Chapter 2 – Landscape Manual

Introduction

The intent of this manual is to describe Wellington's objectives for tree canopy, water conservation, creativity in landscape design and aesthetics while providing guidance for plant selection. Refer also to Article 7 of Wellington's Land Development Regulations (LDRs) and Article 5 Development Review Manual Appendix D Landscape Plans Checklist.

Objectives

1. **Aesthetics:** To improve the aesthetic appearance of development through creative landscaping that helps to harmonize and enhance the natural and built environment;
2. **Environmental quality:** To improve environmental quality by maintaining permeable land areas essential to surface water management and aquifer recharge; reducing and reversing air, noise, heat, and chemical pollution through the biological filtering capacities of trees and other vegetation; promoting energy conservation through the creation of shade; reducing heat gain in or on buildings or paved areas through the filtering capacity of trees and other vegetation; reducing the temperature of the microclimate through the process of evapotranspiration; and encouraging the use of limited fresh water resources through the use of native and drought resistant plants;
3. **Water conservation:** To promote water conservation by encouraging xeriscaping in appropriate areas, such as medians, and utilization of native and drought tolerant landscape material; encouraging the utilization of water conserving irrigation practices; requiring adherence to sound landscape installation standards and maintenance procedures that promote water conservation; ecological placement of landscape material; and utilization of natural areas and vegetation.
4. **Preservation of native plants and vegetation:** To encourage the preservation and planting of native vegetation and plants;
5. **Efficiency in land development:** To promote efficiency in the development of limited land resources by improving the compatibility of otherwise incompatible land uses in close proximity, particularly residential development that is adjacent to more intensive commercial and industrial development, through the use of landscaped buffers;
6. **Land values:** To maintain and increase the value of land by enforcing minimum landscape standards and maintenance, which becomes a capital asset;
7. **Human values:** To provide physical and psychological benefits to persons through landscaping, by reducing noise and glare, and by softening the harsher visual aspects of urban development;
8. **Removal of prohibited plant species:** To encourage the initial eradication and control the ongoing removal of prohibited plant species which have become nuisances because of their tendency to disrupt or destroy the native ecosystems; and
9. **Improved design:** To encourage innovative and cost-effective approaches to the design, installation and maintenance of landscaping, particularly those that promote energy, water conservation and incorporate areas of native vegetation.

Design Principles

1. **Composition:** The quality of landscape design is as dependent on the composition of its elements as on the quantity and selection of plant materials. Landscape materials should be arranged in a manner to provide the following qualities and characteristics:

    a. Landscape designs should seek to provide a textured appearance through the use of a variety of plant material rather than a single species, contrasting large leaf textures with medium and small leaf textures and a variety of plant heights at maturity.

    b. Spacing of key landscaping components, such as trees and shrubs, is an important element of texture and should be consistent with the overall design approach of the landscape plan. Formal landscape designs benefit from a uniform spacing of plants, whereas varied spacing and clustering of trees is more compatible with a naturalistic design.

    c. Landscape designs should include a variety of plants to provide contrasting color to other plants in the design. Designs are encouraged to include flowering plants and especially a mix of plants that display colorful flowers throughout the year.

    d. Landscape designs should consider the complete three-dimensional form of the landscape, not simply the form of individual elements. The interrelationship of all landscape components should be considered so that the final landscaping works together to present a coherent whole. Trees, shrubs, and hedges, especially those used for screening and buffering, should display fullness at maturity that is typical of the species.

2. **Buffering and Screening:** The placement of natural landscape materials (trees, shrubs and hedges) is the preferred method for buffering land uses, providing a transition between adjacent properties, to screen the view of any parking or storage area, refuse collection, utility enclosures or service area visible from a public street, alley or pedestrian area. Plants may be used with fences and/or berms to achieve the desired screen or buffering effect. Landscape material should be mature enough at the time of planting to provide an effective buffer or screen, and should be planted in an appropriate location to allow for desired growth within a reasonable period.

    When used to screen an activity area such as a parking lot, landscaping should not obstruct the visibility of motorists or pedestrians and shall not interfere with public safety.

3. **Responsive to Local Context and Character:** Landscape designs should build on the site's and the area's unique physical characteristics, conserving and complementing existing natural features. Naturalistic design elements such as irregular plant spacing, undulating contours and mixed proportions of plant species should be used to ensure new landscaping blends and contribute to the quality of the surrounding area. Selection and spacing of plant material should be reflective of the neighborhood, district or local character. If local plant materials are identified within an area and consistent with the requirements of this section, those plants should be incorporated in landscape designs whenever possible.

4. **Use of Native and Drought Resistant Plants:** Wherever feasible and environmentally beneficial, landscape designs should feature native and/or related plant species, especially in areas adjacent to existing native vegetation. The landscape design should

take advantage of the unique natural character and diversity of the region along with the adaptability of native plants to local environmental conditions. Where feasible, the re-establishment of native habitats should be incorporated into the landscape design.

