

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION
IRRIGATION SYSTEM, MICROIRRIGATION

(Acre)
CODE 441

SCOPE

This item shall include all plans, instructions, and specifications for the installation and efficient application of water for irrigation by means of irrigation systems.

SPECIFICATIONS

Design

Furnish the owner with a complete plan and design covering all components of the microirrigation system. Include sufficient detail in the plan and design to allow it to be installed by someone unfamiliar with the job and for the installation to be checked for conformance with this standard. Specify type, grades, quality, size, and construction materials of all equipment and appurtenances included in the system design. Prepare the plan in accordance with Georgia NRCS conservation practice standard Irrigation System, Microirrigation, Code 441.

Permits

Obtain all permits, licenses, easements and other requirements required by law before construction begins.

Layout and Installation

Locate the microirrigation system as shown on the drawings or as staked in the field. Install the system to the lines and grades specified by the design and shown on the drawings or as staked in the field. Use equipment and materials of the type, size, and quantities specified in the plans and specifications. System installer, i.e. vendor, producer or third party, for microirrigation equipment will assume full responsibility for the proper installation of the system.

Materials

Applicators. Install applicators as recommended by the manufacturer. Require the contractor (vendor) to provide the manufacturer's performance specifications of the applicator to the owner prior to installation. Use applicators manufactured from materials resistant to the normal effects of water, weather, sun, and commonly injected agricultural chemicals used for cleaning, chemigation and

water amendments. Place applicators beneath the ground surface deep enough to protect them from normal farming operations. Install spray type emitters in such a manner that the wetted area (P_w) used in the design can be obtained.

Pumps, Power Units and Filters. Set pumps, power units, and filters on a firm base and in proper alignment. Use pumps, power units and filters that meet the power, capacity, and pressure requirements specified. Abide by all pertinent safety codes and manufacturer's recommendations for the type of equipment installed.

Pipe. Require the contractor (vendor) to provide the manufacturer's performance data for pipe (tubing) used as laterals and all other pipe not included in the standard for irrigation pipelines (430). The manufacturer's data must include the maximum allowable operating pressure and inside diameter. Install this pipe and tubing as recommended by the manufacturer. Provide a copy of the manufacturer's data to the responsible NRCS personnel as requested prior to installation.

Joints and Connections. Make all joints and connections involved in installation of laterals to the manifold lines in accordance with the pipe manufacturer's recommendations and construct them to withstand the maximum design working pressure for the pipelines without leakage. Install connections of applicators to the lateral lines in accordance with the manufacturer's recommendations.

Valves. When valves must pass the design discharge, use valves equal to the size of pipe or the size recommended by the manufacturer, whichever is greater. Provide the manufacturer's performance data and specifications for valves to the responsible NRCS personnel when requested. Use valves of the type and material specified. Install valves according to manufacturer's recommendations to withstand the maximum design working pressure without damage, or leakage.

Injectors (Chemical, Fertilizer or Pesticides) and Automatic Operating Equipment (Timer). Locate any automatic equipment or injectors (chemical, fertilizer, pesticide) planned for the

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system, adjacent to the pump and power unit and place it in accordance with manufacturer's recommendation. Back-flow prevention devices shall be provided, as required by state law, when chemicals are injected.

Pollution Control

There may be potential for soil erosion during construction. Perform construction operations so that erosion and air and water pollution are minimized and held within legal limits.

Testing the System

Thoroughly and completely test the system at the design pressure for strength, proper functioning, and leakage. Repair any found and retest the system.

During the initial start up after the system has been installed, flush the manifold and lateral lines for a sufficient time to remove any sediment or foreign

material from each line prior to the placement of end plugs.

Test the system to ensure that it functions properly at design capacity, and that the variation in pressure or discharge rate is within the allowable range specified. Do not allow any objectionable flow conditions at or below design capacity and insure all appurtenances perform properly.

Equipment Warranty

System installer, i.e. vendor, producer or third party, assuming responsibility for the installation of the system shall furnish warranties covering the quality of material and workmanship of each piece of equipment furnished in accordance with the original manufacturer's guarantee, and shall replace defective parts shown to have failed due to poor material quality or workmanship.