

Colorado

Practice Documentation Requirements Checklist

for 442 – Sprinkler Irrigation System

Minimum documentation requirements for this practice are outlined below. Documentation for associated practices or system components shall follow the appropriate practice documentation requirements for those practices or components. Some items may not be applicable in all cases; mark "N/A" in the check box if such is the case.

Participant Name:	Address:
Project Name & Location:	

✓	By:	Date:
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RESOURCE INVENTORY

Purpose and objectives of practice clearly identified.			
Soils – type, texture, and intake rate, available water holding capacity (AWC), irrigation limitations, and/or restrictive layers.			
Crops – types, tillage practices, water use, and peak consumptive use.			
Water source – flow rate, volume, seasonal variation, well and pumping plant information, and water quality limitations. Well permit or surface water right verified.			
NRCS-CPA-52, Env. Effects Worksheet, & CO-SSC-1, Cult. Res. Survey Form, completed.			
Right of way easements, utility clearances, SHPO clearance, and applicable State and Federal permits are obtained.			
CO-ENG-13, Notice of Participant Responsibilities, has been reviewed with the cooperator, signed, and filed.			

SURVEY

Surveys as needed to determine elevations, slopes, area, etc. in order to design and document the irrigation system.			
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DESIGN

Engineering Job Class determined and noted.			
Irrigated area determined (acres).			
Soil texture and application rates determined. Limiting impervious layers.			
Peak consumptive use for design of the system (in/day).			
Minimum system capacity determined.			
Hydraulic analysis of the system – nozzle pressure required, pressure rating of pressure regulators, elevation changes along the lateral, lateral height, friction loss determination of the lateral(s), mainline losses, pump column losses, minor losses, backflow prevention for chemigation, etc.			
Design application depth – gross, net, and time requirement.			
Type of water measurement determined.			
Total dynamic head (TDH) (ft) required for maximum capacity. Document adequacy of the pumping plant to meet these requirements. (Pump test \leq 1 year old)			
For Center Pivot and Linear Move Systems:			
1) Weighted potential runoff analysis – document with CPNozzle printout (or CPNozzle package from vendor reviewed and approved): <ul style="list-style-type: none"> a) System wetted length (ft). b) System capacity (gpm or gpm/ac). c) Wetted diameter of outer sprinkler nozzle (ft), also include manufacturer's performance rating table. 			

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d) NRCS soil intake family.			
e) Surface storage (in).			
2) Sprinkler type, positioned height (ft), and spacing (ft).			
3) Pressure regulator type and rating (psi), if used.			
4) Required minimum sprinkler spacing (ft) or computed coefficient of uniformity (CU).			
For solid set, hand move, side roll, etc. sprinkler systems:			
1) Design sprinkler application rate (in/hr) and soil intake rate (in/hr).			
2) Sprinkler type, height (ft), wetted diameter (ft), and operating pressure (psi).			
3) Pressure regulator type and rating (psi), if used.			
4) Minimum lateral and sprinkler spacing (ft) or computed coefficient of uniformity (CU).			
5) Prevailing wind direction and average wind velocity (mph).			
6) Lateral line pressure variation (psi).			
Quantity and cost estimates.			
Design computations have been checked and approved by the appropriate person(s).			

PLANS AND SPECIFICATIONS

Construction drawings drawn on appropriately-sized standard drawing sheets. Include standard drawings as appropriate. Drawings and/or specifications to include the following:			
• Engineering Job Class.			
• Location map or description.			
• Scaled plan view or aerial photo showing field boundaries, location of sprinkler system, mainline and lateral line locations, benchmark elevation/description, map orientation, etc.			
• Sprinkler package including size, type, and location of sprinklers, nozzles, pressure regulators, etc. or noted to be designed by the sprinkler system supplier/manufacturer.			
• Table of quantities.			
• Construction notes and General notes as required.			
• Note on drawings to call the Utility Notification Center of Colorado (UNCC), 8-1-1 or 1-800-922-1987, prior to any excavation.			
Construction specifications prepared (Colorado FOTG Practice Specifications or other).			
Construction drawings and specifications have been checked and approved and drawings signed.			
O&M Plans prepared.			
Plans, specifications, and O&M plans have been reviewed with the cooperator.			
Preconstruction meeting with cooperator and contractor.			

CONSTRUCTION LAYOUT SURVEYS

Locate lateral starts, ends, row spacing, mainline, pivot points, appurtenances, etc., as necessary. Check for pivot circle clearance of obstructions at perimeter.			
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COMPLIANCE CHECKS & FINAL DOCUMENTATION

Verify and record that sprinkler type, height and spacing, nozzle size, and pressure regulator type and rating are installed in accordance with the designed system.			
Length and size of the system lateral and mainlines. Valve and appurtenance type and location.			
UNCC (Utility Notification) ticket number has been recorded.			
Construction inspection reports recorded.			
Changes in design are noted and approved by the landowner and the designer, and proper engineering review/approval is obtained.			
“As-Built” plans prepared and filed (Required if significant changes in design occur during construction and for Job Class V and above). If no significant changes, mark original plans “As-Built”.			
Practice completion certified on CO-ENG-1, CO-ENG-12, or checkout notes.			
Progress reported.			