

Colorado Practice Documentation Requirements Checklist for 441 – Irrigation System, Microirrigation

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:
---	-----	-------

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. Well permit or surface water right verified.			
Water quality analysis as required for drip irrigation system.			
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.			

DESIGN SURVEY

Survey as necessary to determine the topography of the irrigated field.			
Profile of main lines, submains, laterals, etc.			
Maximum water surface elevation or available pressure at water source.			

DESIGN

Engineering Job Class determined and noted.			
Peak consumptive use for design of the system determined (in/day).			
Design application depth – gross, net, and time requirement.			
Minimum system capacity available or required (gpm).			
Minimum operating pressure available or required (psi).			
Total Dynamic Head (TDH) requirements for pump determined.			
Water quality assessed and treatment options determined.			
Filter requirements determined.			
Emitter type, size, and spacing determined.			
Irrigated area and zone size determined (acres).			

Required flow rate per zone determined.			
Number of zones to be watered concurrently determined.			
Hydraulic analysis of the system with total pressure head required at the pump and/or at the filter discharge.			
Document adequacy of the pumping plant to meet total pressure head requirements. (Pump test < 1 year old)			
Hydraulic analysis of flush lines.			
Type of water measurement determined.			
Quantity and cost estimates.			
Design computations have been checked 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:			
<ul style="list-style-type: none"> • Engineering Job Class. • Location map or description. • Plan view of project showing the location & layout of the following: <ul style="list-style-type: none"> ○ Benchmark elevation and description, as needed. ○ Critical elevations (site-specific contour map preferred). ○ Mainline – type, pressure rating, size(s), & length(s). ○ Sub-mainlines - type, pressure rating, size(s), & length(s). ○ Manifolds and/or flush lines - type, pressure rating, size(s), & length(s). ○ Valves – air valves, pressure regulators, control valves, pressure relief, etc. ○ Well(s) or other water sources and pump(s) with capacity. ○ Filter station, chemical injection station, & other appurtenances. ○ Drip emitters, drip tapes, or other outlets identified, model numbers, size(s), etc. ○ Different zones identified and labeled. • Details, as needed (e.g., buried drip tape, manifolds, valve stations, etc.) • 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).			
All engineering reports, designs, drawings, specifications, and related information have been reviewed and checked by appropriate personnel in accordance with current Colorado NRCS policy.			
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 all mainlines, sub-mains, flush lines, etc. as needed.			
---	--	--	--

COMPLIANCE CHECKS & FINAL DOCUMENTATION

Verify and record installed items such as:			
<ul style="list-style-type: none"> • Mainline, sub-mains, and flush line type, size, length, & pressure rating. • Lateral line type, size, & length, emitter type, model, spacing, etc. • Filters, chemigation, air valves, control valves, & other appurtenances. 			
UNCC (Utility Notification) ticket number has been recorded.			
Construction inspection reports recorded.			

441 – Irrigation System, Microirrigation

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.			