Irrigation Requirements

In order to bettter educate the public on irrigation requiremetns, we have prepared this packet of information to assist you in elminating any confusion and getting things done right the first time, saving time, money, but most important, *saving water!*

Important Facts you should know

Any contractor installing or altering an irrigation system must be licensed through the Flagler County Contractor licensing program (313-4085) and obtain a City of Palm Coast business tax receipt. (986-3766)

Lots less than ½ acre (21,780 sq ft)

- An irrigation system is *not* required if using bahia or bermunda sod

- An irrigation *is* required if using St. Augustine or zoysia grass. An underground automatic irrigation system is to be installed as part of the permit (sod or new construction) This must be noted on the site plan during the permitting process.

Lots ½ acre or greater

- Irrigation systems must compy with commericial irrigation (class I) requirements noted in the landscape technical manual and the COPC Land Development Code. (attached)

- Plans must be designed by a landscape architect or certified irrigation professional and submitted to the building division for permitting.

    - residential new construction can include the irrigation installation providing an licensed irrigation contractor is identified.
    - commercial new construction cannot include the irrigation installation, a separate permit is required.

If 'reuse irrigation' water is available in your subdivision, it is *mandatory* that water source is used and;

- NOT use a well or potable water for irrigation
- NOT connect a hose bib to the irrigation system unless it is in a lockable box and signed to read, "Non-Potable" DO NOT DRINK.
- Use only purple colored pipe, valve box covers and irrigation head caps designed for this specific purpose.

If you have any questions or need clarification on any of these requirements, we encourage you to contact John Beaudet, Patrick Arena, Carol Keiper-Bennett or Bill Butler at 986-3700.

2. Frontage Road Buffers

Frontage roads that parallel the main road serving a site may encroach into a front landscape buffer if no less than ten (10) feet of the required buffer is provided on the development side of the frontage road with the remaining footage of the buffer width on the side of the main road.

3. Fleet Rental Parking Buffers

Fleet rental parking spaces shall be located to the side or rear of the building and screened with a buffer planting that is a minimum of five (5) feet in height and opacity of sixty (60) percent at time of planting and that achieves one hundred (100) percent opacity within two (2) years.

4. Utility Structures

Individual structures such as dumpster enclosures, mechanical equipment, backflow preventers, wells, pumps, tanks, buffer walls, HVAC units, transformers, storage sheds, lift stations, utility cabinets, electrical panels, or cable television equipment shall be screened by the utility company or property owner with visual buffer planting, when visible from rights-of-way, parking areas, or adjacent properties. In lieu of a visual buffer planting, solid decorative fencing or walls may be installed to screen from public view. Plants used shall be native or shall be vegetation that conserves water, is adaptable to local conditions, and is drought tolerant.

11.03.06. Irrigation Requirements

A. Requirements by Type of Development

1. Class 1: Class 1 developments shall meet the irrigation design standards contained in this section.

2. Class 2: Irrigation systems for all common areas of a subdivision, including planted medians, shall be designed and installed with the subdivision infrastructure in accordance with this section. If the owner elects, the planting and irrigation of street trees on lots may be postponed until the lot is developed.

3. Class 3: Class 3 developments shall be required to meet the irrigation standards of this section if the lot is one-half (1/2) acre or larger in size, with the exception of **Subsection ~~11.03.06.B~~**, which is required if an irrigation system is installed regardless of the lot size.

11.03.03.B
See attached sheet

B. Design Standards

Irrigation systems shall meet all City irrigation design standards as well as the following:

1. Water Conservation

Irrigation systems shall be designed in such a way as to minimize runoff or spraying of irrigation water onto roadways, driveways, and adjacent properties that are not under the control of the owner. The irrigation systems shall be designed to correlate plants into water use zones.

2. Water Source

Nonpotable water use demands shall be met using water of the lowest quality supply that is both available and acceptable for the intended application. Water reuse or water reclamation

water use applications which do not require potable water. The following are the water source priorities of the City from highest preference to lowest preference:

a. Reclaimed water.

b. Stormwater, lake, or canal.

c. Groundwater (well).

d. Potable water.

