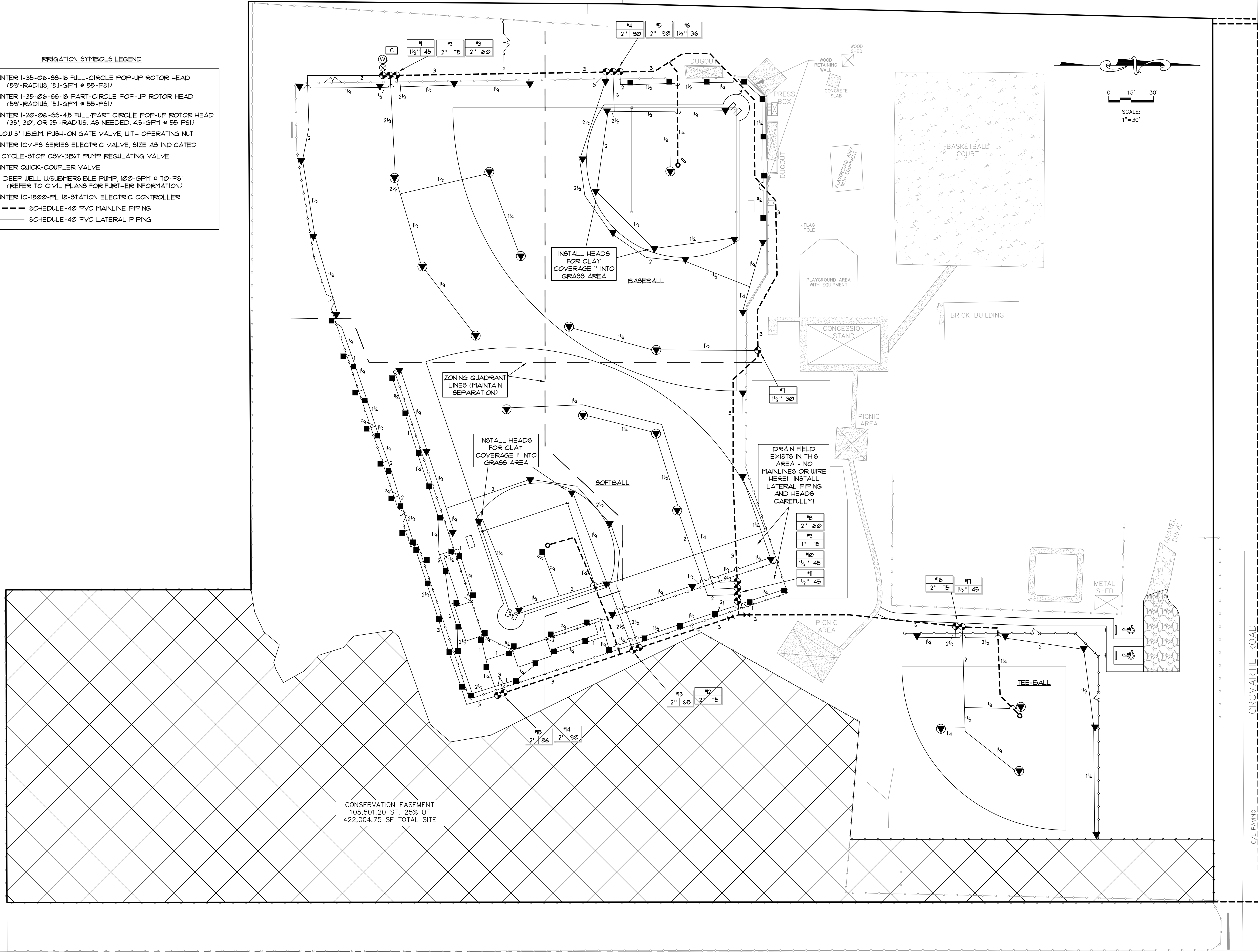


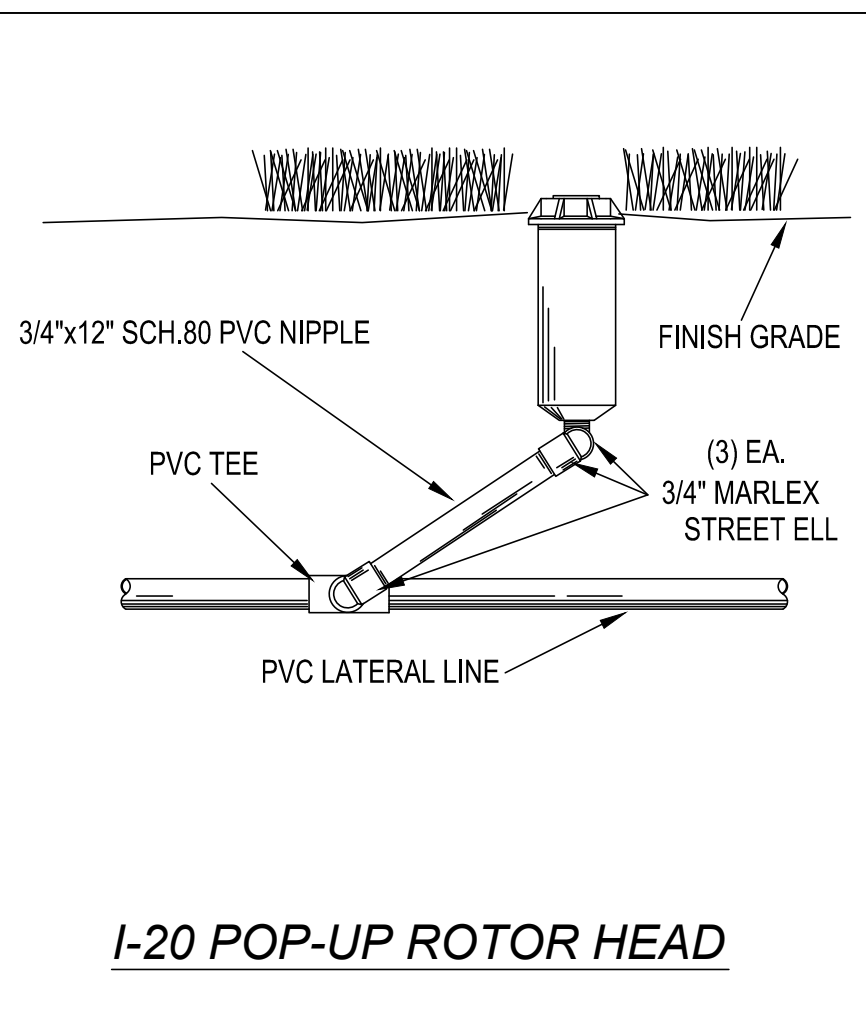
IRRIGATION SYMBOLS LEGEND

- ▼ HUNTER I-35-06-85-18 FULL-CIRCLE POP-UP ROTOR HEAD (59'-RADIUS, 15.1-GPM @ 55-PSI)
- ▼ HUNTER I-35-06-85-18 PART-CIRCLE POP-UP ROTOR HEAD (59'-RADIUS, 15.1-GPM @ 55-PSI)
- HUNTER I-20-06-85-4.5 FULL/PART CIRCLE POP-UP ROTOR HEAD (35', 30', OR 25'-RADIUS, AS NEEDED, 4.5-GPM @ 55-PSI)
- ⊞ CLOW 3" I.B.B.M. PUSH-ON GATE VALVE, WITH OPERATING NUT
- ⊞ HUNTER ICV-F8 SERIES ELECTRIC VALVE, SIZE AS INDICATED
- ⊞ 2" CYCLE-STOP CSV-3B2T PUMP REGULATING VALVE
- ⊞ HUNTER QUICK-COUPLER VALVE
- ⊞ 6' DEEP WELL W/SUBMERSIBLE PUMP, 100-GPM @ 10-PSI (REFER TO CIVIL PLANS FOR FURTHER INFORMATION)
- ⊞ HUNTER IC-1800-PL 18-STATION ELECTRIC CONTROLLER
- SCHEDULE-40 PVC MAINLINE PIPING
- SCHEDULE-40 PVC LATERAL PIPING

