

SECTION 32 8423 - UNDERGROUND IRRIGATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
1. Furnish and install planting irrigation system as described in Contract Documents complete with accessories/fittings necessary for proper installation and function.

1.2 SUBMITTALS

- A. Product Data: Some irrigation materials specified are manufacturer specific however each bidding contractor may request substitutes for any parts of the irrigation system. This submittal shall be made during the bid process as per specs. All materials different than what is specified shall be approved in writing prior to bid submission. If submittals are not provided and approved per specs, the contractor shall use the specified manufactures for all irrigation components.
1. Manufacturer's cut sheets for each element of system.
  2. Parts lists for operating elements of system.
  3. Manufacturer's printed literature on operation and maintenance of operating elements of system.
  4. Cut sheets shall be submitted electronically via email in PDF format.
- B. Quality Assurance / Control:
1. Results of static pressure test at existing point of connection before beginning work on system. Static pressure at point of connection shall be at least 90 psi. If static pressure is not at least 90 psi, some re-design may be necessary. Consult with the Landscape Architect after the pressure test has been completed to determine any changes. If Landscape Architect is not consulted in writing before installation begins, the contractor assumes all liability and cost associated with installing a system (and re-design costs if necessary) that will work properly and provide adequate coverage of all lawn and landscape areas.
  2. The irrigation contractor shall verify that there is sufficient flow (220 gpm) and 90 psi where the new mainline joins the existing mainline. This information shall be given to In-Site Design Group in writing prior to any work beginning on the system. If this is not done, then the landscape contractor assumes all liability and associated costs in getting the system to function as designed.
- C. Closeout:
1. Record Drawings:
    - a. As installation occurs, contractor shall prepare accurate CAD record drawings which will be given to the Landscape Architect at the substantial completion meeting. The Landscape Architect will review the record drawing and give it to the Owner. The following needs to be included on the CAD record drawing produced by the contractor:
      - 1) Detail and dimension changes made during construction.
      - 2) Significant details and dimensions not shown in original Contract Documents.
      - 3) Field dimensioned locations of valve boxes, manual drains, quick-coupler valves, isolation valves, control wire runs not in mainline ditch, and both ends of sleeves.

- 4) Take dimensions from permanent constructed surfaces or edges located at or above finish grade.
  - 5) Take and record dimensions at time of installation.
  - 6) In addition to the CAD record drawing, all valves, heads, both ends of sleeves, all boxes, wire conduit path, drains, etc. shall have a recorded GPS point. An electronic copy and hard copy of this GPS information shall be given to the Owner at the substantial completion meeting. Consult the Owner for the exact format/file type for the electronic version. In-Site Design Group cannot provide this service so if the contractor does not have the ability to do this themselves, they will need to hire a surveyor to perform this task.
- b. If the landscape contractor installing the irrigation system does not have CAD capabilities, they may contact In-Site Design Group at 801-756-5043 for a bid to convert their redlined as-built into a CAD record drawing. The contractor may also solicit bids for this service from other Landscape Architects or CAD drafters. The landscape contractor is responsible for paying the fee for this service as part of their base landscape/irrigation bid.
  - c. The Contractor shall reduce copy of the record drawings to half-size, color all circuits, and laminate both sides with 5 mil thick or heavier plastic and give to Owner at project close-out.
2. Operations And Maintenance Manual Data:
    - a. Provide the following:
      - 1) Instruction manual that contains complete instructions for system operation and maintenance, including spring start-up and winterizing.
      - 2) Complete instructions on how to drain entire system including all aspects of the new/modified system to prevent freezing.
      - 3) At Owners request Contractor shall provide complete watering schedule for grow-in and long term watering. This shall be part of the base bid.

