

# SECTION 02810-IRRIGATION

## PART 1 - GENERAL

### 1.1 RELATED SECTIONS:

Refer to Section 01600 for requirements regarding Preferred Manufactures.

Refer to Section 02200 for requirements regarding earthwork and the University Utility Locate process.

Refer to Section 02500 for requirements regarding pavement and surfacing including the repair of pavement disturbed by construction.

Refer to Section 02600 for identification requirements for underground utilities and piping.

Refer to Section 02900 regarding landscaping requirements including resodding/ reseeded requirements for areas disturbed by construction.

Refer to Section 15050 regarding requirements for backflow assemblies and basic mechanical requirements

### 1.2 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.

All irrigation must be designed by a licensed Landscape Architect or Professional Irrigation Designer. Design/Build systems are not allowed.

Irrigation installation to be performed by a NC licensed Irrigation Contractor

*(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.)*

### 1.3 GENERAL:

#### WATER SOURCE:

- A. Water service for irrigation systems shall be obtained from:
  - a. Separate metered service tap to Greenville Utilities Commission (GUC) water distribution system. Services shall have backflow prevention as required by GUC and Section 15050.
  - b. On site rain collection system such as a cistern

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## PART 2 - PRODUCTS

### 2.1 MATERIALS:

#### A. PIPING:

Pipe shall be SCH40 PVC type with 200 psi or greater. Solid PVC connection laterals or approved pre-manufactures swing joint shall be used to all irrigation heads.

#### B. VALVES:

Electric valves shall be Rain Bird® PE series, or equal. Valves shall be tagged with permanent appropriate zone number on corrosion resistant tags.

#### C. ZONE CONTROL WIRING:

Control wires shall be a minimum of 14 gauge copper single-conductor wire with vinyl insulation. Wiring connectors shall be waterproof connectors, equal to Rain Bird.

Wire color code: Provide control or "hot" wires with a separate color for each zone. Provide white for common or "ground" wires.

Provide a minimum of two spare wires color blue along Main Line pipe

#### D. VALVE BOXES:

In areas that may be subject to vehicle traffic, valve boxes are to be traffic-rated. In other areas, valve boxes shall be green PVC with locking lid. All lids shall be marked "Irrigation."

#### E. IRRIGATION HEAD FITTINGS:

Fittings at irrigation heads shall be flexible swing joints

#### F. IRRIGATION RISER PIPE:

Spray risers shall not be used.

#### TURF AND SHRUB POP-UP SPRAYS

Turf POP-UP sprays shall be 1806 SAM-PRS Rain Bird® bodies. Shrub POP-UP sprays shall be 1812 SAM-PRS Rain Bird® bodies. Nozzles shall be Rain Bird® MPR (matched precipitation rate) nozzles or Rain Bird® HE-VAN (high efficiency

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variable arc) nozzles.

G. POP-UP ROTORS:

Pop-up rotors shall be Rain Bird® 5006 SAM-PRS.

H. AUTOMATIC CONTROLLERS:

Automatic controllers shall be Rainbird ESP-LXMEF or ESP-LXD series compatible with Rain Bird® IQ central control system. Controller will be able to communicate with the University IQ network. Components needed will be based on the campus IQ communication site report. Install in a lockable water-proof, rust-proof wall-mounted cabinet. Provide internal transformer with 115 VAC input and 24 VAC, 30 VA output.

I. FLOW SENSORS and MASTER VALVE

Flow sensor and Master Valve shall be Rain Bird® or compatible with IQ central control system and installed per manufacturers specifications.

J. BACKFLOW PREVENTION DEVICES:

Backflow prevention at the meter per GUC Standards.

### PART 3 - EXECUTION

#### 3.1 EXECUTION:

A. PIPING:

Minimum depth of irrigation piping shall be 18" below grade. Piping installation shall include warning tape and tracer wire as described in Section 02600.

B. Sprinkler heads, valve boxes, etc., shall be installed at finished grade.

C. VALVE WIRING:

Wires are to be bundled and taped together every 10 feet. Lay the wire beneath pipe.

D. WIRE DIAGRAM:

Provide a written description keying each wire color to the appropriate zone and post it on the outside of the cabinet door. Also, provide a separate diagram for owner's records.

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E. WIRE SPLICING:

Where needed use water-proof splice kits as directed by irrigation manufacturer. Irrigation field splices need to be installed in a box and indicated on record drawings.

F. IRRIGATION RECORD DOCUMENTS:

Provide a minimum of three paper copies to University and one AutoCAD file (version 2013) to Facilities Services Grounds Department. Diagram shall show location and type of all control valves, irrigation heads, irrigation piping, sleeving, controllers, power source, water meter source, and all field splicing locations.

G. Provide approved earth fill or sand to a point 4" above the top of pipe.

H. Backfill shall be free from all foreign materials larger than 2" diameter.

I. Compaction of subgrade within 6" of surface shall be in 6" layers with 95% compaction.

END OF SECTION

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