



Colorado Springs Utilities
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WASTEWATER MAIN CONSTRUCTION PLAN CHECKLIST

Complete this checklist for all wastewater mains 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 Wastewater Line Extension and Service Standards.
[Wastewater Line Extension and Service Standards \("Wastewater LESS"\)](#)
- Call-outs are required. Keynote legends may be lightly used if 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.
- Final UDCF file is required to be resubmitted 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](#). Title digital file with your project's title from plan cover sheet.

A. Cover Sheet General Requirements - *By completing this checklist you are required to have a sanitary mainline plan set with its own coversheet. Exceptions must be approved by Utilities Development Services staff.*

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 addresses and lot numbers for all lots/buildings.
- 7) If multi-family, label as to whether townhomes, apartments, duplexes or condominiums.
- 8) Show typical street cross section(s) showing all existing and proposed utilities with required separations. See Wastewater LESS C1 Detail Drawings.
- 9) Add Owner/Developer signature block to cover sheet only. See Wastewater LESS 3.6.C.
- 10) Include signature block on cover sheet for professional engineer registered in the state of Colorado.
- 11) For wastewater mains within public streets, include Utility Grade Review signature block, and if underdrain is proposed include Underdrain Review Statement signature block. See Wastewater LESS 3.6.B and 3.6.D.
- 12) Add CSU Signature block for Wastewater Plan Approval. See Wastewater LESS 3.6.A.
- 13) Add standard Wastewater Plan Notes, including Wastewater Project Specific Notes. See Wastewater LESS 3.6.G and 3.6.H.
- 14) Utilize Plan Information Block detailed in Wastewater 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
 - f. UAP file number or plat reception number
 - g. Development Plan number and date of approval
 - h. Notice of Private Water System reception number
- 15) If proposing a private system, provide a copy of the Notice of Private Wastewater System. See Wastewater LESS 2.3.G.2 and 3.2.B

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A N/A

- 16) Executive Agreement required for mains installed on city property.
- 17) Provide an Agreement and Bill of Sale signed by the Owner/Developer prior to approval of the construction plans.
- 18) Final UDCF file is required to be resubmitted 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.

B. Plan

Annotation:

- 1) Text call-outs are required, no symbol legends allowed.
- 2) 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 water and wastewater mains to which connections are proposed. Label wastewater manhole LID's for all existing manholes. Information can be found 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.
- 3) Label existing and proposed rights of way and/or easements with reception number and widths.
- 4) Label street names (note if private).
- 5) Label subdivision boundaries and adjacent filings.
- 6) Label all proposed wastewater lines as public or private. If private, notarized and recorded Notice of Private Wastewater System document required. Provide information on cover sheet.
- 7) Label phase lines, separate plan set required per phase.
- 8) Label match lines with stations and corresponding sheet numbers.
- 9) Label all existing and proposed pavement, curb and gutter, sidewalks and medians.
- 10) Label all existing or proposed surface improvements, including but not limited to signs, retaining walls, fences, water quality features, etc.
- 11) Show anode size, test station, and location. CSU provides corrosion design on all proposed DIP/steel mains.
- 12) Label curve data including PC's and PT's with stations and label radius.
- 13) Show stations for all crossings.
- 14) Label existing and proposed manholes with stations, diameter, rim elevations, and all in and out inverts with direction (N, S, E, W).

General:

- 15) Provide reference stations for intersecting manholes.
- 16) Show and label access roads to manholes outside of paved areas.
- 17) Show and label service line locations with stations (commercial projects only).
- 18) For curvilinear pipe, check minimum radii requirements in relation to size of main being proposed. See Wastewater LESS Detail Drawing C2-2.
- 19) Ensure easements are adequate. See Wastewater LESS 2.4.D.1.
- 20) Verify that the wastewater main is located in either roadways, or drive aisles of any parking areas, and at a minimum 15' from the edge of the easement.

Abandonment:

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

Stub-outs:

- 22) If stub-out proposed, see Wastewater LESS 2.5.E.8.
- 23) No service connections allowed on stubs for future main extensions.

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Separations:

A N/A

- 24) Label horizontal distance from proposed wastewater line to other utilities and structures and verify that it meets required separation. See Wastewater LESS 2.5.D.3.
- 25) Label all utility vertical crossings. Indicate pipe elevations and clearance at crossings and maintain separations per Wastewater LESS 2.5.D.4.
- 26) If vertical or horizontal separations are not met, use secondary containment options detailed in Wastewater LESS 2.5.D.2.
- 27) Verify that the wastewater main is located 15' away from any tree, structure or building.

Casing Pipes:

- 28) Design steel casing pipes per Wastewater LESS Detail Drawings C2-4 and C2-5. Reference table on C2-4 for minimum casing pipe size.
- 29) Ensure no taps or fittings are proposed at casing pipe locations.
- 30) Indicate casing pipe or flow fill if wastewater main is under another utility greater than 30" in diameter. See Wastewater LESS 2.5.F.3.

Manholes:

- 31) Verify diameters of manholes. See Wastewater LESS 2.5.E.3.
- 32) Manhole Assessment Form must be completed when modifications or connections to existing manholes are proposed. See Wastewater LESS 2.5.E.2.
- 33) Maintain drop through manholes per Wastewater LESS 2.5.E.5.
- 34) Match invert to crown if greater than one pipe size difference.
- 35) High velocity protection required for slopes $\geq 15\%$. See Wastewater LESS Detail Drawing C3-5.
- 36) For internal drop manholes refer to Wastewater LESS Detail Drawings C3-7 or C3-6 and show detail on plans with elevations.
- 37) 500' maximum spacing between manholes.
- 38) Locking hinged covers required within cross-country or remote areas.
- 39) Provide access to manholes. See Wastewater LESS 2.5.D.7.

C. Profile

Note: The following items are to be used in conjunction with the above Wastewater Plan checklist when designing Plan and Profiles.

- 1) Choose scale to properly show details. Minimum 1" = 50' horizontal; 1" = 5' vertical.
- 2) Profiles required for all mains.
- 3) Show profile grid stations and elevations.
- 4) Stations on profile and plan view must match.
- 5) Label existing and proposed grades.
- 6) Label length, diameter, material, and slope of all pipe segments.
- 7) For pipe slopes between 0.5% and 1.04% requires select bedding note and SDR 26 pipe.
- 8) For pipe slopes greater than 10% pipe must be fully restrained (add to USP also).
- 9) Label casing pipe with begin & end stations and add note: See Wastewater LESS Detail Drawings C2-4 and C2-5". Include size and material of casing pipe.
- 10) Label existing and proposed manholes with stations, diameter, rim elevations, and all inverts and cuts.
- 11) If an underdrain is required, show all details listed in Wastewater LESS 8.3.

Signatures of engineering firm:

Plan drawn by:

Date:

Plan reviewed by:

Date: