

Animas Water Company Performance Standards and General Specifications

These Performance Standards and General Specifications describe the procedures and reference the materials and standards expected of any developer or contractor installing water mains or services within the Animas Water Company (AWC) system.

Performance Standards

1. General

Except in the simplest of cases, all new construction review requests must be accompanied by approved plans and specifications prepared by a qualified Professional Engineer, licensed in the State of Colorado.

Any new construction involving a main line extension or replacement within the AWC service area shall include an approved and signed Line Extension Agreement prior to any construction.

All new users must pay the applicable Plant Investment Fee to AWC prior to installation of any customer service water meter. Additional meter installation charges will apply.

In cases of new development, service lines including corporation stop, service to property line and curb stop are to be installed to provide orderly road construction. Plant Investment Fees for those service lines are not due and payable until the time of meter installation by AWC staff.

2. Conceptual Approval

At the conceptual approval stage of any project involving new water mains and other support infrastructure to be served by AWC, --conceptual plans including location, land description, number and size of services anticipated, size of water mains anticipated, and overall peak water demand anticipated shall be submitted in simple form to AWC for review. Plans at this point can be informal and not contain the required later detail.

AWC staff (and the Board if deemed necessary) will review the submittal to determine if 1) service as proposed is available without excess demand on existing AWC facilities, 2) project can meet AWC standards and specifications, 3) project meets the overall interests of AWC.

AWC will respond within a reasonable time to any such conceptual inquiry and indicate to the developer or new user whether the conceptual approval proposal is accepted. That approval may be used by the applicant to further any other governmental approvals he/she may be processing.

Conceptual approval is normally sufficient as of the date of approval and AWC does not require purchase of Plant Investment Fees for individual service connections until such time as the meter assembly is installed.

3. Review by Other Agencies

Conceptual approval may have additional design standards applied through the La Plata County Planning process that are above and beyond the needs of AWC. The local fire authority may have input as to fire hydrant locations, line sizing, etc. that is beyond the minimum needs of AWC. AWC is a rural domestic water provider and does not guarantee fire flow at any point in the system. AWC will maintain and repair any fire hydrant and appurtenances such as valves, fittings, thrust blocks, added to its distribution system. However, AWC takes no role in inspection, flow testing or maintenance of fire hydrants.

4. Plans and Specifications

After Conceptual Approval, Plans and Specifications meeting the above standard are to be submitted for review to the Animas Water Company prior to execution of a Line Extension Agreement and prior to the beginning of any construction.

The Plans and Specifications should present in detail all main and service locations, water valves, hydrants, fittings, details as needed. Review will be undertaken by the Animas Water Company Manager and the Company Engineer, and

comments will be forwarded to the developer. Changes required by AWC of the submitted Plans and Specifications will be completed by the developer's engineer and re-submitted to the Company.

Final approval on plans signed by the Company manager is the only confirmation that the plans are acceptable, and that the contractor or developer can proceed to execute the Line Extension Agreement.

5. Plat or Easements

Along with the Plans and Specifications, appropriate easements for all main lines to be installed and owned by the Company will be provided on either a plat or separate easement instrument. Road or street dedications for utility purposes are generally adequate for right of easement in those dedications.

Any other easement crossing property not defined by road dedications shall be fully described on either the plat or separate recorded instrument. Easements outside of public streets shall be minimum 20' wide and dedicated to AWC. Permanent structure improvements within easements, except for roadways and concrete surfaces, are not allowed.

6. Line Extension Agreement

Only after Plans and Specifications and Plats or Easements have been approved by the Company, will a Line Extension Agreement be executed. A sample Line Extension Agreement should be obtained by the contractor or developer early in the review process so that they understand what is expected of them.

No construction of any kind of Animas Water Company main line improvements can proceed without an executed Line Extension Agreement.

7. Construction and Inspection-

All construction/installation of the approved mains and appurtenances shall be at all times visibly available to designated inspection staff of AWC. AWC staff must approve all installation in accordance with the specifications prior to covering/backfilling any installation.

Changes to the work during construction may be made only with the approval of AWC staff. All changes are to be in writing with documented AWC approval.

8. Acceptance

After all installation is completed in accordance with the approved Plans and Specifications, including inspection and testing by AWC staff, the developer shall request final acceptance of the installation from AWC.

Final acceptance shall require assembly of full paperwork on the project including inspection records, testing records, and a final set of as built drawings. As built drawings shall be in digital form on a coordinate base acceptable to the GIS system of AWC.

A final acceptance document signed by the Manager of AWC will be generated after these steps are completed.

No individual service line within a new main line installation shall be available for use until final acceptance is granted.

At final acceptance, the mains and appurtenances become the property of AWC. All plats and easements must be signed and recorded prior to final acceptance.

9. Warranty

All main line and service extensions installed under the above must be warranted by the developer to be free from defects for one year from date of completion and acceptance. By signing the Line Extension Agreement, the developer agrees to this condition.

General Specifications

10. Pipe

All Main line pipe in the Animas Water Company is to be 6" or larger C900 type, PVC, SDR 14, AWWA C900-16 305 psi class. No main lines smaller than 6" will be accepted. Pipe is to be laid in 20' lengths with gasketed joints at 4' bury to crown of pipe. .

Main sizes may be required to be larger than 6" depending on the nature of the project.

