

LANDSCAPING STANDARDS

PURPOSE: To establish a policy and procedure on the selection and planting of trees, shrubs and groundcovers on any highway rights of way, Interstate and Federal Aid Primary Highways.

DEFINITIONS

Adopted Interchange or Intersection: This is an interchange or intersection which has been adopted by a City or County or other form of government entity (Permittee). As part of the adoptive agreement, the local entity must agree to be responsible for all expenses and aspects regarding the installation of plant materials. The Permittee must provide the necessary maintenance for all plant materials and pick up litter within the interchange or intersection. If the Permittee fails to maintain the site, MDOT will cancel the adoptive agreement and assume maintenance.

Divided Highways: All multilane facilities with a median wide enough to store a stopped vehicle.

Groundcover: Any plant used for mass effect which does not grow higher than 24 inches.

Interstate System: That portion of the National System of Interstate and Defense Highways located within this State, as officially designated or as may hereafter be so designated, by the Department of Transportation, and approved by the Secretary of Commerce, pursuant to the provisions of Title 23, United States Code, "Highways".

Invasive Species/Exotic Pest Plant/Noxious Weed: A species which is not native to the ecosystem under consideration and whose introduction causes economic or environmental harm to human health.

Major Tree: A tree which, at mature size, has a trunk diameter greater than 4 inches at its base. Major trees are not to be planted in the clear zone.

Minor Tree: A tree which, when mature, has a trunk diameter of less than 4 inches at its base. Minor trees may be planted within 8 feet of the shoulder.

Native Plant: A plant species that occurs naturally in a particular region ecosystem and or habitat without direct or indirect human intervention.

Permittee: The local City, County or State government entity or adjacent landowner applying for a permit to install plant materials.

Primary System: That portion of connected main highways, as officially designated, or as may hereafter be so designated, by the Department of Transportation and approved by the Secretary of Commerce, pursuant to the provisions of Title 23, United States Code, "highways".

Shrub: A plant which when mature does not grow higher than 8 feet.

Undivided Highways: These are all two-lane, two-way highways and all multilane highways with a median width which is too narrow to allow a vehicle to store.

PERMITS

Interstate System: Permits for installation of plant materials are to be reviewed by the District and the Maintenance Division and approved by the State Maintenance Engineer.

PROCEDURE

Plans: The Permittee shall prepare a landscape plan of the site showing plant material locations, species and spacing. The landscape plan is for review by the District Office as a part of the permit approval process. Plans should be clearly labeled and prepared at a scale which presents all information in a legible size.

Plant Selection:

The choice of plant materials will vary considerably based on the region and the land use. Rural locations may need only minimal treatment while urban sites may require extensive plantings with combinations of trees shrubs and ground covers. Planting designs should respond to the particular characteristics and functional needs of a site. Functions may range from screening, delineation, noise suppression, scenic visual quality and erosion control. Designs should address the broad scale of a highway landscape and utilize masses of trees and or shrubs for the proper effect.

Location

1. Plant material locations shall conform to all safety standards
2. Location information for trees shall consider:
 - a. on and off site views
 - b. overhead power lines (No trees will be planted within utility rights-of-ways or in areas which may interfere with power lines once the trees mature.)
 - c. underground utilities
 - d. soil moisture
 - e. soil texture
 - f. mature size of plant
 - g. existing or proposed **Outdoor Advertising Sign** locations

Clear Zone

NOTE: Refer to MDOT Roadway Design Manual for Clear Zone criteria.

1. Bridges

Trees planted in a median shall not hamper access to bridges for maintenance purposes

2. Intersections

- a. For intersections to operate properly, a clear unobstructed line of sight should be provided. The driver should have sufficient safe sight distance to see potential conflicts and to take appropriate actions needed to negotiate the intersection safely.
- b. The driver on the stop-controlled leg of an intersection needs sufficient sight distance to safely enter the major roadway.
- c. The driver on the major roadway should have sufficient sight distance to see vehicles approaching the stop sign or traffic signal to avoid a collision if the approaching vehicle violates the traffic control.
- d. For application, the measurement should be determined from where the vehicle enters the right of way on the stop-controlled leg of the intersection. The unobstructed line of sight should be eye level, 3.5 feet about the pavement. No plants or objects should be placed within the clear sight zone that would obstruct clear sight of approaching vehicles.
- e. Figures A through E illustrate the clear sight zones and sight distances which should be available to a vehicle approaching an intersection.
- f. Care should be taken to insure that no trees or shrubs be planted that upon maturity would protrude above the line of sight within the clear sight zone. Likewise, no objects or terrain should be allowed to remain that protrudes above the line of sight in the clear sight zone.
- g.. Intersections controlled by traffic signals are considered by many not to require sight distance between intersection traffic flows because the flows move a separate times. However, due to a variety of operational characteristics associated with intersections, sight distance based on Figures A through E should be available to the driver.

