

Public Water Supply District #12 Of Jefferson County, Missouri

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Water Main Extension Policies, Procedures, and Specifications

- **Submittal Phase**

- Submission of a preliminary plat of the area to be served will be made to PWSD #12 to determine under what conditions the extension will be approved. The District shall determine that the extension may not materially affect in an adverse manner any service rendered to existing customers. In the event PWSD #12 determines, based on information received from its staff and consultants, that the extension would have an adverse effect on existing customers, the District shall not permit the extension without the developer paying for additional modifications needed to correct the problem.
- Should the developer desire to complete the extension, three (3) sets of plans and specifications prepared and sealed by a Registered Professional Engineer in the State of Missouri shall be given to PWSD #12.
- The developer and/or contractor shall present Certification of Insurance in the amount of at least one million dollars (\$1,000,000.00) to PWSD #12.
- The developer must show approval from the Fire Marshal(s) of the fire department(s) having jurisdiction over the area in which the proposed extension is located. The approval shall consist of the Fire Marshal's approved stamp and signature on the plans.
- The submitted plans shall include PWSD #12's specifications, certificate of ownership of all land to be served, and all easements needed to complete the extension.
- If deemed necessary by PWSD #12, the District's engineer will review the submittal to ensure the standards of the District are met and what effect the extension might have on the existing distribution system.
- If any changes are required by the District's engineer, the developer shall have an engineer make the modifications noted and submit three (3) modified sets of plans to PWSD #12 for review and final approval.

- Upon approval of the proposed extension by the District manager and engineer, the plans will be presented to the Board of Directors of PWSD #12 for their approval. The Board of Directors usually meet on the second Tuesday of every month.
- **Construction Phase**
 - The developer and/or contractor is responsible for ensuring all underground utilities are located during the construction process to avoid conflicts between existing utilities and the new water main. This can be done by calling 1-800-DIG-RITE (1-800-344-7483).
 - After approval of the proposed extension, the developer shall obtain and present to PWSD #12, any and all permits (including Missouri Dept. of Natural Resources), easements, and/or plats of record necessary to complete the construction of the water main extension. PWSD #12 will have the easements recorded at the expense of the developer.
 - Construction is to be completed within one year after approval. Should construction not be completed within that time frame, plans must be re-submitted for approval.
 - PWSD #12 personnel must supervise any new connection or extension to the existing water distribution system.
- **Specifications**
 - All water pipe shall be PVC SDR-21 pipe rated at 200 psi working pressure, NSF (National Sanitation Foundation) approved. Minimum Pipe diameter is eight inches (8") for all water mains. All pipe used for crossing creeks shall be made of ductile iron utilizing restrained joints.
 - All water main pipe shall be laid to a depth of at least 42", but not more than 72" below proposed finished street pavement grade or proposed finished grade of ground over pipe, whichever is lower. The measurement will be to the outside top of the pipe barrel. Under no circumstances will 72" depth be exceeded. The trench width shall not exceed the pipe diameter plus 24".
 - All pipe shall be placed on crushed limestone screenings having a minimum thickness of six inches (6"). The pipe shall be covered with the same material to a level at least six inches (6") above the top of the pipe. The remainder of the ditch shall be filled with dirt, or in the case of street crossings, with clean, compacted rock. All backfill material shall be free of any rock or other debris exceeding six inches (6") when measured in any direction.
 - During construction, open pipe ends must be sealed to prevent the possibility of contamination.

