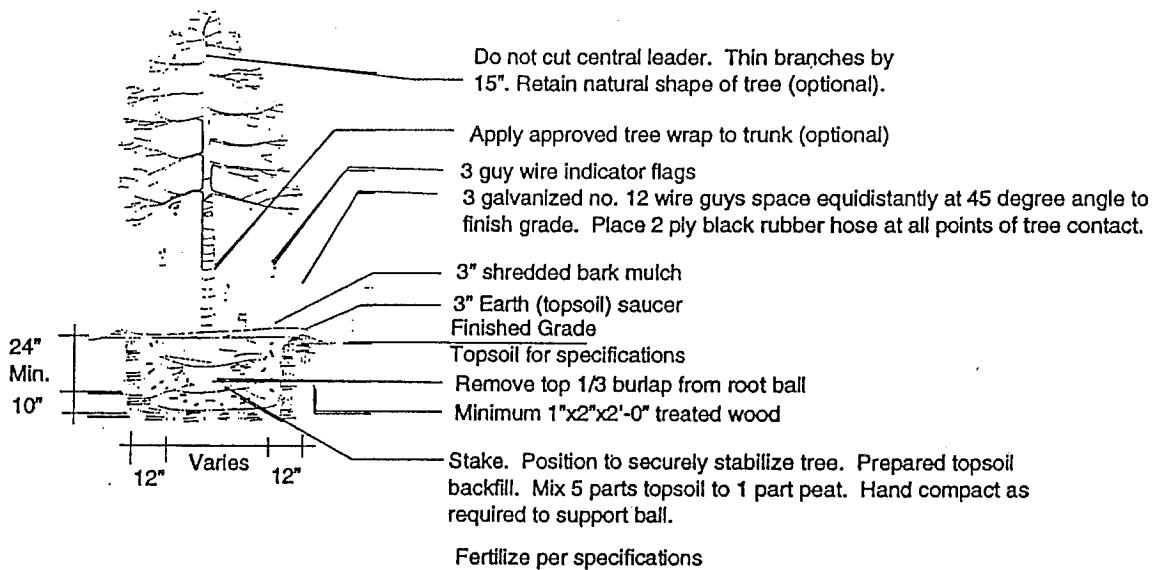
Note:  
Container grown plant material may be  
substituted for burlap material

Plant material shall not be pruned prior to  
installation; after plants have been installed,  
each plant may be pruned for uniformity

### TYPICAL SHRUB PLANTING



### TYPICAL LARGE TREE PLANTING



Note:  
Any series of trees placed in a particular arrangement will be field checked for accuracy. Any trees misplaced will be subject to rejection.