In the same manner, landscape designs are encouraged to utilize drought tolerant plant materials to the maximum extent possible. The use of drought tolerant plants should complement the existing landscape character, conserve water, energy and provide a varied visual appearance with plants that may require more water. Further, trees and shrubs shall be planted where feasible to reduce energy consumption by shading buildings and shall be used to reduce heat island effects by shading paved surfaces.

5. **Natural Landscape:** Landscape designs should incorporate and complement existing natural landscapes, specimen trees and native vegetation including canopy, understory and ground cover. Particular care should be given to preserve intact natural ecosystems and ground level microclimates. Where previous landscaping has dramatically altered natural landscapes, new designs should seek to re-establish natural landscape patterns and plantings.

6. **Continuity and Connection:** Landscape should be designed in a manner consistent with the adjacent and surrounding landscape, provided the surrounding and planned landscaping is also consistent with the other design principles. Plant materials should blend well with adjacent properties, particularly where property edges meet to create a seamless and natural landscape. Exceptions should be made when seeking to create a transition between adjacent uses, districts and neighboring communities.

7. **Enhancing Architecture:** Landscape design should be compatible with and enhance architectural character and features to help relate structure design to the site. Major landscape elements should be designed to complement architectural elevations and rooflines through color, texture, density and form on both vertical and horizontal planes. Landscaping should be in scale with adjacent buildings and be of appropriate size at maturity to accomplish intended goals. Foundation planting, window boxes and living walls should be designed to be compatible with a building's architectural character and are strongly encouraged to incorporate artistic elements.

8. **Energy Conservation and Sustainable Design:** Attention should be given to locating landscape elements in a manner that provides energy conservation benefits. Shade trees planted to provide daytime shading for buildings reduces the energy needed for interior air conditioning. Landscape design should also consider natural drainage features and the use of pervious surfaces and materials to minimize stormwater runoff.

9. **Pedestrian Importance:** In pedestrian-oriented development types, landscape designs should give special attention to the needs of pedestrians. Where landscaping is provided on both sides of a sidewalk, pedestrians should have the experience of walking through a landscape that is separated by a path as opposed to walking between two symmetrical landscapes on either side of a path. Benches, kiosks, artwork and other streetscape elements should be incorporated into landscaping in high activity areas. Pedestrian access to sidewalks or buildings shall be considered in the design of all landscaped areas.

10. **Florida Friendly landscaping:** Wellington promotes Florida Friendly landscaping as defined in F.S. § 373.185, as amended and requires that installed landscapes are designed and maintained with full consideration of the following principles.

    a. Right Plant, Right Place. Specify plant material for the right plant in the right place by selecting plants that match the site’s soil, light, water and climate

conditions, with an aim to provide diversity of trees, shrubs, groundcover and flowers in accordance with landscape standards.
http://fyn.ifas.ufl.edu/handbook/Right_Plant-Right_Place_vSept09.pdf

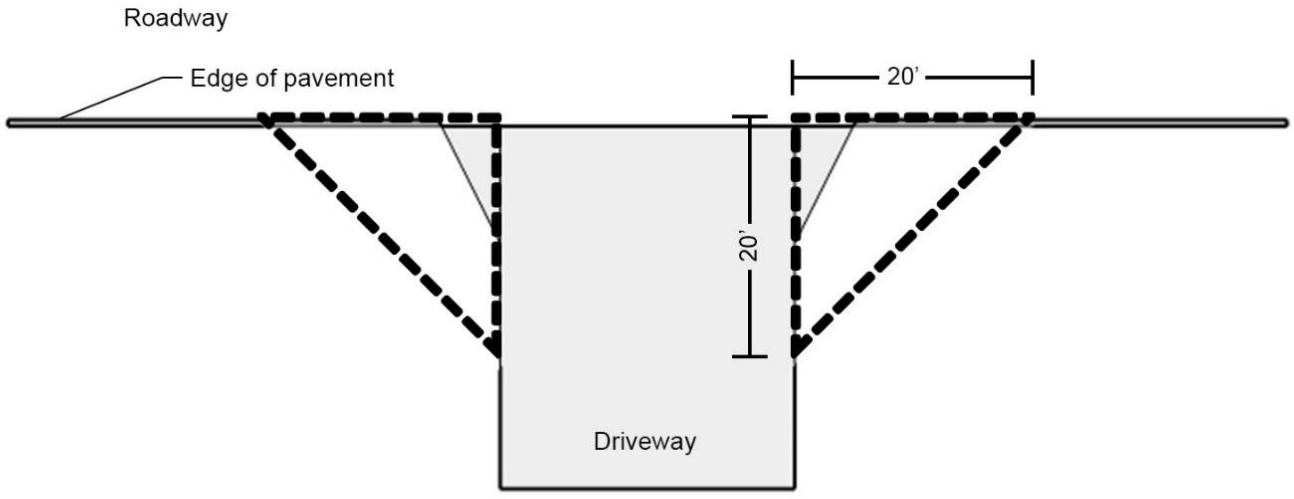
b. Water Efficiently. Design for efficient irrigation by grouping plants with similar watering needs together and zoning the irrigation system accordingly.
http://fyn.ifas.ufl.edu/handbook/Water_Efficiently_vSept09.pdf