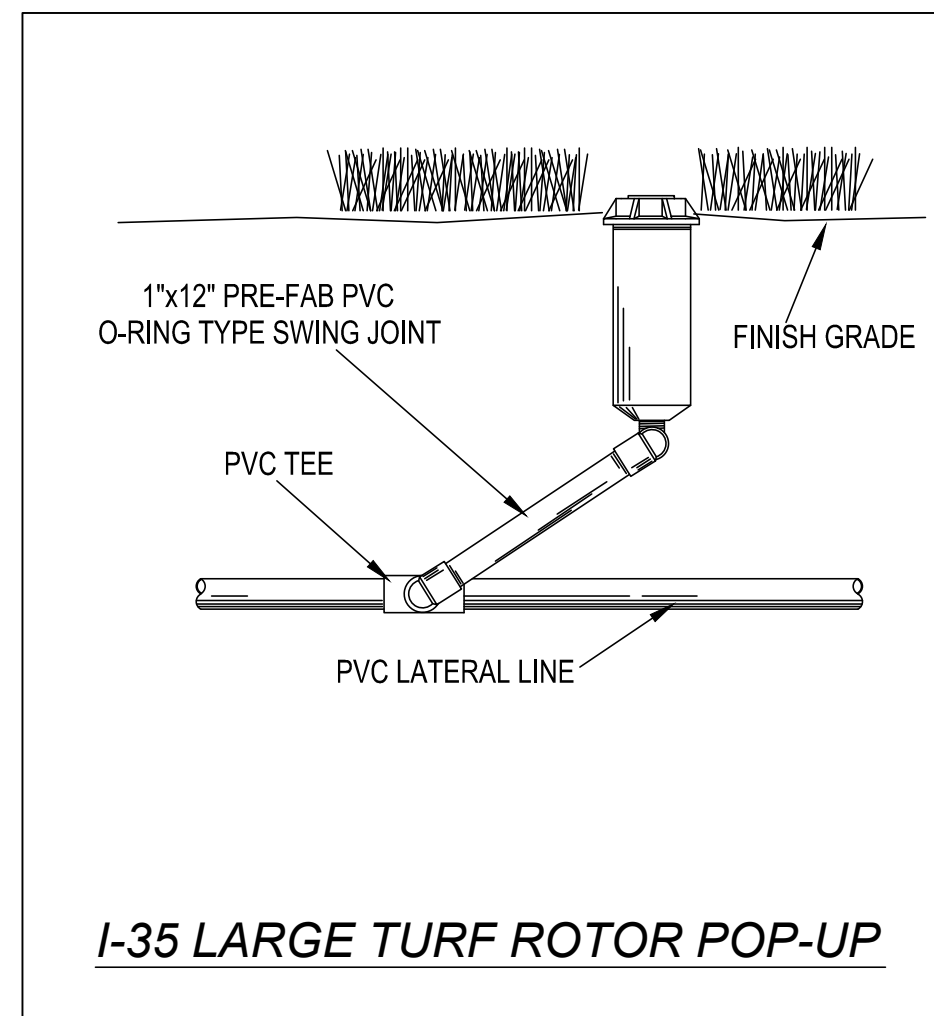


CONSERVATION EASEMENT
 105,501.20 SF, 25% OF
 422,004.75 SF TOTAL SITE

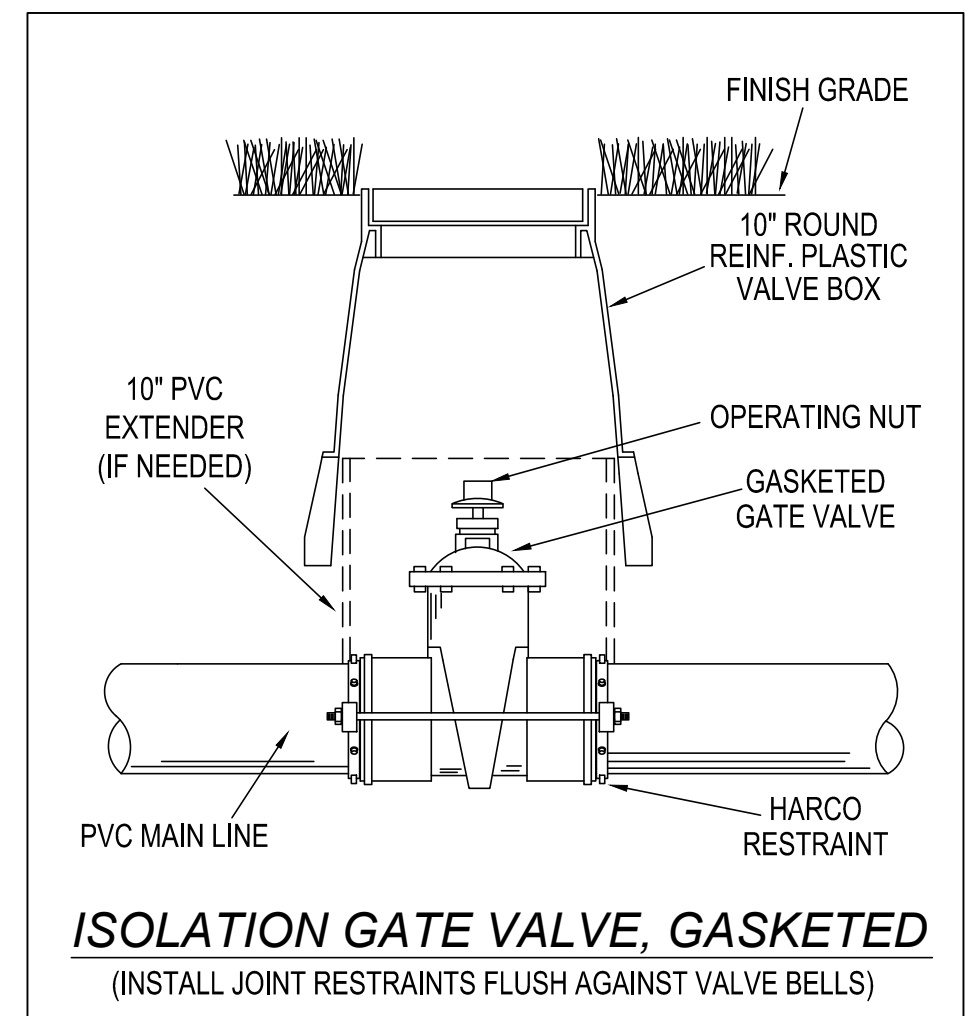
ATKINS 2639 N. Monroe St. Building C Tallahassee, Florida 32303 850.575.1800 FBPI Certificate of Authorization No. 24	CLIENT LEON COUNTY PARKS & RECREATION 2280 Miccosukee Road Tallahassee, FL 32308	PROJECT MICCOSUKEE COMMUNITY PARK IMPROVEMENTS	TASK IRRIGATION PLAN	ORIGINAL: FEBRUARY, 2013 REVISIONS: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____	JOB NO. 100016311 DRAWN CRB DESIGNED CRB CHECKED QC DATE _____ SIGNATURE _____ UNLESS SAID IN THIS BLOCK	SHEET IR-1
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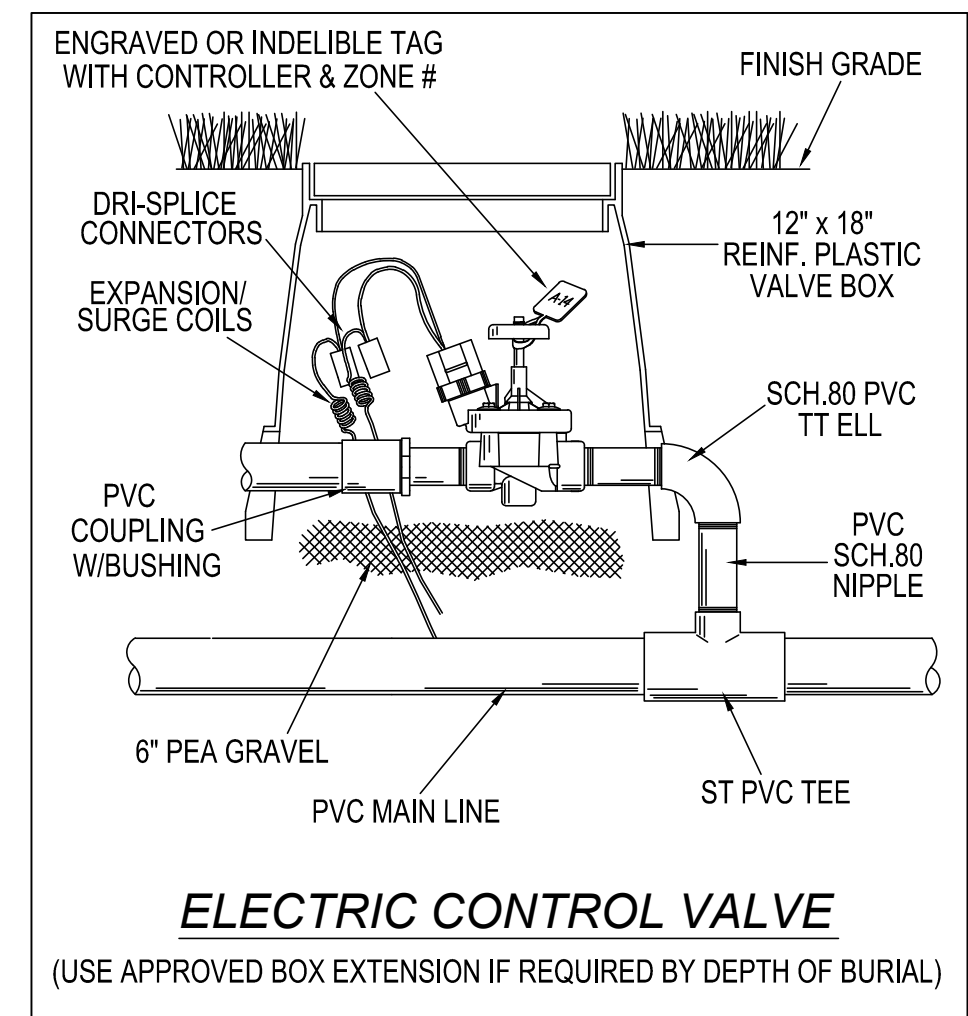
I-20 POP-UP ROTOR HEAD



