Colorado
Practice Documentation Requirements Checklist
for
430 - Irrigation Pipeline

Minimum documentation requirements for these practices 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:	

RESOURCE INVENTORY

	✓	By:	Date:
Purpose and objectives of practice clearly identified.			
Water source and water quantity determined.			
Water quality noted (debris, sediment, etc.).			
Available water rights verification on file. Participant(s) concur with design flow rates.			
Soils identified (soil map, description, properties, etc.), suitability for trenching and backfill determined, and corrosion potential determined, if required. Level of groundwater, presence of boulders or other obstructions, etc. are noted.			
Existing well and pump data noted (flow capacity, pressure available, pump curve, etc.).			
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

Design survey (e.g., horizontal alignment, profile, and cross-sections) as required.			
Benchmarks set.			
Survey data plotted.			

DESIGN

Engineering Job Class determined and noted.			
Flow requirements determined and concurred with by participant(s).			
Hydraulic calculations; e.g., operating pressures, hydraulic grade lines, pump performance or requirements, water hammer, etc. Hydraulic Grade Line (HGL) plotted on pipe profile.			
Pipeline appurtenance design (air valves, pressure relief valves, drains, thrust blocks, inlet structure, trash screens, etc.) to include location, size, pressure ratings, capacity, head loss, published performance data, etc.			
Water measurement method determined and designed (if applicable).			
Structural design computations (internal pressures, external loads on buried pipe, above-ground pipe design, etc.). Need for imported backfill material evaluated. Backfill compaction method determined.			
Quantities and cost estimate determined.			
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 or dimensioned plan view.			
• Stationed profile along centerline of pipeline alignment showing: original ground line, pipeline, pipeline grades, pipe size and pressure rating, size and type of appurtenances and fittings, etc.			
• Appurtenance installation details.			
• Structural details as needed (thrust blocks, pipe trench, connections, etc.).			
• Hydraulic data, such as design flow, operating pressures, etc.			
• Material 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 (if performed by NRCS)

Centerline alignment stakes with offset grade stakes.			
Layout, alignment, and reference stakes for structures and pipeline appurtenances.			

COMPLIANCE CHECKS & FINAL DOCUMENTATION

Pipeline alignment.			
Depth of cover over pipeline (maximum and minimum).			
Profile of trench bottom, if grade control is critical.			
Thrust blocks.			
Initial backfill material and placement.			
Linear feet of pipe installed for each pipe size and pressure class.			
Material certification, including nominal pipe size, type of material (e.g. PVC 1120), pressure rating, designation (e.g. PIP or IPS), and manufacturer's name and code marked on pipe.			
Number, type , and location of all pipeline appurtenances, including drains, screens, valves, pressure regulators, pressure reducers, pressure gauges, outlets, air vents, stand pipes, etc.			
Location and types of flow measurement devices, if used.			
Pipe pressure and leakage tests – description of method used and subsequent results.			
Location and elevation of structural features critical to the operation of the pipeline (stand pipes, inlet structures, outlet structures, etc.).			
Type of pipe protection used on project (e.g. protective coating and/or cathodic protection for steel pipe or exposed PVC painted).			
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.			