### 1.3 QUALITY ASSURANCE

- A. Qualifications:
  1. Use only trained personnel familiar with required irrigation system installation procedures.
  2. Perform installation under direction of foreman or supervisor with five years minimum experience in sprinkling system installations.
- B. Regulatory Requirements: Work and materials shall be in accordance with latest rules and regulations, and other applicable state or local laws. Nothing in Contract Documents is to be construed to permit work not conforming to these codes. Contractor shall apply for all permits and pay for the same. Please check all necessary building codes and other local codes and ordinances for proper installation of all project components including electrical work for controller(s). Provide documentation from governing authority as required by Architect.
- C. Pre-Installation Conference: Schedule pre-installation conference before irrigation system installation begins. Demonstrate or describe method to be used to maintain head spacing from concrete walks, curbs etc. and to stabilize heads.
- D. Weekly (or as deemed necessary by Landscape Architect) job site inspections and/or coordination meetings will be held throughout the construction process. Contractor is required to attend all site construction meetings with Owner and Architect.
- E. Do not cut or trench through any roots 1-1/2" and larger. Hand excavate within the dripline of all existing trees and other plants noted to remain.
- F. Insert a dielectric union wherever a copper-based metal (copper, brass, bronze) and an iron-based metal (iron, galvanized steel, stainless steel) are joined together.

- G. Contractor shall perform pressure test at irrigation point of connection prior to installation of irrigation system. If static pressure is higher or lower than 90 psi for the system, then Landscape Architect shall be notified immediately to determine if some redesign of the system is necessary.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. During delivery, installation, and storage protect materials from damage and prolonged exposure to sunlight.

#### 1.5 SEQUENCING

- A. Install sleeves before installation of cast-in-place concrete site elements, paving, walls, etc.

#### 1.6 WARRANTY

- A. Standard one year guarantee shall include:
  - 1. Filling and repairing depressions and replacing sod due to settlement of irrigation system trenches.
  - 2. Repair and replace any damaged and/or malfunctioning part of the irrigation system.
  - 3. Ensuring system can be adequately drained and winterized including freezing backflow preventor, valves, flow meter, etc.
  - 4. Provide winterization and spring start-up of entire system during the first year of operation.

#### 1.7 OWNER'S INSTRUCTIONS

- A. After system is installed and approved, instruct Owner's designated personnel in complete operation and maintenance procedures.

#### 1.8 MAINTENANCE

- A. Extra Materials:
  - 1. Furnish the following items before Final Closeout Review:
    - a. One heavy-duty keys for isolation valves.
    - b. One heavy-duty keys for manual drains.
    - c. One quick coupler keys with brass hose swivel.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Rock-Free Soil:
  - 1. Backfill soil around PVC pipe.
  - 2. Soil shall have rocks no larger than 1/2 inch in any dimension.
  - 3. Can be on-site or imported material.

- B. Pea Gravel:
  - 1. For use around drains, valves, quick couplers, and rotor heads.
  - 2. 1/2 inch maximum dimension, washed rock.
- C. Sand: Fine granular material naturally produced by rock disintegration and free from organic material, mica, loam, clay, and other deleterious substances.
- D. Native Material: Soil native to project site free of wood and other deleterious materials and rocks over 1/2 inches.
- E. Topsoil: Imported topsoil material meeting the specified requirements. Remove rocks, roots, sticks, clods, debris, and other foreign matter over 1/2 inches longest dimension encountered during trenching and prior to installing topsoil.

## 2.2 COMPONENTS

- A. Pipe, Pipe Fittings, And Connections:
- B. Provide piping materials and factory-fabricated piping products of sizes, types, pressure ratings, and capacities indicated. Where not indicated, provide proper selection as determined by Installer to comply with installation requirements. Provide sizes and types matching piping and equipment connections; provide fittings of materials which match pipe materials used in potable water systems. Where more than one type of materials or products are indicated, selection is Installer's option.
- C. Piping: Provide pipe fittings and accessories of same material and weight/class as pipes, with joining method as indicated.
- D. Ductile Fittings:
  - 1. Provide all labor, material, and related items for Leemco fittings and joint restraint connections for irrigation system for mainline fittings 3" and larger.
    - a. All ductile iron fittings and joint restraints shall have a fusion bonded epoxy coating on interior and exterior of the product surface, average of 10-12mm thickness. Epoxy coating shall conform to the requirements of CSA Z245.20-20 and NSF 61 for water services. Tar/bitumen coating will not be approved.
    - b. All ductile iron fittings, joint restraints, lateral isolation valves and mainline isolation gate valves shall carry a 10-Year warranty on products and replacement labor costs. Prior to install, Manufacture shall provide documentation stating the above warranty information. Contractor shall be responsible to facilitate this warranty for the Owner.
    - c. All ductile iron pipe fittings, joint restraints, lateral isolation valves and mainline isolation gate valves shall be of the same manufacture.
    - d. All rubber gaskets and O-rings shall be constructed of EPDM high grade rubber. SB rubber gaskets and O-rings will not be approved.
    - e. All ductile iron joint restraints shall have blunt cast serrations. Machine threaded joint restraints will not be approved.
    - f. Install Leemco fittings with LH Series pipe to fitting joint restraint per manufacturers specs. See details for more information.
    - g. Mechanical fittings and joint restraints shall be as specified.
- E. Pipe, Pipe Fittings and Connections:
  - 1. Pipe shall be continuously and permanently marked with Manufacturer's name, size, schedule, type, and working pressure.
  - 2. Pipe sizes shown on Drawings are minimum. Larger sizes may be substituted if at no additional cost to Owner.

