

File Name: P:\Projects\2023\237806-Blossman Gas Pompano\CAADD Files\Drawings\237806-IRRIGATION_PLANS.dwg - (Plotted by: Marcos Mendez on Wednesday, July 17, 2024 9:14:07 AM)

IRRIGATION NOTES # SPECIFICATIONS

The system has been designed to conform with all applicable codes. Should any conflict exist, the requirements of the codes shall prevail. It is the responsibility of the owner/installation contractor to insure the entire system is installed according to all applicable laws, rules, regulations and conventions. Irrigation contractor is responsible for obtaining all required permits according to federal, state and local laws.

The scope of work is shown on the plans, notes and details. The Irrigation Contractor shall be certified as a CERTIFIED IRRIGATION CONTRACTOR by the Irrigation Association. The certification shall be current and in good standing.

THE WORK

The work specified in this section consists of furnishing all components necessary for the installation, testing, and delivery of a complete, fully functional automatic landscape irrigation system that completely complies with the irrigation plans, specifications, notes, details and all applicable laws, regulations, codes and ordinances. This work shall include, but not be limited to, the providing of all required material (pipe, valves, fittings, controllers, wire, primer, glue, etc.), layout, protection to the public, excavation, assembly, installation, back filling, compacting, repair of road surfaces, controller and low voltage feeds to valves, cleanup, maintenance, guarantee and as-built plans.

All irrigated areas shall provide 100% head-to-head coverage from a fully automatic irrigation system with a rain sensor. The rain sensor shall be installed to prevent activation of rain sensor by adjacent heads. All watering procedures shall conform to local codes, as well as this project's regional Water Management District restrictions and regulations. Zones are prioritized first by public safety and then by hydraulic concerns. This sequencing will be a mandatory punch list item. These plans have been designed to satisfy/exceed the Florida Building Code (FBC) Appendix F and the Florida Irrigation Society Standards and Specifications for Turf and Landscape Irrigation Systems, fourth edition.

Contractor shall verify all underground utilities 72 hours prior to commencement of work.

It is the responsibility of the irrigation contractor to familiarize themselves with all grade differences, location of walls, retaining walls, structures and utilities. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstruction, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions, or differences, should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.

Irrigation contractor shall repair or replace all items damaged by their work. Irrigation contractor shall coordinate their work with other contractors for the location and installation of pipe sleeves and laterals through walls, under roadways and paving, etc.

The contractor shall take immediate steps to repair, replace, or restore all services to any utilities which are disrupted due to their operations. All costs involved in disruption of service and repairs due to negligence on the part of the contractor shall be their responsibility.

POINT OF CONNECTION (P.O.C.)

The P.O.C. is a new Irrigation Pump Station (See Irrigation schedule and details) and well.

Prior to purchase of pumping system Irrigation Contractor shall check/verify:

- Contractor shall hire a Florida licensed well driller for installation of new well. well driller shall test well and provide irrigation contractor with a capacity-drawdown curve of new well.
- Irrigation Contractor shall test the water quality to ensure it is suitable for landscape plantings, use the services of a reputable, licensed laboratory only, if the water is determined suitable continue irrigation installation, if the water quality is unsuitable, do no proceed without written direction from the owner/owner's representative.

Contractor to verify these minimum conditions can be met prior to the beginning of installation, if the conditions can not be met, the contractor must notify the designer prior to proceeding with the work, if the contractor does not do so, the contractor proceeds at their own risk and becomes responsible for any future work required to make the system perform as required.

THE PIPE

Pipe locations shown on the plan are schematic and shall be adjusted in the field. When laying out mainlines place a maximum of 18" away from the back of curb, front of walk, back of walk, or other hardscape to allow for ease in locating and protection from physical damage. Install all lateral pipe near edges of pavement or against buildings whenever possible to allow space for plant root balls. Always install piping inside project properties boundary.

All pipes are to always be placed in planting beds. If it is necessary to have piping under hardscapes, such as roads, walks, concrete slabs, artificial turf, safety surfaces, or other specialty surface, the pipes must be sleeved using 5ch 40 PVC with the sleeve inside diameter being two sizes larger than the size of the pipe it is carrying with a minimum sleeve size of 2".

Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved. All damaged and rejected pipe shall be removed from the site at the time of said rejection.