3. Medians

- a. Trees planted in a median shall conform to the same clear zone requirements as those planted on the shoulder of a highway.
- b. Curb sections: When a median is protected by a curb, the plant materials may be planted within 5 feet of the curb, as long as the tree's canopy does not extend into the traffic lane.
- c. Canopy: Trees with a canopy that extends into the traffic lane are to be avoided

4. Installation

- a. Planting: Trees and/or shrubs shall be planted in a hole with a diameter of at least 2.5 times the original root ball. The root ball shall be placed on undisturbed soil. Backfill shall be loose and of similar texture to the surrounding undisturbed soil.
- b. Staking: Guying or staking of newly planted trees shall be of a temporary method and easily removed after the tree is established. Trees are to be staked only if they are large

enough that wind may blow them over. Stakes are to be at or below ground level with fabric ties. **Steel "T style" fence posts are not to be used.** Wire in any form is not to be used for guys. All staking material, guys and trunk wrapping must be removed after 2 growing seasons.

c. Mulch: Trees and shrubs shall be mulched with an approved mulch a minimum of 4 inches thick over the roots. Mulch is not to be placed against the trunk as it increases problems with insects and decay. Standard specifications for mulch are found in Section 715.07.1 of the Mississippi Standard Specifications for Road and Bridge Construction.

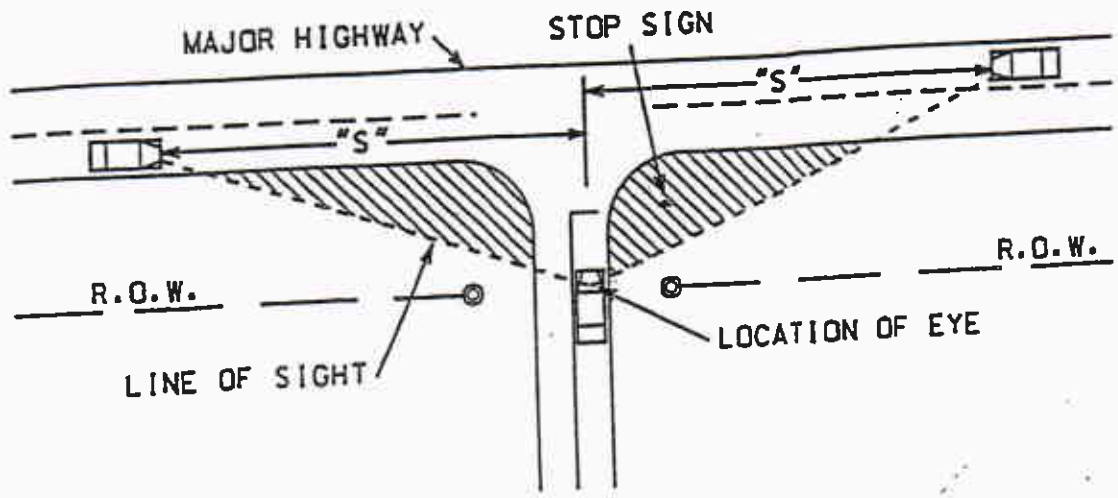


FIGURE A
(WITHOUT R.O.W. FLARE)

Design Speed (MPH)	Setback in Feet	
	Two Lane	Four Lane
30	420	475
40	560	625
50	700	775
55	770	850
60	840	930
65	910	1000

