Colorado Springs Utilities
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NONPOTABLE WATER CONSTRUCTION PLAN CHECKLIST

Complete this checklist for all nonpotable water projects and submit with initial construction plans to Utilities Development Services construction review portal.

A. General Requirements
B. Plan
C. Profile

PROJECT NAME:

IMPORTANT NOTES, read carefully:

- Additional design requirements not included in this checklist can be found in the Water Line Extension and Service Standards.
  Water Line Extension and Service Standards (Water LESS)
- Call-outs are required. Keynote legends may be lightly used when approved by reviewer.
- Combine entire project set (W, S, USP) into one digital file and also combine checklists into their own digital file.
- Plan set digital files, after combining, must be below 18MB. For review and inspection efficiency, **DOWNSIZE ALL** plan set files keeping each individual page less than 1MB. Use no special characters in file name (ie, @, #, &).
- Final UDCF file is required to be resubmitted on lines ≥4" to GIS Mapping Services before UDS plan reviewer signature. For coordinate system requirements per Colorado Springs Utilities Standards, utilize CO State Plane Coordinate system, Central Zone, North American Datum of 1983 (NAD 83/86), using the National Geodetic Vertical Datum of 1929 (NGVD 1929). Upload UDCF to the resubmittal portal and title your digital file with your project's title from plan cover sheet.

A. Cover Sheet General Requirements

A	N/A	
☐	☐	1) Use 24" X 36" format.
☐	☐	2) Show north arrow and scale. Choose scale (approximately 1" = 50') to properly show details.
☐	☐	3) Include site map.
☐	☐	4) Include vicinity map.
☐	☐	5) Include title of project.
☐	☐	6) Provide address for meter.
☐	☐	7) Add Owner/Developer signature block to cover sheet only. See Water LESS 3.6.B.
☐	☐	8) Add CSU Signature block for Water Plan Approval. Applies to all pages of plan set. See Water LESS 3.6.A.
☐	☐	9) Include signature block on cover sheet for professional engineer registered in the state of Colorado.
☐	☐	10) Add standard Nonpotable Water Plan Notes, including Water Project Specific Notes. See Water LESS 3.6.G and 8.12.A.
☐	☐	11) Include *Notice of Authorization* (NOA) number and approval date in plan notes.
☐	☐	12) Utilize Plan Information Block detailed in Water LESS 3.6.F.
☐	☐	a. FIMS map number (https://www.csu.org/Pages/GISMapping.aspx)
☐	☐	b. Tax Schedule number
☐	☐	c. Water pressure zone
☐	☐	d. Max static pressure (see Fire Flow Report and calculate the max static pressure)
☐	☐	e. Utility Design CAD file number **on lines ≥4"**
☐	☐	13) If proposing a private system, provide a copy of the Notice of Private Water System. See Water LESS 2.3.D.1 and 3.2.B.
☐	☐	14) Provide an Agreement and Bill of Sale signed by the Owner/Developer prior to approval of the construction plans.

B. Plan

Annotation:

A	N/A	
☐	☐	1) Show and label all existing utilities (including gas and electric).
☐	☐	a. Include diameter and material for water, wastewater and storm sewer. Indicate as public or private.
☐	☐	b. Label Colorado Springs Utilities Project Number for existing nonpotable mains to which connections are proposed. View information at https://www.csu.org/Pages/GISMapping.aspx. If you still need help contact Infrastructure Records at (719) 668-4426 for “as-builts” and FIMS maps, and City Engineering at (719) 385-5402 for existing storm sewer plans.
☐	☐	c. Label all existing valves. Include numbers for public valves. View information at https://www.csu.org/Pages/GISMapping.aspx. If you still need help, contact Infrastructure Records at (719) 668-4426 for “as-builts” and FIMS maps.
☐	☐	2) Label existing and proposed rights of way and/or easements with reception number and widths.
☐	☐	3) Label street names (note if private).
☐	☐	4) Label subdivision boundaries and adjacent filings.
☐	☐	5) Label match lines with stations and corresponding sheet numbers.
☐	☐	6) Label all existing and proposed pavement, curb and gutter, sidewalks and medians.
☐	☐	7) Label all existing or proposed surface improvements, including but not limited to signs, retaining walls, fences, water quality features, etc.
☐	☐	8) Label all proposed water lines as public or private.
☐	☐	9) Label secondary valves and include construction note for CRA.
☐	☐	10) Show and label all horizontal and vertical bends and size.
☐	☐	11) Label size of all reducers.
☐	☐	12) Label curve data including PC’s and PT’s with stations and label radius.
☐	☐	13) Show stations for all fittings.
☐	☐	14) Show stations for all crossings.
☐	☐	15) Show stations for all service connections ≥4".
☐	☐	16) Label all CTRB’s and CRA’s.