3. Pipe:
    - a. Pressure Lines: 3" and 4" ductile iron pipe at point of connection, Class 200 gasketed O-ring pipe for 4" piping, Sch. 40 Mainline per plans for all piping 3" and smaller.
    - b. Lateral Lines: Schedule 40 PVC.
    - c. Quick Coupler Piping: Galvanized steel for blow-out areas or sch. 80 PVC per plans and details.
  4. Fittings: Install Leemco fittings and joint restraints for mainline 3" and larger. Mainline fittings smaller than 3", if any, shall be Schedule 80 fittings except where detailed otherwise.
  5. Use a dielectric union wherever a copper-based metal (copper, brass, bronze) is joined to an iron-based metal (iron, galvanized steel, stainless steel).
  6. Sleeves for mainline and lateral lines:
    - a. Under Sidewalk: Schedule 40 PVC Pipe for sizes up to 3" and then Class 200 for all sleeving greater than 3".
    - b. All Other: Class 200 PVC Pipe.
    - c. Sleeve diameter shall be two times larger than pipe installed in sleeve.
  7. Sleeves for control wiring:
    - a. Schedule 40 PVC grey electrical conduit shall be used for all sleeving of control wires under hardscape surfaces as well as between all valve boxes.
    - b. Sleeve diameter shall be two times larger than wire bundle installed in sleeve.
- F. Automatic Irrigation Control Wiring and Controller:
1. Control wire shall be 14 gauge UF-UL listed insulated wire. New wire shall be installed in Sch. 40 grey electrical conduit between all valve boxes.
  2. Waterproof Wire Connectors:
    - a. Type Two Acceptable Products:
      - 1) Wire connectors as approved/recommended by CalSense only.
  3. Automatic controllers:
    - a. The existing controller shall remain in place.
    - b. Connect new flow meter and master valve to existing controller.
- G. Valves:
1. Manual Drain Valves: Bronze or Brass ball valve (Ford Curb Stop Valve) on main lines at isolation valve locations.
  2. Automatic Valves:
    - a. Category Approved Products.
      - 1) Rainbird: BPEB (size per plans).
      - 2) Equal as approved by Landscape Architect before bid submission.
  3. Isolation/shut off valves:
    - a. Category Approved Products:
      - 1) 3" and 4" Leemco mainline isolation valves.
      - 2) Equal as approved by Landscape Architect before bidding.
  4. Pressure Reducer: Not required for this project unless pressure exceeds 100 psi.
  5. Quick Coupling Valves and Keys:
    - a. Category Approved Products.
      - 1) Rainbird: 44LRC per plans and details with SH-1 Swivel, (2) 44K Valve Keys and (2) 2049 Cover Keys.
      - 2) Equal as approved by Landscape Architect before bidding.
- H. Valve Accessories:
1. Plastic Valve Boxes And Extensions:
    - a. Acceptable Products:
      - 1) Rainbird.
      - 2) Carson-Brookes.
      - 3) Plymouth Products, Div Ametek.

- 4) Equal as approved by Architect before bidding.
2. Valve ID tags:
  - a. Acceptable Products:
    - 1) Christy. Tags must be pre-printed. Consult with Landscape Architect for more information prior to ordering tags.
    - 2) Equal as approved by Landscape Architect before bidding.
3. Valve Box Supports: Standard size fired clay paving bricks without holes. If Rainbird valve boxes are used, clay bricks are not required.

I. Thrust Blocks (only required at RPZ per details).

1. Thrust blocks for fittings on mainline pipe 3" and larger diameter.
2. Use 3,000 PSI concrete.
3. Use 2 mil plastic.
4. Use no. 4 Rebar wrapped or painted with asphalt tar based mastic coating.
5. Thrust blocks must be installed on native undisturbed soil.

J. Joint Restraint Harness (Required for 3" and larger mainline piping):

1. Use a Leemco joint restraint harness wherever joints are not positively restrained by flanged fittings or threaded fittings.
2. Use a joint restraint harness with transition fittings between metal and PVC pipe, where weak trench banks do not allow the use of thrust blocks or where extra support is required to retain a fitting or joint (such as near a sleeve).
3. Use bolts, nuts, retaining clamps, all-thread, or other joint restraint harness materials which are zinc plated or galvanized.
4. Use on mainline pipe 3 inch and greater or any diameter rubber gasketed pipe. Install Leemco fittings with LH Series pipe to fitting joint restraint per manufacturers specs.

K. Other Components:

1. Provide all other components necessary to complete irrigation system and make it operational.

## 2.3 MANUFACTURERS

A. Contact Information:

1. Carson Industries LLC, Glendora, CA [www.carsonind.com](http://www.carsonind.com).
2. Hunter Industries, San Marcos, CA [www.hunterindustries.com](http://www.hunterindustries.com).
3. King Safety Products, St Charles, MO [www.kingsafety.com](http://www.kingsafety.com).
4. Nibco Inc, Elkhart, IN [www.nibco.com](http://www.nibco.com).
5. Orbit Irrigation Products, Bountiful, UT [www.orbitonline.com](http://www.orbitonline.com).
6. Plymouth Products, Div Ametek, Sheboygan, MI [www.plymouthwater.com](http://www.plymouthwater.com).
7. Rain Bird Sprinkler Manufacturing Corp, Glendora, CA [www.rainbird.com](http://www.rainbird.com).
8. 3M, Austin, TX [www.3m.com/elpd](http://www.3m.com/elpd).
9. Watertronics, Omaha, Nebraska [www.watertronics.com](http://www.watertronics.com)
10. Equal as approved by Landscape Architect before bidding.

## PART 3 - EXECUTION

### 3.1 INSTALLERS

- A. To be pre-approved by the Owner before bidding.

### 3.2 EXAMINATION

- A. Site Verification of Conditions: Perform pressure test at point of connection. Notify Landscape Architect of existing pressure and flow to determine if some re-design of system is necessary before beginning work on system.
- B. Contractor shall field verify all existing and proposed utilities, trees, plants, buildings, structures, roads, curb and gutter, sidewalks, irrigation system, utilities, easements, setbacks, Right-of-ways, etc. to make sure no conflicts exist between existing conditions and proposed plans. Contractor shall be responsible to make on-site field adjustments as may be required due to discrepancies found during construction. Contractor and Owner agrees to hold In-Site Design Group harmless for any and all such discrepancies including costs associated with such discrepancies including repair, replacement or anything related to such discrepancies.

### 3.3 PREPARATION

- A. Protection:
  - 1. Repair or replace work of this Section damaged during course of the Work at no additional cost to Owner. If damaged work is new, installer of original work shall perform repair or replacement.
  - 2. Do not cut existing tree roots measuring over 1-1/2 inches in diameter in order to install irrigation lines. Route main around existing trees and other obstacles such as fire hydrants, light poles, etc. as necessary. Hand dig all trenches within the dripline of any existing trees to minimize harming the tree.
  - 3. All utilities shall be blue staked before digging. Any damage to utilities shall be repaired at expense of the contractor with no additional cost to the owner.\
- B. Layout of Irrigation Heads:
  - 1. Location of heads and piping shown on Drawings is approximate. Actual placement may vary slightly as is required to achieve full, even coverage without spraying onto buildings, sidewalks, fences, etc. Contractor shall install additional pipe as necessary for complete and proper installation of system.
  - 2. During layout, consult with Landscape Architect to verify proper placement and make recommendations, where revisions are advisable.
  - 3. Minor adjustments in system layout will be permitted to avoid existing fixed obstructions.
  - 4. Make certain changes from Contract Documents are shown on record drawings.