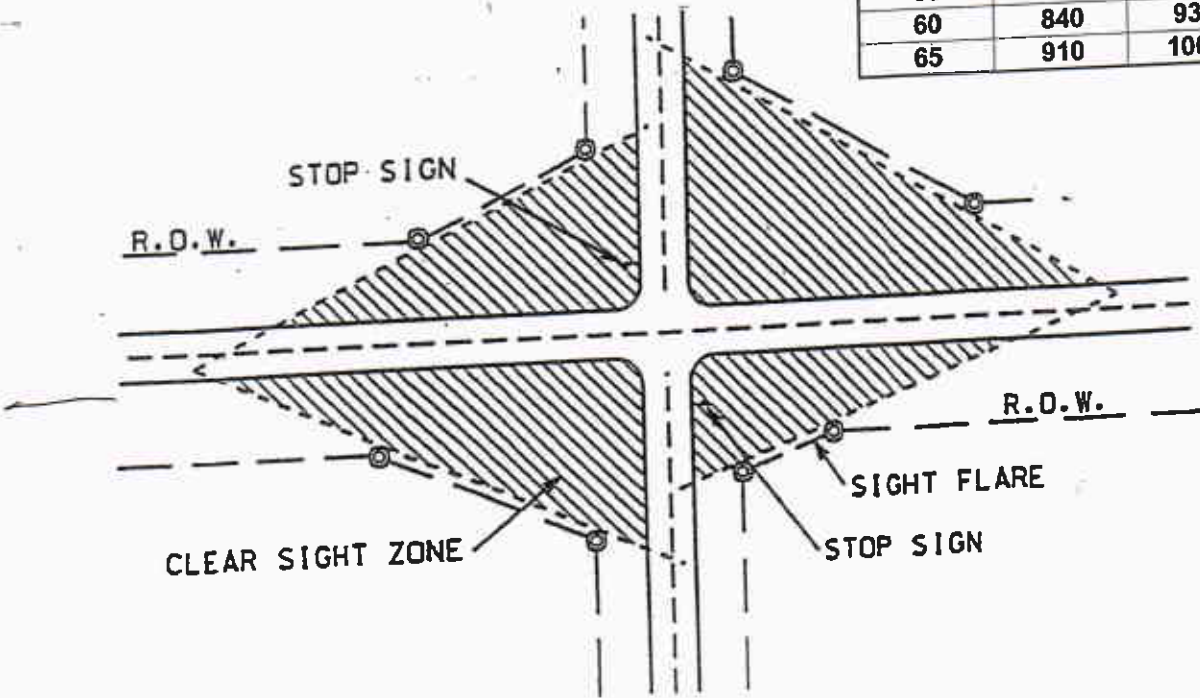


FIGURE B
(WITH R.O.W. FLARE)

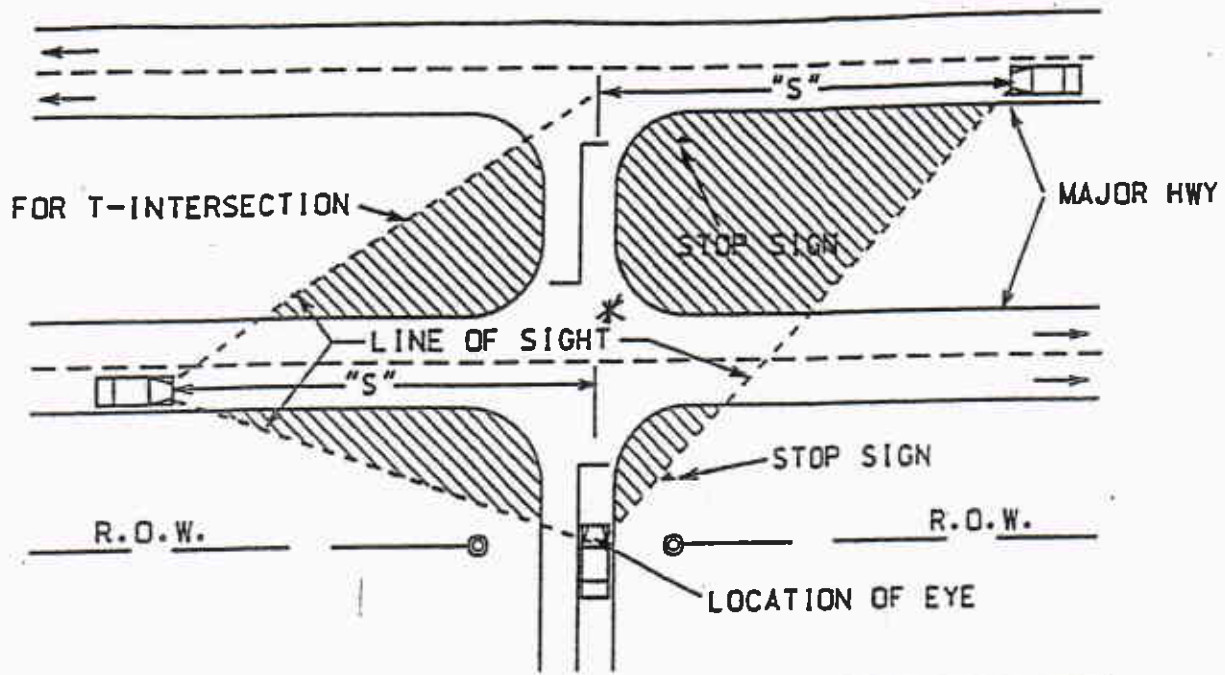


FIGURE C
(WITHOUT R.O.W. FLARE)

DESIGN SPEED (MPH)	S (FT)
	4-LANE
30	525
40	700
50	875
55	950
60	1040
65	1125

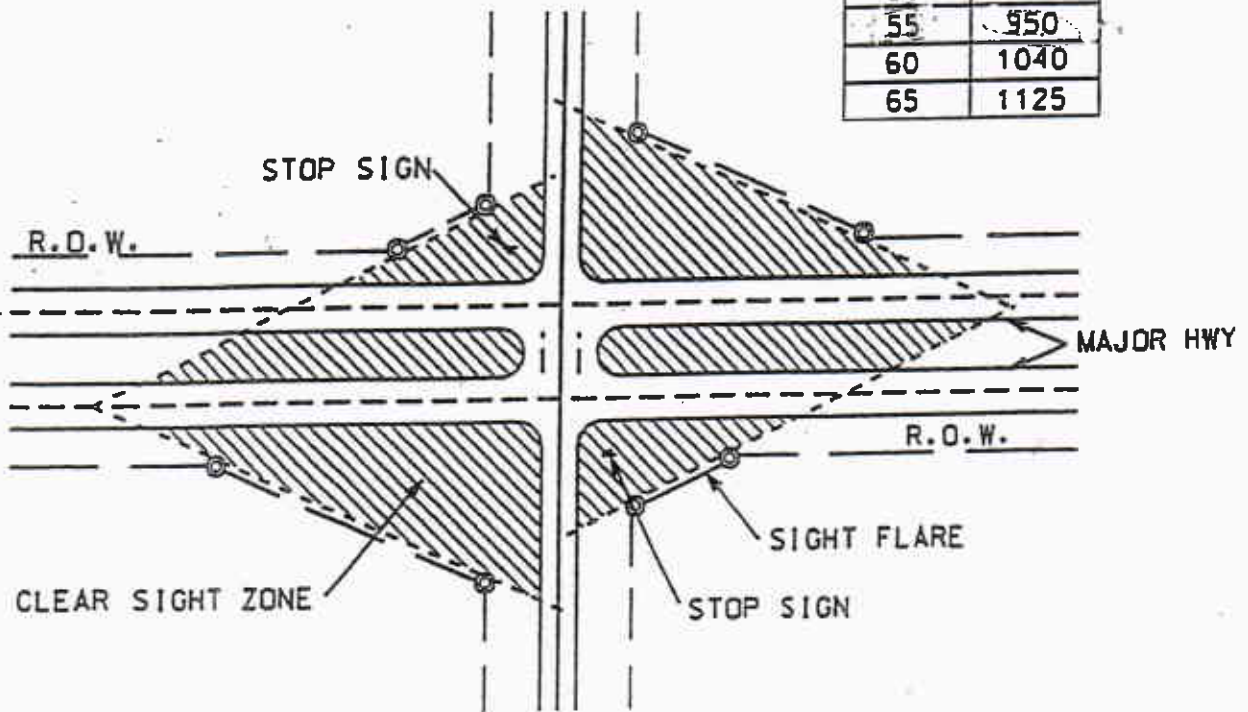


FIGURE D
(WITH R.O.W. FLARE)