I-35 LARGE TURF ROTOR POP-UP



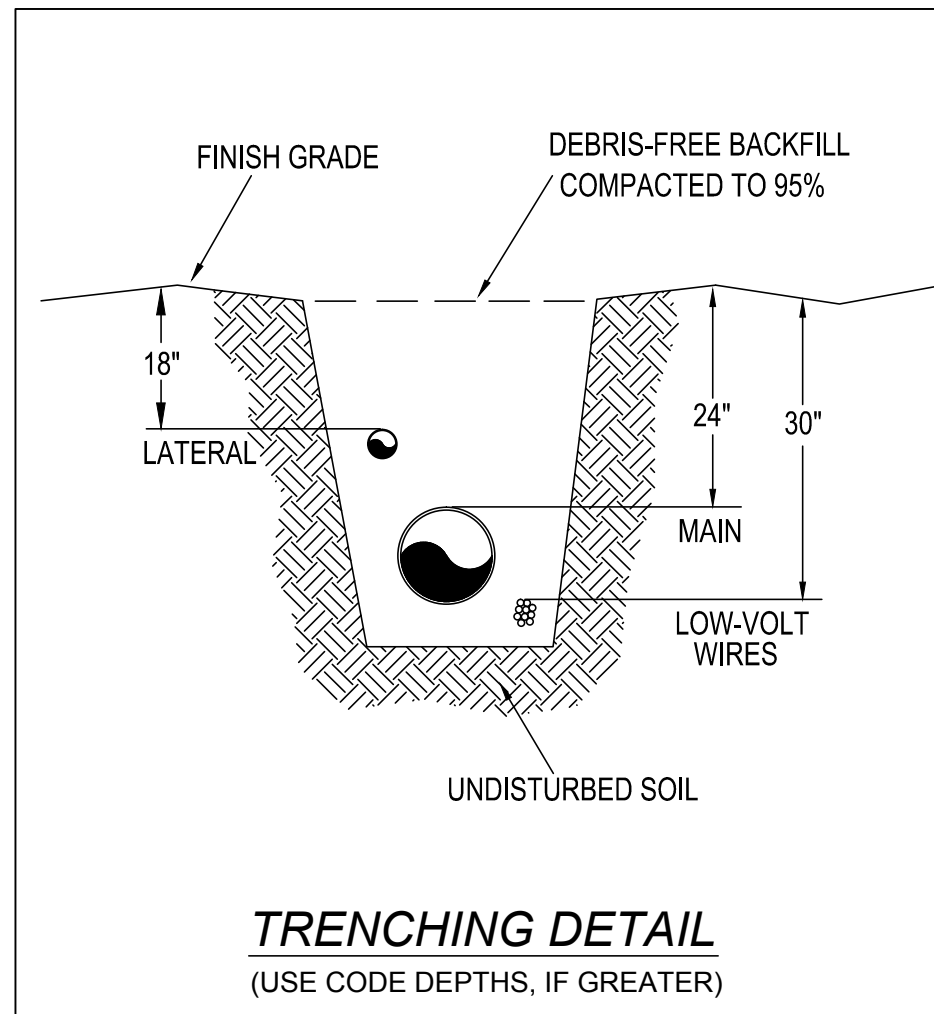
ISOLATION GATE VALVE, GASKETED
(INSTALL JOINT RESTRAINTS FLUSH AGAINST VALVE BELLS)



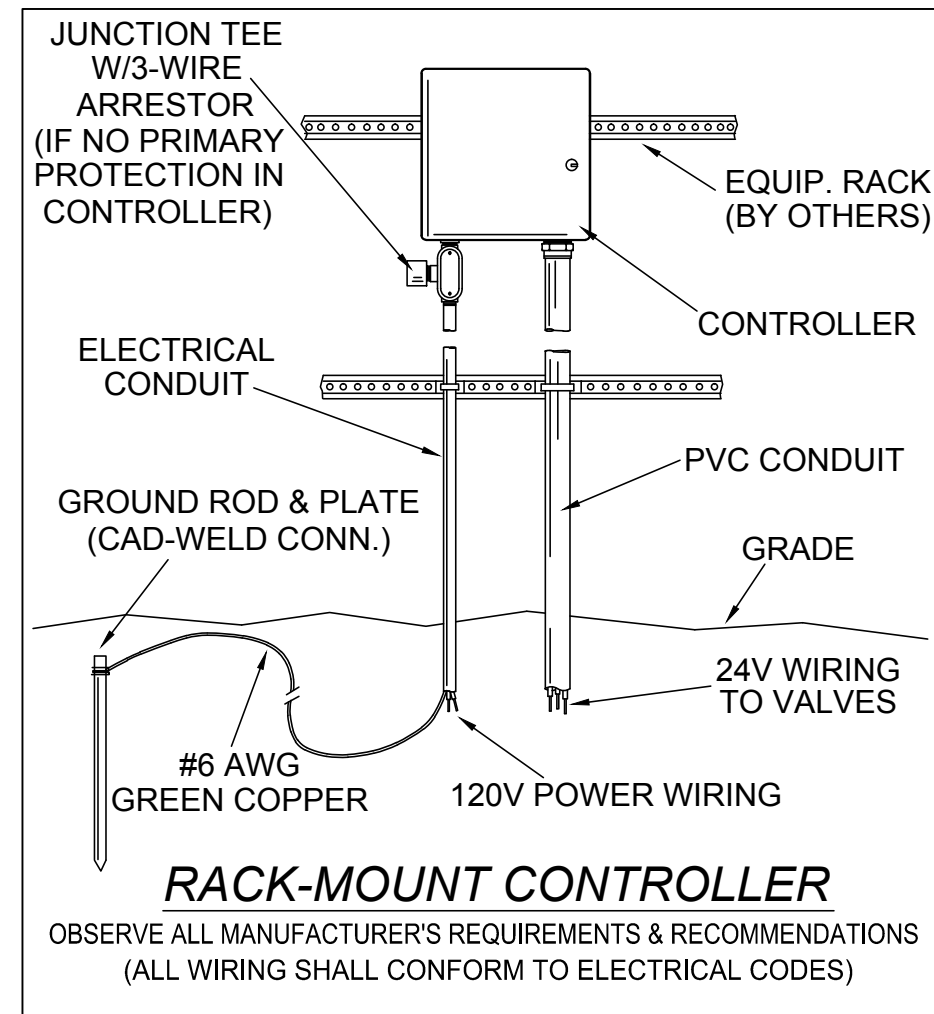
ELECTRIC CONTROL VALVE
(USE APPROVED BOX EXTENSION IF REQUIRED BY DEPTH OF BURIAL)