Mainline shall be Schedule 40 PVC Pressure Pipe with belled ends, and SCH40 PVC Slip solvent-weld fittings, sized as shown on plans.

PVC pipe joint compound and primer: The PVC cement shall be Weld-On 271 I (grey, slow-drying, heavy duty) and the primer shall be Weld-On P70 (purple tinted, compatible with cement), or approved equals.

ELECTRICAL POWER SUPPLY

Electrical supply for pump to be provided by General Contractor. Contractor to coordinate with Electrician for power source to Pump and Irrigation Controller locations. Contractor shall provide Pump electrical supply and confirmation that Panel, breaker and wire sizes are as required by pump manufacturer's specifications for selected model.

Electrical supply for Irrigation Controller is to be setup installed on electrical rack. Contractor shall coordinate with Owner's Representative for location. Controller shall be installed to a 'chest' height for accessibility (See manufacturer's recommendations).

All electrical to comply with the National Electrical Code and any, and all, other applicable electrical codes, laws and regulations. A licensed electrician shall perform all electrical hook-ups (except for low voltage irrigation wire).

WIRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire; suitable for direct burial and continuous operation at rated voltages. Install along mainline as shown on the "TYPICAL IRRIGATION TRENCH DETAIL".

At all valve boxes coil wire around a 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3M-DBY,DBR connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:

- #16 white for common
- #16 spare black common
- #16 red for hot wires
- #16 spare blue hot wire

Spare wires

Run spare wires into every RCV valve box. Install a minimum of 1 common and 2 hot spare wires, in all directions, to every RCV connected in each direction from controller.

Controller grounding - Contractor shall ground controller as per manufacturer's recommendations. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller location, and test results.

LAYOUT

Layout irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to insure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4' below maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will be installed from a reuse water system with purple PVC risers.

Locate valves prior to excavation. Insure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc., and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds. Never install in sport field areas.

VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

EQUIPMENT

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints.

All sprinkler equipment not otherwise detailed or specified shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the size of the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

INSTALLATION

Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin layer on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then turn the pipe a 1/4 turn and hold for 10 seconds. Make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

BACK FILL

The Trench fill 4" below and 4" above all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 1/2" in diameter.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2' on each side of every joint (bell fittings, 90's, tees, 45's, etc.). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

FLUSHING

Prior to the placement of heads, flush all lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walls, walks and paving

TESTING

Remove all remote control valves and cap using a threaded cap. Fill mainline with water and pressurize the system to 125 PSI. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent-welded pipe. This procedure must be followed until the mainline passes the test.

The lateral lines must be filled and visually checked for leaks. Any leaks detected must be repaired. No pressure test of the lateral lines is required.

Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner or his/her representative that proper coverage is obtained and that the system works automatically from the controller. This demonstration requires that each zone is turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Operational Testing - Upon completion of back filling, finish grading and contouring, test the entire system for proper operation; including electrically actuating the remote control valves. Run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In sandy soils no puddling will occur, instead; calculate the required run times.

GUARANTEE

The Irrigation Contractor shall guarantee all labor/work for the installation of irrigation system for a minimum of one calendar year from the time of final acceptance.

SUBMITTALS

Pre-construction:

The Contractor must submit for approval, prior to installation, (3) copies (or digital via email) of the manufacturer's cut sheets/specifications for all components to be used in the irrigation system.

After Project Completion:

- As a condition of final acceptance, the irrigation contractor shall provide the owner with:
- Irrigation as-builts: A high quality, accurate, and legible set of as-built drawings, accurately locate all mainlines, sleeves, valves, independent wire runs, splice boxes, controllers, pumpd, wells, and electrical source. The completed as-built shall be an Autocad Format (.DWG) file and delivered to the owner's representative on a compact disk (cd) or via email.
 - Grounding Certification: Provide ground certification results for each controller and pump panel grounding and installed. This must be on a licensed electrician letter head indicating location and equipment tested, date, time, test method, and testing results.
 - Copies of well drillers reports showing capacity draw-down curve for each well.
 - Copies of water quality report from lab (Include Test Results for Hardness, Iron, Manganese, and Salinity as a minimum).
 - Irrigation Controller Charts: Either with a reduced size plan showing individual zones and corresponding number, or a chart with zone numbers and description of area covered, laminated for stoning in controller.
 - Warranty cards for all major components, including pumps, controllers, sensors, electric valves, other specialty equipment.
 - All instruction manuals, keys or tools (included with equipment purchase) for installed equipment.

