



Underground Fire Main Permits



NOTICE!!!!

MO American has changed their tap process effective 10/1/20. This will have SIGNIFICANT impact on the timeline and construction scheduling for fire mains and projects requiring them. Please read carefully!

Overview

Missouri American, effective 10/1/20 is now prohibiting a tap to their main by others. All fire service taps and meter boxes will be required to be done by Missouri American crews or thru a contract let by Missouri American.

Missouri American is now requiring all fire service line work from the riser to within 6 feet of the valve box to be in-place PRIOR to application for a tap. Missouri American is indicating that it will take 2 to 4 weeks from receipt of a tap to let the required contract to install the tap and valve box. NFPA 24 Section 10.10.2.2.5 allows trenches and joints to be covered prior to hydrostatic testing provided the installing contractor takes responsibility for locating and correcting leakage. This does not absolve a contractor from passing the required Primary Inspection prior to cover. Once the tap and valve box are complete, a hydrostatic test can be performed and a flush of the main witnessed.



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A permit is required for the installation, repair or replacement of underground water supply lines that supply fire protection systems in whole or in part and/or private hydrants on any commercial or residential jobsite. At least 3 separate inspections are required during the course of an underground fire main installation. More inspections may be required for larger jobs with staged construction. Installations will be reviewed and inspected against NFPA 24 version 2019 standards.

When a single tap or “main” is supplying both a fire suppression system and a domestic service system, the “main” shall be considered a fire main and conform to all NFPA standards. Once the domestic service splits off from the main, that domestic system shall no longer be required to comply with NFPA standards.

Portions of a tap, valve box, fire line and hydrants that are maintained by Missouri American Water do not require a permit from us. All work that is and or will be privately maintained shall have a permit from West County EMS & Fire Prot. Dist. (WCEFPD) prior to start of construction and installation without exception. This means that all work on any private portion of the fire main performed by the Missouri American contractor will be subject to a separate permit with engineered drawings.

Outside the Town & Country City Limits

Permits are required from District at 223 Henry Ave., Manchester MO 63011.

Inside the Town & Country City Limits

Permits are required from the District thru the City of Town & Country at their Municipal Center.

Plan Submittal Requirements

1. All plans shall include a title block with information that conforms to the Missouri Board of APELSLA.
2. The plans shall be drawn by a licensed professional engineer, competent in the design and layout of NFPA piping systems. The engineer shall be registered with the State of Missouri and shall be a full-time employee and/or owner of the firm identified in the title block. The engineer may NOT be a subcontracted, part-time or “1099” entity with respect to the firm listed in the title block.
3. The firm shall be registered with the Missouri Secretary of State and shall be in good standing. If the firm is an LLC, is incorporated or is a partnership where one or more of the partners is incorporated or an LLC, then the firm shall be licensed as an engineering firm with the Missouri Board of APELSLA.
4. The plans shall be signed and sealed by the professional engineer of record.



5. The plans shall include a “Code Block” identifying the ICC code and NFPA standards to which the plans are designed.
6. The plans shall include specific detail on each joint, thrust block and connection. Plans shall also show a detail on how the pipe runs thru any structural or foundation components of the building.
7. Pipe materials and fastener information shall be shown on the plans.

Inspection Requirements

1. A minimum of three WCEFPD inspections are required for underground piping serving sprinkler systems and/or private hydrants: 1) Primary inspection; 2) Hydrostatic testing; 3) Flush inspection. Please schedule all inspections at least 48 hours in advance (excluding weekends and holidays). Partial inspections are welcomed with no additional charge. All work will be inspected to the approved plans. Where plans are subsequently found to be deficient in meeting code requirements, the required code(s) shall control. Significant errors and omissions shall require redesign and res
2. **Primary inspection:** Thrust block excavation shall be completed. Thrust blocks shall be poured and set or actively being poured at the time of inspection. **Embedment of restraining rods/stirrups MUST be witnessed by our inspector.** All pipe shall be in place and exposed for visual inspection. Pipe between 4” and 12” diameter shall be laid on a minimum six-inch bed of clean material no larger than ¾” nominal diameter. Unexcavated earth will be allowed provided there are no solid chunks of hard material (rocks, bricks, concrete debris, etc.) greater than ¾” diameter. Trenches shall be of a sufficient depth to allow the required cover above pipe, typically 30” to 36”. Ferrous pipe and fittings shall be encased in polyethylene tubing (not wrapped) and tightly taped to inhibit water infiltration. **Ferrous joints (with the exception of stainless steel 316) shall be completely coated 360 degrees with asphaltic sealant or other corrosion retarding material.** Any required tracer wire (for C900 pipe) shall be installed and reasonably secured to the pipe. Available backfill and cover material shall be ¾” nominal diameter or less.
3. **Hydro Testing:** Thrust blocks shall be in place and cured. Pipe shall be center-loaded with clean sand to prevent uplift, but all joints shall remain exposed. The system shall be hydrostatically tested at 200 psi (or 50 psi over maximum static pressure, whichever is greater) for a duration of at least two hours prior to the arrival of the inspector. If a contractor chooses to cover in accordance with 10.10.2.2.5, the hydrostatic test will be witnessed throughout the duration of the test and no variance will be provided for the maximum 5 psi difference over 2 hours as outlined under 10.10.2.2.1.
4. **Flush inspection:** All portions of the underground system shall be flushed to remove debris prior to connection to overhead piping. This flush shall be witnessed by a WCEFPD Inspector or their designee. Flow shall be through a minimum of a four-inch hose or pipe,



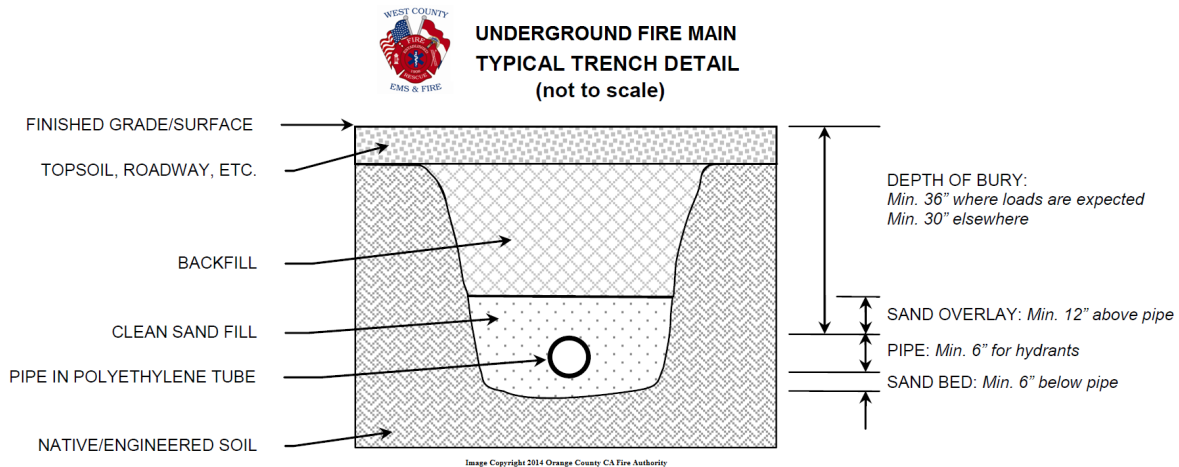
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unless otherwise approved by the fire inspector prior to scheduling the flush. Hose or pipe shall be restrained to prevent injury and damage. The flush and hydro inspections may be scheduled concurrently

- Labels:** Upon flush inspection or prior to final sprinkler or site inspection, all detector check assemblies, control valves, and fire department connections (FDC) shall be clearly labeled with the address(es) served by the device. Address signs shall be securely attached to the device and be of a durable, fade-resistant material which is visible and legible from the fire lane. FDC and four-inch hydrant outlets shall be unobstructed and oriented toward the fire lane. Valves shall be locked in the open position with breakaway locks. All PIV valves and private hydrants shall be painted OSHA safety red. The closest upstream indicating valve to the riser shall be painted OSHA safety red. Hydrant and FDC caps shall be in place.
- Private Hydrants:** All newly installed or modified private hydrants shall be labeled with a capital "P" at least 6" in height and white in color, located on the street or access side of the hydrant so that it is visible to fire operations and inspections crews. All private fire hydrants must have a red bonnet and barrel.

Pipe and Trench Requirements



- A 6-inch bed of clean fill sand shall be provided below the pipe and 12-inches above the pipe (total of 18 inches plus outer diameter of the pipe).
- Pipe shall be buried at least 36" where subject to loading (e.g., driveways, parking lots) and at least 30" elsewhere.