GENERAL NOTES

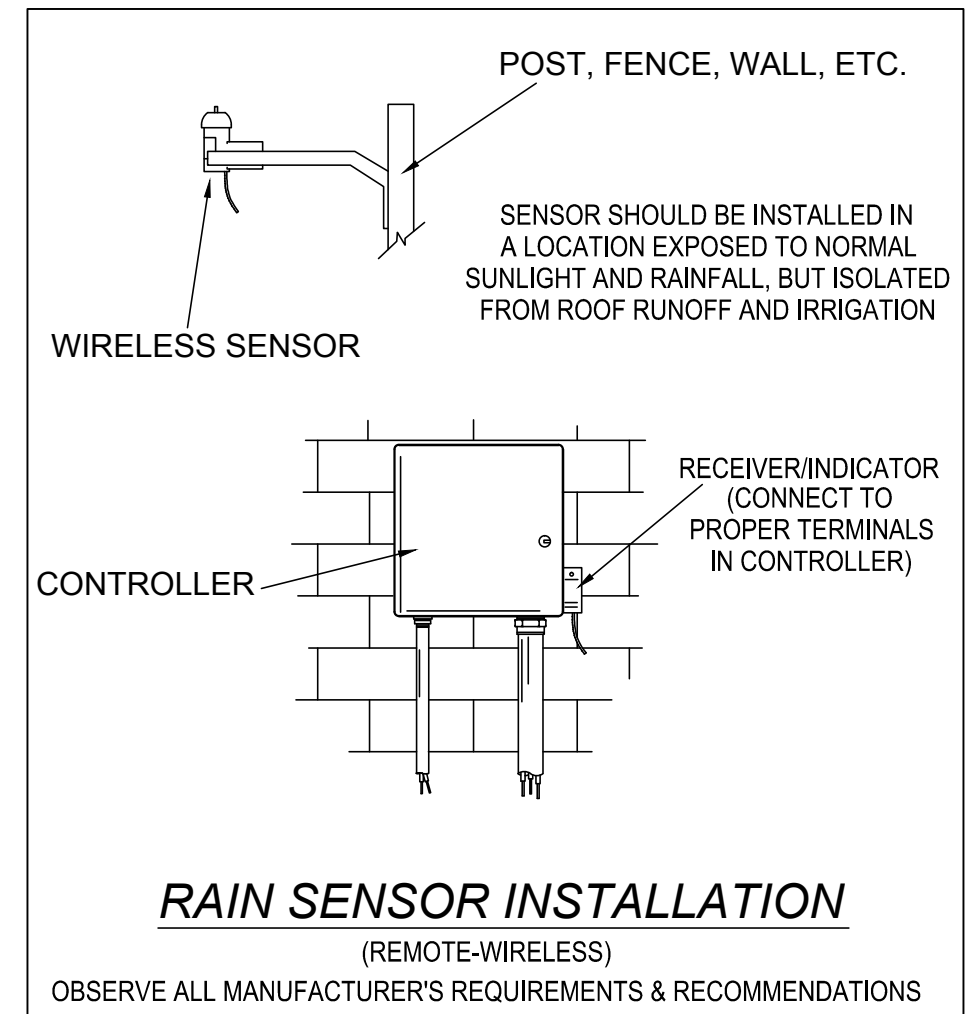
1. THE DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, AS IT MAY NOT HAVE BEEN POSSIBLE TO ACCURATELY DEPICT THE EXACT LOCATIONS FOR ALL MATERIAL, OR ALL JOBSITE ELEMENTS. THE INSTALLER SHALL BE EXPECTED TO MAKE MINOR ADJUSTMENTS ON THE SITE AS NEEDED, IN ORDER TO MAINTAIN COMPLETE AND ACCURATE COVERAGE, AND MAINTAIN THE INTENT OF THE DESIGN. MODIFICATIONS WHICH INCREASE THE SPACING OF HEADS, OR DECREASE THE SIZING OF PIPE, SHALL NOT BE MADE WITHOUT PRIOR CONSENT OF THE PROJECT MANAGER. THE FINAL LOCATIONS FOR ALL MAJOR EQUIPMENT, INCLUDING CONTROLLERS, VALVES, SUPPLY CONNECTIONS, MAINLINES, ETC. SHALL BE DETERMINED IN THE FIELD, STAKED OUT BY THE CONTRACTOR, USING THE DRAWINGS AS A GUIDE, AND APPROVED PRIOR TO INSTALLATION.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH PREVAILING CODES AND REGULATIONS. ALTHOUGH DUE DILIGENCE HAS BEEN EXERCISED IN THE PREPARATION OF THE DOCUMENTS TO AVOID CONFLICTS, IT SHALL REMAIN THE RESPONSIBILITY OF THE INSTALLER FOR VERIFICATION AND CONFORMANCE TO THE PARTICULAR CODES FOR THIS LOCATION. THE INSTALLER SHALL OBTAIN ANY NECESSARY PERMITS, LOCATES, AND INSPECTIONS.
3. ALL WORK SHALL BE CLOSELY COORDINATED WITH THAT OF OTHER TRADES, IN ORDER TO AVOID CONFLICTS. THE INSTALLATION SHALL BE COORDINATED WITH ALL NEW AND EXISTING IMPROVEMENTS, AND WITH THE ACTUAL INSTALLED BEDLINES, SOD LIMITS, AND PLANT LOCATIONS.
4. THE INSTALLER SHALL BE FAMILIAR WITH ALL APPLICABLE DOCUMENTS, INCLUDING ANY WRITTEN SPECIFICATIONS THAT MAY HAVE BEEN ISSUED. ANY CONFLICT FOUND BETWEEN THE VARIOUS DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE PROJECT MANAGER FOR DETERMINATION.
5. ALL MATERIAL AND LABOR NECESSARY TO PROVIDE A COMPLETE, FULLY OPERATIONAL, AND GUARANTEED SYSTEM SHALL BE CONSIDERED PART OF THE WORK, WHETHER OR NOT THEY ARE SPECIFICALLY INDICATED IN THE DOCUMENTS. THIS SHALL INCLUDE CONFORMANCE TO THE REQUIREMENTS AND RECOMMENDATIONS OF THE VARIOUS MANUFACTURERS OF THE EQUIPMENT, AND TO APPLICABLE TRAINING AND CERTIFICATION OF INSTALLATION PERSONNEL.
6. UNLESS SPECIFICALLY STATED TO THE CONTRARY, PIPING AND WIRING PASSING UNDER PAVED OR OTHER IMPERVIOUS SURFACES SHALL BE INSTALLED IN SLEEVING OF ADEQUATE SIZE AND STRENGTH. SIDEWALKS AND DECKS AND TURF PAVERS SHALL REQUIRE SLEEVING, EVEN IF NOT SHOWN ON THE DRAWINGS. CONTROL WIRING MAY BE RUN WITHIN A LARGER SLEEVE WITH MAINLINE PIPING, BUT ONLY IF PROTECTED BY A SMALLER CONDUIT. WIRE MAY NOT BE TAPED TO THE MAINLINE IN LIEU OF THIS CONDUIT, AS ABRASION OF THE WIRE JACKET IS LIKELY TO OCCUR.
7. SLEEVES UNDER PARKING AND DRIVEWAYS MAY BE THE RESPONSIBILITY OF OTHER THAN THE IRRIGATION CONTRACTOR (SUCH AS THE PAVING OR SITE CIVIL CONTRACTOR). CONSULT OTHER DOCUMENTS FOR ADDITIONAL INFORMATION. ANY NEEDED SLEEVE WHICH EITHER CANNOT BE FOUND OR IS DAMAGED BEYOND PRACTICAL USE SHALL BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY, ALONG WITH RECOMMENDATIONS FOR CORRECTIVE ACTION. SLEEVES UNDER SIDEWALKS, DECKS, ETC. ARE NORMALLY INSTALLED BY THE IRRIGATION CONTRACTOR.