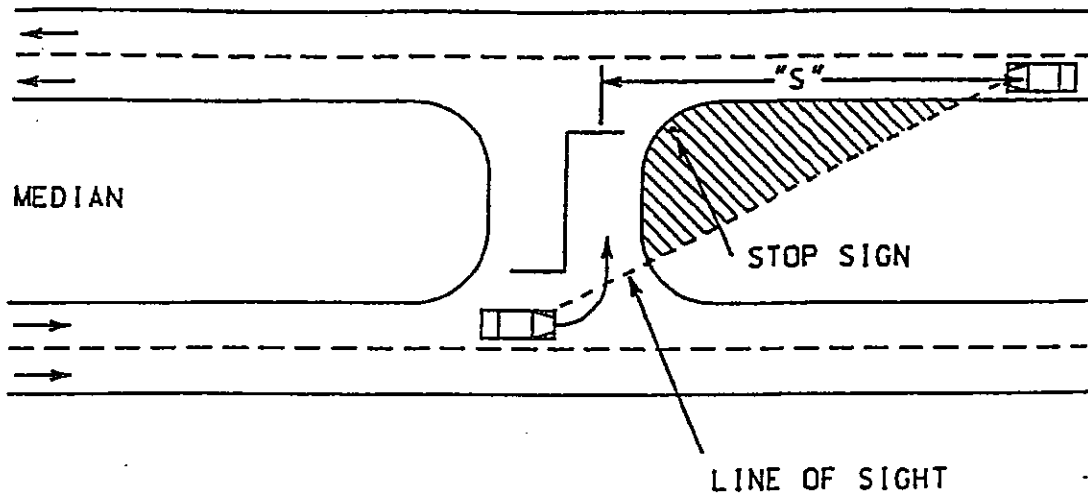
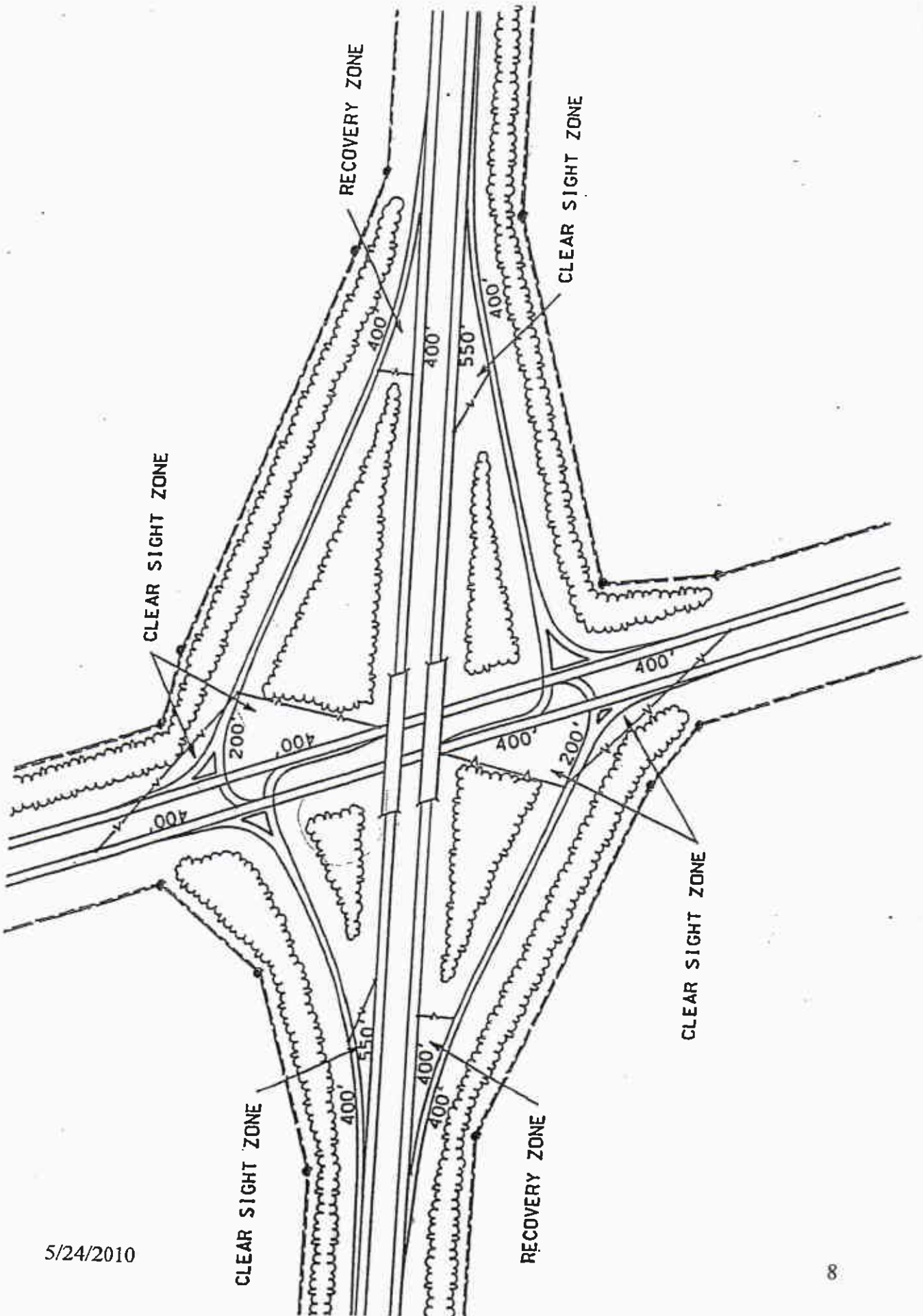
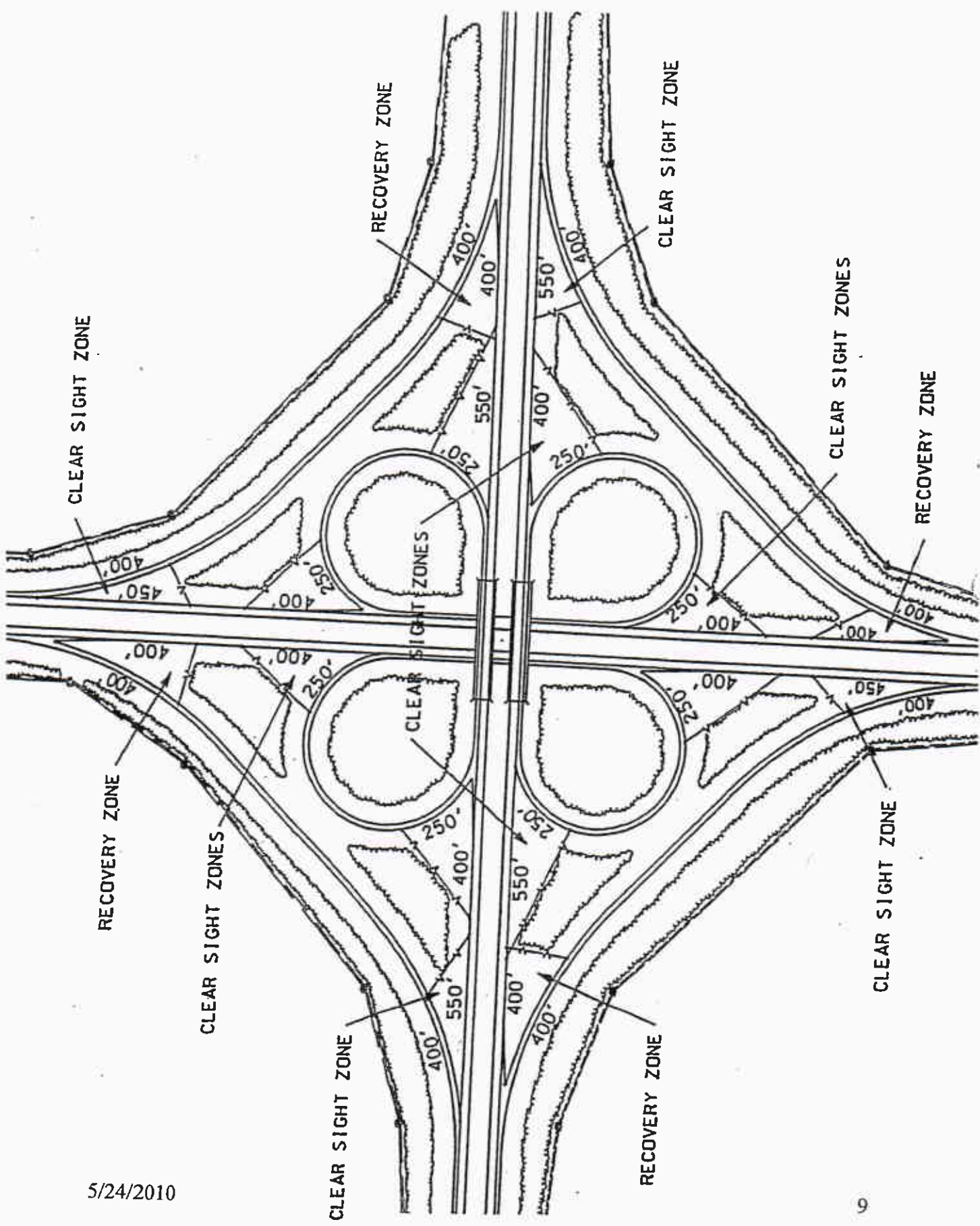