c. Fertilize Appropriately. Fertilize appropriately to prevent pollution and maximize plant health. http://fyn.ifas.ufl.edu/handbook/Fertilize_Appropriately_vSept09.pdf
d. Mulch. Specify that landscape beds are well mulched with at least two inches of space around tree trunks to prevent rot, using sustainably harvested mulch, such as melaleuca, pine straw or eucalyptus.
http://fyn.ifas.ufl.edu/handbook/Mulch_vSept09.pdf

e. Manage Yard Pests Responsibly. Specify a design that utilizes integrated pest management principles by selecting pest-resistant plants, and recommends maintenance practices that spot- treat pests with selective spectrum pesticide applied in accordance with label instructions.
http://fyn.ifas.ufl.edu/handbook/Manage_Yard_Pests_Responsibly_vSept09.pdf

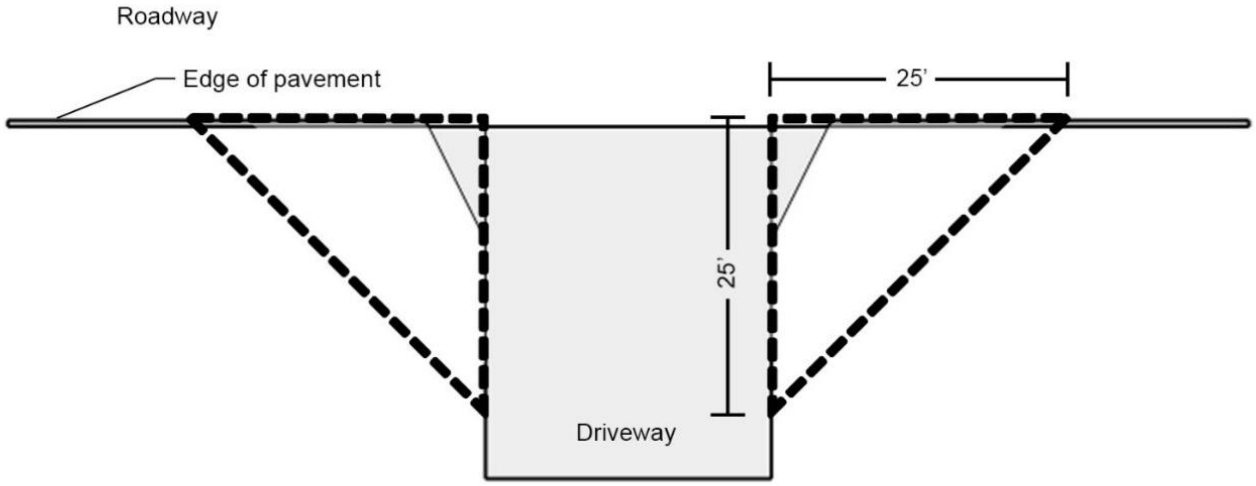
Visibility Corners

Visibility Corners for Rights-of-way Less Than 100':



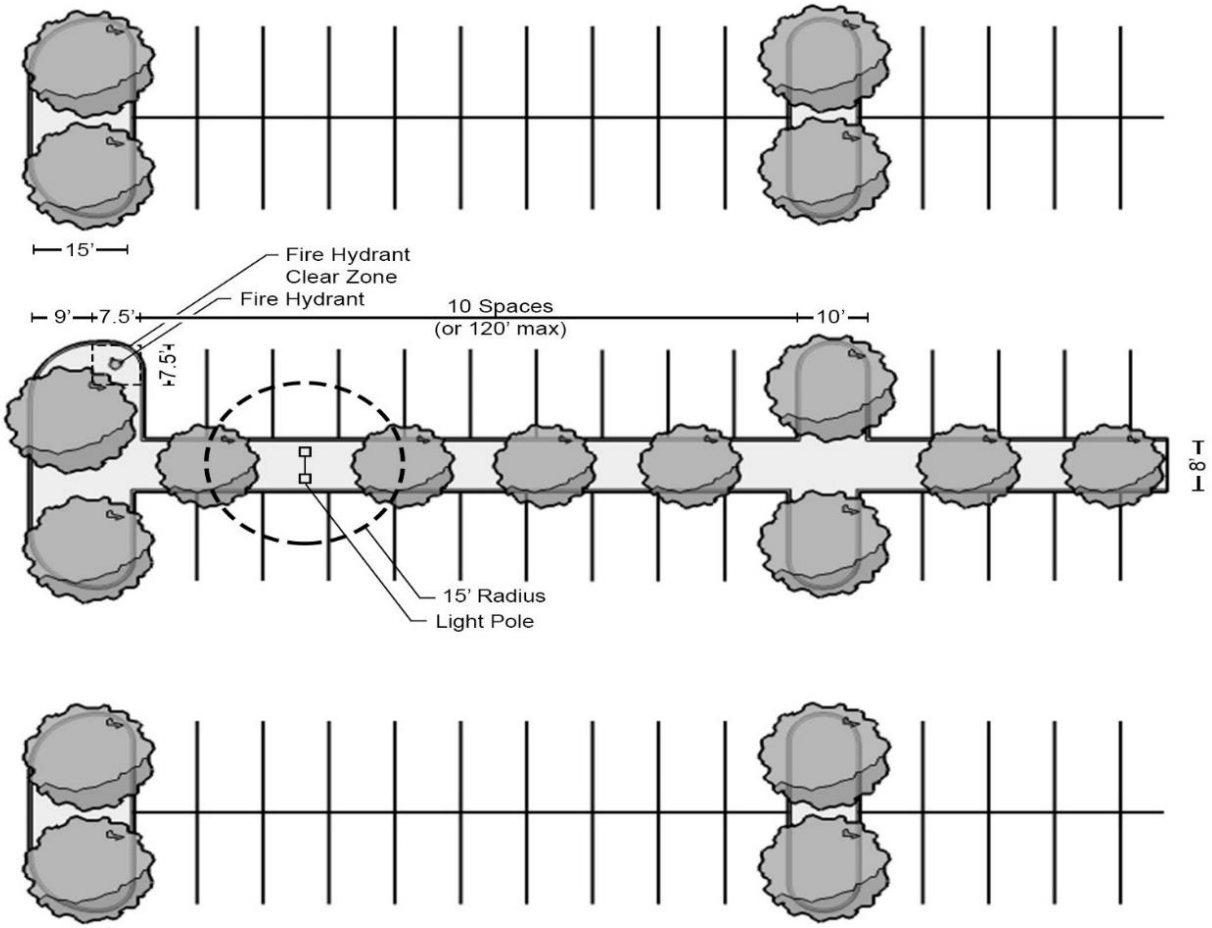
NOTE: Dimensions shown taken from edge of pavement.

