



## **MONROE TOWNSHIP, MIDDLESEX COUNTY**

### **TREE PLANTING STANDARDS AND SPECIFICATIONS, RECOMMENDED PLANTINGS AND SPECIMEN TREE LIST**

**I. Intent and purpose.** The intent of this Guide is to ensure harmonious planting throughout the Township of Monroe by clarifying what the Township deems to be adequate planting and to enable developers and property owners to plan projects which aesthetically enhance the community in the most economical manner. To ensure that principles of good landscaping and design are adhered to and implemented, the following shall be adhered to:

- (1) The preservation, insofar as possible, of desirable existing trees and shrubs.
- (2) The preservation, insofar as possible, of natural rock outcroppings and natural topographic features.
- (3) Adequate planting density.
- (4) A variety of plant species to provide interest throughout the year with color and texture of foliage, bark, flowers and fruit that are displayed at various seasons.
- (5) Proper selection and diversification of plant species to minimize the possibility of damage due to insects and disease.
- (6) Plant species which are suitable for use in Monroe Township soil conditions.
- (7) Proper plant sizes at the time of installation to ensure a successful planting.
- (8) Proper planting procedures.

#### **II. Planting procedure.**

- A. Inspection of site. Contractors shall visit the work site so as to familiarize themselves with existing conditions, i.e., existing soil, drainage, topography, buildings, towers, poles and overhead and underground power lines and conduits.
- B. Consultation. It is the responsibility of the contractor to notify and consult with the Planning Board's or Zoning board of Adjustment's Licensed Tree Expert prior to installation of any planting, for the purpose of comprehension of specifications, plant material, planting details and planting schedule.



C. Selection of plant material.

- (1) All trees and shrubs shall conform to the American Standard for Nursery Stock, as published by the American Association of Nurserymen. They shall be nursery grown, balled and burlapped, or container grown, unless specified. No plant shall have a man-made ball. Bare-root shrubs or shade trees may be used where specifically permitted on approved plans.
- (2) All plant material and sizes shall be specified on the landscaping plan. No substitutes shall be made without permission of the Professional Arborist.
- (3) All plants shall have a growth habit normal for species and variety, unless otherwise specified, and shall be healthy, vigorous and free of insects, disease and mechanical injury. For inspection purposes, plants shall be measured prior to pruning, with branches in normal position.

D. Soil. Topsoil used in planting pits and for backfilling for trees and shrubs shall be fertile agricultural soil capable of sustaining vigorous plant growth and shall have a pH of five point five (5.5) to six point five (6.5). It shall have uniform composition, be free from large stones, wood and other foreign objects and shall not contain substances toxic to plant growth. Planting pit and backfilling material shall not be used unless it meets this requirement. Poor or sandy soils may be used if supplemented by a minimum of fifty percent (50%) by volume of peat moss.

E. Planting season.

- (1) Planting shall normally be undertaken when the soil is free of frost and firable, unless otherwise specified. No planting shall be done during abnormally hot weather. The time of planting, however, shall be agreed upon at the conference between the Professional Arborist and the contractor, and a specific schedule shall be set up.
- (2) Trees should not be planted in the "Fall Planting Season" unless they have been dug at the proper time — nor should they be placed in the "Fall Planting Season" if they are on the "Fall Planting Hazard List", according to the American Nurseryman's Association standards.

F. Plant installation.

- (1) The diameter of all plant pits shall be at least one and two-thirds (1 2/3) greater than the ball diameter. Topsoil meeting the requirements of Subsection D above shall be provided at a minimum depth of six (6) inches below the ball or root system. The pit for bareroot trees and shrubs must be at least six (6) inches deeper than existing roots and twelve (12) inches wider.



