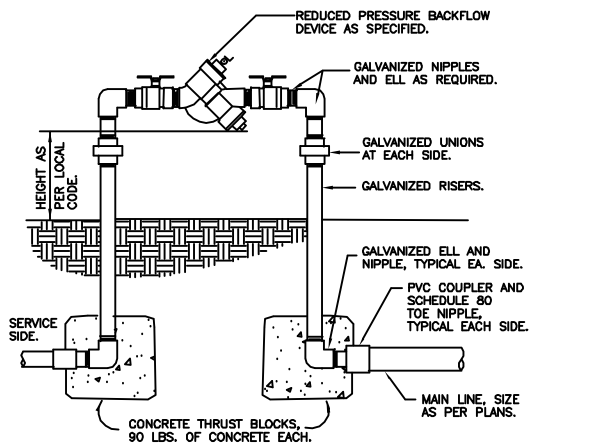
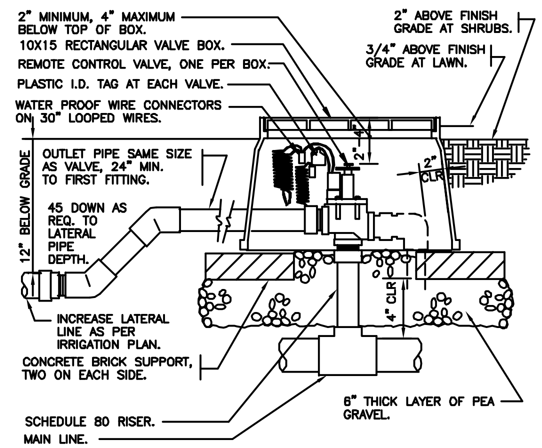
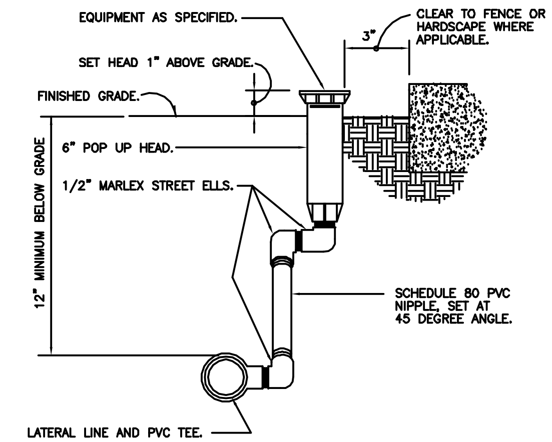


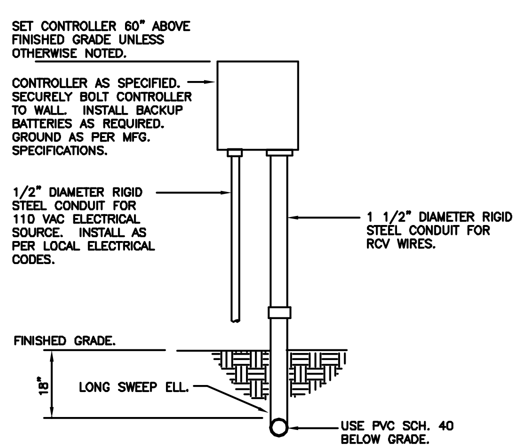
1 REDUCED PRESSURE BACKFLOW DEVICE
1" = 1'-0" 328409.43-01



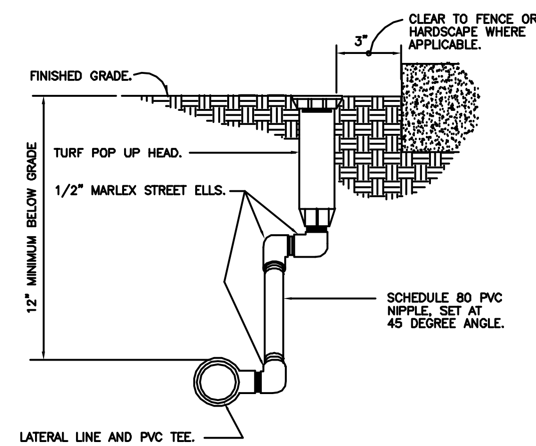
4 ELECTRIC REMOTE CONTROL VALVE
1 1/2" = 1'-0" 328406.13-01