### TYPICAL EVERGREEN TREE PLANTING

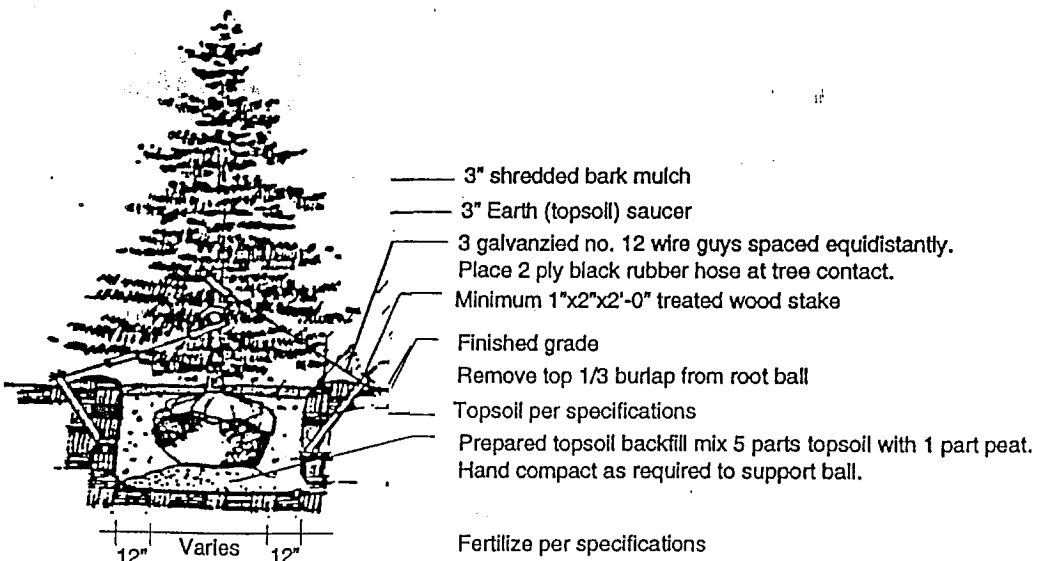


FIGURE 1