- (2) Plants shall be planted at exactly the same depth as previously grown. All soil in the planting pits shall be firmed to prevent air pockets and settling.
  - (3) After balled and burlapped plants are set at the proper level in the holes, all cord and burlap shall be untied from the trunk base. For drumlaced plants, retie the ball by tightening the top cinch cord. All plants shall be backfilled with topsoil which meets the requirements of Subsection D above. All plants shall be thoroughly watered in at the time of planting to prevent air pockets and settling.
  - (4) After materials are planted, all damaged branches shall be removed by pruning. All nursery tags shall also be removed.
  - (5) All elastic material, burlap, string or containers shall be removed at time of planting.
  - (6) At the time of planting, trees and shrubs shall be pruned using generally accepted horticultural methods.
- G. Caliper. Caliper indicates the diameter of a tree trunk measured, in inches, six (6) inches above ground level for trees up to four (4) inches in diameter and measured twelve (12) inches above ground level for trees over four (4) inches in diameter. Ball and burlap indicates that the tree should not be planted bare-rooted.
- H. Mulching.
- (1) A four-inch minimum layer of mulch shall be applied around each individual tree.
  - (2) A "mulch" shall be considered any material, organic or inorganic, of a granular nature that is not readily subject to movement by wind or water.
  - (3) Wood chips, partially rotted or nitrogen-enriched, may be used. New wood chips are not acceptable because of the bacteria drawing available nitrogen from the soil, thus preventing its use by the plants it is intended to protect.
- I. Staking. All stakes and ties shall be removed not less than twelve (12) months nor more than eighteen (18) months from time of planting.
- J. Wrapping.
- (1) Each tree shall be wrapped with an expandable paper or cloth treated to last at least one (1) year. Wrapping is to be applied spirally with a fifty-percent overlap being secured at the base and the top with suitable cord, as well as in the middle.
    - (a) This wrap shall extend from the ground level up the trunk to the first branches.
    - (b) This wrap is to prevent sun scald and shall be attached or fastened at each end with a material that will permit tree growth without girdling.



- (2) The person preparing the landscape plan shall coordinate said plan for plantings in the public right-of-way with all utility companies and agencies, public and private, to make certain that plantings will not impair the use of said public right-of-way for the installation, operation and maintenance of utility facilities.
- K. Maintenance. Maintenance of planted material shall be the responsibility of the developer during the performance and maintenance bond guaranty periods. Maintenance shall include watering, setting plants, and any other work necessary to assure survival and normal growth.
- L. Placement.
  - (1) Trees shall be planted on the lawn side of a sidewalk unless otherwise specified by the approving board. Trees shall be guaranteed until at least one (1) year following planting to assure that new growth appears and that the tree is healthy.
  - (2) Intersections. If a house is located on a corner:
    - (a) Plantings shall be no closer than twenty-five (25) feet nor in a radius of ten (10) feet from the corner setback.
    - (b) Any hedges in this area should be cut back to no more than thirty (30) inches tall.
    - (3) No tree shall be planted closer than five (5) feet from any utility line.
- M. Spacing. The spacing of trees planted within the Township right-of-way or Shade Tree Easement area shall average fifty (50) feet. No two (2) trees shall be planted more than sixty (60) nor less than forty (40) feet apart.

**III. Recommended plantings.**

The following recommendations may be revised from time to time. Developers must obtain a copy of the current recommendations before planting.

A. Trees to be planted in street lawns, Shade Tree Easements and rights-of-way.

A. Group A - Trees greater than four (4) feet (48 inches) wide:	
Botanical Name	Common Name
Fagus grandifolia	American Beech
Ulmus americana	American Elm cultivars