General:

☐	☐	17) Isolation valves must be installed a minimum of one every 600’. See Water LESS 2.6.G.8.
☐	☐	18) No connections allowed between connection to public system and secondary valves.
☐	☐	19) Ensure easements are adequate. See Water LESS 2.6.F.
☐	☐	20) 30” minimum spacer pipe between fittings. See Water LESS Detail Drawing A4-5.
☐	☐	21) For joint deflection criteria, see Water LESS Detail Drawing A4-1.
☐	☐	22) A maximum of 4 degrees deflection at a fitting, 2 degrees in and 2 degrees out.

Abandonment:

☐	☐	23) Label pipe as abandoned in-place and/or as removed per CSU standards. Also label length of pipe to be removed and/or abandoned.

Separations:

☐	☐	24) Label horizontal distance from proposed water line to other utilities and verify that it meets required separation. See Water LESS 2.6.G.3
☐	☐	25) If horizontal separation is not met, use secondary containment options detailed in Water LESS 2.6.G.2
☐	☐	26) Label all utility vertical crossings. Indicate pipe elevations at crossings and maintain separations per Water LESS 2.6.G.4
☐	☐	27) If vertical separation is not met, use secondary containment options detailed in Water LESS 2.6.H.2
☐	☐	28) Refer to Water LESS Detail Drawings A7-1 through A7-4 for crossings underneath other utilities and structures.
☐	☐	29) Verify that the water main is located in roadways, in drive aisles of any parking areas, and at a minimum 15 feet from the edge of the easement.
☐	☐	30) Verify that the nonpotable water main is located 15 feet away from any tree, structure or building.

Restraints:

☐	☐	31) For PVC and DIP pipe sloped at ≥10%, install MJ restrained pipe and add CRA's at top and bottom of slope. See Water LESS Detail Drawing A4-6.

Casing Pipes:

A	N/A	
☐	☐	32) Steel casing pipes needs to be approximately 1.5 to 2 times the diameter of the proposed water line. See Water LESS Detail Drawing A7-2 and A7-3.
☐	☐	33) Ensure no taps or tees are proposed at casing pipe locations or within lowerings.
☐	☐	34) Show casing pipe if water main is under another utility greater than 30'' in diameter. See Water LESS Detail Drawings A7-2 and A7-3.

Fire/Post Hydrants:

☐	☐	35) Hydrant design notes shall include: station and offset, node label, flange elevation, and bury depth. Verify flange elevation max of 4" above final grade.
☐	☐	36) No horizontal or vertical bends allowed on hydrant laterals, except for offsets as shown on Water LESS detail Drawing A5-3
☐	☐	37) No taps allowed on hydrant laterals
☐	☐	38) Show bollards if required. See Water LESS Detail Drawing A5-4.
☐	☐	39) All hydrant laterals will be restrained. See Water LESS Detail Drawing A5-3.

Roundabouts/Medians:

☐	☐	40) Verify water mains installed in a roundabout or median are in a casing pipe. See Water LESS Detail Drawings A7-10 and A7-11.
☐	☐	41) Show service taps located 15' outside of roundabout or median. Water LESS 2.6.H.6

Nonpotable Specific Requirements:

☐	☐	42) Implement measures to minimize direct contact of nonpotable water spray with the public or nearby public equipment. See Water LESS 8.5.A.
☐	☐	43) Implement other public protection measures (i.e. locking hose bibs, segregating equipment, etc.) as determined and communicated by CSU. See Water LESS 8.5.A.
☐	☐	44) There shall be no connections between nonpotable and potable water systems.
☐	☐	45) Indicate location of approved meter, backflow prevention assembly, and strainer (if proposed)
☐	☐	46) Indicate booster pump location if required.
☐	☐	47) Indicate left-opening valves with a black operating nut and a purple valve lid. See Water LESS 8.8.A.
☐	☐	48) Design irrigation mains and laterals per Water LESS 8.10.
☐	☐	49) If converting from potable to nonpotable system, see Water LESS 8.11.B.

C. Profile

☐	☐	1) Choose scale to properly show details. Minimum 1" = 50' horizontal; 1" = 5' vertical.
☐	☐	2) Profiles required for mains >12" and fire lines >4"
☐	☐	3) Profiles required when slopes >10%, if in geological hazard area, if water main lowering present, and when the water main is outside of ROW or paved areas
☐	☐	4) Show profile grid stations and elevations
☐	☐	5) Stations on plan and profile view must match
☐	☐	6) Label existing and proposed grades
☐	☐	7) Label length, diameter, material, and slope of all pipe segments
☐	☐	8) Label all proposed horizontal and vertical bends with elevations
☐	☐	9) Label all valves (note: butterfly valves required on mains >16")
☐	☐	10) Show profile grid elevations

Signatures of engineeing firm:

Plan drawn by:

Date:

Plan reviewed by:

Date: