

The Consolidated Mutual Water Company – General Construction and Water Notes:

Main Extension Notes:

1. All materials and workmanship shall be in conformance with Denver Water's Engineering Standards and Materials Specification as adopted by The Consolidated Mutual Water Company (Company) and the approved plans.
2. All main installations/system modifications will be approved and inspected by The Consolidated Mutual Water Company. Field change directives made by The Consolidated Mutual Water Company's Inspector shall be made within 24 hours by the contractor.
3. Contractors shall maintain a copy of the approved plans and the current Denver Water Engineering Standards on-site at all times during construction. See the list below for a quick reference to the Material Specifications and Standard Details that have been modified by The Consolidated Mutual Water Company.

Company Modified Material Specification Quick References:

None

Company Modified Standard Details Quick References

- a. Typical Public Right-of-Way Section
 - b. Typical Private Street Section
 - c. Typical Trench Section
 - d. Typical Trench Section for Pipeline in Dipping Bedrock
 - e. Plan, Profile, & Location for Fire Hydrants, Mains, & Valves
 - f. Tracer Wire Installation for PVC Water Main
 - g. Storm & Sanitary Sewer Crossing
 - h. All Pressure Regulating Valve and Check Valve Manholes/vault typical details are superseded by Company plan specific details.
 - i. Valve Operation
 - j. 46-70 ALL SERVICE LINE AND METER NOTES AND DETAILS ARE SUPERSEDED BY CONSOLIDATED MUTUAL WATER'S METER SPECIFICATIONS AND DETAILS.
4. AWG 12 solid copper wire shall be installed on all water mains when mains are installed by open trench methods. An alternate material will be considered when mains are installed by other methods.
 5. The depth of cover over the pipe, measured from official street grade to the top of the pipe, shall be a minimum of 4-1/2 feet and shall be known as the *cover over the pipe*. If difficulties arise when crossing interference, and where specifically approved by Denver Water, deviations from 4-1/2 feet of cover will be permitted. The cover over the pipe shall be a minimum of 4-1/2 feet and a maximum of 10 feet with The Consolidated Mutual Water Company approval.

6. Any changes in alignment and grade shall be authorized by Company Staff and shall be accomplished by the installation of additional fittings. The deflection of joints is permitted only when installing pipe on horizontal or vertical curves and must be done in accordance with the pipe manufacturer's accepted ranges.
7. Prior to the installation of water mains, road construction must have progressed to at least the sub-grade state. Sub-grade is defined as an elevation of no more than 7 inches below the finished grade.
8. The Contractor shall adjust all valve boxes and fire hydrants to the final finished grade. Valve Boxes must be installed flush with permanent surface level.
9. Bends, tees, fire hydrants, blow-offs, and plugs at dead-end mains shall be protected from thrust with mechanical restraint and concrete kick blocks in accordance with Denver Water's Engineering Standards as adopted by The Consolidated Mutual Water Company.
10. Valves shall be placed as shown on the plans in accordance with Company Plans and Details. For the most part valves shall be located on property line extensions, except for tapping tees where an additional valve shall be placed on the tapping tee.
11. Utility crossings shall maintain a minimum clearance of 18-inches between the outside of the pipes, unless shown otherwise on the approved plans.
12. Contractor is responsible for potholing all proposed utility crossings prior to beginning water line work. Pothole information must be provided to the Company and any conflicts noted/highlighted. Delays due to utility conflicts not noted shall not be considered.
13. Only one point of connection is allowed until the testing of the new main installations is complete.
14. Newly installed water mains and fire service lines shall be hydrostatically tested in accordance with Denver Water Engineering Standards.
15. The trench shall be excavated and the pipe exposed for inspection at any location on the project, when requested The Consolidated Mutual Water Company.
16. The sterilization and flushing of new water mains shall be inspected by Company Staff. Company Staff will sample water and take it to its certified lab for testing. Results will be provided to Contractor.
17. The Contractor is responsible for:
 - a. Calling for utility locates.
 - b. Staking prior to beginning construction.
 - c. Obtaining, at the Contractor's expense, applicable licenses,

permits, bonds, etc., that are required for the main installation/system modification. Unless otherwise stated by the Company.

- d. Contact Company's Engineering Department to schedule a Pre-construction Meeting, 303-238-0451, at least 1 week prior to beginning construction.
 - e. Contact Company's Distribution Department to schedule inspections, 303-238-0451, at least 48 hours prior to any work being performed.
 - f. In the event of an emergency, at any time, contact the Company at 303-238-0451 to notify Company Staff of the situation.
18. Submittals to the Company shall be done so in accordance with the Company's submittal specification. Submittals include but are not limited to:
- All materials to be installed and/or used
 - Shop drawings
 - Construction schedule
 - Product data
 - Samples
 - Traffic control plans
 - Methodology for utility crossings
 - Pot-hole data or other subsurface exploration test results.
19. The Contractor is not permitted to operate existing Company Valves. All notifying customers verbally/written about water outages during construction shall be done so by Company Staff.
- Note: Be advised that on occasion valves in our system may be inoperable. On such occasions, it may become necessary to back up an additional block for the shut out. If that occurs, additional notifications verbally/written to customers will be required. No adjustment to contract will be made nor will contractor be paid for down time.*
20. All trench compaction and street restoration shall be done to the standard of the applicable municipality.
21. Traffic control, stormwater management plans and related work shall be developed and performed by the contractor to the applicable municipality standard/requirements.
22. Prior to any work being performed on the water infrastructure, a mandatory pre-construction meeting shall be held where the following items shall be addressed:
- CMWC preconstruction requirements,
 - construction schedule;
 - staking instructions;

- inspection notification requirements
- installation requirements for pipe, fire hydrants, blow offs, etc.;
- testing requirements;
- Final inspection.

The following individuals are required to attend this meeting:

- Project owner/developer and/or their representative,
- CMWC Superintendent, Engineer, and Inspector,
- Denver Water Inspector (if project is within the Denver Water portion of the system),
- Contractor installing pipe (to include onsite foreman),
- General Contractor, if different then pipe contractor,
- Surveyor (suggested but is an optional attendee)

It is strongly suggested any Contractor bidding on this plan set should contact CMWC's Engineering Department to obtain a copy of the standard pre-construction meeting guidelines prior to submitting a bid for this work.

23. The water service line(s) and meter location(s) within this plan set are shown for information only. The Stockholder shall submit separate construction drawings(s) to CMWC from which the Stockholders Contractor will install the domestic and fire line services, vault(s), meter pits and required backflow apparatus.