<i>Tilia Americana</i> cvs.	American Linden cultivars
<i>Taxodium distichum</i>	Baldcypress
<i>Nyssa sylvatica</i>	Black Gum
<i>Celtis occidentalis</i>	Common Hackberry
<i>Metasequoia glyptostroboides</i>	Dawn Redwood
<i>Quercus robur</i> cvs.	English Oak cultivar
<i>Fagus sylvatica</i> cvs.	European Beech cultivars
<i>Ginkgo biloba</i>	Ginkgo
<i>Aesculus hippocastanum</i> cvs.	Horsechestnut cultivar
<i>Zelkova serrata</i>	Japanese Zelkova
<i>Cercidiphyllum japonicum</i>	Katsuratree
<i>Gymnocladus dioica</i>	Kentucky Coffeetree
<i>Ulmus parvifolia</i>	Lacebark Elm
<i>Tilia cordata</i> cvs.	Littleleaf Linden cultivars
<i>Platanus x acerifolia</i>	London Planetree
<i>Celtis x occidentalis</i> 'Magnifica'	Magnifica Hackberry
<i>Quercus rubra</i>	Northern Red Oak
<i>Quercus palustris</i>	Pin Oak
<i>Acer pseudoplatanus</i>	Planetree maple
<i>Acer rubrum</i> cvs.	Red Maple cultivars
<i>Betula nigra</i> cvs.	River Birch cultivars
<i>Quercus acutissima</i>	Sawtooth Oak
<i>Quercus coccinea</i>	Scarlet Oak
<i>Sophora japonica</i>	Scholartree
<i>Quercus imbricaria</i>	Shingle Oak
<i>Acer saccharum</i> cvs.	Sugar Maple cultivars
<i>Quercus bicolor</i>	Swamp White Oak
<i>Liquidambar styraciflua</i>	Sweetgum
<i>Gleditsia triacanthos inermis</i> cvs.	Thornless Honey Locust cultivars
<i>Liriodendron tulipifera</i>	Tuliptree
<i>Salix babylonica</i>	Weeping Willow
<i>Quercus alba</i>	White Oak
<i>Quercus phellos</i>	Willow Oak

B. Group B - Trees greater than two and one-half (2 ½) to four (4) feet wide:



Botanical Name	Common Name
<i>Ilex opaca</i>	American Holly
<i>Carpinus caroliniana</i>	American Hornbeam
<i>Prunus maackii</i>	Amur Chokeberry
<i>Betula platyphylla</i>	Asian White Birch
<i>Pyrus calleryana</i> cvs.	Callery Pear cultivars
<i>Acer platanoides</i> 'Crimson King'	Crimson King Maple
<i>Carpinus betulus</i> cvs.	European Hornbeam cultivars
<i>Koelreuteria paniculata</i>	Goldenraintree
<i>Betula populifolia</i>	Gray Birch
<i>Acer campestre</i>	Hedge Maple
<i>Ostrya virginiana</i>	Hophornbeam
<i>Stewartia koreana</i>	Korean Stewartia
<i>Cornus kousa chinensis</i>	Kousa Dogwood
<i>Prunus serrulata</i>	Kwanzan Cherry
<i>Acer platanoides</i>	Norway Maple
<i>Aesculus pavia</i>	Red Buckeye
<i>Cercis Canadensis</i>	Redbud
<i>Prunus sargentii</i> cvs.	Sargent Cherry cultivars
<i>Magnolia x soulangiana</i>	Saucer Magnolia
<i>Tilia tomentosa</i>	Silver Linden
<i>Halesia carolina</i> cvs.	Silverbell cultivars
<i>Oxydendrum arboretum</i>	Sourwood
<i>Acer buergerianum</i>	Trident Maple
<i>Crataegus phaenopyrum</i> cvs.	Washington Hawthorn
<i>Cladrastis kentukea</i>	Yellowwood

C. Group C – Trees less than thirty (30) inches wide:	
Botanical Name	Common Name
<i>Amelanchier laevis</i> cvs.	Allegheny Serviceberry cultivars
<i>Acer ginnala</i>	Amur Maple
<i>Cornus mas</i>	Cornelian Cherry
<i>Malus</i> cvs.	Crabapple cultivars
<i>Lagerstroemia indica</i> cvs.	Crepe Myrtle cultivars
<i>Amelanchier arborea</i>	Downy Serviceberry