### 3.4 INSTALLATION

- A. Trenching And Backfilling:
  - 1. Pulling of pipe is not permitted.
  - 2. Excavate trenches to specified depth. Remove rocks larger than 1-1/2 inch in any direction from bottom of trench. Separate out rocks larger than 1-1/2 inch in any direction uncovered in trenching operation from excavated material and remove from areas to receive landscaping and then remove from site at no additional cost to the Owner. All extra excavated material from irrigation installation shall be hauled off-site at no additional cost to the Owner.
  - 3. Cover main line pipe with 2" of sand on top, bottom and sides of pipe as noted in Contract Documents. If excavated soil is acceptable to Landscape Architect, the sand will not need to be installed and a credit shall be issued to the Owner. Contractor shall bid a separate line item for sand bedding all irrigation mainline piping with initial bid submission. If this is not done, sand will be required regardless of the soil type on-site. Remainder of backfill to within 4 or 12 inches in lawn areas shall be rock-free soil as

specified under PART 2 PRODUCTS. Top 4 to 12 inches of backfill in lawn areas shall be imported topsoil as specified in Section 329113.

4. Do not cover pressure main, irrigation pipe, or fittings until Landscape Architect or Owner has inspected and approved system.
5. Hand trenching is required for all areas within the dripline of any existing tree. Do not cut any root 1-1/2" or greater.

B. Sleeving:

1. Sleeve water lines and control wires under walks and paving. Extend sleeves 18 inches minimum beyond walk or pavement edge. Cover sleeve ends until pipes and wires are installed to keep sleeve clean and free of dirt and debris.
2. Position sleeves with respect to buildings and other obstructions so pipe can be easily removed.
3. Patch and repair asphalt and concrete damaged (if any) during sleeving installation including excavation, backfill, compaction, road base or gravel, concrete, asphalt, cutting and/or boring, etc. These costs shall be part of the base bid.

C. Grades And Draining:

1. Winterization is required for this project. The irrigation system has been designed to be blown out with an air compressor; however, manual drains shall be installed at mainline isolation/gate valve locations and other areas as directed by the Owner. Perform the following:
  - a. Slope pipe to drain to isolation valve locations.
  - b. At these locations install manual drain per detail and the following:
    - 1) 1" bronze or brass ball valve (Ford Curb Stop) for manual drain. Do not use automatic drain valves.
    - 2) Install 2 inch Class 200 PVC pipe over top of drain and cut at finish grade.
    - 3) Provide rubber valve cap marker.
    - 4) Provide two cubic foot pea gravel sump at outlet of each drain.
  - c. Slope pipes under parking areas or driveways to drain outside these areas.
  - d. Provide and install quick-coupling valves per plan for easy blowout of entire system.

D. Installation of Pipe:

1. Install pipe in manner to provide for expansion and contraction as recommended by Manufacturer.
2. Shield pipe from direct sunlight so that expansion and contraction do not affect the integrity of glued fittings. Temperature swings from daytime to night time can cause pipe to completely pull out of glued fittings. Consult with the manufacturer for proper shielding of PVC pipe before installation and provide the Owner with the proposed method for shielding the piping.
3. Ensure that mainline doesn't conflict with proposed utilities, fire hydrants, light poles, underground sumps or storm drain and downspout piping or other utilities. Refer to civil and electrical plans for locations of these utilities. Re-route mainline and lateral lines as necessary to avoid these and all other utilities as may be required or requested by Owner, Architect, Civil Engineer, Electrical Engineer or Landscape Architect.
4. Unless otherwise indicated on Drawings, install main lines with minimum of 24" of cover based on finished grade.
5. Trench bottoms shall be flat and not have a lot of ups and downs where water could get trapped in low spots. The contractor shall ensure trenches are uniform, have uniform slopes and have the high and low spots removed prior to laying pipe in trenches.
6. Install pipe and wires under driveways or parking areas in specified sleeves 24" below finish grade or as shown on Drawings.
7. Insert a dielectric union wherever a copper-based metal (copper, brass, bronze) and an iron-based metal (iron, galvanized steel, stainless steel) are join
8. Cut plastic pipe square. Remove burrs at cut ends before installation so unobstructed flow will result.



