

SECTION 32 84 00 - IRRIGATION SYSTEM

PART 1 GENERAL

1.01 DESCRIPTION

- A. The specified work includes the furnishing of all design services, drawings, approvals, materials, equipment, well and or city water connection and backflow preventer, well (s), underground power connection, meter and labor necessary for the providing an irrigation system for the lawn and shrub areas as shown on the drawings and as herein specified.
- B. Contractor shall connect irrigation system to City water source or well as directed by owner. When City water source is used, tap into water line, provide meter, and backflow preventer and hotbox. Backflow preventer to comply with Hampton codes and standards and shall include a 'Hot Box' temperature enclosure around backflow preventer.
- C. One year parts and service contract on irrigation system. Owner has option to renew service contract for additional years. Fee for service shall comply with set fee service contract.

1.02 RELATED WORK

- Section 32 13 13 Concrete Pool Deck
- Section 32 91 00 Plant Materials and Planting
- Section 32 91 13 Soil Preparation - Topsoil
- Section 32 93 23 Sodding

1.03 QUALITY ASSURANCE

- A. Meet or exceed standards and installation standards as set forth by the manufacturer and the prevailing trade industry.

1.04 SUBMITTALS

- A. Submit the following test reports to Landscape Architect:
 - 1. Design build irrigation plan
 - 2. Catalog pages indicating all irrigation fittings and equipment to be used.

1.05 PROJECT CONDITIONS

- A. The Contractor shall be notified in writing by the owner or his authorized representative when to commence work of planting and irrigation installation. Thereafter, planting operations and irrigation installation shall be conducted under favorable weather conditions which are normal for such work as determined by accepted practice in the locality of the project.
- B. The Contractor shall be familiar with the alignment of existing or new utility lines, ducts and buried cables. The Contractor shall field check the location of utilities

before any installation of material or plants. The Contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement. If discrepancies occur, consult landscape architect.

- C. Protect existing utilities, paving, and other facilities from damage caused by irrigation installation.
- D. All work shall be accomplished under the direction of a competent, experienced foreman.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All major components (Valves, Heads, and Controllers) shall be manufactured by a single manufacturer - 'Rainbird', 'Toro', or 'Hunter'. Ground cover and shrub bed heads shall be 12" high min. pop-up heads.
- B. Backflow preventor shall be by "Watts".
- C. Temperature control hot box around backflow preventor shall be lockable fiberglass enclosure by "Hot Box". HB-1 to HB-2 models with lock by Hot Box, (800) 736-0236.
- D. Pressure lines on irrigation systems shall be class 200 pvc pipe by "Lasco".
- E. Lateral lines on irrigation system shall be approved PVC or PE pipe as selected by installer.
- F. Irrigation controller shall be provided by contractor and shall be as manufactured by 'Toro', 'Rainbird' or 'Hunter' .
- G. Irrigation controller wire shall be individual stands of insulated wire. Multi strand bundled wire packages are not acceptable.

PART 3 EXECUTION

3.01 EXECUTION

- A. The irrigation contractor shall provide an irrigation package to include design and installation of the system to water the limits of the property and planting as shown on the planting plan.
 - 1. All lateral pipe to Class 200 PVC or approved poly pipe. All pressure main lines to be Class 200 PVC Pipe or thicker.
 - 2. Irrigation controller shown schematically and located at meter pedestal. Landscape Architect to field verify location.
 - 3. Irrigation Contractor shall adjust sprinkler head locations and spray patterns to work with landscaping and eliminate water hitting building walls and pavements.
 - 4. Irrigation contractor to make field adjustments for the actual site and adjust nozzle radius to provide 100% coverage.