8. CONTROL WIRING SHALL BE ROUTED WITH THE MAINLINE WHENEVER POSSIBLE. OTHERWISE, WIRING SHALL BE PROTECTED WITH PVC CONDUIT OF SUITABLE SIZE, AND FULL BOXES AT RECOMMENDED INTERVALS. LOW VOLTAGE WIRING SHALL BE TYPE "UF" WITH PVC JACKET. MULTI-CONDUCTOR OR NON-PVC JACKETS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE PROJECT MANAGER. UNLESS STATED TO THE CONTRARY, "HOT" WIRES SHALL BE SIZE 14-1, COLORED RED. SPARE WIRES, A MINIMUM OF TWO OF WHICH SHALL BE RUN FROM THE CONTROLLER TO THE FARTHEST ZONE VALVE IN EACH DIRECTION, SHALL BE 14-1, BLUE IN COLOR. VALVE COMMON WIRES SHALL BE 12-1, WHITE IN COLOR. WIRE SPLICES FOR ELECTRIC VALVES SHALL BE OF APPROVED TYPE. SPEARS "DRI-SPLICE" CONNECTORS AND SEALANT ARE THE PREFERRED CONNECTORS, BUT "KING NUTS" OR OTHER TYPES MAY BE SUBMITTED AS AN ALTERNATE. THE INSTALLER SHALL INSTALL ALL WIRING WITH ADEQUATE SLACK, SNAKED IN TRENCHES, BUNDLED AT TEN FOOT INTERVALS, AND WITH SURGE/EXPANSION COILS AT THE VALVES AND THE CONTROLLER LOCATION.
9. ALL SPRINKLER HEADS SHALL BE OF THE PROPER SIZE AND TYPE FOR THE LOCATION. HEADS SHALL BE INSTALLED IN THE PRESCRIBED MANNER, PLUMB, AND WITH THE PROPER HEIGHT WITH RESPECT TO GRADE. ALL HEADS AND OTHER EQUIPMENT SHALL BE INSTALLED WITH ADEQUATE AND UNIFORM CLEARANCES FROM ALL PAVING, CURBS, SIDEWALKS, WALLS, AND OTHER OBSTACLES, SO THAT DAMAGE TO EQUIPMENT DOES NOT OCCUR DURING NORMAL LANDSCAPE MAINTENANCE OPERATIONS. ALL SPRINKLERS SHALL BE ADJUSTED TO OBTAIN OPTIMAL COVERAGE OF IRRIGATED AREAS, WHILE MINIMIZING OVERSPRAY ONTO WINDOWS, WALLS PAVING OR OTHER IMPERVIOUS SURFACES, PARTICULARLY WOODWORK AND/OR TRIM. THE INSTALLER SHALL UTILIZE THE PROPER NOZZLE SETS FOR THE LOCATION.
10. QUICK-COUPLER VALVES SHALL BE HUNTER HQ-44RC-AW 1" VALVES WITH STABILIZER WINGS. INSTALLER TO FURNISH 5 EA. HUNTER HK-44A COUPLER KEYS AND 5 EA. HUNTER HS-2 SWIVEL ELLS TO THE OWNER'S REP.
11. THE CONTROLLER SHALL REQUIRE A STANDARD 120-VAC POWER FEED, WHICH SHALL BE COORDINATED BY THE INSTALLER, AND HOOKED UP BY A LICENSED ELECTRICIAN. IT IS PREFERRED THAT A DEDICATED CIRCUIT BE PROVIDED FOR THIS CONNECTION. A 3-WIRE POWER INPUT SURGE ARRESTOR SHALL BE PROVIDED ON THE POWER FEED, AND A DEDICATED GROUND ROD/PLATE NETWORK (SEE DETAIL) SHALL BE INSTALLED, HAVING A MEASURED EARTH GROUND RESISTANCE OF NOT GREATER THAN TEN (10) OHMS.
12. THE CONTROLLER SHALL BE EQUIPPED WITH A PROPERLY LOCATED AND INSTALLED RAIN/FREEZE SHUTOFF SENSOR DEVICE (HUNTER WRF-CLK REMOTE, UNLESS NOTED OTHERWISE) AS REQUIRED BY FLORIDA LAW. THE SENSOR SHALL BE LOCATED IN SUCH A MANNER SO THAT IT IS UNOBSTRUCTED AND DIRECTLY EXPOSED TO NATURAL RAINFALL AND SUNLIGHT FROM ALL DIRECTIONS, BUT NOT TO RUNOFF WATER FROM ROOFS, ETC.
13. THE CONTROLLER SHALL NOT BE UTILIZED TO START THE PUMP ELECTRICALLY, AS THERE ARE QUICK-COUPLERS IN USE ON THE PROJECT. INSTEAD, A PRESSURE-RATED STEEL BLADDER TANK SHALL BE INSTALLED, AND AN APPROVED PRESSURE SWITCH SHALL BE USED TO ACTIVATE THE PUMP UPON DEMAND. A 2' CYCLE-STOP VALVE SHALL BE INSTALLED AT THE WELL DISCHARGE TO REGULATE PUMP OPERATION.
14. THE MINIMUM SUPPLY REQUIREMENT FOR THE SYSTEM AS DESIGNED IS 100-GPM AT 10-PSI.
15. THE INSTALLER SHALL PROVIDE AN APPROVED METHOD BY WHICH THE SYSTEM MAY BE DRAINED FOR FREEZE PROTECTION AND/OR MAINTENANCE.
16. THE INSTALLER SHALL BE EXPECTED TO BE FAMILIAR WITH ALL REQUIREMENTS FOR THE WORK, AND TO CONDUCT HIS WORK IN A CLEAN, SAFE, AND WORKMANLIKE MANNER. THE OWNER RESERVES THE RIGHT TO ACT TO PROTECT HIS PROPERTY AND THE OTHER PERSONNEL AT WORK THERE, AND TO MAKE EMERGENCY REPAIRS OR TAKE CORRECTIVE ACTION IF THE INSTALLER DOES NOT FULFILL HIS OBLIGATIONS IN A TIMELY MANNER. THE OWNER FURTHER RESERVES THE RIGHT TO BACK-CHARGE THE INSTALLER TO COVER SUCH EXPENSES, TO THE EXTENT ALLOWED UNDER APPLICABLE LAW.



