

Purpose: The purpose of this document is to provide the property owner with assorted insights to assist in arriving at a maintenance program that provides appropriate value. It is intended to eliminate common, poor maintenance practices, to provide information about some superior maintenance practices and considerations, and to be a tool in assisting the property owner in covering most of the items that might be considered when negotiating a contract with their maintenance contractor or directing their maintenance personnel. The reader will find multiple references to the Cooperative Extension Service (IFAS) as a source of information for up-to-date data on various subjects.

PART I – GENERAL

1.01 Personnel

- A. Maintenance Contractor will provide all labor, transportation and supervision necessary to perform the work described herein.
- B. Field personnel will be equipped with all supplies, tools, parts and equipment to perform work.
- C. Personnel will be licensed for all applicable maintenance functions, including any chemical application when required by law.
- D. Maintenance Contractor personnel shall comply with all OSHA dress code regulations (i.e. steel toed shoes, safety goggles, etc).
- E. Maintenance Contractor personnel are perceived as representatives of Client while on property, and as such, will conduct themselves in an efficient, well mannered, well groomed and workmanlike manner at all times. Work will be coordinated with Client and scheduled to give the least possible interference to property, merchants, occupants, guests, visitors and customers.
- F. Any damage caused by the Maintenance Contractor personnel shall be repaired immediately at no cost to Client.
- G. The Maintenance Contractor Supervisor will have constant radio contact with the Maintenance Contractor Senior Project Manager assigned to monitor the project, as well as the office support staff.
- H. Sufficient warning devices will be employed, whenever necessary, to provide safety to persons and vehicular traffic.
- I. Drug Free Workplace - Maintenance Contractor will have in place a Drug Free Workplace policy as a condition of employment.

1.02 Insurance, Licenses, Permits, Liabilities

- A. The contractor will carry liability amounts and workmen's compensation coverage on his operators and employees and require same of any sub-contractors and provide proof of it to the client. The contractor is also responsible for obtaining any licenses and/or permits required by law for activities on client's property.

Liability - The contractor is liable for:

- 1. Any damage due to operation of his equipment in performing the contract.

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2. Complying with all laws pertaining to protected plant species.
 3. Damage to plant material due to improper horticulture practices.
 4. Improper installation of irrigation system replacement components.
 5. Injury to non-target organisms in application of pesticides.
- B. The contractor is not responsible for:
1. Death or decline of plant materials due to improper selection, placement, planting, or maintenance before the time of this contract.
 2. Damage due to improper irrigation components in existence at the time of contract initiation.
 3. Exposed cables/wires or sprinkler components/lines normally found below the surface of the lawn.
 4. Flooding, storm or wind damage.
 5. Disease or damage to lawns or landscape plants caused by excessive irrigation or lack of water to inoperative irrigation components provided the contractor reported these to client, or irrigation restrictions imposed by the Water Management District or civil authorities.
 6. Damage caused by any item hidden in the landscape and not clearly guarded or marked.
 7. Damage due to vandalism or theft.

PART 2 – QUALITY CONTROL RESOURCES

2.01 References

- A. American National Standards Institute. *Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices*. ANSI A300 - Pruning Standards and ANSI A300-Part 2 Fertilization. Washington D.C.
- B. Florida Department of Environmental Protection. *Florida Green Industries Best Management Practices For Protection of Water Resources in Florida*. June 2002.
- C. *Consideration for Developing a Lawn and Landscape Maintenance Contract*, Sydney Park Brown and Michael J. Holsinger. IFAS Publication SS-ENH-09, February 2001.
- D. Note that many informative publications are available in print and on-line from the Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611, or your county Cooperative Extension Service Agent. Check <http://edis.ifas.ufl.edu> for on-line publications.

2.02 Chemical Applications

- A. Any application of chemicals shall be in accordance with manufacturer's recommendations.
- B. Any application of chemicals shall be in accordance with the rules and regulations governing use of pesticides in Florida

PART 3 - LAWN MAINTENANCE

3.01 Mowing, Edging, and Trimming

- A. Contractor shall mow turf areas, as needed according to seasonal growth, so that not more than 1/3 of the leaf blades are removed per mowing. Mowing shall be with a mower appropriate to the turf type and in a varied pattern to prevent rutting of turf by mowing equipment. Mower blades will be sharp at all times to provide a high quality cut and minimize disease. Mowing height should be in accordance with grass type and variety and the mowing height for St. Augustine & Bahia is 3" - 3 1/2". Clippings will be left on the lawn unless readily visible clumps remain on the grass surface 12 hours after mowing. Otherwise, clippings will be collected and removed by the contractor. In the case of fungal disease outbreaks, clippings will be collected until the disease is controlled.
- B. Every other mowing, the contractor shall edge all sidewalks, fences, buildings, driveways, parking lots, and other hardscape surfaced areas, adjacent to turf areas. Isolated trees growing in lawn areas will require mulched areas around them to be maintained minimum 18" from primary trunk(s) to avoid bark injury from mowers and filament line trimmers and to reduce root competition from grass. Tree mulch rings and plant beds adjacent to turf areas shall be edged on same schedule as hardscape areas. Turf around sprinkler heads will be trimmed so as to not interfere with nor intercept the output of water. Mono filament line trimmers shall not be used around trees and shrubs where injury to the bark of plants could occur. Contractor will remove all debris from plant beds and grass clippings from sidewalks, curbs, and roadways immediately after mowing and/or edging and discard of them off-site or bag them and place them in a location indicated by the Client. Litter shall not be left on adjacent drives, roads or property.
- C. Maintenance equipment and instruments shall be cleaned and processed to avoid spreading of disease, etc.