FIGURE E



5/24/2010



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Approved Plant Materials List

Groundcovers

Common Name	Scientific Name	Height	Spread
Ajuga	<i>Ajuga reptans</i>		
Asiatic Jasmine	<i>Trachelospermum asiaticum</i>	10"-18"	
Creeping Juniper	<i>Juniperus horizontalis</i>	24"	48"
Daylily (numerous cultivars)	<i>Hemerocallis fulva</i>	varies	
Lantana	<i>Lantana montevidensis</i>	2'	4'
Liriope	<i>Liriope muscari</i>	12"	
Monkey Grass	<i>Ophiopogon japonicus</i>	6"-12"	
Shore Juniper	<i>Juniperus conferta</i>	18"	36"

Shrubs

Common Name	Scientific Name	Height	Spread
Althea	<i>Hibiscus syriacus</i>	8'	4'
Arborvitae	<i>Thuja occidentalis</i>	10'	6'
Baby's Breath Spiraea	<i>Spiraea thunbergii</i>	5'	5'
Bridal Wreath Spiraea	<i>Spiraea prunifolia</i>	4'	3'
Burford Chinese Holly	<i>Ilex cornuta</i> 'Burfordii'	10'	6'
Dwarf Burford Holly	<i>Ilex cornuta</i> 'Burfordii Nana'	5'	3'
Butterfly Bush	<i>Buddleia alternifolia</i>	8'	6'
Canna	<i>Canna x generalis</i>	2'	3'
Chinese Holly	<i>Ilex cornuta</i>	8'	6'
Chinese Photinia	<i>Photinia serrulata</i>	20'	10'
Clerya	<i>Ternstroemia gymnanthera</i>	8'	5'
Cotoneaster	<i>Cotoneaster horizontalis</i>	3'	4'
Deciduous Holly	<i>Ilex decidua</i>	12'	8'
Devilwood	<i>Osmanthus americanus</i>	15'	10'
Dwarf Rotunda Holly	<i>Ilex cornuta</i> 'Rotunda'	4'	3'
Dwarf Japanese Holly	<i>Ilex crenata</i> 'Compacta'	8'	5'
Elaeagnus	<i>Elaeagnus pungens</i>	8'	8'
Elaeagnus Glen St. Mary	<i>E. pungens</i> x Glen St. Mary	5'	5'
False Holly	<i>Osmanthus x Fortunei</i>	15'	10'
Frasers Photinia	<i>Photinia x Fraseri</i>	10'	8'
Fetter Bush	<i>Lyonia lucida</i>	3'	3'
Florida Jasmine	<i>Jasminum floridum</i>	3'	4'
Flowering Quince	<i>Chaenomeles speciosa</i>	6'	6'
Forsythia	<i>Forsythia x intermedia</i>	5'	5'
French Mulberry	<i>Callicarpa Americana</i>	5'	5'
Gallberry	<i>Ilex glabra</i>	4'	3'
Gardenia	<i>Gardenia jasminoides</i>	5'	5'