5. In the event repairs are required in planting beds installed at the time of required repairs, the Irrigation Contractor shall top dress disturbed mulch beds with approved mulch. Any plant damage shall be paid for by Irrigation Contractor.
6. All electric solenoid valves to be provided with a 10 inch PVC valve box. There shall be no more than one (1) valve per valve box.
7. All main line piping to be located a minimum of 12 inches below finished grade to the top of pipe. All wiring to be placed below mainline. All lateral lines are to have 12 inches of cover. All mainline piping and wiring, when not run in same trench as mainline, will have a metallic marking tape placed in trench at a depth of 6 inches below finish grade.
8. Provide a method for winterizing the irrigation system. Method to be approved by Landscape Architect.
9. Piping, zoning and head layout designed and installed by Irrigation Contractor. Prior to construction, contractor shall submit shop drawings to Landscape Architect for approval. Pipes shall be laid out in a branch type pattern and shall not be laid out in an 'end fed' pattern.
10. Pressure line shall be laid out to reduce pressure loss and provide equal gallonage to all irrigation zones.
11. Head and/or drip irrigation spacing not to exceed maximum recommended spacing set by manufacturer. Triangular head spacing is preferred, provide minimum heads to provide 100 percent coverage.
12. Controller shall provide one station per irrigation zone and electric valve. Controller to be in waterproof enclosure and lockable. Electrical/mechanical series controller by 'Rainbird', 'Toro' or 'Hunter'.
13. Electric solenoid valves to be 252 series by 'Rainbird', 'Toro' or 'Hunter'
14. Limit of irrigation to be limits of irrigation as shown on the plans.
15. At the option of the contractor, pipes under paving can be bored or sleeved prior to paving and road construction if applicable. Sleeved pipes must be coordinated with the general contractor and will be the responsibility of the Irrigation Contractor. Provide sleeve when line is bored under paving.
16. All taps, permits and fees paid by Irrigation Contractor. Contractor to comply with all state and local codes.
17. All trenching for irrigation lines shall be placed at the dripline of existing trees with a minimum of 8'-0" away from all trunks.
18. All filling of trenches to be completed in a professional manner. All trench settlement to be repaired by the contractor.
19. Provide one year guarantee on parts and labor of irrigation system. This is to include all winterization and spring startups at no cost to the owner while under warranty.

20. Irrigation contractor shall submit irrigation plan to landscape architect for approval. Site plan shall show gallonage per zone, zones, head type, nozzle size, and location, pipe layout, pipe size, valve size, well or pump station location, electric solenoid valve and valve box location. No work shall proceed until landscape architect has approved the irrigation plan. Designate corresponding zone numbers on the controller and provide reduced copy of map inside controller door.
21. All electric solenoid valves to be enclosed in a P.V.C. value box with two (2) C.F. of pea gravel at bottom for drainage.
22. Proposed heads or drip irrigation to be installed in relationship to proposed and finished grades.
23. Contractor shall provide power connections to Irrigation Controller and backflow preventer.
24. All below grade wire splices to be enclosed in a P.V.C. splice kit by '3M' or equal. Splices are to occur in valve boxes only.
25. Contractor to winterize system for the first year with a one year guarantee on parts and labor of irrigation system at no cost to the owner while under warranty.
26. All nozzles to operate at manufacturers recommended pressure rate. Maximum variation of operating pressure in each zone to be 10% unless approved by Landscape Architect. Pipe size and pipe layout to account for this.
27. All P.V.C. pipe to be solvent-glue connected.
28. Locate new valves and piping as not to conflict with proposed trees and large shrubs as shown on the planting plan.
29. Use 14 gauge individual 'single' strand wire or larger for each electric solenoid valves. Use of multi-strand irrigation control wire is prohibited.
30. Provide 3,500 psi concrete footing under 'Hot Box' backflow preventer enclosure.

3.02 INSPECTION FOR ACCEPTANCE

- A. Inspection of the irrigation system to determine completion of contract work, exclusive of the possible minor adjustments, will be made by the owner or his authorized representative upon written notice requesting such inspection submitted by the Contractor at least ten (10) days prior to the anticipated date.
- B. Acceptance. After inspection, the Contractor will be notified in writing by the owner or his authorized representative of acceptance of all work, exclusive of the possible replacement of plants subject to guarantee or, if there are any deficiencies, of the requirements for completion of the work. Work remaining to be done shall be subject to reinspection before acceptance. The owner will, after acceptance, accept the responsibility for maintenance as prescribed in the contractor's schedule, as outlined above. Final payment to be held until an "As Built" drawing is delivered and accepted by the owner.

3.3 CLEAN UP

- A. Clean Up of Site. At the end of each day's work, the Contractor shall remove all trash and other debris resulting from his planting operations. Also, the Contractor shall police the entire site and remove all forms of existing rubbish, including wire, cans, and piles of dead grass, all of which shall be removed from the site.

END OF SECTION