3.02 Fertilization

- A. Contractor shall fertilize turf areas as per the recommendations of the University of Florida Cooperative Extension Service recommendations (See tables). All fertilizers shall be complete, granular in composition, and contain 30% - 50% of the nitrogen in slow or controlled release form. The ratio of nitrogen to potash will be 1:1 or 2:1 for complete fertilizer formulations. Nitrogen fertilization rate shall be based on the desired growth rate of the turf type and phosphorus shall be based upon the soil sample recommendation from a certified soil testing facility. The fertilizer shall also contain magnesium and micro-nutrients (i.e. manganese, iron, zinc, copper, etc.). Iron shall be in sulfate, succrate or chelated form.
- B. Fertilizers will be applied at a rate of one (1) pound of nitrogen per 1000 square feet. This is calculated by dividing the percent nitrogen into 100, (Example: If a 16-4-8 fertilizer is used, then 16 is divided into 100 = 6+ pounds of 16-4-8 will be spread over 1000 square feet of lawn area).
- C. For best results, an ongoing regimen of pH testing may be undertaken. Samples should be representative of the site or selected area and taken to a depth of 6 inches. Other items on soil test should include cation exchange capacity (to determine ability of calcium, potassium and magnesium to be held, without leaching to soil particles), estimated nitrogen release, and

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percent of organic matter in soil samples. Also test irrigation water, as it can apply nutrients too.

- D. Consider a foliar analysis (a test of existing plant tissues) which will reveal which nutrients are being taken up by the plant.
- E. In absence of soil or foliar analysis, consider using 3:1:5 for Florida or any sandy soil.
- F. Consider applying chelated minor elements as spray to leaves, especially where soil pH is a challenge. Soil pH affects the absorption of micronutrients by plant roots.
- G. Fertilizer shall be swept off of walks and drives and onto lawns or beds. It is recommended that a minimum of ¼ inch of water be applied to the area, after application of fertilizer.
- H. Florida Department of Environmental Protection best management practices for the protection of water resources in Florida shall be followed near shorelines and storm water facilities.

3.03 Weed Control

- A. Consider the environmental implications of lawn monocultures. If a plurality of non-ornamental lawn species is acceptable to the client, adjust weed control to target specific problematic plant species.
- B. Determine whether unknown or unexpected plants are native species that provide food or shelter for butterflies, birds, and other desirable insects and animals that will naturally control unwanted species and plan weed control accordingly. If retention of plant creates no significant aesthetic problem, consider leaving it to promote biodiversity.
- C. Lawn areas shall be maintained with spot control of weeds as needed and a program of weed control may be included with the fertilization program. Chemical weed control (e.g. herbicide) may be used in open lawn areas, but extreme caution shall be observed near adjacent flower, groundcover or shrub beds. If warranted and approved by the Client, pre-emergent herbicides will be broadcast in February and October for weed control. Post-emergent herbicides may not be applied to turf areas without the express approval of the client. This includes weed and feed formulations. Records will be kept on identified invasive and obnoxious plant species and treatment(s) rendered for control.
- D. Check with local Cooperative Extension office to determine most appropriate means to safely destroy invasive or poisonous plant species, such as Air Potato (*Dioscorea bulbifera*), Kudzu (*Pueraria montana*), Bradford Pear (*Pyrus calleryana* 'Bradford'), Mimosa (*Albizia julibrissin*), Chinaberry (*Melia azedarach*), Brazilian Pepper (*Schinus terebinthifolius*), Torpedograss (*Panicum repens*), etc. Also, check with Florida Exotic Pest Plant Council www.fleppc.org and www.invasive.org for potential invasives in your area.
- E. Florida Department of Environmental Protection best management practices for the protection of water resources in Florida shall be followed. Contractor shall provide most recent publication of this document to the Client.

3.04 Pest Control

- A. Consider the environmental implications of loss of natural insect and animal lawn monocultures. If a plurality of non-ornamental lawn species is acceptable to the client, adjust weed control to target specific problematic plant species.
- B. Determine the existence of native insect and animal species that may naturally control unwanted species and plan pest control program accordingly..
- C. Insecticides and other controls shall be used, sparingly, to avoid annihilation of beneficial species which serve as a natural control of problematic species.
- D. The contractor will inspect lawn areas each visit for indications of pest problems and advise the client or representative of such problems. Upon confirmation of a specific problem requiring treatment, pesticides will be applied as needed on a spot treatment basis following University of Florida, Institute of Food and Agricultural Services (IFAS) recommendations using least toxic Integrated Pest Management (I.P.M.) procedures.
 - 1. Records will be kept on pests identified and treatment(s) rendered for control. Pesticide applications will be made in accordance with the rules and regulations governing use of pesticides in Florida.
 - 2. At the Client's request, the contractor shall post alerts and notify pesticide-sensitive persons (if applicable) of the pesticide application.
 - 3. All spraying of pesticides will be done at temperatures below 80 degrees Fahrenheit.
- E. The pest control applicator shall be licensed and a copy of the license made available to the owner.

3.05 Core Aeration / Thatch Removal / Scalping

- A. Core aeration provides a more favorable environment for microbial activity, improve drainage in some soils, and provide increased oxygen to the roots, shall be executed as warranted and with authorization of the Client.
- B. Thatch removal
 - a. Removal of thatch (a spongy, build-up of dead and living grass shoot, stems, and roots) should be considered when thatch thickness exceeds one inch. It should be performed by vertical mowing when the turf grass is rapidly growing to ensure quick recovery.
 - b. Refer to the University of Florida Cooperative Extension Service document ENH12, "Thatch and Its Control in Florida Lawns" for requirements for successful thatch removal procedure.
- C. Scalping is not a substitute for vertical mowing. *We do not advise owner to consent to scalping procedure without first consulting the local county extension agent for alternatives.* Damage done to the lawn from scalping may kill St. Augustine grass or centipede grass and can severely injure other turf species.

PART 4 - LANDSCAPE PLANT MAINTENANCE (*Trees, Palms, Shrubs, Ground Covers*):

4.01 Fertilization

A. Ornamental shrubs, groundcovers and trees:

1. Ornamental shrubs, groundcovers and trees shall be fertilized, with a complete, granulated fertilizer, two (2) times per year. Fertilization should occur during the months of March and September for North Florida or February and October for South Florida. Shrubs and trees less than five (5) years old in the landscape may receive an additional fertilization in the summer.
2. Fertilizer applied to shrubs and trees planted in beds shall be broadcasted over the entire plant bed, following guidelines recommended by the University of Florida, IFAS. Shrubs and trees in lawn areas exposed to lawn fertilizations will not receive supplemental fertilizer. Fertilizer may be punched into the soil on berms and steep slopes where runoff is likely.
3. Fertilization rate will be one (1) pound of nitrogen per 1,000 square feet or equivalent. Fertilizers for trees and shrubs should contain equal amounts of nitrogen and potassium and 30% of more of both elements should be available in slow-release form. The fertilizer should also contain magnesium and a complete micronutrient amendment. Fertilizer analysis shall be similar to 8-2-8 (4-1-4 ratio) and 12-4-12 (3-1-3 ratio). Nutrient deficiencies shall be treated with supplemental applications of the specific lacking nutrient according to University of Florida Cooperative Extension Service (based upon report from a certified soil testing laboratory).
4. Consider annual application of Urea Formaldehyde to encourage good nutritional exchange in ornamental landscapes. If native plants are planted in appropriate native soils, this may not be needed, as plants should be receiving appropriate nutrition.
5. For best results, an ongoing regimen of Ph testing may be undertaken. Samples should be representative of the site or selected area and taken to a depth of 6 inches. Other items on soil test should include cation exchange capacity (to determine ability of calcium, potassium and magnesium to be held, without leaching to soil particles), estimated nitrogen release, and percent of organic matter in soil samples. Also test irrigation water, as it can apply nutrients too.
6. Consider a foliar analysis (a test of existing plant tissues) which will reveal which nutrients are being taken up by the plant.
7. In absence of soil or foliar analysis, consider using 3:1:5 for Florida or any sandy soil.
8. Due to palm nutritional needs, consider a fertilizer composed of least twice the potassium as nitrogen content.
9. Consider applying chelated minor elements as spray to leaves, especially where soil pH is a challenge. Soil pH affects the absorption of micronutrients by plant roots.
10. See planting specifications for requirements of newly installed plants.

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11. Fertilizer shall be swept off of walks and drives and onto lawns or beds. It is recommended that a minimum of ¼ inch of water be applied to the area, after application of fertilizer.
 12. Florida Department of Environmental Protection best management practices for the protection of water resources in Florida shall be followed near shorelines and storm water facilities.
- B. Citrus Trees: Consult University of Florida Cooperative Extension Service for most up to date guidelines. Rule of thumb is to apply ¼ pound of fertilizer for each inch of tree circumference, as measured from six inches above the ground. Starting a few inches from the trunk, uniformly scatter the measured fertilizer out past the drip line. Where turf could be damaged by high fertilizer rates, make holes two feet apart and several inches below the turf to receive fertilizer. After placing fertilizer replace soil and then turf.
- C. Mature palms: Apply granular fertilizer, with a product formulated for palms, four (4) times per year at a rate of six (6) pounds each application. Palms less than eight (8) feet in height should receive three (3) pounds four times per year. Queen palms will receive a supplement of manganese sulfate at the rate of five (5) pounds per mature palm in March. Any date palms showing chlorosis of the lower leaves will receive applications of magnesium sulfate twice per year. Palm Tree fertilizer shall be applied over shrubs and lawn, if necessary, within a 30' radius of each palm.
- D. Annuals/bedding:
1. Annuals/bedding plants shall be fertilized monthly, at a rate of 1/2 pound of nitrogen per 1,000 square feet of area every two (2) weeks or a slow release fertilizer such as Osmocote or Nutricote (3-4 month release) shall be incorporated in the bed at planting.
 2. The base fertilizer for all annual beds shall be organic. Contractor shall provide a granular program for installation as well as a supplement to be applied four (4) weeks after installation and as needed. PH in all bedding plant soil shall be maintained at a level between 5.5 and 6.5.

4.02 Pest Control

- A. Determine the existence of native insect and animal species that may naturally control unwanted species and plan pest control program accordingly. All insects are not harmful to palms, trees and shrubs and consideration of beneficial insects should be maintained.
- B. Insecticides and other controls shall be used, sparingly, to avoid annihilation of beneficial species which serve as a natural control of problematic species.
- C. Contractor shall practice Integrated Pest Management (I.P.M.) to control insects, diseases and weeds on and around annuals, perennials, ground covers, shrubs, vines, and trees. This will include weekly monitoring and spot treatment as necessary using least toxic methods. All spraying will be done before 10:30 a.m. and at temperatures below 80 degrees Fahrenheit.
- D. Treatment of first choice shall be insecticidal soaps, horticultural oils and biological controls such as *Bacillus thuringiensis* (Bt) formulations.

4.03 Weed Control

- A. Determine whether unknown or unexpected plants are native species that provide food or shelter for butterflies, birds, and other desirable insects and animals that will naturally control unwanted species and plan weed control accordingly.
- B. Groundcover and annual beds shall be maintained, weekly, with spot control of weeds as needed. Hand or mechanical pulling (no herbicides) of weeds shall be done for all flower, shrub and groundcover areas of bed. Chemical weed control shall be used, sparingly, to avoid annihilation of beneficial plant species which serve as habitat for desirable insects, birds, and animals. Chemical weed control (e.g. Roundup herbicide) may be used in open mulch areas of bed if approved by client. Upon client approval, herbicides may be employed for heavy infestations, or to treat parasitic weeds in palm roots. Weeds in paved areas may be controlled with string trimmers.
- C. Avoid use of pre-emergent herbicides in the vicinity of palm locations.
- D. Florida Department of Environmental Protection best management practices for the protection of water resources in Florida shall be followed near shorelines and storm water facilities.

4.04 Pruning

- A. General: (*see 7.01 - appendix for definitions of pruning techniques.*)
 - 1. Pruning shall be done in a manner complying with standard horticultural practices and shall not result in the removal of more than one-third (1/3) of the branching structure, nor alter the basic plant structure. See figure 2, for more information.
 - 2. All pruning and thinning shall have the distinct objective of retaining the plant's typical natural shape and the original design specifications, unless client requests otherwise. See figure 2, for more information.
 - 3. If removing dead or diseased branches, pruning cuts shall not be flush with primary, larger limbs and the branch collar (swelling at the branch base) shall remain.
 - 4. Consideration shall be given to the growth and blooming period of each species (e.g. Azaleas should be pruned soon after blooming, vs. months later, because their flower buds set on the new growth).
 - 5. To maintain the height and width of shrub hedges and groupings, selectively prune unruly, lengthy shoots and branches immediately above a leaf node, but well within the main structure of the plant mass.
 - 6. Shearing of trees and shrubs should be avoided in most cases because it destroys the natural character of the plant and creates foliage density that may inhibit air and light penetration.
 - 7. Electric or gasoline powered shears shall not be used in pruning.
 - 8. The contractor shall remove all litter.
 - 9. Pruning shears, etc. shall be cleaned and processed to avoid spreading of disease, etc.