When required, (C900 PVC is the standard), ductile iron pipe shall be Class 52, AWWA C151 with push on gasketed joints.

11. Fittings

All fittings for main line pipe are to be mechanical joint ductile iron with restrained or "Mega Lug" joints. Installation of the "Mega lug" bolts shall be according to manufacturers instructions. Fittings are to be AWWA C153 rated for 250 psi.

All bend fittings, end caps, tees, and miscellaneous required fittings shall utilize concrete thrust blocking as described below.

12. Valves

Gate valves shall be resilient seat type that meet requirements of AWWA C509. Valves shall be iron body with epoxy coating and stainless steel cap bolts. Valve connection to main shall be mechanical joint with "Mega lug" restraint. Valves are to have two inch operating nuts and a non-rising bronze stem and rated at a working pressure of 250 psi.

13. Valve Boxes

Valve boxes shall be adjustable two piece box and lid, 5 ¼ inch inside diameter, adjustable screw type. The lid shall have "Water" cast in the top. At completion and setting of final grade, a concrete annulus, minimum 8" wide and 4" thick shall be poured around the lid and flush with the asphalt.

14. Thrust Blocks

Concrete thrust blocks for the appropriate bend, pressure, and soil type shall be installed at all bends and tees. The design engineer for the project is to make appropriate size calculations for the thrust surface against undisturbed soil for each fitting case. Concrete shall be minimum 2500 psi at 28 days.

When warranted by soil pH conditions, AWC may require polyethylene wrap at fittings, valves, and hydrant bases per AWWA C-105-77.

15. Fire Hydrants

Fire hydrants are to be AWWA C-502, ordered with 4' bury, mechanical joints, "Mega lug" restrained, 5 ¼" valve opening, turn left to open, with two 2 ½" hose nozzles and one 4 ½" pumper nozzle, national standard thread. Hydrants shall drain upon closure, with minimum 4 cu. ft. of washed gravel provided at weep holes. Hydrants are to be of traffic breakaway design. Due to supply issues, make and specification of all hydrants are to be approved by submittal by AWC prior to installation. Hydrant placement shall be approved by local Fire Authority.

16. Warning Tape/Tracer Wire

Tracer wire shall be installed continuously along all water mains and stubbed where possible with 24" surplus at fire hydrants or when not possible, in valve boxes. Wire is to be 10 gauge, insulated copper for direct bury and buried adjacent or on top of the pipe.

Specific "Water Main" underground warning tape is to be installed approximately halfway in depth to the water main during backfill wherever mains are installed.

17. Water Service Lines

Water service lines to C900 water mains shall use an approved tapping saddle, _____ corporation stop, ¾" copper "k" to curb stop by _____ (or larger in case of larger water services). Water service lines and curb stop are to be installed prior to testing of main lines. Depth of bury 4'. Water service lines for new construction are to be terminated with a 6' tee post with base at end of corporation stop. Corporation stops are to be installed 2' inside property lines.

Valve box, meter pit, meter yoke, meter, and accessories are to be installed only by AWC personnel and only after payment of PIF and installation fees.

18. Separation of Water and Sewer Lines

Water and sewer main crossings shall have the sewer main encased in accordance with CDPHE regulations. Whether above or below, crossings shall never have separation of less than 6" vertically. CDPHE regulations for crossings of water service lines shall be observed.

Water and sewer mains when laid in streets shall be 10' or more separated horizontally.

19. Installation and Laying of Pipe

Pipe and fittings shall be handled so as to prevent shock damage, and physical surface damage to any coatings on fittings or ductile iron pipe.

Pipe shall be laid in dry trenches, adequately dewatered.

Dirt and foreign material are to be kept out of pipe before and during laying operations.

Disinfection tablets shall be added to pipe joints as they are laid.

The open end of any pipe shall be plugged anytime installation stops or pauses.

20. Trenching and Backfill

All trenches shall be over-excavated to a depth of 4" below required bury plus pipe depth. Bedding of equivalent class 6 ABC or finer accepted material shall be compacted to a depth of 4" below the pipe. Haunching on sides and backfill over top of pipe to a depth of 12" shall meet the same sizing gradation. Compacted backfill from 12" over the pipe to the roadway or other surface shall not have material greater than 3" in size and be uniformly graded with adequate fine material. Backfill up to 2' from surface shall be compacted to 90% MDD and from 2' depth to surface to 93% MDD. Frozen or excessively wet material is not acceptable as backfill.

21. Testing-

All water mains and fittings are to have testing completed prior to backfill. All thrust blocks and joint restraints are to be installed prior to testing with minimum concrete cure time of 48 hours for thrust blocks. Initial backfill may be placed in the center of pipeline sections but all bell and spigot joints and all fittings shall remain visible.

Mains are to be initially filled and air removed by opening valves, services, etc. All air must be removed in testing for testing to be successful.

After mains have had their initial testing fill, a chlorine residual test will be performed. Installation of chlorine tablets in mains at installation is required in adequate quantity to yield initial chlorine residual of 20 parts per million as tested at random locations.

Water mains and services are then to be pressurized, using external pumps and not existing main line pressure, to 200 psi. The pressure will be maintained using external means for a period of 2 hours. At completion of the pressure test, water needing be added to the pipe will be measured. For 6", 8", and 10" pipe a loss of less than 0.2 gallon per 100 feet of pipe will be deemed acceptable.