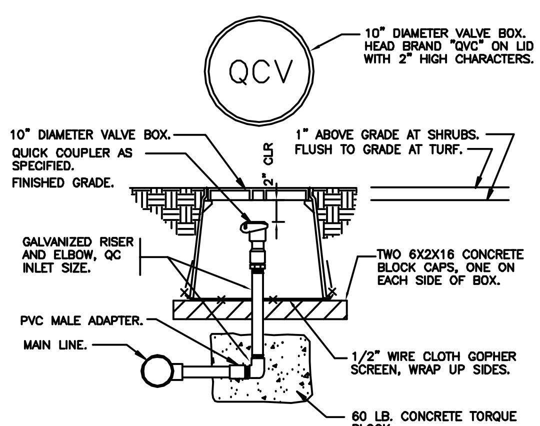
7 SHRUB SPRAY 6" POPUP W/MARLEX
3" = 1'-0" 328403.26-10



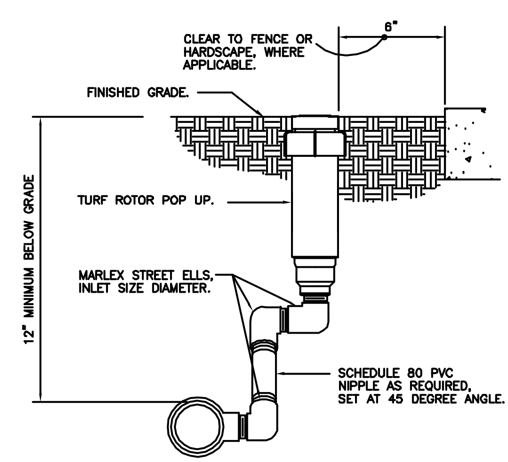
2 WALL MOUNT CONTROLLER
1" = 1'-0" 328409.13-01



5 TURF SPRAY MARLEX ASSEMBLY
3" = 1'-0" 328403.13-01



3 QUICK COUPLER VALVE IN BOX
1 1/2" = 1'-0" 328406.43-04



6 TURN ROTOR MARLEX ASSEMBLY
3" = 1'-0" 328403.16-01

SECTION 02810
1.0 GENERAL
1.1 DESCRIPTION OF WORK:
A. Furnish all labor, materials, equipment, and services necessary for the complete installation of a landscape irrigation system to provide 100 % coverage of the landscape areas identified on the plans as specified. The work includes but is not limited to:
1. Trenching, backfill and compaction for irrigation lines.
2. Automatically controlled irrigation system: Backflow prevention; water tap; water meter; pressure regulator; drain valves and isolation gate valves; piping and sleeves under paving and sidewalks, repair of paving, main and later lines; electrical valves and wiring, valve boxes and controllers; sprinklers, couplings, connectors and fittings.
3. Test all systems and make operative.
4. Submit record drawings.
5. One-year guarantee period.

1.2 QUALITY CONTROL:
A. Installer Qualifications: Firms experienced in the successful installation of a minimum of five projects within the past five years similar in scope, quality, and contract value to that indicated for this project. Firm shall have sufficient manpower, equipment and financial resources to complete the Work of the Section.
B. The Owner and the Landscape Architect reserve the right to reject any and all materials and workmanship which they deem to be not in accordance with the specifications. Rejected materials and work shall be removed from the site immediately and replaced with that of the specified quality.
C. Applicable Standards:
ASTM
D2241-Poly (Vinyl Chloride) (PVC) Plastic Pipe, SDR/PR, Class 200 and 160.
D1785- Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40.
D2464- Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded, Schedule 40.
D2466- Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 40
D2564-Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.

D. Applicable Codes:
1. Most current edition of Uniform Plumbing Code.
2. Applicable Building Code.
3. All applicable local codes and ordinances.
4. National Electric Code.
5. Should specification's requirements differ from local requirements, consider Contract Documents requirements to be minimum acceptable and comply with any more stringent local requirements.
E. Permits and Fees:
1. Obtain all permits and pay required fees to any agency having jurisdiction over the work.
2. Arrange inspections required by local ordinances during the course of the construction.
3. Upon completion of the work, furnish satisfactory evidence to show that all work has been installed in accordance with the ordinances and code requirements.
F. Testing:
1. Perform testing and inspections required by specifications and by regulating authorities.
2. Give 24 hours notice that such tests are to be conducted.

1.3 SUBMITTALS:
`A. Product Data: Include pressure rating, rated capacity, settings, and electrical data of selected models for the following:
1. Valves. Include above ground and below ground; general duty, manual and automatic control, and quick-coupler types.
2. Valve boxes.
3. Sprinklers.
4. Specialties. Include emitters, drip tube, and other devices.
5. Controllers. Include wiring diagrams.
B. Record Drawings:
1. Prepare and submit a reproducible Record Drawing showing the complete layout of the main line pipe, controller location, valve locations, and all sprinkler head locations. Record Drawings shall also include and show all materials, and manufacturer's name and catalog number.

1.4 SITE INSPECTION:
A. Become familiar with all site conditions.
B. Locate all existing utilities prior to start of construction.
C. Make necessary adjustments in the layout as may be required, 1) to connect to existing stubouts (should such stubs not be located exactly as shown) or 2) to work around existing work. Such adjustments shall be made with no increase in cost to owner.