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- B. Tree and Palm (also see C.4) pruning will be executed as needed and with the consent of the Client.
1. No pruning shall be executed during or immediately following growth flushes.
 2. Branches shall be pruned just outside the branch collar.
 3. Removal of dead limbs and branches from all trees shall occur continuously throughout the year. Dead shade and ornamental tree branches greater than 1.5 inches diameter shall be removed from the canopy of all trees.
 4. No pruning should be performed on live wood that would affect the designer's intent and natural character of the plant.
 5. Any limbs which pose a threat to public safety, damage to adjacent property, or the future health of the tree shall be removed.
 6. Remove all sucker growth, by hand – not herbicides, from the base of trees on a regular basis.
 7. If removing spent blooms or pruning to increase bloom quantity or period, branch diameters shall not exceed 1/4" at location of the cut. 1/8" diameter is the recommended maximum cut location for deadheading.
 8. Live branches greater than 1.5 inches diameter shall not be removed without consultation with an arborist certified by the International Society of Arboriculture.
 9. Trees planted in containers (or any area that restricts root growth) shall have their canopy mass maintained at the same size as soil volume available for root growth.
- C. Specific pruning practices:
1. Prune canopy trees to maintain their desired uniform appearance by thinning or tipping. No topping shall be performed. Branches are encouraged to hang over walks with adequate clearance (see local codes). See figure 1, for more information.
 2. If requested by the client, Crape Myrtle trees shall be renewal pruned in February on branches not exceeding 1/8" caliper or diameter. No topping shall be performed on Crape Myrtles. For longer blooming period, deadhead immediately after initial bloom. Topping of Crape Myrtles destroys the character of the small tree forms. Any intended benefits of topping can be achieved by selective thinning and deadheading.
 3. Ligustrum and Holly trees shall be selectively hand pruned and thinned for natural form. Severe shearing into "globes", "cones", etc. shall be avoided.
 4. Palms shall be pruned and maintained, as needed, throughout term of contract.
 - a. Palms should be pruned to remove dead and nutrient deficiency-impaired fronds (those with less than 50% green tissue).
 - b. Remove spent seed pods and fronds that are completely dead (no green frond tissue) or presenting a hazard to people.
 - c. Remove only completely dead fronds from Sabal palmettos and Washingtonia robustas to maintain a round (360 degree) canopy.

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- d. Time pruning to occur after fruit has set but before it matures.
 - e. When maintenance contract requires intensive pruning of palms, no more than 25% of tree's healthy canopy (green frond tissue) should be removed. Intensive pruning should not be repeated more than once in a one year period. "Hurricane cut" and "Carrot-top" treatment shall be grounds for dismissal of contractor / personnel.
 - f. If severe cold has killed or browned the entire canopy; wait until new fronds are sprouting from top of palm before removing completely dead fronds, to maximize plant photosynthesis.
 - g. Avoid applying chain-saw oil to palm tissues.
 - h. Use classic cut on Medjool palms.
 - i. If a lethal disease is confirmed in trunk, petiole, spear leaf, etc., remove palm from site as soon as possible. Minor leaf spot diseases may not be a long-term threat and retention of substantially green fronds is important to photosynthesis; producing food from minerals, carbon dioxide, and water. Confirm field diagnosis with laboratory diagnosis.
 - j. Perform a visual inspection of palms for symptoms or signs of disease, harmful insects, or nutritional problems; on a routine basis.
5. Shrubs shall be selectively pruned by hand as needed to ensure proper informal shape, fullness, and bloom. If a formal appearance is desired by the client, hedge shearing shall not be performed until shrub rows reach full and desired height. Pruning of all flowering shrubs shall be scheduled to prevent interference with flowering cycle or season. Plants obstructing pedestrian or automobile traffic shall be pruned as needed to maintain public safety. Shrub hedges located in site buffer areas shall be maintained at the minimum height (see local codes) or higher (if owner prefers). Shrubs near buildings shall be maintained at a height and width as determined by owner.
6. Ground covers shall be confined to plant bed areas by mechanical (hand or power) or chemical means, as environmental conditions permit. Climbing variety groundcovers shall be hand pruned to remove wayward growth.

4.05 Mulching

All organic mulched areas shall be replenished once a year during the winter months (Nov. - Feb.) with the same type (i.e. cypress, pine bark, melaleuca, recycled, etc.) mulch to maintain a depth of three (3) inches. All curb, roadway and bed line edges shall be trenched to help contain the applied mulch. All mulched beds shall be turned over for a fresh appearance bi-monthly. Mulch shall not be placed against the trunks of plants. Inorganic mulches (i.e. stone, shell, rubber) shall be raked to maintain uniform appearance and depth. Additional inorganic mulch material shall be added at owner's request. Note that cypress mulch may inhibit water percolation to roots. Note that mulching under citrus is discouraged, but a sand ring may be applied for good drainage. Avoid excess mulch around palms; place no or very thin layer of mulch over root-ball area.