3. Temporary Irrigation

All landscape installations shall make necessary provisions for watering to establish and guarantee plant survival. Sites with these types of irrigation shall use super absorbents in the planting backfill as well as native plants or xeric plants and trees. A watering schedule shall be submitted. For an example, see the University of Florida Extension publication ENH856 – Tree Specifications for Planting and Shrubs in the Southeastern United States. Specifications shall be included to provide one (1) of the following:

a. Automatic irrigation;

b. Hand watering via hose bib or other water source;

c. Water truck hand watering; or

d. Automated water bags.

4. Irrigated Areas

The irrigation system, unless temporary, shall have mainlines and lateral lines buried underground and designed to provide adequate irrigation to all landscaped areas except for areas of existing native vegetation or planting areas comprised of vegetation that conserves water, is adaptable to local conditions, and is drought tolerant.

5. Backflow Prevention

Irrigation systems connected to a potable water source shall have a backflow prevention assembly installed as required and approved by the Land Use Administrator. Permitted wells shall have a serviceable double-check valve as required and approved by the Land Use Administrator. See **Chapter 9** for these requirements.

6. Moisture Sensor or Smart Irrigation Controller

All irrigation systems shall have an operational moisture-sensing device with buried soil probes located in each water use zone or a smart irrigation controller.

11.03.07. Installation of Plants

All landscaping is to be installed in a professional manner following good nursery practices as set by the Florida Nurserymen Landscape and Growers Association. All planting requirements shall meet or exceed the standards set forth in this chapter and the University of Florida Extension Publication ENH856 - Tree Specifications for Planting Trees and Shrubs in the Southeastern United States.

A. Mulching Requirements

All planting areas shall be mulched with a minimum two (2) inches up to four (4) inches of mulching material. The type of mulching material is subject to approval by the City.

B. Turf

Grass areas shall be planted with sod in a species normally grown as permanent lawns in East Central Florida. Newly installed Bahia sod shall be healthy and may have no more than twenty (20) percent weeds or unlike grass species. Newly installed St. Augustine, Seashore Paspallum, Bermuda, and Zoysia sod may have no more than five (5) percent weeds or unlike grass species. For newly installed turf where irrigation is not provided, grass species shall be Bahia grass (or Bermuda grass upon approval of the Land Use Administrator). All areas of a disturbed site not otherwise landscaped or not left in natural native vegetation shall be grassed or mulched at a minimum.

11.03.04. Parking Lot Landscaping Requirements

A. Visual Screening

Visual screening from the right-of-way in the form of shrubbery is required for off-street parking areas in accordance with the following:

1. Height

A minimum of twenty-four (24) inches in height, measured from the adjacent parking surface level, at time of planting. If the screen is planted on a berm, the height of the plants can be less as long as the cumulative height is at least twenty-four (24) inches.

2. Spacing

The maximum plant spacing shall be three (3) feet on center. If the proposed plants are larger than the minimum specified, wider spacing may be allowed at the discretion of the Land Use Administrator.

3. Material Type

Plant material must be nondeciduous for full year around screening.

B. Internal Parking Lot Landscaping

Internal parking lot landscaping shall comprise a minimum of ten (10) percent of the vehicular use area. The vehicular use area is the total area of all parking stalls, drive aisles, and access ways within the limits of the property being developed.

1. Landscape Islands

a. A qualifying island or planting area shall contain one (1) shade tree for every two hundred fifty (250) square feet of island area. A single island which is five hundred (500) square feet or greater, is equal to two (2) island credits. Existing trees preserved in islands may qualify for more than one (1) landscape island credit, based on the size of the tree and area provided as determined by the Land Use Administrator. Shade trees shall not be planted in islands containing less than eight (8) feet in width and two hundred fifty (250) square feet in size.

b. A minimum of seventy-five (75) percent of the required islands shall be a minimum of two hundred fifty (250) square feet in area; with the remainder a minimum size of one hundred fifty (150) square feet. The one hundred fifty (150) square foot islands shall have one (1) understory tree, with a minimum height of twelve (12) feet to fourteen (14) feet, or a grouping of three (3) palms, for each vehicular use area credit proposed.

c. Vehicular use areas must meet a minimum of one (1) vehicular use area credit for every 4,000 square feet of vehicular use area.