Dwarf Gardenia	<i>G. jasminoides</i> 'Prostrata'	2'	2'
Glossy Abelia	<i>Abelia grandiflora</i>	5'	5'
	<i>A. grandiflora</i> 'Prostrata'	2'	3'
	<i>A. grandiflora</i> 'Sherwoodii'	3'	3'
	<i>A. grand.</i> 'Edward Goucher'	4'	4'
Helleri Holly	<i>Ilex crenata</i> 'Helleri'	2'	2'
Holly Leaf Osmanthus	<i>Osmanthus heterophyllus</i>	15'	8'
Indian Hawthorn	<i>Rapheliopsis indica</i>	3'	4'
Japanese Barberry	<i>Berberis Thunbergii</i>	3'	2'
Japanese Holly	<i>Ilex crenata</i> 'Convexa'	3'	3'
Japanese Yew	<i>Podocarpus macrophyllum</i>	10'	5'
Lilac Chastetree	<i>Vitex agnus-castus</i>	15'	12'
Loropetalum	<i>Loropetalum chinese</i>	6'	5'
Nandina	<i>Nandina domestica</i>	4'	3'
Oleander	<i>Nerium oleander</i>	10'	8'
Palmetto	<i>Sabal minor</i>	8'	6'
Pittosporum	<i>Pittosporum tobira</i>	10'	10'
Red Leaf Photinia	<i>Photinia glabra</i>	10'	8'
Reeves Spiraea	<i>Spiraea cantoniensis</i>	5'	5'
Snowbell	<i>Stryax americanus</i>	6'	5'
Spicebush	<i>Lindera Bensoin</i>	6'	8'
Sweet Olive	<i>Osmanthus fragrans</i>	12'	8'
Sweet Shrub	<i>Calucanthus floridus</i>	6'	4'
Witch Hazel	<i>Hammalelis virginiana</i>	8'	8'
Yaupon	<i>Ilex vomitoria</i>	10'	6'
Dwarf Yaupon Holly	<i>Ilex vomitoria</i> 'Nana'	2'	2'

Trees

Note: Plants in Bold Type are considered as Minor Trees, i.e. less than 4" trunk diameter at mature size.

Common Name	Scientific Name	Height	Spread
American Beech	<i>Fagus grandifolia</i>	50	40
American Holly	<i>Ilex opaca</i>	25	20
American Hornbeam	<i>Carpinus caroliniana</i>	25	20
American Smoketree	<i>Cotinus obovatus</i>	15	15
American Snowbell	<i>Styrax americanus</i>	20	20
Atlas Cedar	<i>Cedrus atlantica</i>	30	20
Autumn Elaeagnus	<i>Elaeagnus umbellata</i>	12	12
Basswood	<i>Tilia americana</i>	45	25
Black Cherry	<i>Prunus serotina</i>	50	35
Black Gum	<i>Nyssa sylvanica</i>	65	25

Black Walnut	<i>Juglans nigra</i>	60	30
Buckwheat Tree	<i>Cliftonia monophylla</i>	15	10
Burford Chinese Holly	<i>Ilex cornuta</i> 'Burfordii'	15	15
Cabbage Palm	<i>Sabal palmetto</i>	40	12
Carolina Silverbell	<i>Halseia Carolina</i>	20	15
Cherry Laurel	<i>Prunus caroliniana</i>	15	15
Chinese Pistache	<i>Pistachia chinensis</i>	25	25
Chinese Photinia	<i>Photinia serrulata</i>	20	10
Crabapple	<i>Malus species</i>		
Crapemyrtle	<i>Lagerstroemia indica</i>	15	15
Cypress	<i>Taxodium distichum</i>	60	25
Dahoon Holly	<i>Ilex cassine</i>	15	12
Deciduous Holly	<i>Ilex decidua</i>	15	12
Drake Elm	<i>Ulmus parvifolia</i>	20	15
East Palatka Holly	<i>Ilex x attenuate</i>	30	10
Eastern Redbud	<i>Cercis canadensis</i>	20	15
Eastern Red Cedar	<i>Juniperus virginiana</i>	30	20
European hornbeam	<i>Carpinus betulus</i>	30	15
Flameleaf Sumac	<i>Rhus copallina</i>	8	5
Flowering Dogwood	<i>Cornus florida</i>	20	20
Fringe Tree	<i>Chionanthus virginicus</i>	30	25
Ginkgo	<i>Ginkgo biloba</i>	50	50
Glossy Privet	<i>Ligustrum lucidum</i>	20	15
Goldenraintree	<i>Koelreuteria paniculata</i>	30	30
Green Ash	<i>Fraxinus pennsylvanica</i>	60	45
Green Hawthorn	<i>Crataegus viridis</i>	25	25
Groundsel Tree	<i>Baccharis halimifolia</i>	8	8
Holly Leaf Osmanthus	<i>Osmanthus heterophyllus</i>	20	12
Hophornbeam	<i>Ostrya virginiana</i>	30	25
Japanese Black Pine	<i>Pinus thunbergiana</i>	15	8
Japanese Snowbell	<i>Styrax japonicus</i>	20	15
Japanese Zelkova	<i>Zelkova serrata</i>	50	50
Kentucky Coffeetree	<i>Gymnocladus dioica</i>	50	30
Lacebark Elm	<i>Ulmus parviolia</i> "Drake"	35	35
Laurel Oak	<i>Quercus laurifolia</i>	60	50
Leyland Cypress	<i>Cupressocyparis leylandii</i>	45	15
'Little Gem' Magnolia	<i>M. grandifolia</i> 'Little Gem'	20	15
Live Oak	<i>Quercus virginiana</i>	45	60