Visibility Corners for Rights-of-way 100’ or More:



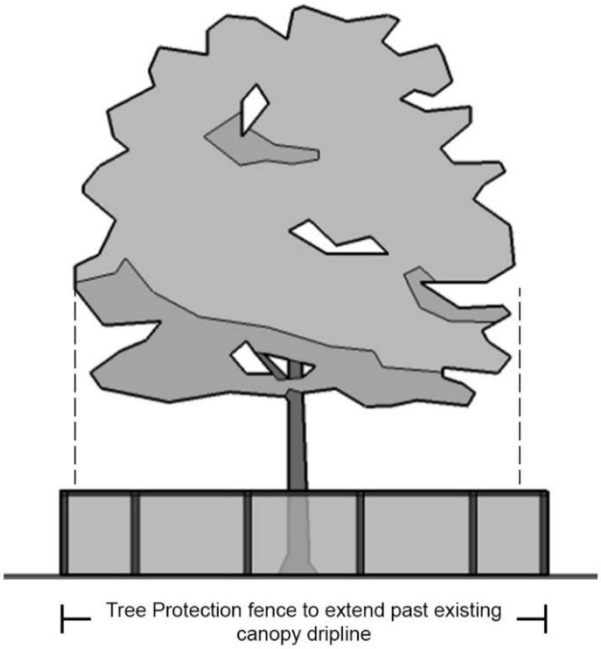
NOTE: Dimensions shown taken from edge of pavement.

Parking Lot Medians and Dividers



NOTE: Dimensions shown taken from back of curb.

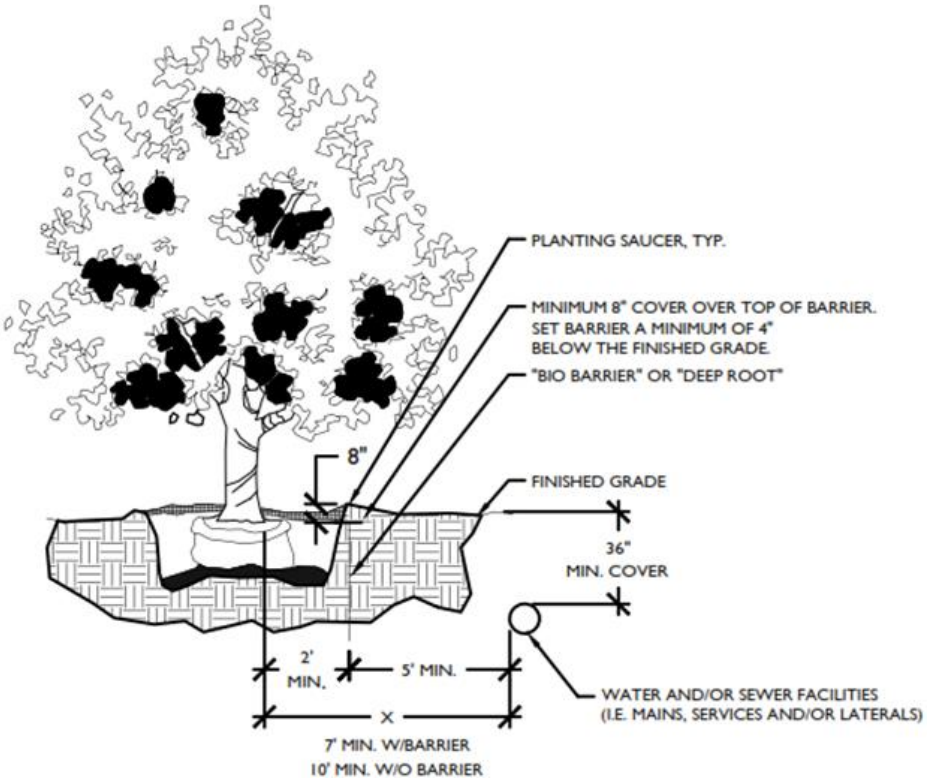
Tree Protection Fence Example:



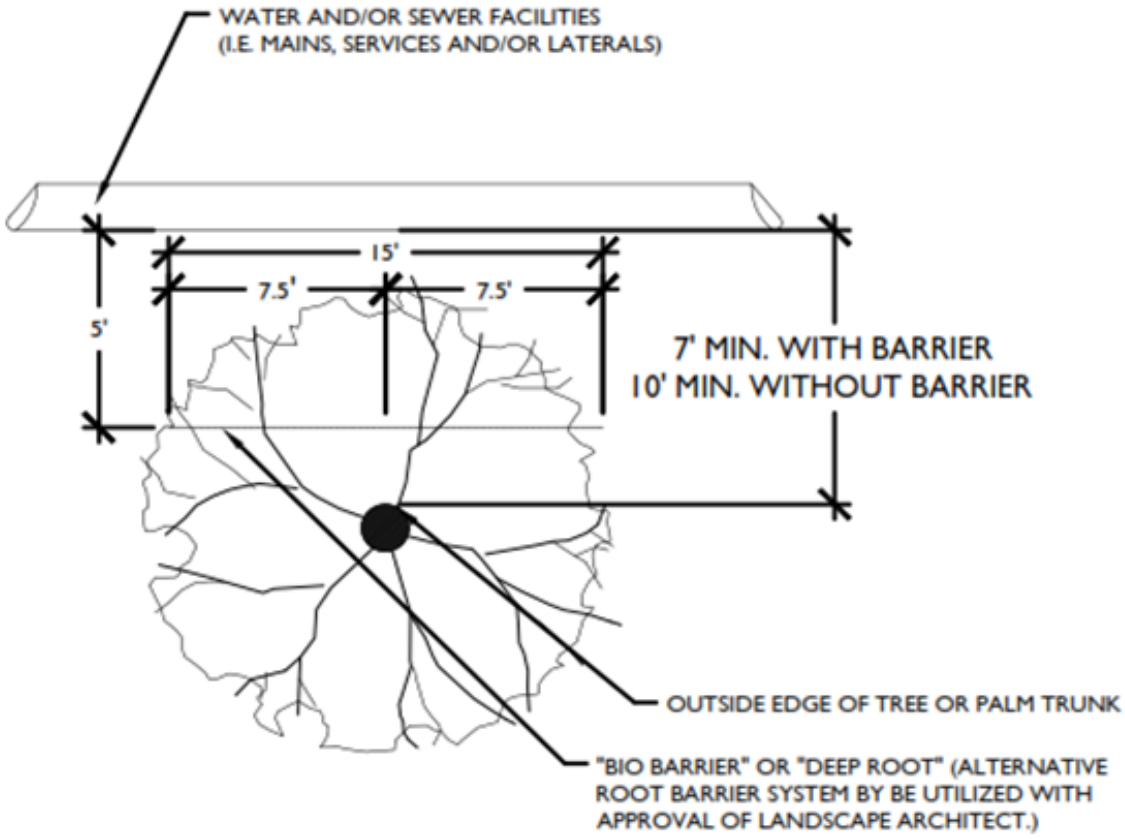
Root Barrier Specification Diagram Example

NOTE:
1. TREES ARE TO BE INSTALLED WITH A MINIMUM TEN FOOT (10') SEPARATION FROM ANY PUBLIC WATER OR PUBLIC SEWER MAIN AND/OR SERVICE, HYDRANTS, AND LIFT STATIONS. IF A TEN FOOT (10') SEPARATION CANNOT BE ACHIEVED, THE TREE SHALL BE INSTALLED WITH A ROOT BARRIER SYSTEM.