VIII. IRRIGATION DESIGN STANDARDS

The following irrigation design standards shall apply to all properties unless otherwise exempted:

A. All irrigation equipment (sprinklers, rotors and micro-irrigation devices) within a given zone shall have the same precipitation rate (i.e. - rotors cannot be on the same zone as spray heads).

B. Irrigation systems for all Class 1, Class 2, and Class 3 (for Class 3, only if area is greater than ½ acre) development sites are required (unless 100% xeric plants are utilized) and shall separate the irrigation zones based on planting design water requirements. Fifty percent (50) of the pervious area of the site must be planted (or preserved) with xeric or native plant material and this material shall be irrigated separately from other non-xeric/ native shrubs.

C. For Class 3 developments ½ acre or under, no irrigation system is required. However, if a non-drought tolerant type of grass is used (i.e. - St. Augustine) a note is required on the plot plan submittal stating an underground permanent irrigation system will be installed prior to final certificate of occupancy issuance. Irrigation plan submittal is not required.

D. All irrigation heads shall be no closer to building structures than twelve (12) inches per the Florida Building Code.

E. Minimum pipe cover over mainlines shall be eighteen (18) inches and twelve (12) inches for lateral lines. Drip irrigation lines, at a minimum, shall be covered with mulch.

F. Wells, pumps, electrical control devices, and other related items relating to irrigation systems, unless specifically authorized by the City, shall not be permitted in the public rights-of-way.

G. Irrigation system shall be designed to avoid spraying onto sidewalks that are constructed for or used by the public. Watering onto impervious surfaces shall be minimized.

H. All valves and wire splices shall be in valve boxes at the proper grade and the wire connections water proofed.

I. All spray heads shall be equipped with in-stem pressure regulation in order to conserve water and improve distribution uniformity. Heads shall have identification from the top.

J. Irrigation controller shall be programmable by the minute and be equipped with battery back-up or non-volatile memory (ability to maintain program without power). A card shall be placed in the controller noting whether each zone is a rotor zone or spray zone, the area of the site that zone covers and the recommended run time.

K. Except for backflow preventers, all above ground exposed piping or risers shall be painted black or dark green to blend in with buffer plantings.

L. All above ground piping shall be galvanized, brass, or Schedule 40 PVC. If PVC pipe is used, it shall either be either painted black or dark green or enclosed so as to protect it from sunlight. All pumps shall be required to be bolted to a concrete slab and enclosed.

M. In required public parking areas drip irrigation is encouraged. Irrigation heads, if used, in parking lot islands shall be of the underground pop-up type with height determined by the height of the specific plant material around it. Any shrub risers along the end of a

parking lot stall shall be set back a minimum of twenty-four (24) inches from the face of the curb or parking stop. Risers shall be staked if they are not able to be vertical with the ground when operating.

N. If drip irrigation is used, a filter and pressure regulation device must be installed in a valve box on the system and flush plugs at the end of each line installed and placed in a valve box for location and servicing.

O. Head-to-head coverage shall be delineated on the plans. Irrigation plans shall include gallon per minute discharge rates per zone.

P. Irrigation shall be designed in the most water efficient means as possible.

Q. A nozzle chart shall be included in the plans indicating the gallons per minute discharge for each type of nozzle.

R. Where re-use water is available, it shall be utilized in lieu of any other water source. If re-use water is used or planned to be used at some future date, all irrigation mainline piping, control valve box covers, risers and irrigation heads shall be colored purple. Additionally, signs shall be posted in conspicuous locations on the site stating “Re-Use water – Do not drink”.

S. Any proposed tree planting in which the tree is 3½" caliper or larger shall have an irrigation bubbler installed within the watering ring at time of planting.

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