

## SECTION 02810 - IRRIGATION

### PART 1 - GENERAL

#### 1.1 SCOPE OF SECTION:

This section contains the requirements relating to transmission and distribution systems for irrigation water, except, the requirements for potable water transmission lines used for providing irrigation water are described in Section 02660.

*(Division 2 items are generally considered to be located outside of buildings starting at a maximum distance of 5' outside of the building. However, that statement does not apply to the irrigation system, which may be located within 5' of buildings and may extend to areas within buildings.)*

#### 1.2 GENERAL:

##### A. WATER SOURCE:

1. Water for irrigation use should either be groundwater from one of the University's existing irrigation wells (permitted through the St. Johns River Water Management District), or reuse water from the University's Water Reclamation Facility, if available. Consult with PPD for requirements and permission on either of these preferred options for a source of water.
2. Other less preferred irrigation water sources include surface water (from Lake Alice or one of several ponds), and groundwater from a new well. Consult with PPD for requirements and permission prior to proceeding with any of these options. New wells must be reported to the St. Johns River Water Management District by the PPD A/E Department and permitted if certain threshold criteria are exceeded.

B. OVER-PRESSURIZATION: The irrigation system shall be protected from over-pressurization. Choose a pressure-reducing valve to accommodate pressure conditions.

C. BACKFLOW PREVENTION: Refer to Section 15050 for the backflow prevention requirements relating to the potable water, firewater, and irrigation systems. (The Section 15050 backflow prevention requirements apply to these systems regardless of whether the systems are described within a Division 2 section or a Division 15 section and whether the backflow prevention device is installed indoors or outdoors.)

##### D. METERING REQUIREMENTS FOR SURFACE AND GROUNDWATER:

The University's Consumptive Use Permit for surface and groundwater consumption from the St. Johns River Water Management District requires the University to install in-line totalizing flow meters on all withdrawal points. Consult with the PPD A/E Department regarding these requirements prior to planning or installing any new withdrawal points of surface or groundwater. The PPD A/E Department shall provide guidance regarding any applicable SJRWMD permitting requirements and any associated University procedures.

The meter should have a straight section of pipe at least 10 times the diameter before the meter, and 5 times the diameter length after the meter to allow for accurate flow measurements. This section of pipe should be easily accessible for meter calibration requirements.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS:**

- A. PIPING: Pipe shall be Schedule 40 PVC or class 200 PVC (purple).
- B. REUSE WATER PIPING: Pipe shall be purple or have a **purple stripe** on top of the pipe. If PVC piping is used for the reuse water main then the piping shall be at least DR-18 or AWWA C900. The PVC piping used for the reuse water main shall have a 14 gauge insulated wire attached to the pipe for use in locating the pipe.
- C. REUSE WATER VALVE BOXES: Valve boxes for reuse water shall say, "Reuse" on lid. Refer to Item F.1 below regarding valve box construction. The inside of the lid and shaft shall be painted purple.
- D. VALVES: Electric valves shall be Rainbird PE series.
- E. VALVE WIRING: Valve wiring shall be a minimum of 14-gauge copper single-conductor wire with vinyl insulation. Wiring connectors shall be waterproof grey connectors, equal to Rainbird.
- F. VALVE BOXES:
  - 1. In areas, which may be subject to vehicle traffic, valve boxes are to be concrete with minimum size 12-inch metal lids. In other areas, valve boxes shall be 12 inch minimum purple PVC with locking lid. All lids shall be marked "Irrigation Control Valve." Paint interior of valve boxes purple.
  - 2. Acceptable Manufacturers: Ametek 12 inch "Superflexion;" Tyler 461S; USF 7500.
- G. SPRINKLER HEAD FITTINGS: Fittings at sprinkler heads shall be barbed fittings compatible for use with flexible polyethylene pipe.
- H. SPRINKLER RISER PIPE: Sprinkler riser pipe shall be Schedule 80 PVC, either gray or white painted green.
- I. SHRUB ADAPTERS: Shrub adapters and pop-up sprays shall be Toro 570 series.
- J. TREE BUBBLERS: Tree Bubblers shall be Toro 500 series. Flood Bubblers Model #514-20.
- K. POP-UP ROTORS: Pop-up rotors shall be Hunter I-20 rotors.
- L. AUTOMATIC CONTROLLERS: Automatic controllers shall be Rainbird ESP-SAT pedestal mount. Installation per manufacturers specifications including proper cadwelded and not clamped grounding procedures.

## **PART 3 - EXECUTION**

**3.1 EXECUTION:**

- A. PIPING: Minimum depth of all irrigation piping shall be 18" from top of pipe. Piping installation shall include warning tape and tracer wire as described in Section 02600.
- B. Sprinkler heads, valve boxes, etc., shall be installed so as not to interfere with mowing operations.
- C. VALVE WIRING: Wires are to be bundled and taped together every 20 feet. Lay the wire beneath pipe.
- D. SLEEVING AT ROADS AND SIDEWALKS: All irrigation lines placed under roads and/or sidewalks shall be sleeved with Schedule 40 PVC pipe of a diameter sufficient to ensure ease of removal and replacement of the irrigation lines without disturbing the roads and/or sidewalks.

END OF SECTION