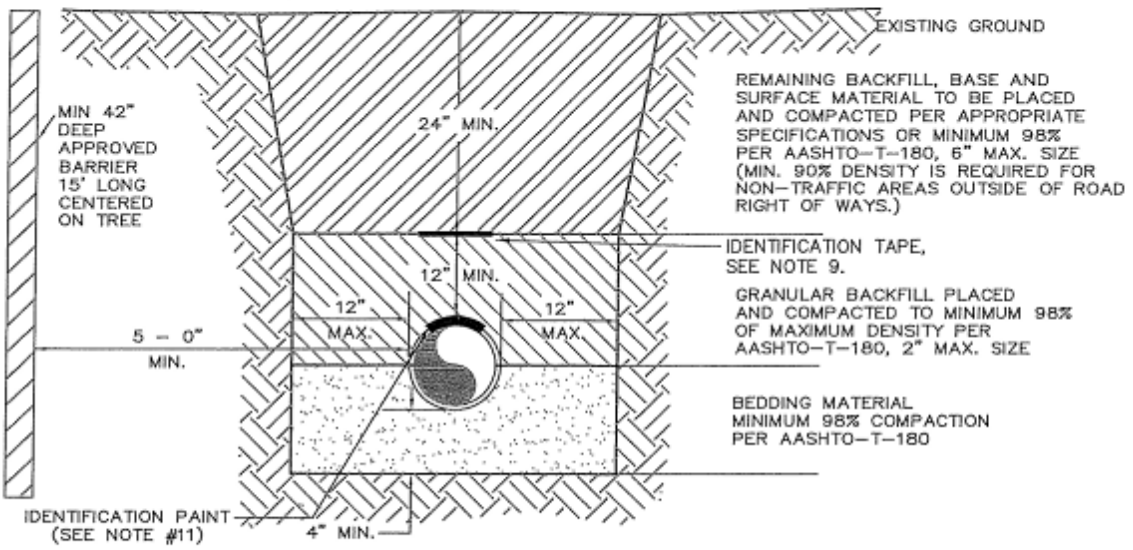
2. ROOT BARRIERS SHALL COMPLY WITH ALL REQUIREMENTS OF THE MUNICIPALITY WITHIN WHICH THEY ARE LOCATED AS WELL AS WITH ANY REQUIREMENTS OF THE UTILITY HOLDER OF THE AFFECTED UTILITIES. IN THE EVENT THAT CONFLICTING REQUIREMENTS EXIST BETWEEN THIS ROOT BARRIER DETAIL AND THE MUNTICPALITY/UTILITY HOLDER REQUIREMENTS, THE MORE STRINGENT OF THE REQUIREMENTS SHALL BE APPLICABLE.



Typical Planting Diagram Example



Typical Trench Diagram Example



NOTES:

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK $\frac{3}{8}$" TO $\frac{2}{8}$" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK DEBRIS AND LARGER ROCKS SHALL BE REMOVED.

2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.

3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.

4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, ROOTS AND DEBRIS.

5. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM. MINIMUM 1 SET SET OF TESTS FOR EACH GRAVITY MAIN RUN BETWEEN, MANHOLES OR AS DIRECTED BY THE INSPECTOR.

6. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.

7. SEE SEPERATE DETAIL FOR "PIPE INSTALLATION UNDER EXISTING PAVEMENT – OPEN CUT."

8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.

9. APPROVED MAGNETIC TAPE IS REQUIRED FOR: ALL PVC MAINS. THE TAPE SHALL BE INSTALLED 12" ABOVE PIPE.

10. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES.

11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE) AND DIP RECLAIMED WATER MAINS (PURPLE).

V.O.W. CONSTRUCTION STANDARDS & DETAILS

REVISION	TYPICAL TRENCH DETAIL	PAGE No.
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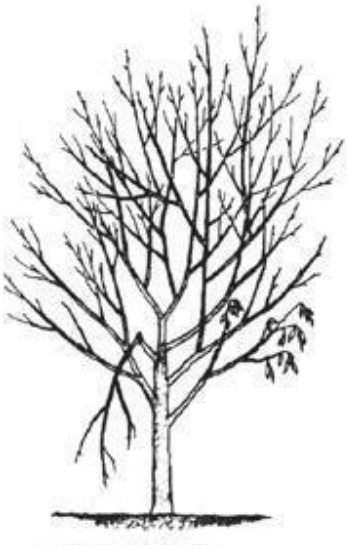
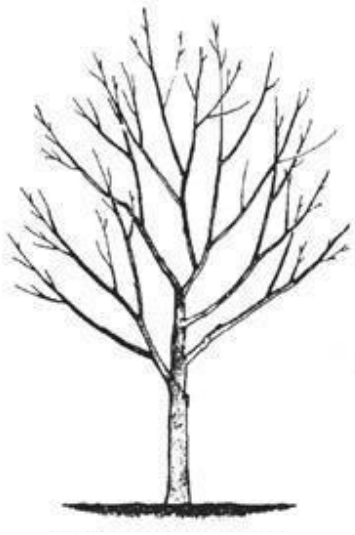
Proper Pruning of Trees and Palms

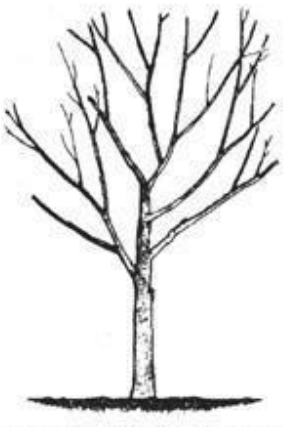
Pruning Trees:



Before Pruning:
Mature trees often need pruning due to crowded foliage, broken and dead branches and asymmetrical shape.



After Proper Pruning:
After pruning, trees should retain a symmetrical appearance and tree-like form. A minimum canopy spread of 20 feet shall be maintained.