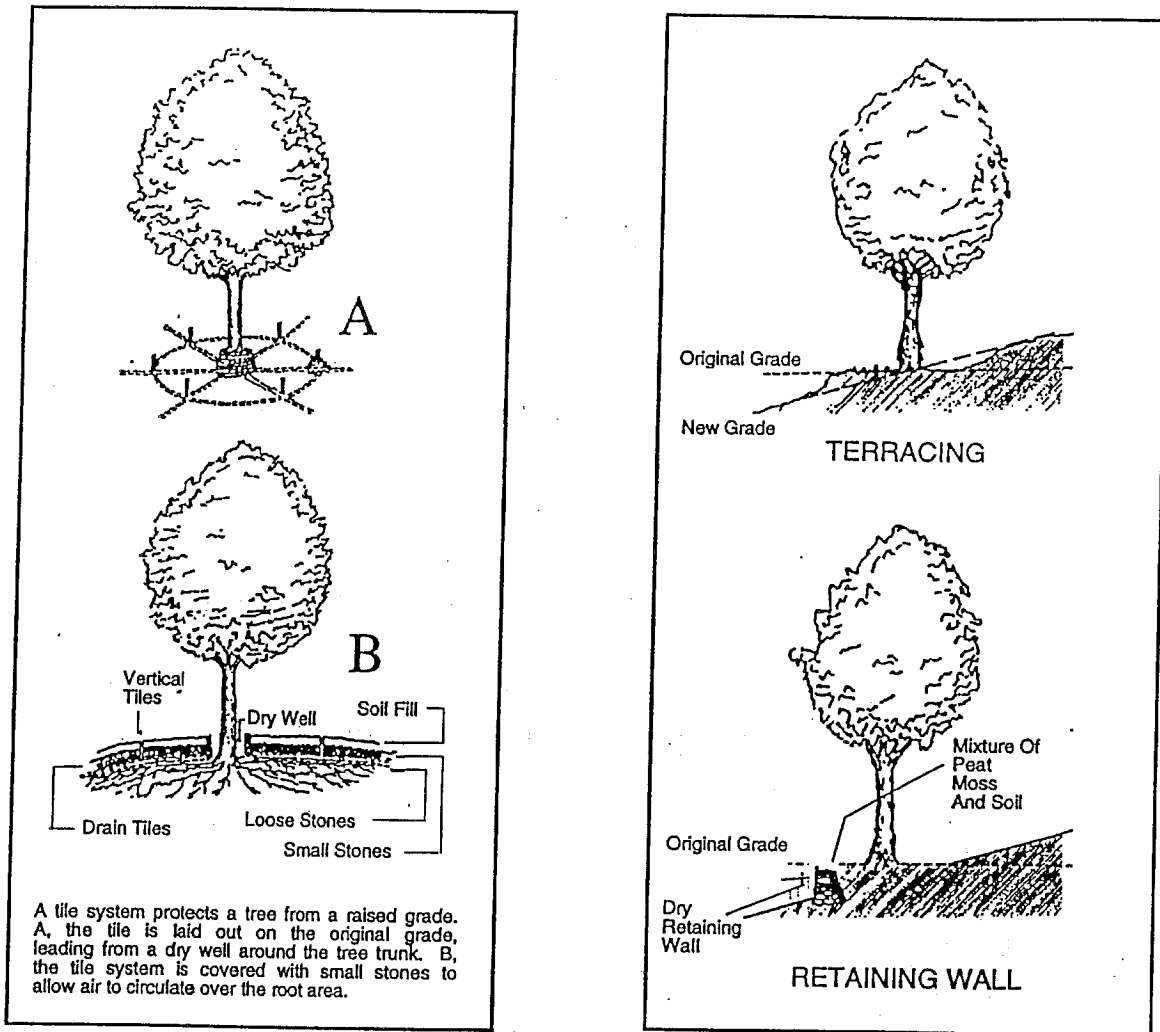
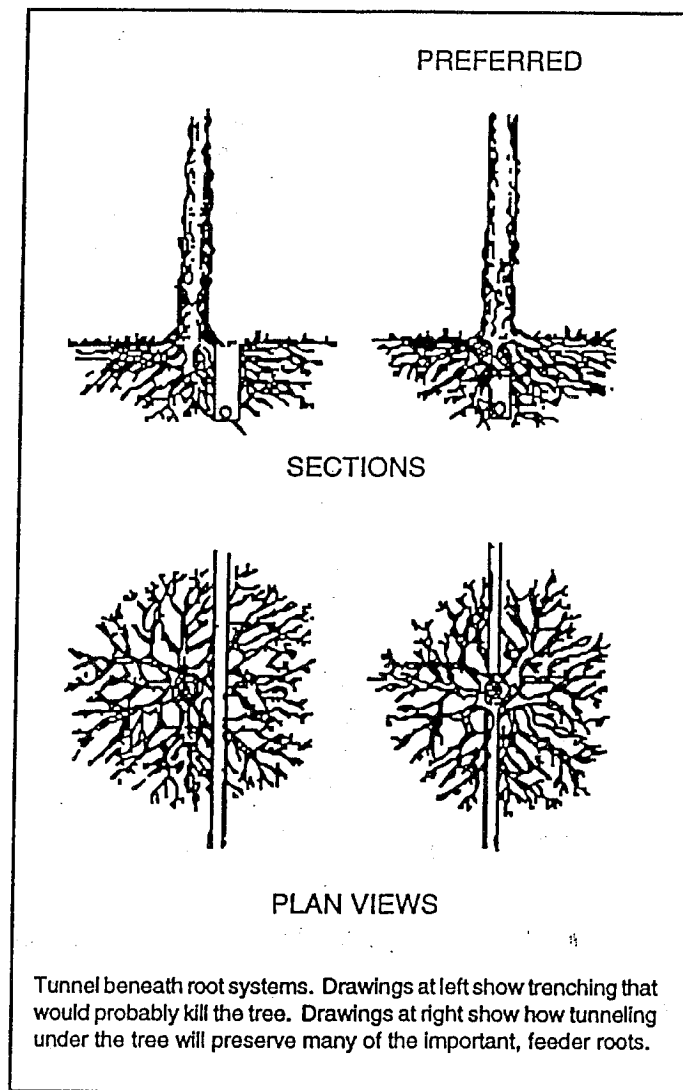
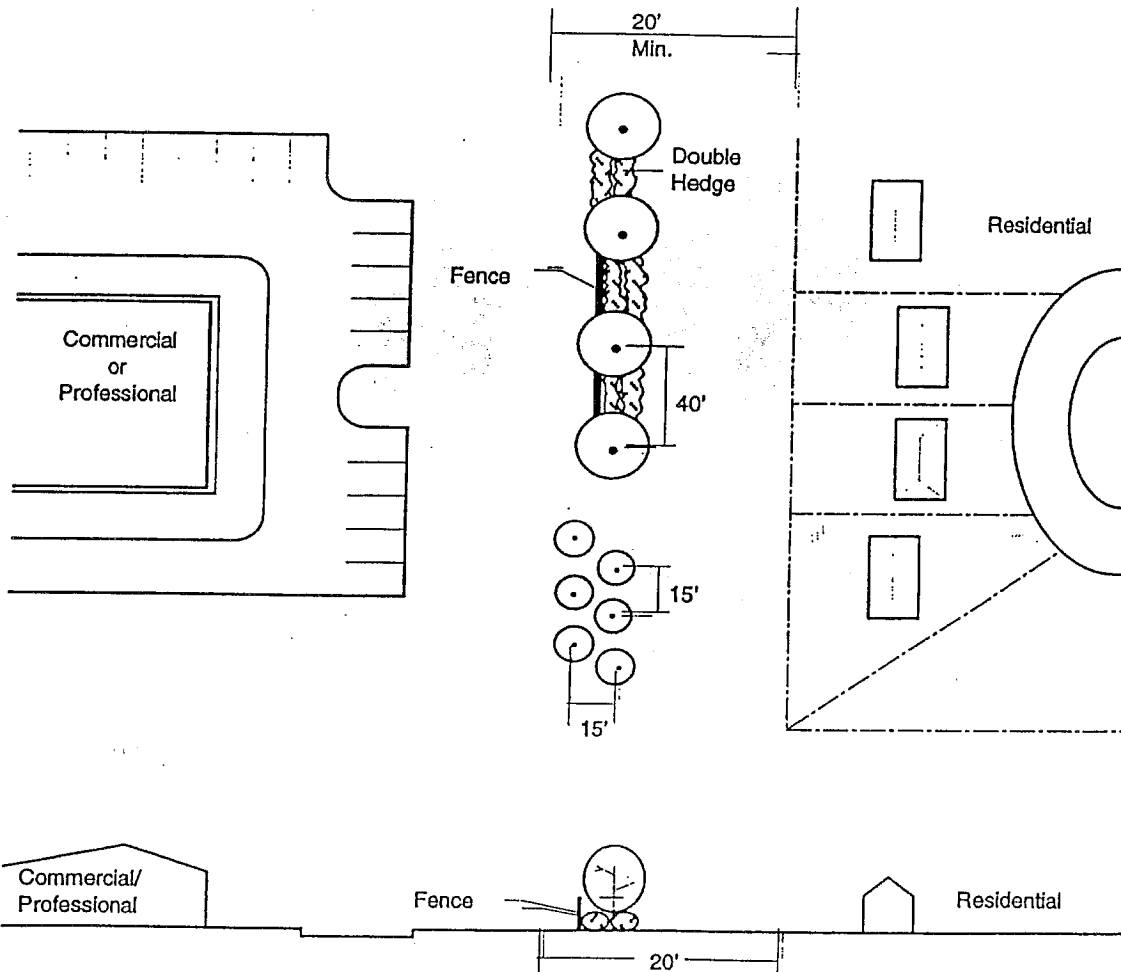


