

328000 Irrigation

Sections Included In This Standard:

- 1.1 Design Requirements
- 2.1 Materials
- 3.1 Installation Requirements

PART 1 – GENERAL

1.1 DESIGN REQUIREMENTS

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 (reclaimed) water from the University's Water Reclamation Facility, if available. Consult with Facilities Services 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 Facilities Services for requirements and permission prior to proceeding with any of these options. In order to proceed with either of these options, approval must be in writing from Facilities Services. New wells must be reported to the St. Johns River Water Management District by the Facilities Services A/E Department and permitted if certain threshold criteria are exceeded. Refer to standard 332000 for Wells.
3. Domestic water is the least preferred option for irrigation. In the event of domestic water is used for irrigation it will require back flow prevention and a separate utility meter. In order to proceed with this option, approval must be in writing from Facilities Services

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 331000.

D. METERING REQUIREMENTS FOR SURFACE AND GROUNDWATER: Refer to section 330900.

PART 2 – PRODUCTS

2.1 MATERIALS

A. PIPING:

1. WELL WATER PIPING USED FOR IRRIGATION: Pipe shall be Schedule 40 PVC or class 200 PVC.
2. RECLAIM or REUSE WATER PIPING: Pipe shall be purple or have a **purple stripe** on top of the pipe. If PVC piping is used for the reclaim or 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.

- B. TRACER WIRE and WARNING TAPE: See 331000.
- 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-LS pedestal mount. Installation per manufacturers specifications including proper cadwelded and not clamped grounding procedures.
- M. VALVE BOXES: Valve boxes shall be cast iron. Surround with concrete pad, with chamfered edges. Pad shall be 18" x 18" x 8" with 6" x 6" #10 gage welded wire mesh. Lid should be marked "REUSE" or "RECLAIMED." Boxes and lid material shall be AASHTO H-16 rated.

PART 3 – EXECUTION

3.1 INSTALLATION REQUIREMENTS

- 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 Standard 331000.
 - a. Tracer wire and Warning tape shall be installed on all irrigation piping that meets the following criteria.
 - i. All piping that is located before a control valve. i.e. constantly pressurized. Regardless of pipe size.

ii. On all pipe that is over 4" diameter.

- 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