After Excessive Pruning:
Pruning in excess of one-fourth of the required canopy spread is prohibited. Tree-topping (hatracking) is prohibited.

1. Trees and shrubs – general guidance: http://hort.ifas.ufl.edu/woody/documents/PruningLandscapeTreesShrubs.pdf
2. Crape Myrtles: http://hort.ifas.ufl.edu/woody/documents/CrapeMyrtlePruning.pdf
3. Young trees: http://hort.ifas.ufl.edu/woody/documents/ch_12_mw04.pdf
4. Mature trees: http://hort.ifas.ufl.edu/woody/documents/ch_12_mw04.pdf
5. Restoring trees after storm damage: http://hort.ifas.ufl.edu/woody/documents/EP300.pdf
6. FPL - Caring for Trees and Your Service: https://www.fpl.com/reliability/pdf/caring-for-trees.pdf

Pruning Palms:

Before Pruning:
Mature palms often need pruning to remove lower fronds that are chlorotic or dead. There shall be no pruning of live green fronds above the horizon line.

After Proper Pruning:
After pruning, palms should retain green fronds at the horizon line. Fronts that are dead or more than half chlorotic should be cleared.

After Excessive Pruning:
Pruning in excess of one-third of fronds is prohibited. Over-pruned palms are unattractive and may attract pests.

1. Palms: http://hort.ifas.ufl.edu/woody/documents/palms.pdf

Preferred Plant Lists

PREFERRED TREE LIST		
Shade Trees		
Native	***Botanical Name***	***Common Name***
	Bucida buceras	Black Olive
	Bulnesia arborea	Verawood
X	Bursera simaruba	Gumbo Limbo
X	Conocarpus erectus	Green Buttonwood
	Delonix regia	Royal Poinciana
X	Juniperus virginiana silicicola	Southern Red Cedar
X	Lysiloma sabicu	Wild Tamarind
X	Pinus ellitottii var densa	South Fla. Slash Pine
X	Piscidia piscipula	Jamaica Dogwood
X	Quercus virginiana	Southern Live Oak
X	Simarouba glauca	Paradise Tree
	Tabebuia caraiba	Yellow Trumpet Tree
X	Taxodium distichum	Bald Cypress
Smaller Trees		
Native	***Botanical Name***	***Common Name***
X	Ateramnus lucidus	Crabwood
X	Canell winterana	Wild Cinnamon
X	Capparis cynophallophora	Jaimaican Caper
X	Chrysophyllum oliviforme	Satin Leaf
X	Clusia rosea	Pitch Apple
X	Coccoloba diversifolia	Pigeon Plum
X	Conocarpus erectus 'Sericeus'	Silver Buttonwood
X	Cordia sebestena	Orange Geiger
X	Eugenia foetida	Spanish Stopper
X	Eugenia rhombea	Red Stopper
X	Guaiacum officinale	Lignum Vitae
X	Ilex vomitoria	Yaupon Holly
	Jacaranda caerulea	Bahama Jacaranda
X	Krugiodendron ferreum	Black Ironwood
	Lagerstroemia indica	Crape Myrtle
	Ligustrum japonicum	Ligustrum
X	Myrcianthes fragrans	Simpson's Stopper
X	Myrica cerifera	Wax Myrtle
X	Tecoma stans 'Esperanza'	Yellow Elder
X	Acacia farnesiana	Sweet Acacia

PREFERRED PALM LIST		
Feature Palms		
Native	***Botanical Name***	***Common Name***
	Bismarckia nobilis	Bismarck Palm
	Cocos nucifera	Coconut Palm - Malayan var.
	Phoenix dactylifera	Date Palm
X	Roystonea regia	Royal Palm
Palms for 3:1 substitution		
Native	***Botanical Name***	***Common Name***
X	Acoelorrhaphe wrightii	Paurotis Palm
	Carpentaria acuminata	Carpentaria Plam
	Dypsis lastelliana	Triangle Palm
	Livistonia decipiens	Ribbon Palm
	Ptychosperma elegans	Solitaire Palm
X	Sabal palmetto	Sabal (Cabbage) Palm
	Veitchia montgomeryana	Montgomery Palm
	Washningtonia robusta	Washingtonia Palm
	Wodyetia bifurcata	Foxtail Palm
Smaller Palms		
Native	***Botanical Name***	***Common Name***
	Butia capitata	Pindo palm
	Hyophorbe iagencaulis	Bottle Palm
	Hyophorbe iverschaffeltii	Spindle Palm
	Phoenix roebelenii	Pygmy Date Palm
	Rhapis excelsa	Lady Palm
X	Thrinax radiata	Florida Thatch Palm
	Trachycarpus fortunei	Windmill Palm
	Veitchii merrillii	Christmas Palm

PREFERRED SHRUBS, GRASSES, GROUND COVERS AND PERENNIALS LIST		
Large/Medium		
Native	***Botanical Name***	***Common Name***
	Acalypha wilkesiana	Copper Leaf
	Buddleia	Butterfly Bush
X	Capparis cynophallophora	Jamaican Caper
X	Chrysobalanus icaco	Cocoplum
X	Citharexylum fruticosum	Fiddlewood
X	Cocoloba uvifera	Seagrape
X	Conocarpus erectus 'Sericeus'	Silver Buttonwood
	Duranta erecta	Gold Mound Duranta
X	Erythrina herbacea	Coral Bean
X	Eugenia foetida	Spanish Stopper
X	Forestiera segregata	Florida Privet