- Upon commencement of construction and during construction, PWSD #12 personnel shall inspect all water mains prior to backfill to ensure that construction is being carried out in the manner specified and to the satisfaction of PWSD #12. If construction methods are improper and not to the satisfaction of PWSD #12, the owner and/or contractor shall be notified that water supply to the extension will not be furnished until all deficiencies have been corrected and approved by PWSD #12.
- Tracer wire shall be #12 AWG THHN solid copper and be taped to the top of the pipe at not more than eight-foot (8') intervals. Where necessary, weatherproof direct-bury splice kits shall be used. Wire shall be placed along the outside of each main line and fire hydrant valve box, terminating under the lid.
- When possible, extensions shall be connected to the existing water distribution system using at least two separate connection points, creating a looped system.
- All "dead-end" lines shall terminate with an approved valve and fire hydrant assembly.
- All gate valves shall be AWWA approved, rated for 250 psi working pressure, resilient wedge type, NSF certified, epoxy coated inside and out, must have a two-inch (2") square operating nut, and be of domestic origin.
- Valve boxes shall be cast iron, adjustable, and have a cast iron lid marked "WATER".
- Fire hydrants shall be Mueller brand breakaway traffic type, American Flow B84B or equivalent approved by PWSD #12. All hydrants shall be rated at 250 psi working pressure, have a 5 ¼" main valve, two 2 ½" nozzles, one 4 ½" nozzle and be red in color. The center of hydrant nozzles shall be twenty inches (20") above the finished grade and the 4 ½" nozzle shall face the nearest street.
- All fire hydrants shall have a gate valve attached with an anchor-type coupling not more than two feet (2') from the hydrant. Hydrants and valves shall be placed on a flat concrete block and stand plumb in all directions. Hydrant drain holes shall be kept clear of concrete. A minimum of eight cubic feet of 1" clean rock shall be placed around the hydrant drain holes.
- Fire hydrants and main line valves shall be located no more than 500' apart in commercial districts and 1000' apart in residential districts, or as specified by state standards or the local fire marshal having authority.
- A 4" pipe shall be located at lot lines (or as otherwise agreed) to each lot for future service-line street crossings. These pipes shall be installed similar to the water main, sealed and marked with a steel fence post terminating above grade and painted blue.
- All elbows, tees, and other fittings shall be cast iron, of domestic origin, mechanical joint type with a concrete thrust block.

- All thrust blocks shall be formed and poured-in-place. Pre-cast concrete blocks will not be accepted as a substitute.
- All fittings shall be attached utilizing a Mega-Lug or approved equivalent restraint kit.
- Horizontal and vertical separation of all water and sewer lines shall conform to current Missouri regulations stated in MO 10 CSR 60-10.
- All bores and road crossings shall be in accordance with the specifications of PWSD #12, the State of Missouri, and Jefferson County. All necessary permits and expenses are the responsibility of the developer and/or contractor.
- All lines shall be disinfected in accordance with current AWWA and Missouri Department of Natural Resources specifications. Water samples will be taken by PWSD #12 personnel and submitted for bacteriological testing at a state-certified laboratory. Any section of water main that fails to meet testing requirements shall be flushed, disinfected and sampled again. The developer may be billed for excessive, repeat sampling.
- All lines, hydrants, and fittings shall be hydro-tested to 200 psi for two hours with not more than a five (5) psi drop in water pressure. This test MUST be witnessed and approved by a PWSD #12 representative.
- Ground must be finish graded with soil stabilization (seed & straw, hydro-seed, etc.) in place before final inspection.
- At the completion of the project, as-built plans must be submitted to PWSD #12 in both paper and digital format.

- **PWSD #12 Acceptance Phase**

- The following items must be completed before water service will be provided to the water main extension at the completion of the project:
 - PWSD #12 personnel will verify that the water main extension was installed to meet the specifications of PWSD #12 and the Missouri Dept. of Natural Resources.
 - The water main extension shall pass a pressure test monitored by PWSD #12 personnel or a designated representative (as described above).
 - The water main extension shall pass a bacteriological test administered by PWSD #12 personnel or a designated representative.
 - PWSD #12 personnel will electronically locate the new main extension to verify that all trace wire is functional. Any needed repairs will be the responsibility of the contractor.

- The developer's engineer will provide two (2) paper copies and one digital copy of "as-built" plans for the water main extension to PWSD #12.
 - A copy of the final recorded subdivision plat will be provided to PWSD #12.
- Upon completion of the above items, Public Water District #12 shall accept the water main extension at its next regular meeting of the Board of Directors. The date of acceptance will begin a one (1) year warranty period for the developer to guarantee the project. Should any repairs or replacement of lines be needed during this time period, PWSD #12 will notify the developer who shall immediately correct the problem. Should the developer fail to correct the problem in a timely manner, PWSD #12 shall correct the problem at the developer's expense.

My signature below indicates that I have read and understand all of the above information.

Developer	Date
Contractor	Date
Manager, PWSD #12	Date

Developer's signature must be notarized:

STATE OF MISSOURI)
COUNTY OF JEFFERSON) SS

On the _____ day of _____, 20____, before me personally appeared _____

_____ to me known to be the person(s) described in and who executed the foregoing agreement and acknowledge that they executed the same as their free acts and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal at my office in Jefferson County, Missouri the day and year first above written.

Notary Public