1.5 PROTECTION OF EXISTING CONDITIONS:
A. Take necessary precautions to protect site conditions to remain.
B. Should damage be incurred, repair the work to its original condition at no additional cost to the Owner.

2.0 PRODUCTS
2.1 PIPE AND FITTINGS:
A. Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes will be permitted, but substitutions of larger size may be approved. All pipe damaged or rejected because of defects shall be removed from the site at the time of said rejection.
B. All piping 3 inch and larger will be equipped with gaskets.
C. All fittings for pipes 3 inches or larger will be equipped with gaskets.
D. All piping downstream of electric valves, sizes 3 inches and smaller shall be rigid, unplasticized PVC 200 PSI working pressure extruded from virgin parent material of the type specified on the drawings. The pipe shall be homogenous throughout and free from cracks, holes, foreign materials, blisters, wrinkles, and permanently marked with the manufacturer's name, material size, and schedule type. Pipe must bear the NFS seal.
E. All mainline piping and underground piping under continuous pressure shall be rigid unplasticized PVC-Class 200 PSI working pressure extruded from virgin parent material of the type specified on the drawings. The pipe shall be homogenous throughout and free from visible cracks, holes, and foreign materials, blisters, wrinkles, and dents.
F. All plastic fittings to be installed shall be molded fittings manufactured of the same material as the pipe and shall be suitable for solvent weld, slip joint ring tight seal, or screwed connections. NO fitting made of other material shall be used except as hereinafter specified.
G. Slip fitting socket tapers shall be so sized that a dry unsoftened pipe end conforming to these special provisions can be inserted no more than halfway into the socket. Plastic saddle flange fittings will not be permitted. Only schedule 80 pipe may be threaded.

2.2 SLEEVES:
A. All sleeves shall be schedule 40 PVC or stronger. All sleeves are required at every crossing indicated on drawings. (Size Noted)
B. All sleeves shall be installed under proposed pavement areas prior to subgrade and base construction.
C. Sleeves shall have a minimum horizontal separation of 18 inches and a maximum of 24 inch clearance below bottom of curb.
D. The location of all sleeves shown on the plans is schematic. The contractor shall make any adjustments necessary to accommodate existing vegetation, utilities, or other existing conditions.
E. If the road crossings are designated as being bore locations the bore must be ample size to accommodate the size sleeve specified.

2.3 CONTROL SYSTEM:
A. The automatic controllers shall be made by the same manufacturers as the valves.
B. Install Rain Check or Mini-Click type shut off device to override the control timer in the event of rain.
C. 120-volt power shall be supplied by General Contractor as part of the electrical panel installation.

2.4 CONTROL WIRE:
A. Control wire shall be type UF, UL approved for direct burial and shall be gauge 14 or larger for the control wire and gauge 14 or larger for common wire.
B. Joining of underground wires shall be made with watertight connectors in valve boxes. No splicing between boxes is acceptable.
C. All wire connections in valve boxes.

2.5 IRRIGATION VALVES:
A. Zone Control Valves
1. Globe-type diaphragm valves of normally closed design, with PVC bodies and covers. Operation accomplished by means of an integrally mounted heavy-duty 24 volt AC solenoid complying with Nation Electric Code, Class II Circuit, Solenoids shall be completely waterproof, suitable for direct underground burial. Provide a flow stem adjustment in each valve.

2.6 VALVE BOXES:
A. All valve boxes shall be installed in thermoplastic valve access boxes of the size required to permit access to the valve. Valve boxes shall include black thermoplastic locking covers.
B. All valve boxes shall be installed on at least a 2 cubic foot gravel base to provide foundation and drainage.
C. All valve box elevations shall be ½ inch below finished grade.

2.7 SURGE PROTECTION:
A. Contractor to provide electrical surge protection for the system controller.

2.8 BACKFLOW PREVENTION: As determined by Municipality/Local regulations.
2.9 PRESSURE REGULATOR: As determined by Contractor.

3.0 EXECUTION
3.1 EXCAVATION AND BACKFILL
A. Trenches for pipe sprinkler lines shall be excavated to sufficient depth and width to permit proper handling and installation by any other method the Contractor may desire if approved by the Owner, pipe manufacturer, and Designer. The backfill shall be thoroughly compacted and evened off with the adjacent soil level. Selected fill dirt or sand shall be used in filling 4 inches above the pipe. The remainder of the backfill shall contain no lumps or rocks larger than 3 inches in any dimension. The top 12 inches of backfill shall be topsoil, free of rocks subsoil, or trash. Any open trenches or partially backfilled trenches left overnight or left unsupervised shall be baricaded to prevent undue hazard to the public space.
B. The Contractor shall backfill in 6 inch compacted lifts as needed to bring soil to its original density.