Lusterleaf Holly	<i>Ilex latifolia</i>	20	10
Musclewood	<i>Carpinus caroliniana</i>	20	30
Natchez White Crapemyrtle	<i>Lagerstroemia indica</i> 'NW'	35	30
Nellie R. Stevens Holly	<i>Ilex x 'Nellie R. Stevens'</i>	20	10
Overcup Oak	<i>Quercus lyrata</i>	35	35
Parsley Hawthorn	<i>Crataegus marshallii</i>	15	10
Pecan	<i>Carya illinoensis</i>	50	45
Pignut Hickory	<i>Carya glabra</i>	50	30
Purpleleaf Plum	<i>Prunus cerasifera</i>	12	10
Red Buckeye	<i>Aesculus pavia</i>	15	15
Red Maple	<i>Acer rubrum</i>	60	25
Red Oiser Dogwood	<i>Cornus sericea</i>	6	6
River Birch	<i>Betula nigra</i>	40	35
Roughleaf Dogwood	<i>Cornus drummondii</i>	15	10
Sassafras	<i>Sassafras albidum</i>	40	25
Savannah Holly	<i>Ilex x attenuate</i>		
Scarlet Oak	<i>Quercus coccinea</i>	60	45
Shagbark Hickory	<i>Carya ovata</i>	60	35
Shumard Oak	<i>Quercus shumardii</i>	60	40
Silky Camellia	<i>Stewartia Malacodendron</i>	10	8
Silverbell	<i>Halesia diptera</i>	20	15
Slippery Elm	<i>Ulmus rubra</i>	50	30
Smooth Sumac	<i>Rhus glabra</i>	12	10
Southern Red Oak	<i>Quercus falcate</i>	60	60
Southern Magnolia	<i>Magnolia grandiflora</i>	50	40
Sourwood	<i>Oxydendrum arboretum</i>	60	40
Spruce Pine	<i>Pinus glabra</i>	30	20
Star Magnolia	<i>Magnolia stellata</i>	15	10
Sugar Maple	<i>Acer saccharum</i>	50	35
Swamp Chestnut Oak	<i>Quercus michauxii</i>	60	30
Sweetbay Magnolia	<i>Magnolia virginiana</i>	20	15
Sycamore	<i>Platanus occidentalis</i>	75	60
Tulip Poplar	<i>Liriodendron tulipifera</i>	80	40
Virginia Pine	<i>Pinus virginiana</i>	20	15
Waxleaf Ligustrum	<i>Ligustrum japonicum</i>	20	15
Waxmyrtle	<i>Myrica cerifera</i>	15	12
White Oak	<i>Quercus alba</i>	60	60
Willow Oak	<i>Quercus phellos</i>	60	40

Windmill Palm	<i>Trachycarpus fortunei</i>	20	6
Winged Sumac	<i>Rhus copallinum</i>	12	8
Witchazel	<i>Hamamelis virginiana</i>	15	15
Yaupon Holly	<i>Ilex vomitoria</i>	12	8
Yellowwood	<i>Cladastris kentukea</i>	30	50

Plants that will not be permitted:

Loblolly Pine	<i>Pinus taeda</i>
Longleaf Pine	<i>Pinus palustris</i>
Slash Pine	<i>Pinus elliotii</i>

These plants are considered Invasive Species and will not be permitted.

Australian Pine	<i>Causarina equisetifolia</i>
Camphor Tree	<i>Cinnamomum camphora</i>
Chinese Tallowtree	<i>Sapium sebiferum</i>
Chinaberry	<i>Melia azedarach</i>
Chinese Privet	<i>Ligustrum sinense</i>
Japanese Privet	<i>Ligyustrun japonicum</i>
Mimosa	<i>Albizia julibrissin</i>
Chinese Parasol Tree	<i>Firmiana simplex</i>
Paper Mulberry	<i>Broussonetia papyrifera</i>
Royal Paulownia	<i>Paulownia tomentosa</i>
Russian Olive	<i>Elaeagnus angustifolia</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Variegated Chinese Privet	<i>Ligustrum sinense 'Variegata'</i>
White Poplar	<i>Populus alba</i>