

IRRIGATION SPECIFICATIONS

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. Location 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.

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 make 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 use in the design of this project, and 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. 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 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 specified 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.

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 that 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. This may include, but not be limited to, existing irrigation. 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. If surface water or well are used, 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. This work should be performed as early as possible, or at initial well drilling.

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 18" on mainline piping, and 12" 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 the pipe is not permitted. Pipe shall be cut in 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) 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.

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 warranted 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 beyond the expiration of the warranty, to the extent allowed by law.

PROPERTY APPRAISER ID Number 31-21-31-300-024A-0000
SEMINOLE COUNTY
APPROVED FOR CONSTRUCTION
THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE TO THE SEMINOLE COUNTY LAND DEVELOPMENT CODE AND ANY SITE REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OR THE FACILITY AS CONSTRUCTED WHICH RESULTS IN A FAILURE TO MEET APPLICABLE CODE REQUIREMENTS. ADMINISTRATIVE ACCEPTANCE OF THE DEVELOPER'S PLANS DOES NOT CONSTITUTE A WAIVER OF ANY CODE REQUIREMENTS NOR DOES IT RELIEVE THE DEVELOPER OF RESPONSIBILITY TO MEET THOSE REQUIREMENTS. THIS SPECIFIC APPROVAL IS VALID FOR A PERIOD OF ONE YEAR FROM THE DATE BELOW.
APPROVED.
SEMINOLE COUNTY DEVELOPMENT REVIEW DEPARTMENT
DATE

Table with 2 columns: Field, Value. Includes Date: 10/7/09, Drawn by: CRB, Reviewed by: CL, Job Number: 2945, Revision: 12/1/09.

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HARDSCAPE, LANDSCAPE & IRRIGATION PLANS
Irrigation Specifications
Sheet Number: IR3.00