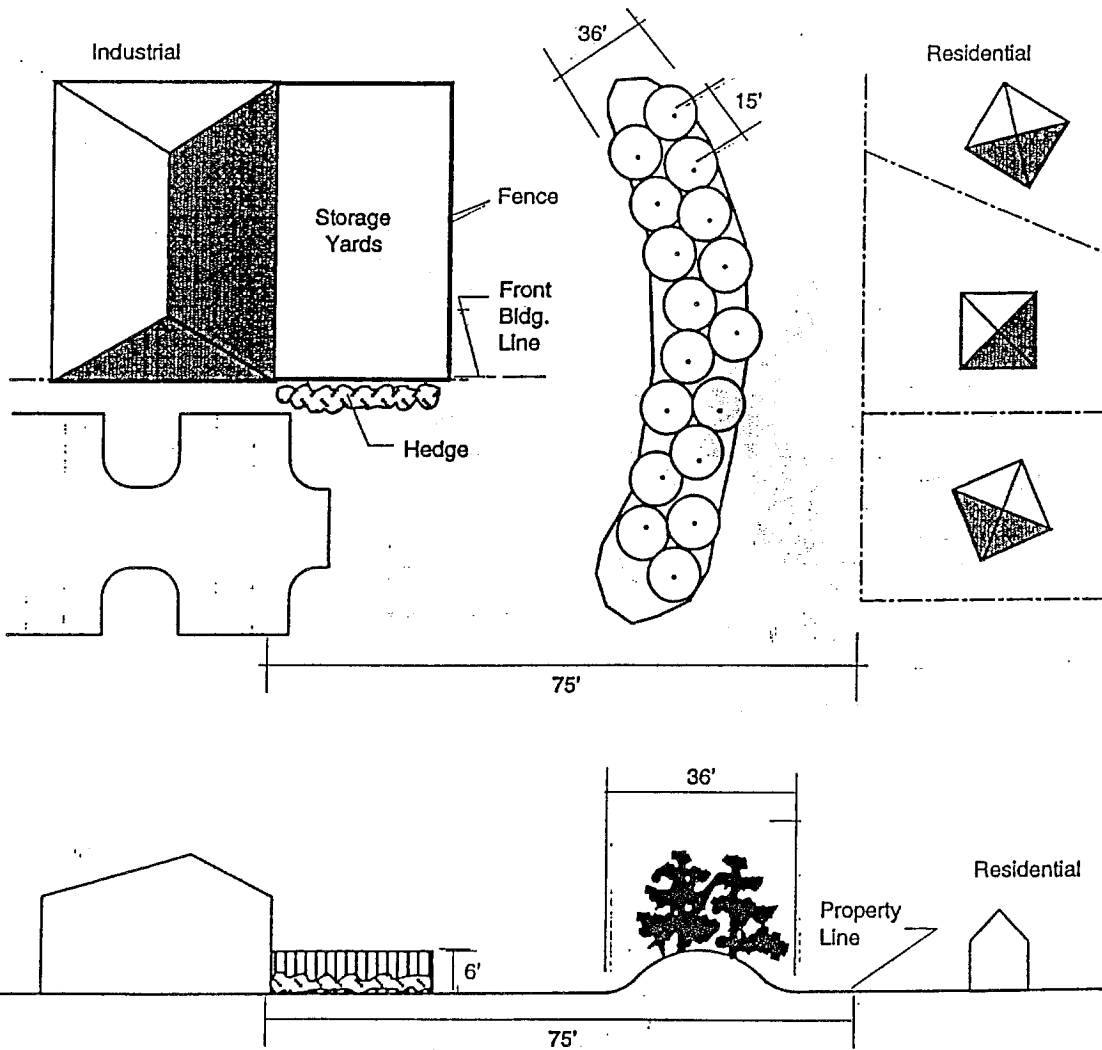
FIGURE 2



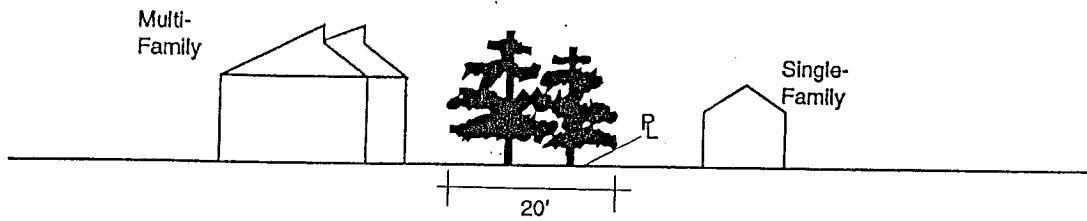
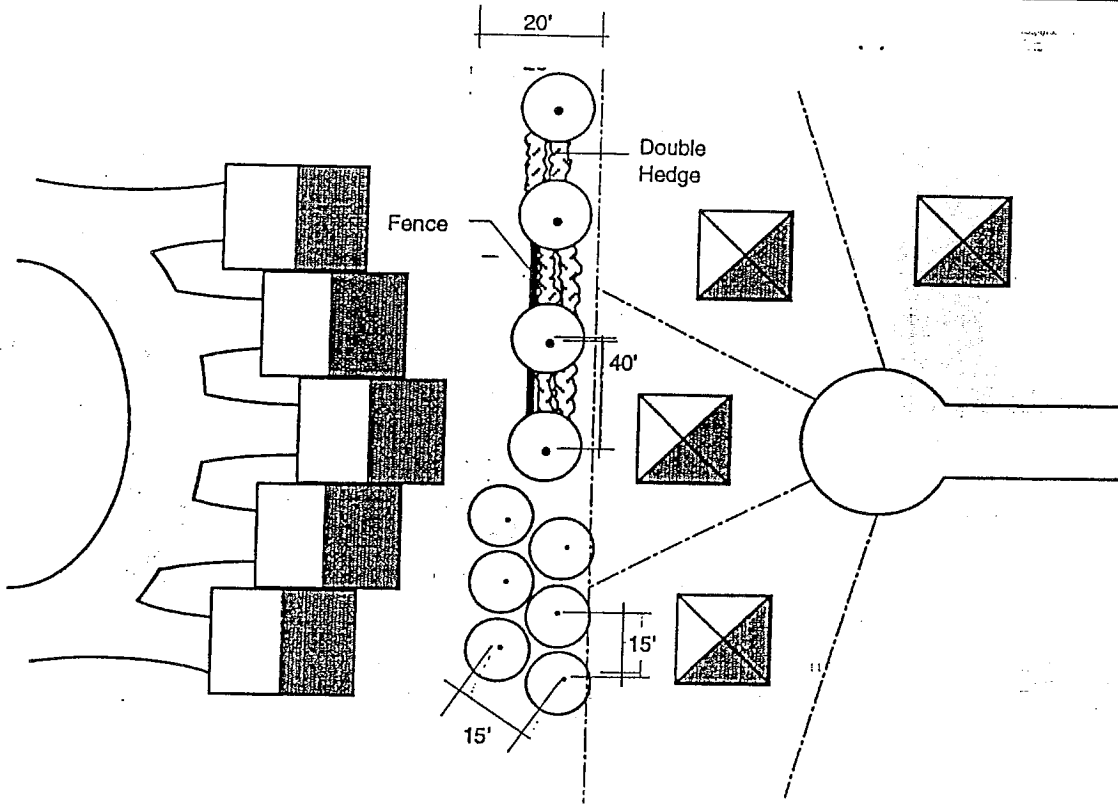
WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
Any commercial or professional office zone or land use, or any conditional use	Any residential zone or land use	20 feet	1. 1 tree from plant list a or list B per 35 feet of linear boundary or fraction thereof and a double row 6 foot hedge from list E or 6 foot wall, fence, or earth mound and a hedge from list D 1 tree from list A or list B per 40 feet of linear boundary or fraction thereof OR 2. double row, staggered, planting of trees from list C at 15 feet on center



WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
Any industrial zone or land use	Any residential, commercial, or professional office zone	75 feet side and rear yard	36 foot wide, 6 foot tall, earthen berm and a double row of staggered trees from list C at 15 feet on center. STORAGE YARD: 6 foot fence or wall and hedge, from list E, facing front yard only and/or any public/private street

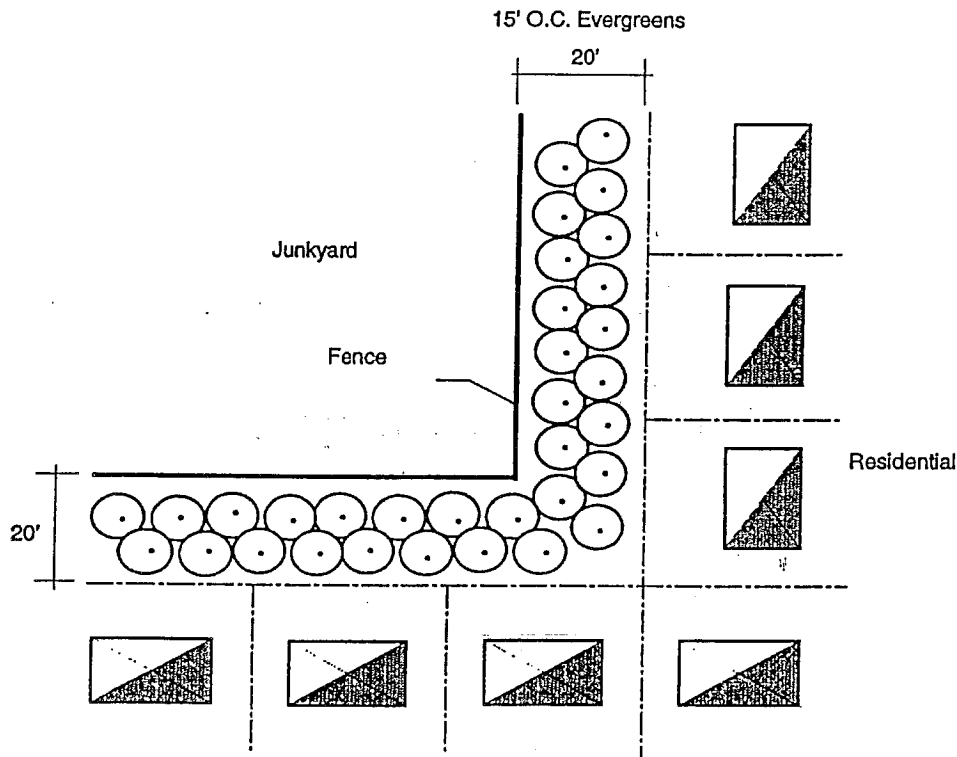


WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
Any multi-family residential (3 units per building or greater density) zone or land use	Any single-family residential zone or land use	20 feet	1. 1 tree from plant list A or list B per 45 feet of linear boundary and a double row 6 foot hedge from list E or 6 foot wall, fence, or earth mound and hedge from list D OR 2. continuous staggered double row planting of trees from list C at 15 feet on center

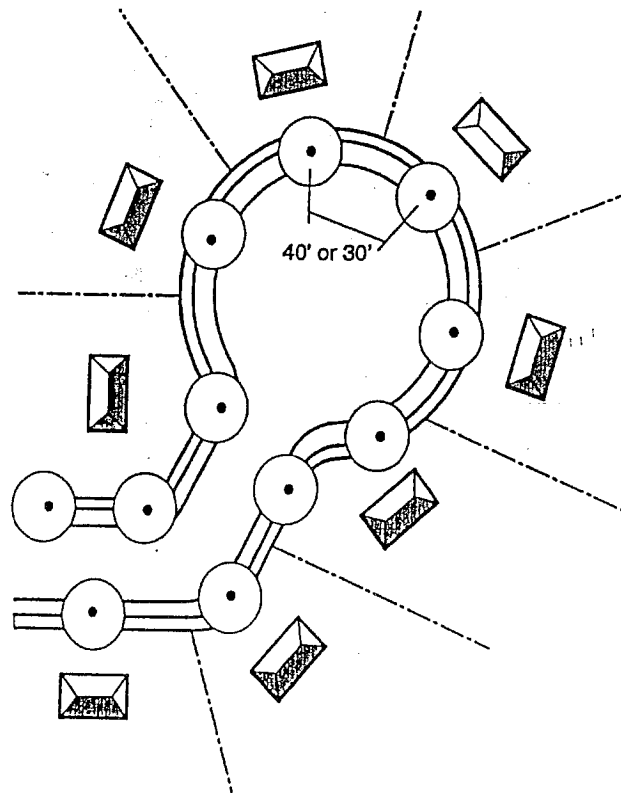
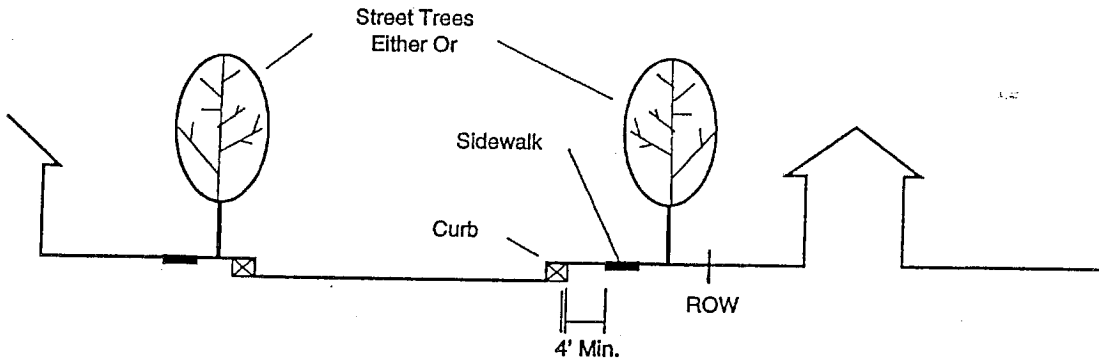