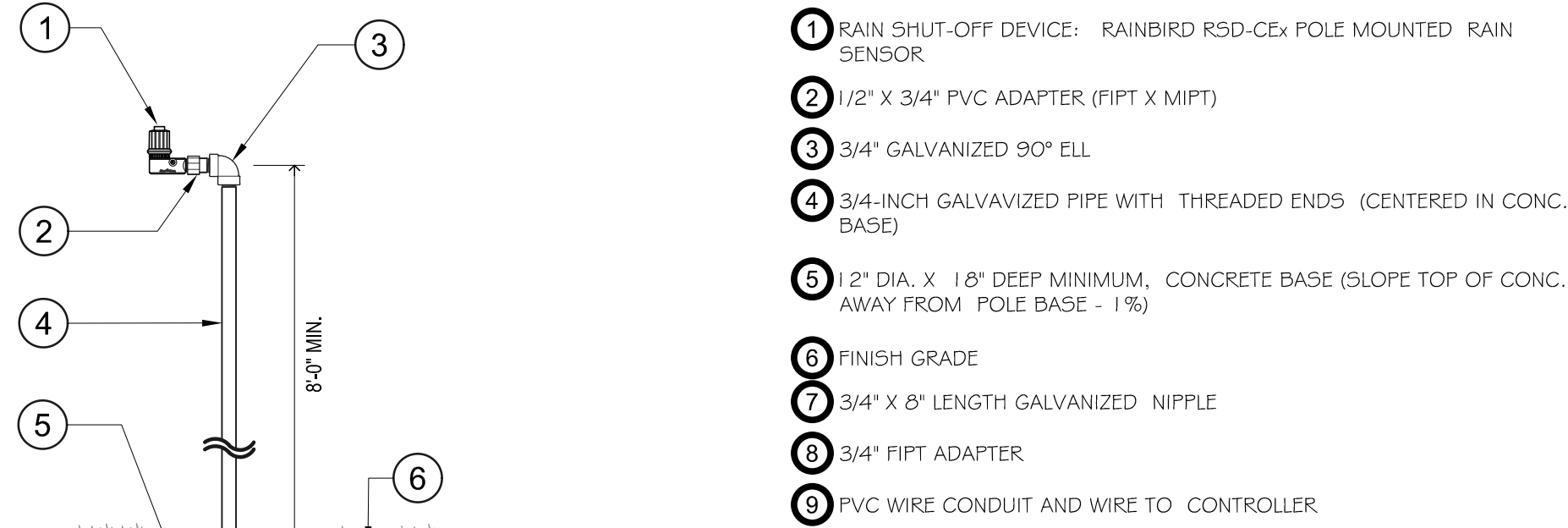
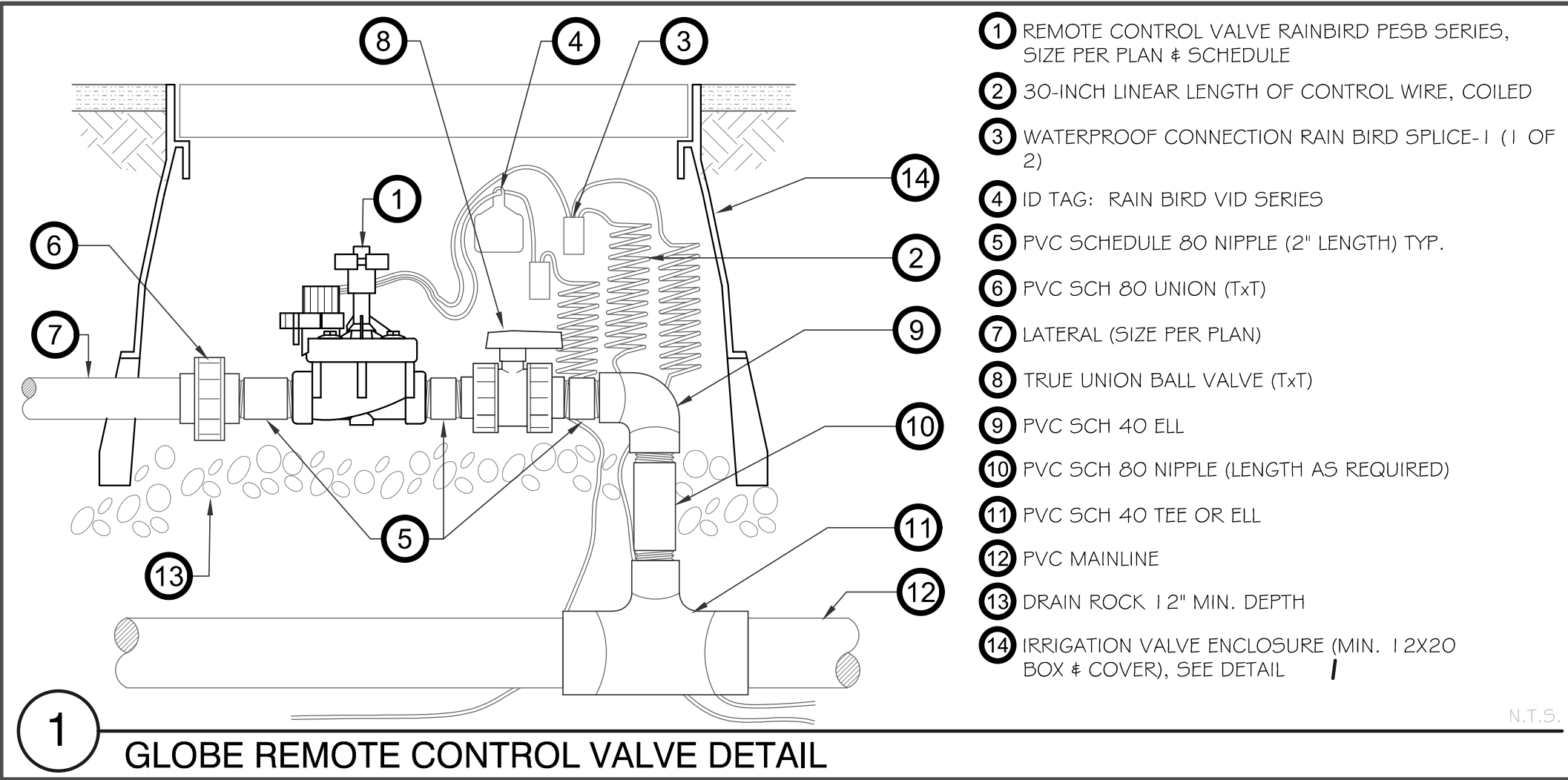
Inspections and Coordination Meetings required:

- Pre-construction meeting - designer and contractor to review entire install process and schedule with owner/general contractor.
- Mainline installation inspection(s) - all mainline must be inspected for proper pipe, fittings, depth of coverage, backfill, and installation method.
- Mainline pressure test - all mainline shall be pressure tested according to this design's requirements.
- Flow meter calibration - all flow meters must be calibrated, provide certified calibration report for all flow meters (if installed).
- Coverage and Operational test
- Final Inspection
- Punch List inspection

Final Acceptance:

Final Acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. final payment will not be released until these conditions are satisfied:

- All above inspections are completed, documented, and approved by owner.
- Completion and acceptance of 'as-built' drawings.
- Acceptance of Ground Certification.
- Acceptance of Well drillers report and water quality tests.
- Acceptance of required controller charts and placement inside of controllers.
- Acceptance of Warranty Cards
- All other submittals have been made to the satisfaction of the owner.



NOTE: CONTRACTOR SHALL FIELD MEASURE LOCATION OF SENSOR TO CONTROLLER PRIOR TO INSTALLING, IN ORDER TO CONFIRM THE TOTAL LENGTH OF WIRE RUN DOES NOT EXCEED THE MANUFACTURER'S PROVIDED SENSOR WIRE (TYPICALLY 25').

2 RAIN SHUT-OFF DEVICE DETAIL

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY



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IRRIGATION NOTES

MICHAEL CONNER, R.L.A.
STATE OF FLORIDA REGISTERED LANDSCAPE ARCHITECT
LICENSE No.1181

DATE: 07/02/2024

Digitally signed
by Michael D
Conner
Date:
2024.07.17
12:02:48 -04'00'

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09/04/2024