PART 5 - MISCELLANEOUS

5.01 Annual Flowers

- A. Major renovation of annual beds shall be accomplished once per year in February. Detailing of annual beds shall be performed at a minimum of once (1) per month. Detailing shall include pinching / dead heading, replacement and cultivation.
- B. Specific Advice
 - 1. Fertilizer - till in at planting or drench with liquid fertilizer two (2) weeks after planting and rinse residue from buds and blooms.
 - 2. Mulch – none needed. (May use w/ perennial plantings.)
 - 3. Spacing – 8” to 12” on center; perennials may be spaced 14” to 16” on center, since they will typically have longer time to grow into space.
 - 4. Drainage – raise beds in low lying areas to avoid soil-borne fungus problems.
 - 5. Irrigation – If specific annual bed irrigation zones do not exist, plants shall be hand watered to ensure adequate moisture available for optimum growth. Annual beds should not receive overspray from other irrigation zones. 12-inch pop-up spray heads are recommended to get spray over plants.
- C. Minimum Replacement Schedule
 - 1. "Seasonal color" - Maintenance Contractor shall schedule four (4) seasonal crop rotations per year and will install (4") annual flowers per rotation. All plants shall have an extensive root system and 50% bloom when installed. Recommended rotation schedule is (adjustable) December, March, June & September.
 - 2. Maintenance Contractor will be responsible for planting and changing all "Seasonal Color" with the exception of "Special Color" such as Poinsettias, Easter Lilies, etc. unless included in rotation schedule. Separate authorization from Client is required for the purchase of "Special Color" plants that are deemed desirable by Client.
- D. Constant color maintenance

Maintenance Contractor shall be responsible for the full and complete care of all "Seasonal Color" plantings; including watering, mulching, spraying, fertilization, pruning, etc. Client is guaranteed that every annual/perennial planting mass shall maintain a healthy, vigorous appearance and shall at all times provide the finest quality color planting possible.

5.02 Irrigation Systems

- A. Contractor shall inspect and test all components and zones in the irrigation system monthly and shall reset zone times according to seasonal evapotranspiration (EVT) changes.
- B. Contractor shall be aware of local water use restrictions and will adjust irrigation schedule with the approval of the client.

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- C. With client's approval, minor adjustments and repairs such as head/emitter cleaning replacement, filter cleaning, small leaks, and minor timer adjustments shall be made by the contractor.
- D. During weekly maintenance the contractor will note and report to client any symptoms of inadequate or excessive irrigation, drainage problems, etc. and repair problems, with client's written approval.
- E. Once a year, the contractor will recalibrate each irrigation zone following the local Cooperative Extension Service recommendations.
- F. If well or pond is employed as the water source, contractor should check the quality of the source and suggest appropriate water treatment to assure landscape viability. Additional testing is suggested during time of drought.

5.03 Ball Moss

Treat using a solution of 2.5 % to 5% sodium bicarbonate (baking soda) in water in the months of January and February. Spraying during this time period helps to avoid leaves on trees. If done in the summer, use the lower dosage and avoid new leaf growth on oaks (avoid leaves in general, to avoid phytotoxicity).

5.04 Disease and Infestation Prevention

Maintenance equipment and instruments shall be cleaned and processed to avoid spreading of disease, etc.

5.05 Fruit Production

Contact local University of Florida Cooperative Extension Service for information concerning special practices required for fruit production.

PART 6 - TABLES

6.01 Florida turf grass fertilization guide

- A. The following tables were copied from document SS-ENH-09, which replaces Fact Sheet OHC-10, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. First published: May 1994. Reviewed: January 1995. Revised: February 2001. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu> to verify most recent revisions.

Table 1. Calendar Guide to Annual Zoysia grass Fertilization^{1,2}

Maintenance Level	J	F	M	A	M	J	J	A	S	O	N
North Florida											
Basic			C		SRN				C		
Moderate			C		SRN		SRN		C		
High			C	N	SRN		SRN		C		
Central Florida											
Basic			C		SRN				C		
Moderate			C		SRN			SRN		C	
High		C		N	SRN		SRN		N		C
South Florida											
Basic			C		SRN		SRN			C	
Moderate		C		N		SRN		SRN			C
High		C		N	SRN		SRN		SRN		C

¹North Florida in this example is considered to be anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining southern portion of the state.

²C=complete fertilizer application (NPK); N=nitrogen application only; SRN=nitrogen only in a slow release form; Fe=iron application only.

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Table 2. Calendar Guide to Annual Bermuda grass Fertilization ^{1,2}

Maintenance Level	J	F	M	A	M	J	J	A	S	O	N
North Florida											
Basic			C		SRN				C		
Moderate			C		SRN		SRN		C		
High			C	SRN	C		SRN	Fe	C		
Central Florida											
Basic			C		N		SRN		C		
Moderate		C		N		SRN		SRN		C	
High		C	N	SRN		C	Fe	SRN		C	
South Florida											
Basic		C		N		SRN			C		C
Moderate		C	N		C		SRN		SRN		C
High		C	N	SRN	C	SRN	Fe		SRN		C
¹ North Florida in this example is considered to be anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining southern portion of the state. ² C=complete fertilizer application (NPK); N=nitrogen application only; SRN=nitrogen only in a slow release form; Fe=iron application only											

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Table 3. Calendar Guide to Annual Centipede grass Fertilization ^{1,2,3}

Maintenance Level	J	F	M	A	M	J	J	A	S	O	N
North Florida											
Basic				C							
Moderate				C		Fe					
High				C		SRN	Fe				
Central Florida											
Basic			C			SRN					
Moderate			C			SRN	Fe				
High			C			SRN		C			
South Florida											
Basic			C			Fe				C	
Moderate		C		SRN						C	
High		C		SRN		Fe				C	

¹North Florida in this example is considered anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining portion of the state.

²For initial spring application, particularly in North Florida, the recommended time to fertilize is after the last frost.

³C=complete fertilizer application (NPK); N=nitrogen only; SRN=nitrogen only in a slow release form; Fe=iron application only.

LANDSCAPE MAINTENANCE CONSIDERATIONS

Table 4. Calendar Guide to Annual St. Augustine grass Fertilization^{1,2,3}

Maintenance Level	J	F	M	A	M	J	J	A	S	O	N
North Florida											
Basic			C			Fe			C		
Moderate			C		SRN		Fe		C		
High			C		SRN	Fe	SRN		C		
Central Florida											
Basic			C				Fe		C		
Moderate			C		SRN		Fe	SRN		C	
High		C		N	SRN		Fe	SRN		C	
South Florida											
Basic			C		SRN		SRN			C	
Moderate		C		N		SRN		SRN			C
High		C		N	SRN		SRN		SRN		C

¹North Florida in this example is considered to be anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining portion of the state.

²For initial spring application, particularly in North Florida, the recommended time to fertilize is after the last frost.

³C=complete fertilizer application (NPK); N=nitrogen application only; SRN=nitrogen only in a slow release form; Fe=iron application only.

LANDSCAPE MAINTENANCE CONSIDERATIONS

Table 5. Calendar Guide to Annual Bahia grass Fertilization ^{1,2,3}

Maintenance Level	J	F	M	A	M	J	J	A	S	O	N
North Florida											
Basic			C					C			
Moderate			C		SRN			C			
High			C		SRN		Fe	C			
Central Florida											
Basic			C		Fe			C			
Moderate			C			N	Fe		C		
High			C	N		SRN	Fe		C		
South Florida											
Basic		C				Fe				C	
Moderate		C		N		Fe				C	
High		C		N		SRN		Fe		C	

¹North Florida in this example is considered to be anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining portion of the state.

²For initial spring application, particularly in North Florida, the recommended time to fertilize is after the last frost.

³C=complete fertilizer application (NPK); N=nitrogen application only; SRN=nitrogen only in a slow release form; Fe=iron application only.

LANDSCAPE MAINTENANCE CONSIDERATIONS

6.02 SUGGESTED MAINTENANCE SCHEDULE - General

January	February	March	April
Trim Seed Heads & weak stems from Crape Myrtles Renew Mulch Begin pruning hardy shrubs and trees Treat Ball Moss	Trim Seed Heads & weak stems from Crape Myrtles Treat Ball Moss Apply crabgrass pre-emergent Prune shade trees that <u>do not</u> flower during spring.	Apply complete lawn fertilizer Trim ornamental grasses, if appropriate.	
May	June	July	August
Prune Camellias & Azaleas after flowering is done for season. Aerate lawns as needed De-thatch St. Augustine grass Inspect for mole crickets or chinch bug infestation – treat if found Seed Bahai grass (if raining)	Prune Camellias & Azaleas after flowering is done for season.	Prune Camellias & Azaleas after flowering is done for season.	
September	October	November	December
			Overseed with Rye grass

6.02 SUGGESTED MAINTENANCE SCHEDULE – Phoenix Genus Palms

January	February	March	April
	New growth will become evident near end of month	Fertilize & remove any freeze damaged fronds Avoid new growth during pruning	New canopy beginning to emerge
May	June	July	August
New canopy emerging Remove emerging seed/date stalks	Fertilize		
September	October	November	December
Fertilize			Fertilize

6.03 Florida turf grass mowing height guide

A. The following table was copied from document SS-ENH-09, which replaces Fact Sheet OHC-10, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. First published: May 1994. Reviewed: January 1995. Revised: February 2001. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu> to verify most recent revisions.

Type Turfgrass	Mowing Height
Bahia grass and St. Augustine grass varieties (Raleigh, Floratam, Floratam, Bitterblue, Floratine, FX 10)	3.0 - 4.0"
Semi-dwarf St. Augustine varieties (Seville, Del Mar, Jade, Palmetto)	1.5 - 2.5"
Bermudagrass (Hybrids)	.75 - 1.5"
Bermudagrass (Common)	1.5"
Centipedegrass	1.5 - 2.0"
Zoysiagrass	1.0 - 3.0"

PART 7 - APPENDIX

7.01 Definitions

Balled and Burlapped (B&B) – A soil ball containing roots of the plant wrapped and secured in synthetic, natural or treated burlap, and/or wire. All synthetic fabric, including “grow bags”, should be removed from the rootball prior to planting, but biodegradable burlap can be left around the rootball. The soil should be moist enough to hold together, around the roots, so that the main trunk or stem cannot be loosened from the soil.

Caliper – diameter of a tree trunk. Caliper is measured 6 inches from the ground on trees up to 4 inches in caliper and 12” above the ground for larger trees. Diameter at Breast Height (D.B.H.) is measured 4.5’ above grade and is often used when measuring existing trees on a site.

Clear Trunk – The lower portion of the trunk measures from the soil line up to the first major branch.

Carrot Topping – pruning significantly healthy fronds from a palm causing petioles to droop above the horizontal.

Collar – the tissue at the base of a branch, where it meets the main trunk or larger member.

Container Grown – A plant grown in a container such as a pot or can. There should be sufficient roots to penetrate the soil, so that the soil does not fall away from the roots when removed from the container. However, containers with roots growing out or circling the within the pot should be avoided. See Florida Grades and Standards for details.

Deadheading – removing spent flowers, before they can seed, to promote more blooms.

Espalier – a plant that is pruned, shaped and trained against a trellis or wall.

Flush Cut – a pruning cut that is made too close to the trunk, instead of outside the collar of the branch.

Harden Off – prior to replanting a recently dug tree.....

Hatracking – excessive branch removal in an attempt to either reduce the size of the tree’s canopy or reshape the canopy. This is an unsound practice that is often employed indiscriminately versus the thoughtful practice of “thinning”.

Heading – shortening a branch or stem by cutting just above a branch crotch, node, or shoot bud. This may be used on formal hedges and topiary, is inappropriate for the shaping of trees.

Hurricane Cut – practice of removing all fronds and used in the transportation of nursery palm trees that allows stressed palms, with freshly cut and exposed root systems, to retain moisture and resources for adjustment to new location. This is not appropriate for palms already established in the landscape.

Leader – the primary branch that rises out of the tree trunk at the base of the canopy structure. Some trees may have multiple leaders which may compromise the strength of the tree.

LANDSCAPE MAINTENANCE CONSIDERATIONS

Pinching – the encouragement of additional branching by pinching off soft, single stems of annuals and perennials.

Pollarding – the destruction of the natural character of a plant by cutting all the branches to the same location each year. This produces a witches broom affect by new growth.

Rejuvenation – cutting off something, somewhere.

Shearing / Trimming – the shaping of a plant to create a formal, unnatural character. Specimen topiaries and formal partierres require this technique. Formal hedges should be shaped wider at their base to provide light to lower foliage. “Lollipopping” trees with this technique should be avoided and “thinning” should be employed to developed tree size or shape.

Thinning – the removal of entire branches at the base of the plant or at a side branch. This action will promote new growth in the interior of the plant, maintaining the natural / informal character of the plant.

Topiary – A formal plant form developed and maintained by frequent shearing and clipping. Typical topiaries include geometirc shapes, animal shapes, etc. Topiary requires the selection of a plant with appropriate characteristic for the art form. Almost trees cut into round shapes at shopping centers are inappropriate for the art form and were intended to shade the parking lot with a generous canopy.

Topping – cutting major leader or co-leaders of trees. This destroys the natural character of the tree and compormises the structural integrity of the tree.

7.02 Credits & Disclaimers

A. These maintenance considerations were adapted from or inform by various sources. Notable resources include:

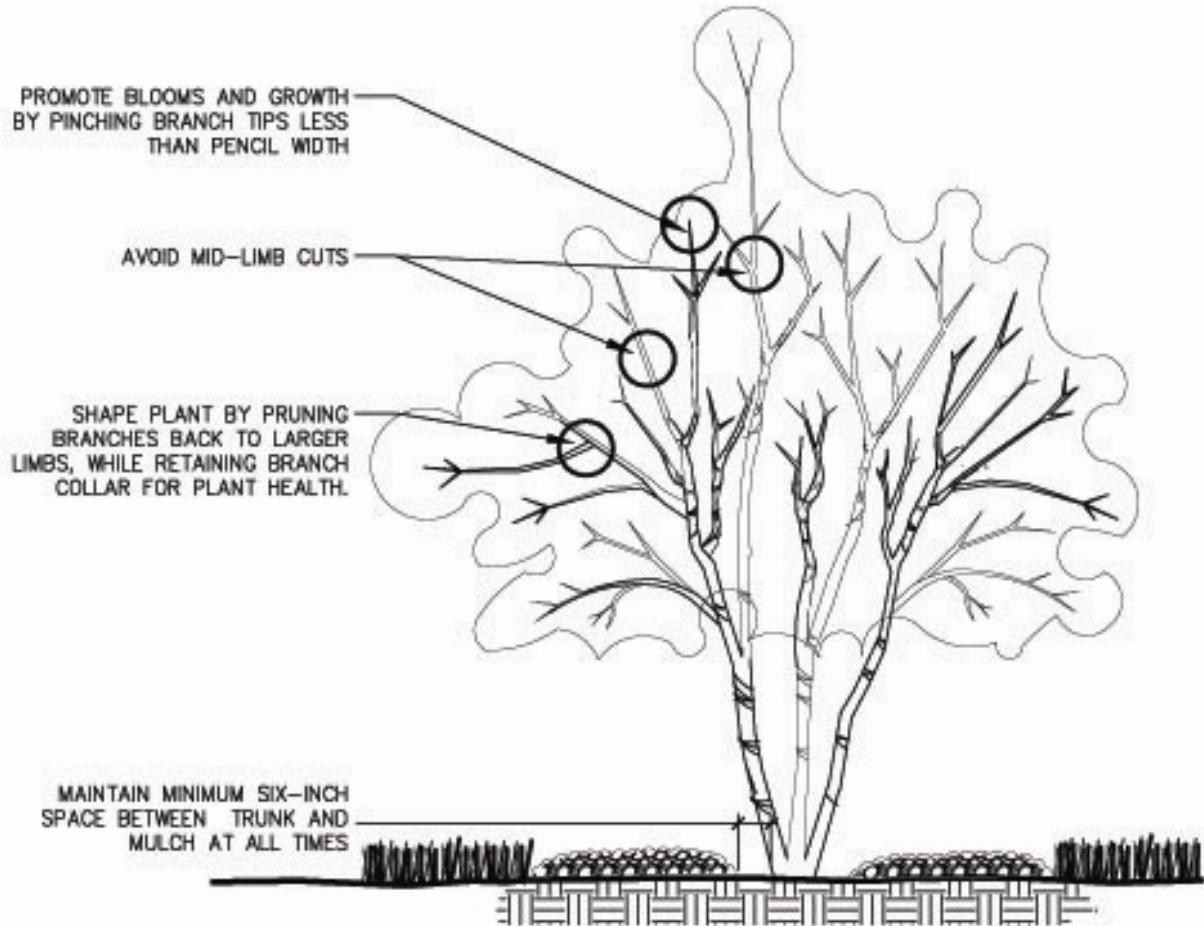
1. Florida State Department of Agriculture, Bureau of Plant Industry, "Grades and Standards for Nursery Plants", latest edition.
2. Bulletin SS-ENH-09, by the Florida Cooperative Extension Service, Insitute of Food and Agricultural Sciences (IFAS), University of Florida. Revised February 2001.

B. Use of trade names in this document is informational. Approval, warranty or guarantee of referenced products shall not be implied and other products may be suitable.

C. The purpose of this document is to provide the property owner with assorted insights to assist in arriving at a maintenance program that provides appropriate value. It is intended to eliminate common, poor maintenance practices, to provide information about some superior maintenance practices and considerations, and to be a tool in assisting the property owner in covering most of the items that might be considered when negotiating a contract with their maintenance contractor. See Section 2.01 for references that may be used to keep up-to-date with superior maintenance practices.

LANDSCAPE MAINTENANCE CONSIDERATIONS

NOTE: SELECTIVELY PRUNE LIMBS; DO NOT USE "TRIMMER" TOOLS TO SHAPE TREES INTO UN-NATURAL SHAPES. FOR BEST TREE HEALTH; STRIVE FOR NATURAL CHARACTER OF TREE, WHEN FORCED TO REMOVE PROBLEM BRANCHES, ETC.



NOTE: PURPOSE OF MULCH IS TO RETAIN MOISTURE AND IMPEDE WEED GROWTH. MULCH NOT REQUIRED WHERE LOW PLANT CANOPY SHADES ROOT ZONE AND NATURAL LEAF LITTER IS MAINTAINED TO HOLD MOISTURE AND IMPEDED WEEDS. AVOIDING RAKING OFF NATURAL LEAF DROPPINGS. USE MINIMAL LAYER OF MULCH, IF AESTHETIC "TOUCH UP" IS DESIRED AND APPLY TO MAXIMUM MULCH DEPTH OF 2 - 3 INCHES. SEE LANDSCAPE MAINTENANCE CONSIDERATIONS SECTION 4.04.