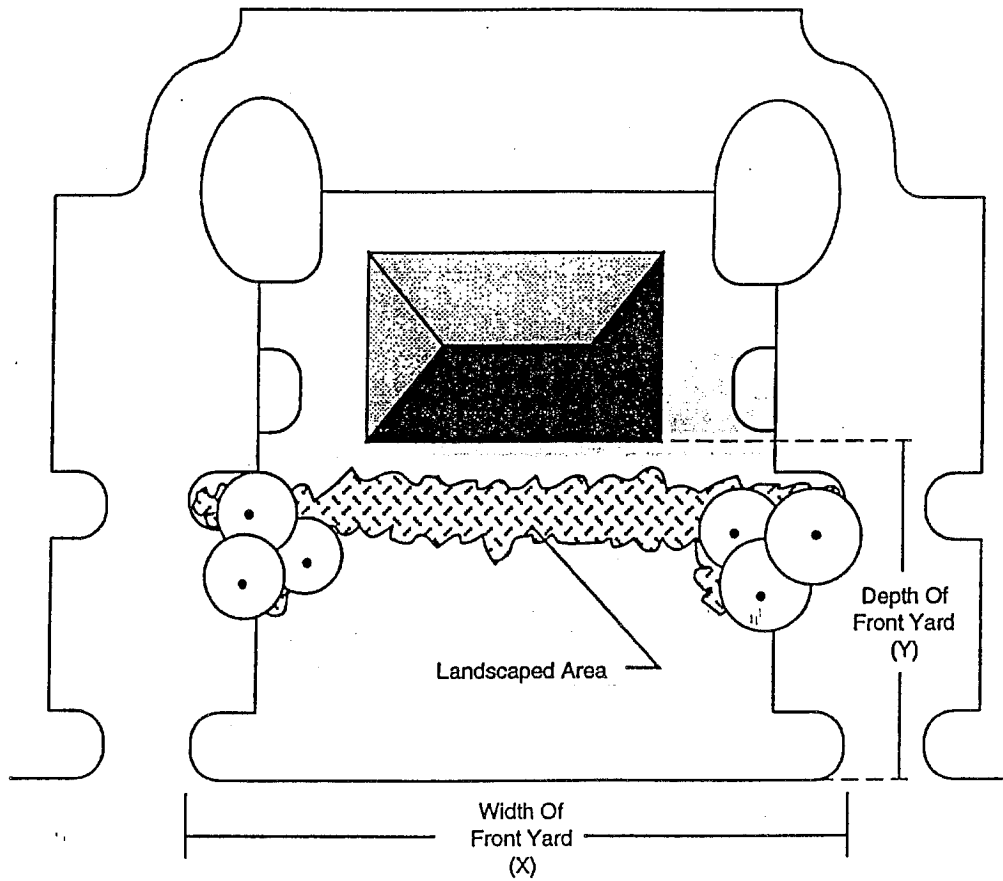
WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
A junk, salvage, refuse, or parts yard or recycling center	Any zone or street (public or private)	20 feet	1. 6 foot solid wall or fence and a single row hedge from list D or list E and 1 tree from list A or list B per 35 feet of linear boundary or fraction thereof OR 2. 6 foot solid fence or wall and staggered double row evergreens from list C at 15 feet on center



WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
Street trees may be planted to meet the tree density requirements and shall be placed within the street right-of-way or within an easement immediately adjacent to the street right-of-way			<ol style="list-style-type: none"> <li>1. 1 tree from list A or list F at least 60 feet on center (maximum)</li> <li style="text-align: center;">OR</li> <li>2. 1 tree from list B at least 60 feet on center (maximum)</li> </ol>