3.2 INSTALLATION OF PLASTIC PIPE:
A. Plastic pipe shall be installed in a manner that permits expansion and contraction as recommended by the manufacturer.
B. Plastic pipe shall be cut with a handsaw or hacksaw with the assistance of a square in sawing vice or in a manner so as to ensure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth, unobstructed flow will be attained.
C. All plastic-to-plastic joints shall be solvent weld joints or slip seal joints. Only the solvent recommended for the pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer. The Contractor shall assume full responsibility for the correct installation.
D. The joints shall be allowed to set at least 24 hours before pressure is applied to the system on PVC pipe.

3.3 CONTROLLER AND ELECTRICAL CONNECTIONS:
A. All electrical connections shall conform to the National Electric Code, latest edition.
B. Control wires installed beneath walks, drives, or other permenant surfaces shall be placed in sleeves.
C. Wires shall be spliced only at valve boxes.
D. Leave 24 inch loop of wire at each valve for expansion/contraction and servicing.
E. Controllers and valves shall be from the same company (e.g. Rain Bird, Hunter, or approved equal).
F. 120 VAC electrical power supply to the controller location shall be supplied by others.

3.4 FLUSHING AND TESTING:
A. After new sprinkler piping and risers are in place and connected for a given section and all necessary division work has been completed and prior to the installation of sprinkler heads all control valves shall be opened and a full head of water used to flush out the system.
B. Sprinkler main shall be tested under normal water pressure for a period of 12 hours. If leaks occur, repair and repeat the test. Give Landscape Architect 48 hours notice prior to testing.
C. Testing of the system shall be performed after completion of the entire installation and any necessary repairs shall be made at the Contractor's expense to put the system in good working order before final payment by Owner.
D. Adjustment of the sprinkler heads and automatic equipment will be done by the Contractor upon completion of installation to provide optimum performance. Minor adjustments during the guarantee period will be made by Owner.
E. After completion, testing, and acceptance of the system, the Contractor will instruct the Owner's personnel in the operation and maintenance of the system.

4.0 ACCEPTANCE AND GUARANTEE
4.1 SUBSTANTIAL COMPLETION:
A. Submit request for inspection for substantial completion to the Landscape Architect at least 48 hours prior to the anticipated date of inspection and testing (refer to Paragraph 3.3 TESTING, herein).
B. Submit Record Drawings and Maintenance Manual to the Landscape Architect with request for inspection (refer to Paragraph 3.4 FLUSHING AND TESTING, herein).
C. Review the work jointly with the Owner and Landscape Architect for Substantial Completion.
D. Upon completion of repairs and replacements found necessary at the time of review, the Owner and Landscape Architect will confirm the date of Substantial Completion of the work.
E. The date of Substantial Completion will constitute the date of the One-Year Guarantee.

4.2 GUARANTEE:
A. Guarantee all work, products, equipment, and materials for one (1) year, beginning at Date of Substantial Completion.
B. During the period of the Guarantee, replace immediately, with no additional compensation, all work not functioning correctly; make adjustments as necessary to maintain complete coverage; make good any other damage, loss, destruction, or failure. Repairs and replacements shall be done promptly and at no additional cost to the Owner.
C. Repair damage to grade, plants, and other work or property as necessitated due to irrigation defects, repairs, replacement or adjustment.
D. If the replacement is not acceptable during or at the end of the Guarantee Period, the Owner may elect either subsequent replacement or credit. Replacement products shall have a similar one-year guarantee from the time of replacement. E. Guarantee applies to all losses with the exception of those due to Acts of God, vandalism, or Owner neglect, as determined by the Landscape Architect.

4.3 FINAL INSPECTION AND ACCEPTANCE:
A. At end of Guarantee Period and upon request for inspection, jointly review all guaranteed work for Final Acceptance.
B. Submit written request for inspection for Final Acceptance to the Landscape Architect at least 2 weeks prior to anticipated date of inspection; include list of work provisionally accepted and list of work replaced during Guarantee Period.
C. Upon completion by the Contractor of all required repairs and replacements, the Owner and the Landscape Architect will confirm the date of Final Acceptance of the work.
END OF SECTION 02810

Eric R. McQuiston L.L.C.
Landscape Architecture

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CITY HALL PARKING LOT
& COURTYARD

BOUSCAREN STREET
SLIDELL LA

JOB No:	2172	DATE:	05-30-13
DRAWN BY:	ERM	CHECKED BY:	

REVISIONS

#	DESCRIPTION	DATE

LANDSCAPE
IRRIGATION
DETAILS

SHEET No: 10 OF 11

L1.3