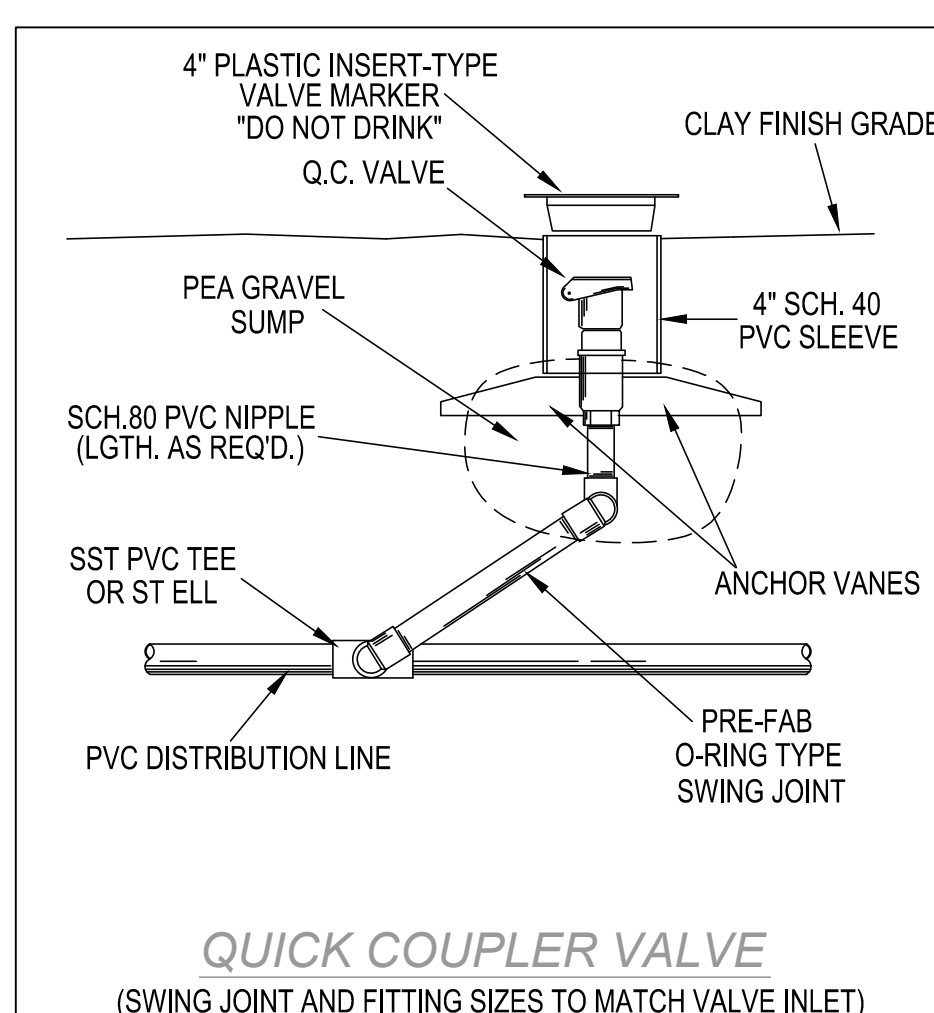
TRENCHING DETAIL
(USE CODE DEPTHS, IF GREATER)



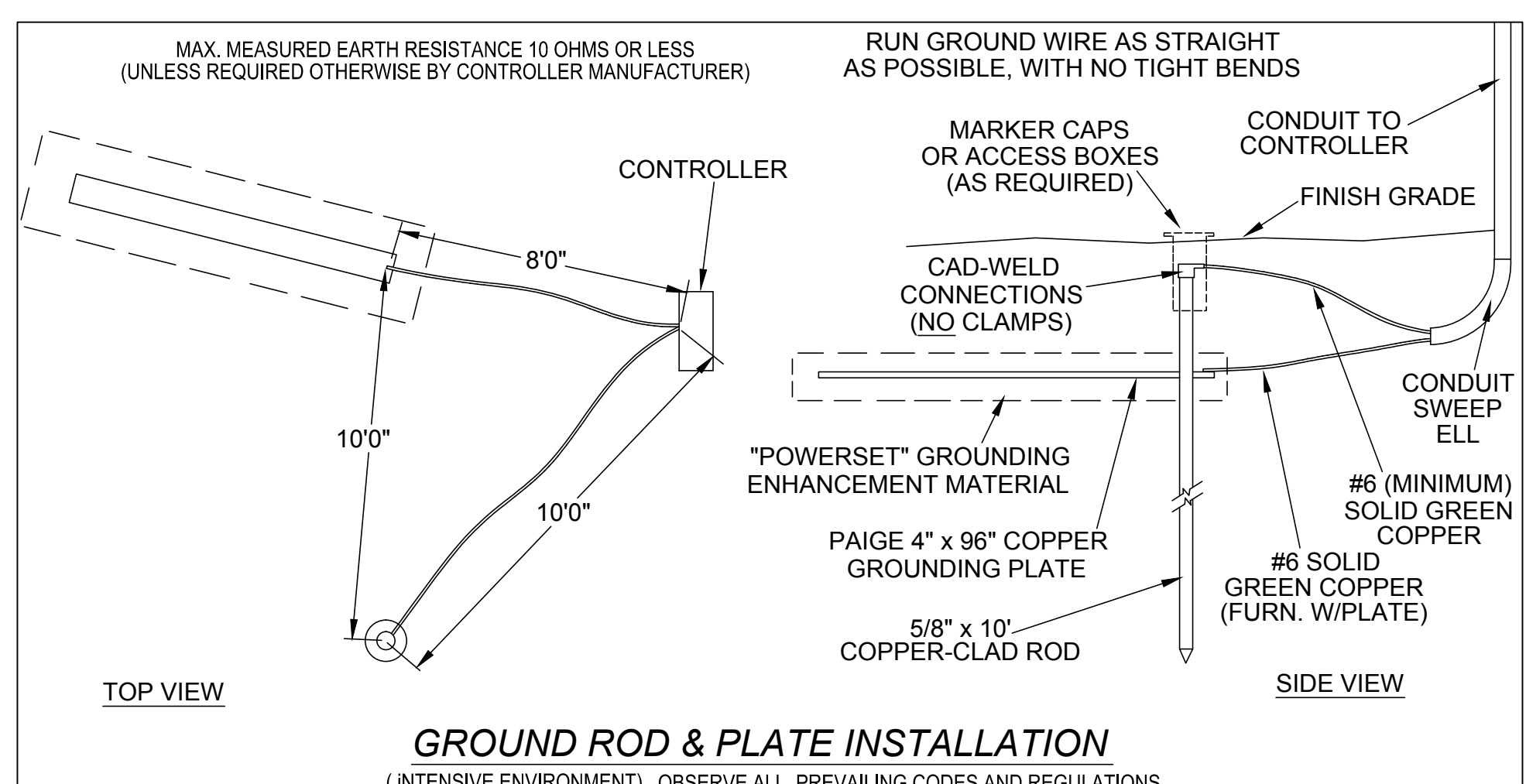
RACK-MOUNT CONTROLLER
OBSERVE ALL MANUFACTURER'S REQUIREMENTS & RECOMMENDATIONS (ALL WIRING SHALL CONFORM TO ELECTRICAL CODES)