<i>Crataegus laevigata</i> cvs.	English Hawthorn cultivars
<i>Prunus x</i> cvs.	Flowering Cherry cultivars
<i>Cornus florida</i> cvs.	Flowering Dogwood cultivars
<i>Laburnum x watereri</i>	Goldenchain tree
<i>Prunus subhirtella</i> cvs.	Higan Cherry cultivars
<i>Syringa reticulata</i> 'Ivory Silk'	Ivory Silk Tree Lilac
<i>Acer palmatum</i> cvs.	Japanese Maple cultivars
<i>Acer griseum</i>	Paperbark Maple
<i>Prunus cerasifera</i>	Purpleleaf Plum
<i>Amelanchier canadensis</i> cvs.	Shadblow cultivars
<i>Malus baccata</i>	Siberian Crabapple
<i>Magnolia stellata</i>	Star Magnolia
<i>Magnolia virginiana</i>	Sweetbay Magnolia
<i>Malus hupehensis</i>	Tea Crabapple
<i>Crataegus viridis</i> 'Winter King'	Winter King Hawthorn

**B. Trees to be planted in off-street parking areas:**

**A. Landscape screen:**

- (1) Evergreen and semi-evergreen shrubs: Pfitzer's juniper (*Juniperus chinensis pfitzeriana*), dense yew (*Taxus cuspidata densiformis*), a Japanese andromeda (*Pieris japonica*) and inkberry holly (*Ilex glabra*).
- (2) Broadleaf evergreen shrubs: franchet cotoneaster (*Cotoneaster franchet*), and leatherleaf viburnum (*Viburnum rhytidophyllum*).
- (3) Columnar evergreen trees: columnar Chinese juniper (*Juniperus chinensis columnaris*), dark American arborvitae (*Thuja occidentalis nigra*) and keteleeri juniper (*Juniperus chinensis keteleeri*).
- (4) Pyramidal evergreen: Austrian pine (*Pinus nigra*), Canadian hemlock (*Tsuga canadensis*) and Norway spruce (*Picea excelsa*).

**IV. SPECIMEN TREE**

Any of the following trees that reach the indicated diameter/circumference\* and any tree designated by the Township Council as a historic tree or landmark tree and such other trees or species of tree as Council may, from time to time, designate as a Specimen Tree.



Tree Species, Cultivar or Variety	Diameter	Circumference
Abies concolor	14 ½"	45"
Acer campestre	25"	78"
A. nigrum	25"	78"
A. platanoides	28 ¾"	90"
A. rubrum	33 ½"	105"
A. saccharinum	50"	157"
A. saccharum	25"	78"
Aesculus hippocastanum	14 ½"	45"
A. octandra	19 ¾"	62"
Betula nigra	33 ½"	105"
B. pendula	25"	78"
Carya ovata	14 ½"	45"
Fagus grandifolia	17"	53"
F. sylvatica	22 ½"	70"
Gleditsia triacanthos inermis	28 ¾"	90"
Gymnocladus dioicus	28 ¾"	90"
Ilex opaca	14 ½"	45"
Juglans nigra	28 ¾"	90"
Liquidambar styraciflua	25"	78"
Liriodendron tulipifera	40 ½"	127"
Nyssa sylvatica	25"	78"
Picea abies	30"	94"
P. pungens 'Glauca'	22 ½"	70"
Pinus nigra	25"	78"
P. resinosa	22 ½"	70"
P. strobus	23 ¼"	73"
P. sylvestris	28 ¾"	90"





Platanus occidentalis	28 ¾"	90"
Prunus serotina	25"	78"
Pseudotsuga menziesii	22 ½"	70"
Quercus alba	19 ¾"	62"
Q. coccinea	25"	78"
Q. imbricaria	19 ¾"	62"
Q. palustris	28 ¾"	90"
Q. prinus	22 ½"	70"
Q. rubra	28 ¾"	90"
Q. shumardii	33 ½"	105"
Q. velutina	28 ¾"	90"
Tilia americana	30 ¼"	95"
T. cordata	33 ½"	105"
Ulmus americana	33 ½"	105"
Tree Species, Cultivar or Variety	Diameter	Circumference
Abies concolor		