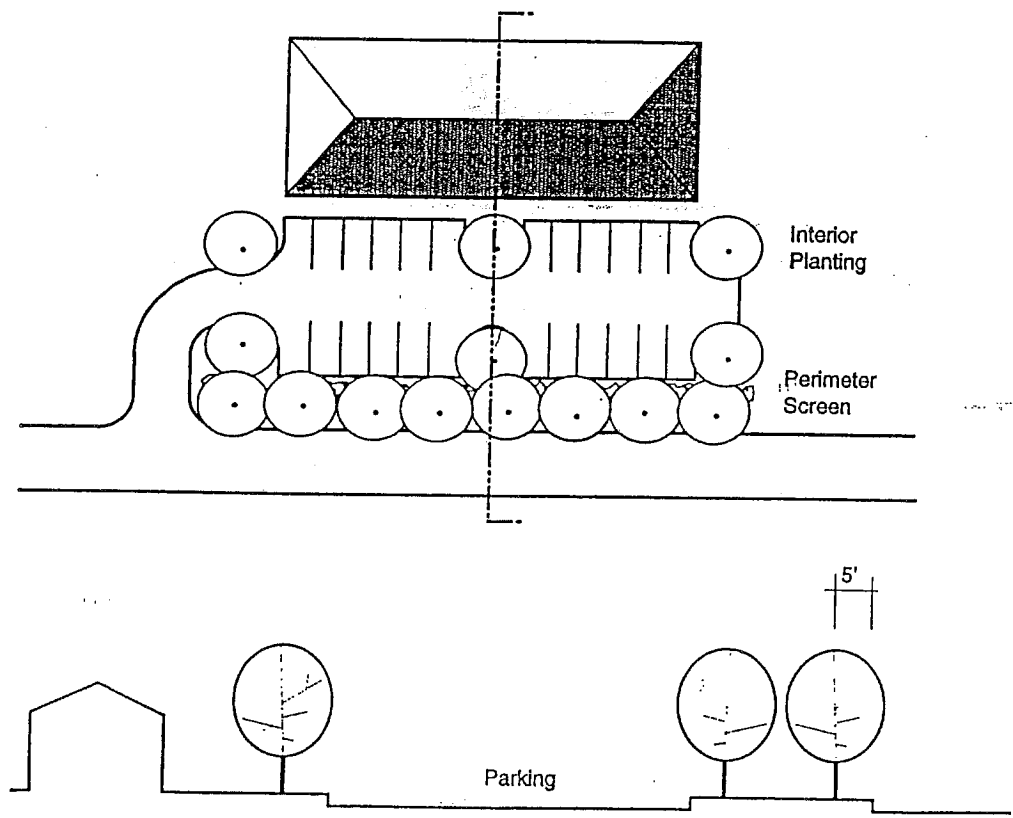
WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
Any general commercial zone or highway commercial zone or land use	The public right-of-way, public or private street	10% of total front yard area must be landscaped	Trees, shrubs, planting beds, and/or perennials in a motif designed by the owner. This is in addition to other required landscaping.



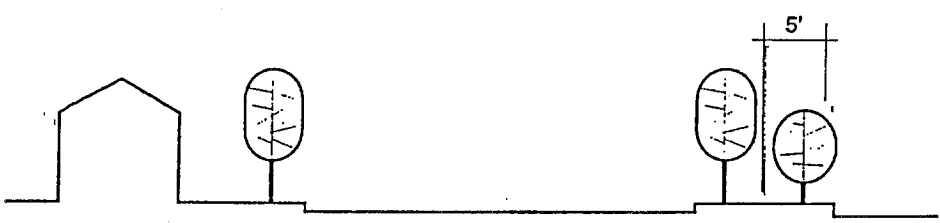
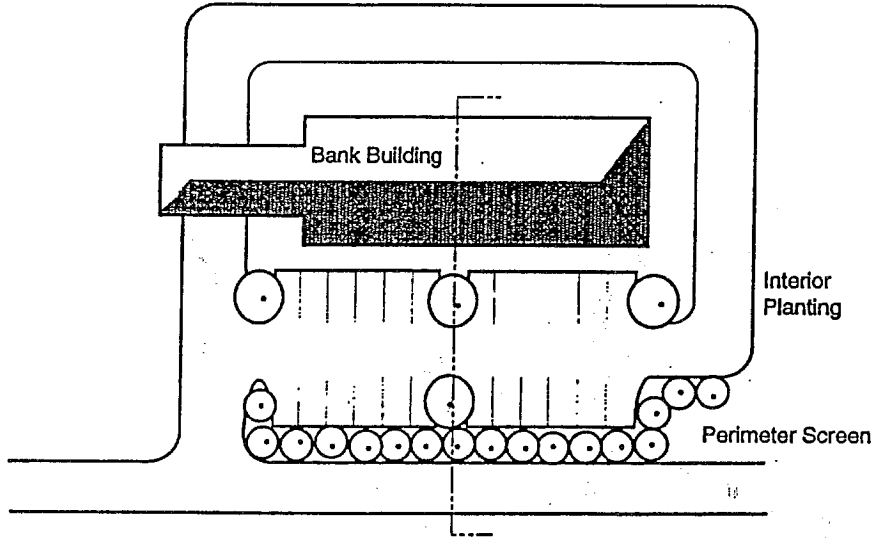
Required Front Yard Landscaping