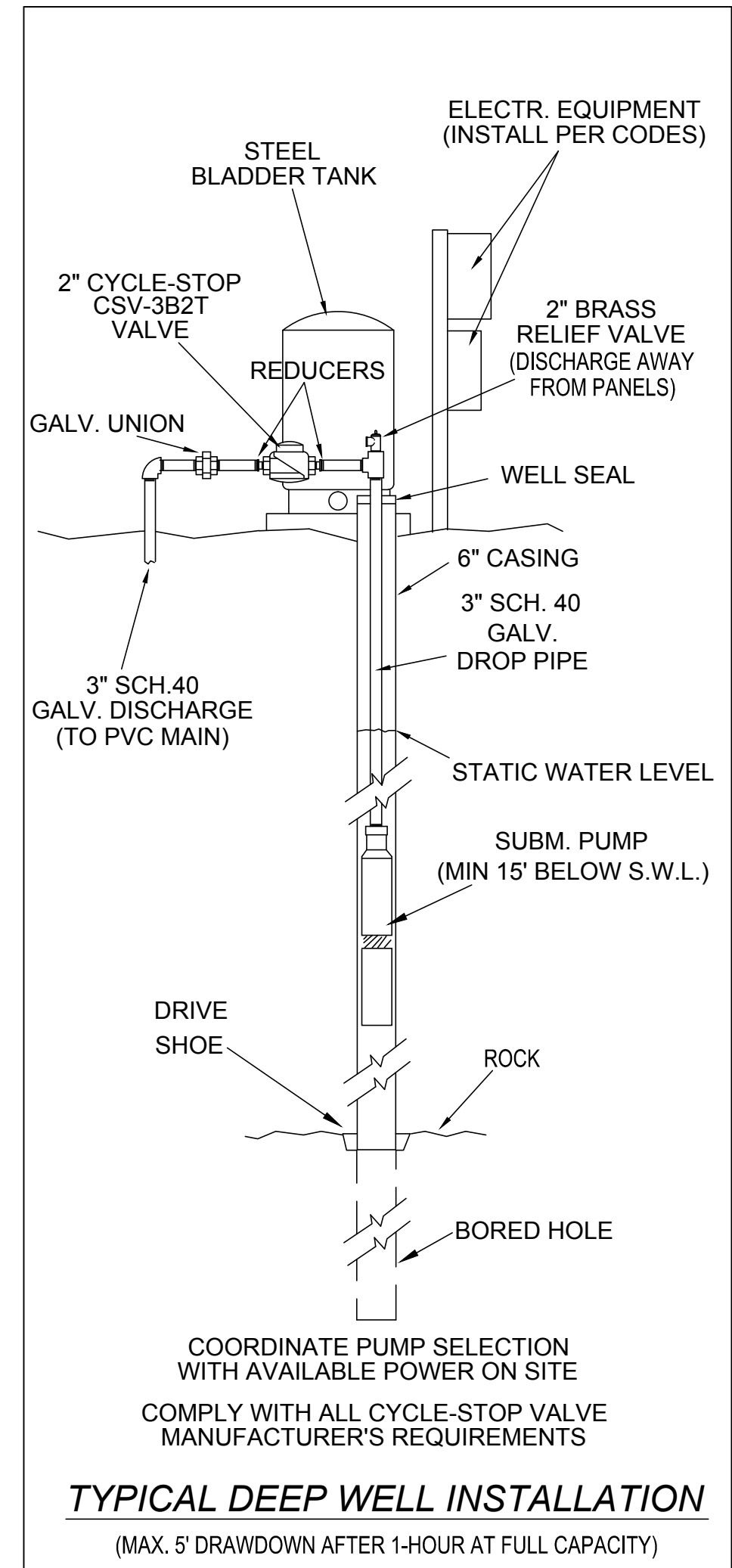
RAIN SENSOR INSTALLATION
(REMOTE-WIRELESS)
OBSERVE ALL MANUFACTURER'S REQUIREMENTS & RECOMMENDATIONS



QUICK COUPLER VALVE
(SWING JOINT AND FITTING SIZES TO MATCH VALVE INLET)



GROUND ROD & PLATE INSTALLATION
(INTENSIVE ENVIRONMENT) OBSERVE ALL PREVAILING CODES AND REGULATIONS



TYPICAL DEEP WELL INSTALLATION
(MAX. 5' DRAWDOWN AFTER 1-HOUR AT FULL CAPACITY)

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JOB NO. 100016311
DRAWN CRB
DESIGNED CRB
CHECKED QC
DATE
SIGNATURE
UNLESS SAID IN THIS BLOCK

ORIGINAL: FEBRUARY, 2013
REVISIONS:
1
2
3
4
5

TASK
IRRIGATION NOTES & DETAILS

PROJECT
MICCOSUKEE COMMUNITY PARK IMPROVEMENTS

CLIENT
LEON COUNTY PARKS & RECREATION
2280 Miccosukee Road
Tallahassee, FL 32308

ATKINS
2639 N. Monroe St. Building C
Tallahassee, Florida 32303
850.575.1800
FBPI Certificate of Authorization No. 24

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

The work consists of installing a complete automated underground irrigation system as shown on the Drawings and hereinafter specified. The work shall include the furnishing of all labor, equipment, materials, permits, meeting and coordination time, and supervision in performing all operations in connection with the construction of the irrigation system. The Bidders are advised that all work will be performed in a thorough, proper, and professional manner, and that the implementation of substandard or otherwise unapproved materials or methods will not be tolerated by the Owner.

B. General Description:

The irrigation system shall be constructed using the materials and methods shown on the Drawings and as called for in these Specifications. The system shall be constructed to grades and conform to areas and locations as shown on the Drawings. Locations of irrigation lines and equipment shown on the Drawings are largely diagrammatic. Mainline, valve, pump & well (if used) and supply P.O.C. locations shall be staked out by the Contractor and approved by the Owner prior to installation. Location of all other equipment shall be as close as practical to those shown on the Drawings. Mainline locations shall also be coordinated to avoid conflicts with pavement, easements, proposed and existing planting and/or other obstructions. The construction of the irrigation system shall include the furnishing, installation, and testing of all main, sub-mains, lateral piping, fittings, sprinkler heads, swing joints, valves, controller equipment, wiring, pumping equipment (if used), all other pertinent materials and accessories, the removal and/or restoration of existing improvements, excavation and backfill, and all other work in accordance with the Drawings and Specifications, as required for a complete, functional, and fully warranted system. Although architectural considerations may result in some differences of criteria between various areas of the project, the Contractor shall maintain uniformity of construction methods and materials throughout.

The site contains an existing irrigation system, which shall essentially be shutdown and abandoned in place. The Installer shall coordinate on-site any work necessary to facilitate the proper disposition of this system.

C. Relationship of the Documents:

The Drawings for this project and these Written Specifications are to be considered totally integral, with neither considered complete without the other. The Bidders shall thoroughly examine and familiarize themselves with all the information contained in the Documents, and by submitting a bid for this work, agree to accept and be bound by all the provisions made in the Documents. Should a discrepancy arise between the Drawings and these Specifications, the Drawings shall control, unless the item in question is part of an Addendum, dated later than the Drawings. The Owner or his chosen Representative shall be immediately notified of any such discrepancies, and shall take any corrective action deemed necessary.

D. Alternate Products and Methods:

Specific equipment, performances, installation methods, and other such criteria have been chosen for reference purposes in the design of this project, in order that the necessary performance and installation criteria be known. These shall be considered the basis for the Base Bid. The use of alternate equipment and/or methods shall not be acceptable without prior approval, but shall be considered by the Owner at the time of the Bids. Consideration shall be given only for those materials and methods whose performance most closely matches that which is contained in the original Documents, and most reasonably serves the intent of this design. Any modifications or other impact to this design which may be necessitated by the submission of alternate equipment and/or methods shall be clearly noted within the submittal, and subsequently acted upon by the Owner. The Bidders shall warrant that any bid submitted for any equipment shall include all materials and work necessary for the proper and fully warranted installation of the equipment, including, but not limited to, increased pipe or wire size, fittings, concrete, gravel, or any other associated materials and/or labor. After the Contract is awarded, any alternative material or methods that the Installer wishes considered shall be submitted in a written "Request for Substitution", which shall include full data for the proposed alternate, a cost difference (plus or minus) and a detailed reason for submitting the alternate.

E. Related Work Specified Elsewhere:

Consult the Owner for documents pertaining to other trades relative to this work.