9. Make solvent weld joints as follows:
    - a. Do not make solvent weld joints if ambient temperature is below 45 deg F.
    - b. Clean mating pipe and fitting with clean, dry cloth and apply one coat of P-70 primer to each.
    - c. Apply uniform coat of 711 solvent to outside of pipe.
    - d. Apply solvent to fitting in similar manner.
    - e. Give pipe or fitting a quarter turn to insure even distribution of solvent and make sure pipe is inserted to full depth of fitting socket.
    - f. Allow joints to set at least 24 hours before applying pressure to PVC pipe.
  10. Tape threaded connections with teflon tape.
- E. Thrust Blocks and Pipe Supports: Portland cement design mix, 3000 psi minimum, with 0.58 maximum water-cementitious materials ratio.
1. Install thrust blocks per details.
  2. Use a form to provide the appropriate amount and shape of concrete for the thrust block. Do not cover the fitting with concrete. The entire fitting must be serviceable when the thrust block is installed.
- F. Joint Restraint Harness:
1. Install joint restraint harness in the manner recommended by the manufacturer, in accordance with the drawings these specifications and in accordance with accepted industry practices. Install joint restraints for all mainline pipe fittings 3" and larger.
- G. Control Valves And Controller
1. Install valves in plastic boxes with reinforced heavy duty plastic covers. Locate valve boxes within 12 inches of sidewalks and shrub bed edges with tops at finish grade. Do not install more than two valves in single box.
  2. Valve boxes placed in planter areas shall be brown or tan in color. Valve boxes placed in lawn areas shall be green in color. Valve boxes shall be capable of being bolted closed after installation. Round valve boxes are not allowed on the project even if shown in the details. Use standard or jumbo boxes.
  3. Place 3 inches minimum of pea gravel below bricks supporting valve boxes to drain box. Set valve boxes over valve so all parts of valve can be reached for service. Set cover of valve box even with finish grade. Valve box cavity shall be reasonably free from dirt and debris.
  4. Arrange valve stations to operate in an easy-to-view progressive sequence around project site. Tag valves with waterproof labels showing final sequence station assignments.
  5. Wiring:
    - a. Enclose all wiring in Sch. 40 grey PVC electrical conduit per specs.
    - b. Use waterproof wire connectors at splices and locate all splices within valve boxes.
    - c. Use wire as noted on contract documents or an approved equal.
  6. Connect new master valve and flow meter to the existing controller (field verify exact location).

### 3.5 PIPE JOINT CONSTRUCTION

- A. Basic pipe joint construction is specified in Division 33 Section "Common Work Results for Utilities." Where specific joint construction is not indicated, follow piping manufacturer's written instructions.
- B. Join pressure piping according to the following:
1. Join ductile-iron pressure piping according to AWWA C660 or AWWA M41 for push-on joints.

2. Join ductile-iron special fittings according to AWWA C660 or AWWA M41 for push-on joints.
  3. Join PVC pressure piping according to AWWA M23 for gasketed joints.
  4. Join PVC water-service piping according to ASTM D 2855 for solvent-cemented joints.
- C. Join dissimilar pipe materials with pressure-type couplings.

### 3.6 FIELD QUALITY CONTROL

- A. Site Tests: Before backfilling main line, conduct piping tests before joints are covered, and after thrust blocks have sufficiently hardened (or mechanical joint restraints are in place). Fill pipeline with water 24-hrs prior to testing, and apply hydrostatic test pressure to stabilize system. Test pressure at 150 psi minimum for 2 hours minimum and make certain there are no leaks. Notify Landscape Architect 3 working days minimum before conducting test.
- B. Operational Test:
1. Activate master valve from controller using both the remote control device and the controller. The Construction Project Representative will visually observe operation and leakage.
  2. Replace defective remote control valve, solenoid, wiring, or appurtenances to correct operational deficiencies.
  3. Replace defective pipe, fitting, joint, valve or appurtenance to correct leakage problems. Cement or caulking to seal leaks is prohibited.
  4. Repeat tests, replace components, and correct deficiencies at no additional cost to the Owner.

### 3.7 CLEANING

- A. Upon completion of work, remove from the site all machinery, tools, excess materials, excess excavated soils, rock and other debris and rubbish at no additional cost to the Owner. In addition, contractor shall sweep, clean, power wash, etc. all areas of construction as may be required to leave the site clean.

### 3.8 FINAL INSPECTION

- A. At the end of the 1 year guarantee period, the Contractor shall call for a final inspection of the sprinkler irrigation system. There shall be five (5) days notice given, in writing, to the Owner, prior so that the appropriate people may attend.
- B. Prior to that time, the system will have been checked for operation, and any defects corrected. A final list of items found in need of correction (if any), will be made and the Contractor shall correct them. Upon acceptance of the system, the Owner shall assume all responsibility for the system.

END OF SECTION 32 8423