	Galphimia gracilis	Thryallis
X	Hamelia patens	Firebush
X	Hibiscus	Hibiscus
	Jasminum multiflorum	Downy Jasmine
	Jasminum nitidum	Shining Jasmine
	Jatropha integerrima	Jatropha
	Musa spp.	Banana
X	Myrcianthes fragrans	Simpson's Stopper
	Nerium oleander	Oleander
	Philodendron spp.	Philodendron
	Pittosporum spp.	Pittosporum
	Podocarpus macrophyllus 'Maki'	Podocarpus
X	Psychotria nervosa	Wild Coffee
X	Sabal minor	Dwarf Palmetto
	Schefflera arboricola 'Dwarf'	Dwarf Schefflera
	Strelitzia nicolai	White Bird of Paradise
	Tabernaemontana divaricata	Crape Jasmine
	Thunbergia erecta	King's Mantle
	Tibouchina grandiflora	Princess Flower
	Tibouchina granulosa	Purple Glory Tree
	Viburnum odoratissimum	Sweet Viburnum
	Viburnum odoratissimum awabuki	Awabuki Viburnum
	Vitex agnus-castus	Chaste Tree
	Yucca spp.	Yucca
Small		
Native	***Botanical Name***	***Common Name***
	Acalypha hispida	Chenille Plant
	Aloe spp.	Aloe
	Aspidistra elatior	Cast Iron Plant
	Bougainvillea spp.	Bougainvillea
	Carissa grandiflora	Natal plum
	Gamolepis chrysanthemoides	Bush Daisy
	Ixora spp.	Ixora
X	Lantana montevidensis	Weeping Lantana
	Russelia equisetiformis	Firecracker Plant
X	Sabal etonia	Scrub Palmetto
	Strelitzia reginae	Orange Bird of Paradise
Grasses		
Native	***Botanical Name***	***Common Name***
	Cymbopogon	Lemongrass
X	Muhlenbergia capillaris	Muhly Grass
	Spartina bakeri	Sand Cordgrass
X	Tripsacum dactyloides	Fakahatchee Grass
X	Tripsacum floridana	Florida Gamma Grass

Groundcovers		
Native	***Botanical Name***	***Common Name***
	Arachis glabrata	Perennial Peanut
	Cyrtomium falcatum	Holly Fern
	Dryopteris ludoviciana	Southern Shield Fern
X	Ilex glabra	Inkberry
	Trachelospremum asiaticum	Asiatic Jasmine 'Minima'
	Zamia firfuracea	Cardboard Plant
X	Zamia pumila	Coontie
Perennials		
Native	***Botanical Name***	***Common Name***
	Aechmea spp.	Bromeliads
	Bulbine fritescnes	Bulbine
	Caladium spp.	Caladium
	Crinum asiaticum	Crinum Lily
	Dianella caerulea	Flax Lily
	Heliconia spp.	Heliconia
X	Hymenocallis	Spider Lily
	Pachystachys lutea	Golden Shrimp Plant
	Pentas lanceolata	Pentas
	Plumbago auriculata	Plumbago
	Tulbaghia violacea	Society Garlic

Prohibited and Controlled Species List

PROHIBITED SPECIES LIST	
Botanical Name	***Common Name***
Acacia auriculiformus	Earleaf Acacia
Araucaria heterophylla	Norfolk Island Pine
Bischofia javanica	Bischofia Tree
Brassia actinophylla	Schefflera Tree
Casuarina spp.	Australian Pine
Cupaniopsis	Carrotwood Tree
Ficus spp.	Ficus - all species except strangler fig (ficus aurea), short leaf fig (ficus citrifolia), rusty leaf fig (ficus rubiginosa) or those maintained as a hedge
Melaleuca quinquenervia	Melaleuca
Schinus terebinthifolius	Brazillian Pepper
Syzygium cumini	Jambolan / Java Plum
Terminalia catappa	Tropical Almond

CONTROLLED SPECIES LIST		
Botanical Name	***Common Name***	***Planting or Reestablishment***
Swietenia mahogani	Mahogany	New plantings are only permitted if fifty (50) feet or more from a hardscape area, such as a road, sidewalk or parking lot. If an existing tree sustains damage to fifty percent (50%) or more of its canopy, major limbs or trunk, the entire tree shall be removed.
Ficus		Some species are prohibited. See the prohibited species table. Permitted Ficus species may be planted and maintained as a hedge pursuant to Article 6, in a planter or when planted with root barriers located thirty (30) feet or more from any utility line.
Grevillea robusta	Silk Oak	Permitted when planted five-hundred (500) feet or more from any designated preserve area.
Dalbergla sisoo	Rosewood	Permitted when planted five-hundred (500) feet or more from any designated preserve area.