1.02 SUBMITTALS

A. Requirements:

Prior to commencement of work under this Contract, the Contractor shall submit six (6) sets of submittal data on all proposed materials and equipment. This data shall include copies of all manufacturers' warranty information, including documentation of any extended warranties, if applicable to this project.

Submittals shall be in three-ring binders with various sections tabbed and properly indexed. Each item shall be marked as acceptable to the General Contractor before the Engineer, Landscape Architect, or the Consultant shall consider it for approval.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

The Contractor shall supply all material and equipment of the types and makes shown on the Drawings. No substitutions shall be permitted without prior written approval of the Owner. The Contractor shall inspect all material and equipment prior to installation; any defective materials or equipment shall be removed immediately from the site and replaced with the proper items. All materials shall be new and current production. Pipe shall be delivered to the site in full 20-foot lengths, and shall be clearly and permanently marked with manufacturer's name, classification, and code references. Any items used in the installation which are subsequently found to be defective, improperly installed, or not as specified herein and on the Drawings, shall likewise be removed and replaced with the proper materials and equipment, and installed in the proper manner, as interpreted by the Owner. Any work done or materials used for this purpose shall be provided by the Contractor at no cost to the Owner. All materials normally associated with the proper installation of the specified equipment, or required by the corresponding manufacturer of the equipment, shall be considered part of the work, regardless of whether every item is specifically called out in the Documents. In the event that less costly type of equipment is accepted for use on the project, or any equipment is omitted from the work, the Contractor shall discount the Contract amount (or if paid, shall fully refund the difference to the Owner) regardless of whether the action was initiated by the Owner or the Contractor. The use of prototype or field-test materials is absolutely prohibited on this project, unless the permission of the Owner or his authorized representative is obtained in advance.

PART 3 - INSTALLATION

3.01 GENERAL:

A. Description:

The Contractor shall install a fully operational and warranted automatic irrigation system. Any and all materials and prevalent methods necessary to do so shall be provided by the Contractor as part of this contract, even if not specifically called for in the Drawings and/or these Specifications. The Contractor shall obtain all the necessary permits and inspections for this work, and shall be responsible for penalties or damages which may result from his failure to do so. The content and enforcement of codes and regulations may vary from job to job, or change over time between Design and Construction. Information contained in these documents is for reference purposes ONLY, and shall not be considered an absolute interpretation of prevailing requirements. The responsibility for researching code requirements, and for conformance thereto, shall remain solely that of the Contractor. The Contractor shall NOT install any materials or perform any work that is known to be in violation of any standing code requirement or regulation, even if so directed by the Design Documents. Conflicts of this nature should be brought immediately to the attention of the Project Manager using a written "Request for Information".

B. Existing Conditions:

The Drawings show conditions as they are believed to exist, but it is not intended, nor should it be interpreted, that the conditions shown constitute a representation by the Owner that the conditions actually exist. The Contractor shall personally inspect the job site prior to bidding, to fully familiarize himself with the nature of the work, and shall accept full responsibility for any loss sustained as a result of differences between the conditions shown on the Drawings and any actual condition revealed during the completion of the work. (EXCEPTION: Rock Clause; See section 3.02.D.) The Contractor shall, prior to excavation, verify the location of any and all existing underground improvements, and shall take any action necessary to protect said improvements during his work, and eliminate service outages. If the site contains areas of protected wetland or other environmentally sensitive areas, the Contractor shall fully acquaint himself with the actual limits of these areas and any corresponding buffer zones, and shall make sure that the progress and/or result of his work shall not impact these areas. These areas may not be excavated, drained, thrown into by sprinklers, used for equipment access or storage, or otherwise disturbed in any way whatsoever. Any fees or penalties assessed upon the Owner as a result of violations by the Contractor will be paid by the Contractor. The Contractor shall be responsible for checking the irrigation water source for salinity, odor, stain or other objectionable properties, and reporting the results to the Owner and Landscape Architect. If the irrigation source is from pressurized service, the Contractor shall test the supply pressure before work begins, to ensure that it is adequate for the proper operation of the system. This work should be performed as early as possible.

C. Trenching and Backfilling:

The Contractor shall be responsible for staking out the head locations on the project. When grading has been established in a particular area, the Contractor shall, prior to beginning any excavation in the area, cause staking to be performed, and shall secure the approval of the Owner or Landscape Architect of the finished staking. Excavation shall be open vertical construction sufficiently wide to allow free working space around the work installed, and allow ample space for backfilling and tamping. Trenches for piping shall be cut to required grade lines, and compacted to provide accurate grade and uniform bearing for the full length of the piping. Bottoms of trenches shall be free of rocks and other sharp objects. Unless specifically stated to the contrary, minimum depth of cover shall be 24" on mainline piping, and 18" on lateral piping. Minimum depth of cover on low-voltage wiring shall be as provided by the electrical codes in effect. Intersecting pipes and those sharing a common ditch shall have a minimum of three inches clearance from each other, and from other utilities. Initial backfill shall be pulverized native soil, free of foreign matter. Within four inches of the pipe shall be clean soil or sand. Remaining backfill shall be compacted to dry density equal to that of adjacent undisturbed soil, and shall conform to adjacent grades without depressions, lumps, or other irregularities. In lieu of trenching, piping may be laid by plowing, using approved equipment and methods. The Contractor shall still abide by the minimum clearances prescribed above.

D. Rock Clause:

If the ground should be such that the Contractor encounters large rocks, debris, or other obstructions that cannot be trenched through or otherwise removed during the normal course of construction, the Owner shall be notified, and a cost for excavation and backfill with selected materials shall be negotiated.

E. Pipes:

Pipe and associated fittings shall be as noted in the Drawings. Pipe shall be installed in such a manner so as to provide for expansion and contraction in accordance with the manufacturers published recommendations. Spigot ends of the pipe shall be firmly and completely seated in the fittings. Angular deflections in the joint shall not exceed manufacturer's recommendations. Lines shall be flushed before installation of heads. Heating and bending of the pipe is not permitted. Pipe shall be cut in such a manner so as to provide a clean, square cut, free of chips, burrs, or splitting. Pipe shall be laid using a cleaner, primer, and cement (if solvent-weld) or lubricant (if gasketed joints) approved by the manufacturer of the pipe. As pipe is laid, installed pieces shall be restrained, so that slippage does not occur in previous joints. The Contractor shall monitor previous joints for slippage, until joints are set. Cemented joints shall be twisted one quarter turn as they are assembled, and excess solvent shall be immediately wiped away.

The installer shall provide an approved method that will facilitate the draining of the system for purposes of freeze protection or maintenance.

F. Inspections:

The Owner or his designated Representative may appear on site at any time to make periodic informal inspections. Other persons, such as the Consultant, or a representative of an equipment manufacturer may be included to offer comments. If it is determined that the provisions of the Documents or other requirements of the Work, including the proper and warranted installation of any equipment, have not been complied with, the Installer shall be directed to make immediate and satisfactory repairs. Upon completion of the Work, the Owner reserves the right to schedule a formal walk-through inspection, at which a punchlist will be prepared, outlining items of concern or deficiency that must be corrected prior to the Work being considered complete.

G. Record Drawings:

The Installer shall be responsible for maintaining up-to-date on-site record drawings during the progress of the work. Record drawings shall show all major deviations from the Construction Drawings, and shall document installed mainline and wire routings, valve locations and designations, controllers, pavement crossings, splice boxes, pumping equipment (if used) and any other major equipment. These on-site drawings shall be available for inspection at any time during execution of the work, and shall be compiled into a complete, legible and reproducible (or CAD) "As-Built" drawing once work is complete. This completed drawing shall be provided to the Owner prior to Final Acceptance.

H. Warranty:

The entire system, including parts and labor, shall be warrantied by the Installer for a period of not less than one year from date of acceptance by the Owner. Manufacturers' warranties of greater than one year shall be fully honored for their duration. The Owner reserves the right to seek damages for improper or substandard work up to and beyond the expiration of the warranty, to the extent allowed by law.