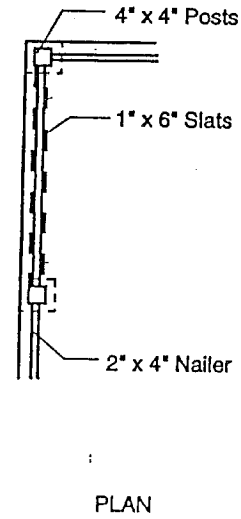
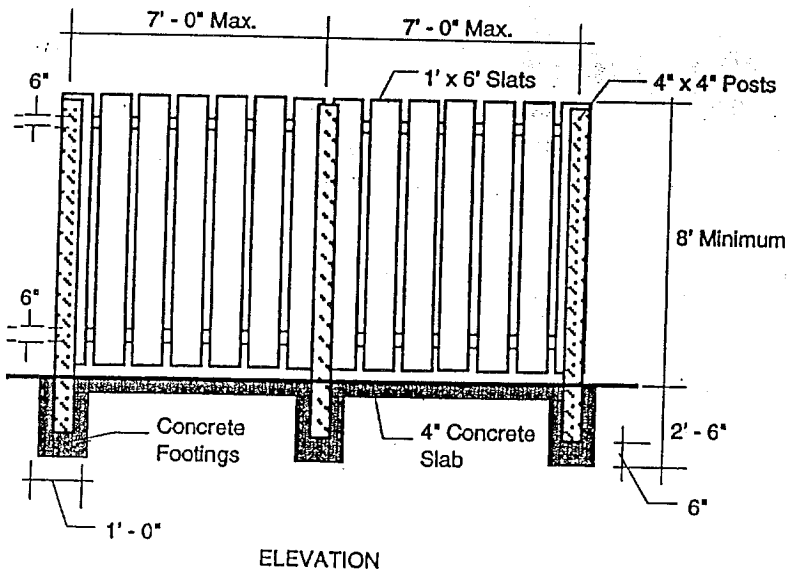
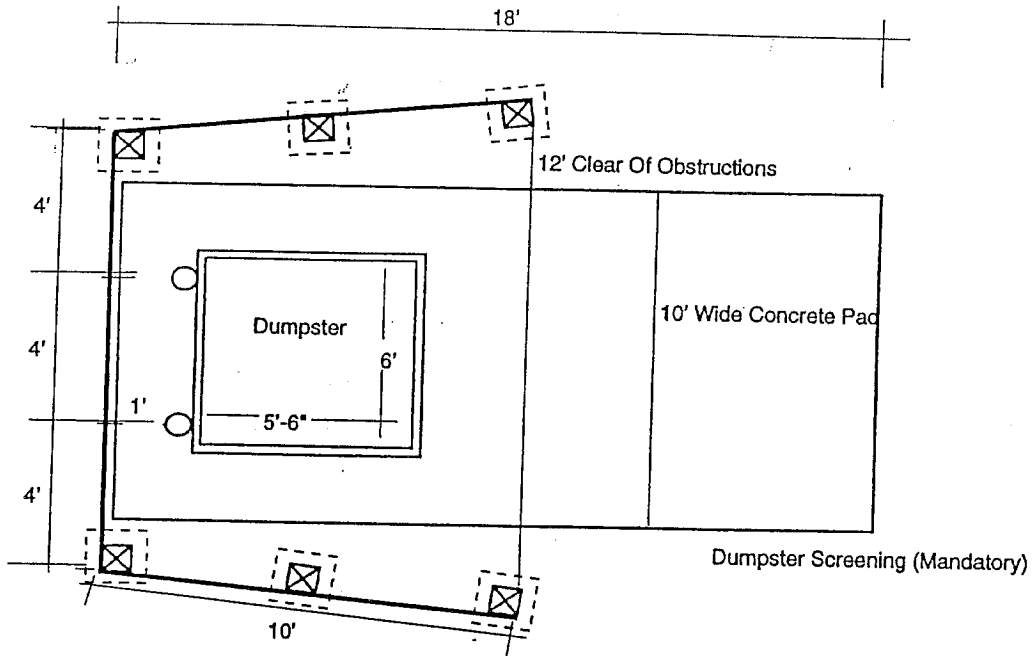
$$(X) \times (Y) / 10$$

WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
<p>A vehicular use area associated with any zone or land use, except single-family residences, banks, savings and loan, and mortgage companies, and auto dealerships</p>	<p>Any public or private street</p> <p>-- PLUS -- In all cases</p>	<p>5 feet perimeter screening easement</p> <p>-- PLUS -- 5% interior landscaped area</p>	<p>1. 1 tree from list A per 40 feet of linear boundary or fraction thereof and shrubs from list D or list E at least 3 feet on center</p> <p>OR</p> <p>2. 1 tree from list B per 25 feet of linear boundary or fraction thereof and shrubs from list D or list E at 3 feet on center (1 tree minimum)</p> <p>-- PLUS -- 1 tree from list A or list B per 250 square feet of interior landscaped area</p>



WHEN	ADJOINS	MINIMUM PLANTING STRIP	PLANT MATERIAL/OPTIONS
A vehicular use area at a bank, savings and loan, mortgage company, or auto dealership	Any public or private street  -- PLUS --  In all cases	5 feet perimeter screening easement  -- PLUS --  5% interior landscaped area	Trees from list B at 20 feet on center  -- PLUS --  1 tree from list A or list B per 250 square feet of interior landscaped area





Screen Fence Detail  
(Guidelines)  
Other Material Such As Brick, Block, Hedges, Etc. May Be Used For Screening

## SUGGESTED REFERENCES

- Barbour, Roger W. and Wharton, Mary E., *Trees and Shrubs of Kentucky*. The University Press of Kentucky, 1973.
- Dirr, Michael A., *Manual of Woody Landscape Plants*. Stipes Publishing Company, 1977.
- Dirr, Michael A., *Photographic Manual of Woody Landscape Plants*. Stipes Publishing Company, 1978.
- Division of Planning, Lexington - Fayette Urban County Government Planting Manual, 1983.
- Hudak, Joseph, *Trees for Every Purpose*. McGraw - Hill Book Co., 1980.
- Wyman, Donald, *Shrubs and Vines for American Gardens*. McMillan Publishing Co., Inc., 1965.
- Wyman, Donald, *Trees for American Gardens*. McMillian Publishing Co., Inc., 1965.