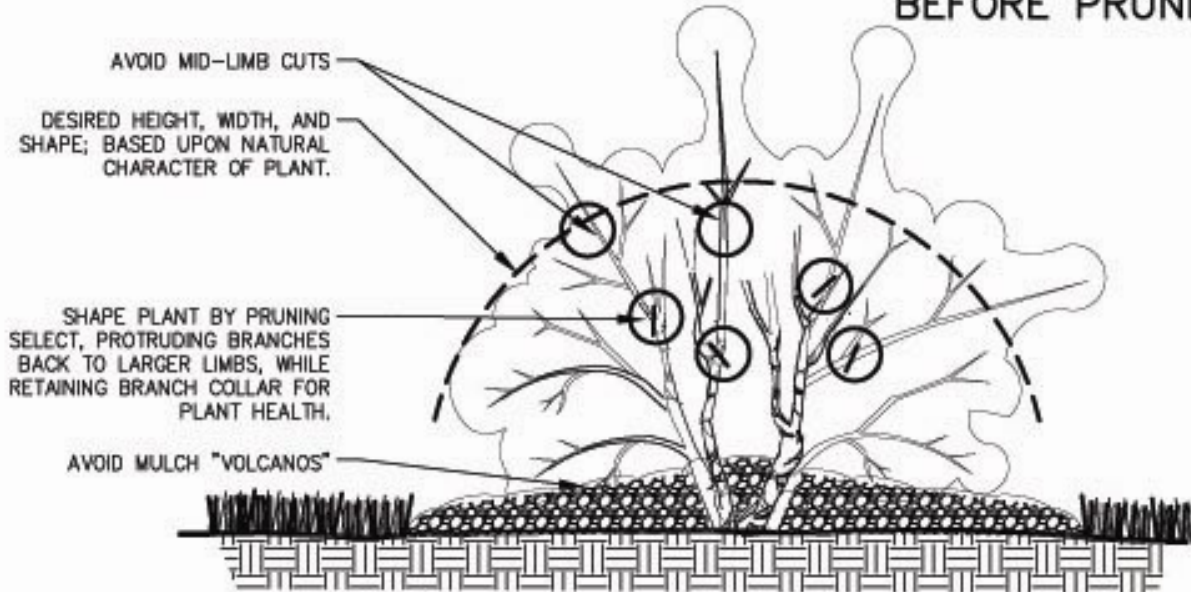


FIGURE 1

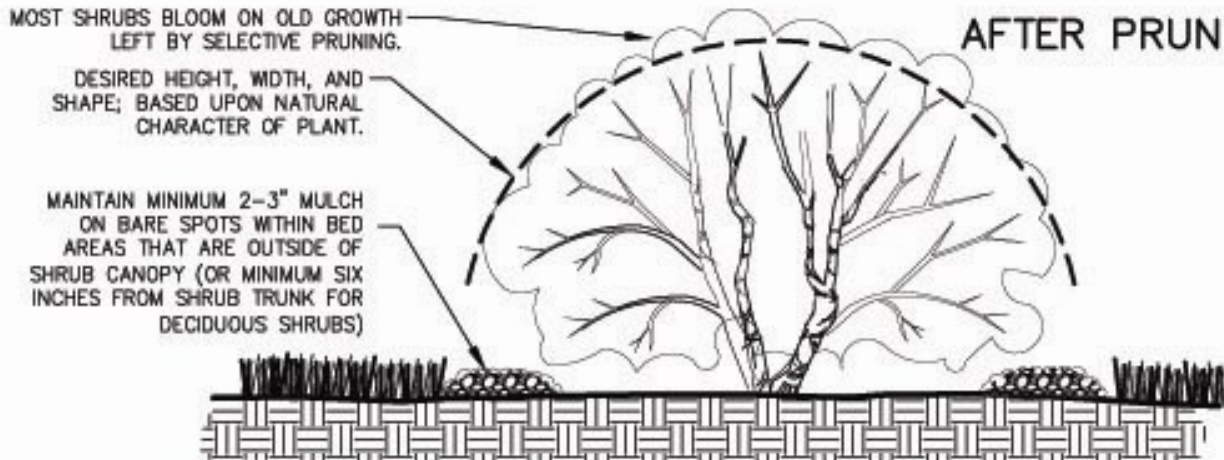
LANDSCAPE MAINTENANCE CONSIDERATIONS

NOTE: SELECTIVELY PRUNE LIMBS; DO NOT USE "TRIMMER" TOOLS TO SHAPE SHRUBS INTO UN-NATURAL SHAPES. FOR BEST SHRUB HEALTH; STRIVE FOR NATURAL CHARACTER OF SHRUB, WHEN FORCED TO REMOVE PROBLEM BRANCHES, ETC. PROMOTE BLOOMS, FRUIT AND GROWTH BY CLEANLY SNIPPING BRANCH TIPS NO GREATER THAN PENCIL WIDTH, WITH PRUNING SHEARS.

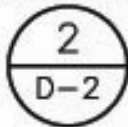
BEFORE PRUNING



AFTER PRUNING



NOTE: PURPOSE OF MULCH IS TO RETAIN MOISTURE AND IMPEDE WEED GROWTH. MULCH NOT REQUIRED WHERE LOW PLANT CANOPY SHADES ROOT ZONE AND NATURAL LEAF LITTER IS MAINTAINED TO HOLD MOISTURE AND IMPEDE WEEDS. AVOIDING RAKING OFF NATURAL LEAF DROPPINGS. USE MINIMAL LAYER OF MULCH, IF AESTHETIC "TOUCH UP" IS DESIRED AND APPLY TO MAXIMUM MULCH DEPTH OF 2 - 3 INCHES. SEE LANDSCAPE MAINTENANCE CONSIDERATIONS SECTION 4.04.



HEALTHY SHRUB MAINTENANCE

SECTION - ELEVATION

NOT TO SCALE

FIGURE 2