- All pipe shall be approved for use in fire service systems. Class 150 will be used at a minimum, and class 200 pipe shall be used where the water pressure exceeds 150 psi. The use of galvanized pipe is prohibited when a portion of the system is buried.
- All bolts used for underground connections, including T bolts, shall be 316 stainless steel or ferrous bolts coated 360 degrees with asphaltic sealant. Asphaltic sealants (and other opaque sealants) shall not be used to coat stainless steel bolts (this is to ensure bolts can still be verified as 316 stainless steel during inspection). All ferrous fittings (with the exception of 316 stainless steel) shall be cleaned and thoroughly coated with asphalt or other corrosion retarding material after assembly and prior to the installation of polyethylene tube.
- Thrust blocks, or another approved method of thrust restraint, shall be provided wherever pipe changes direction.



Typical Thrust Block Applications

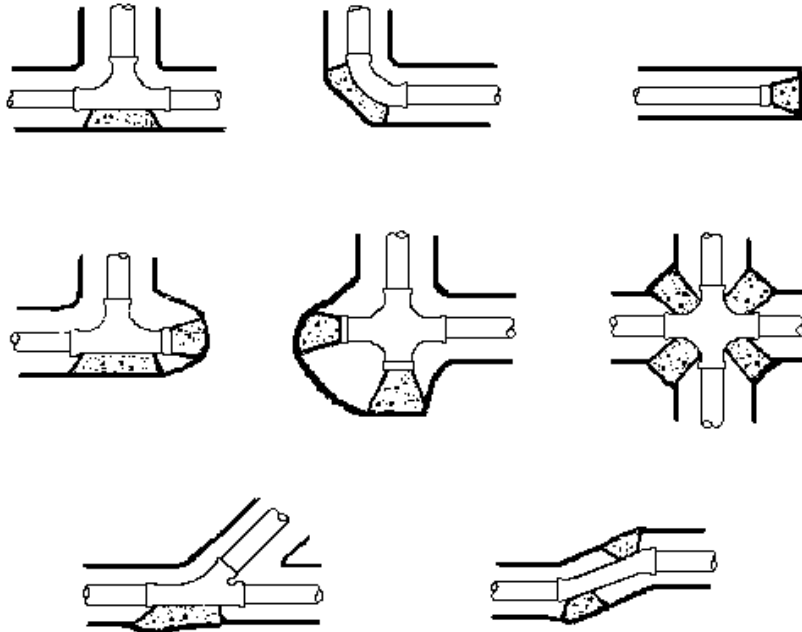


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- A minimum two-inch clearance shall be provided where the pipe passes through slabs or walls. Underground system shall terminate at the riser flange and placed a maximum of 18 inches from an exterior wall and 6 inches above the slab.



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7. Backfill shall be tamped in layers or puddle under and around pipes to prevent settlement or lateral movement and shall contain no ashes, cinders, refuse, construction debris, organic matter or corrosive materials. (NFPA 10.9.1)
8. Rocks shall not be placed in trenches. (NFPA 10.9.2)
9. Tracer wire shall be placed along any runs of buried non-metallic pipe.



Missouri-American Water Co.– St. Louis Operations New Service Tap and Tap/ Service Line termination processes

Effective August 21st, the Missouri Public Service Commission has approved a change in our tariff regarding service lines in St. Louis County.

Below is a summary of the changes:

- Missouri American Water (MOAW) will take responsibility for the maintenance and replacement, if needed, for the portion of the service line traditionally owned by the water service provider (from the water main to the curb stop or meter box). MOAW will assume ownership of the service line from the water main to the curb stop or meter box when maintenance or replacement work is performed.
- If MOAW encounters a service line containing lead while doing maintenance or replacement, we will replace all the lead in the service line, including any lead in the portion of the service line owned by the property owner.
- These changes apply to both residential and non-residential service lines.
- With these changes, the County Service Line Protection Program would only continue to be utilized for leaks that occur on 1) non-lead residential service lines, and 2) the portion of the service line from the curb stop or meter box to the building premise.
- New service line installations from the main to the meter box will be the responsibility of MOAW.
- All service line work will continue to be done in accordance with applicable laws and ordinances.

We are committed to providing clean, safe, reliable water service to our customers, and these changes will allow us to address service line issues quickly and safely. The change will also bring parity in how service line ownership and maintenance responsibilities are handled in St. Louis County and throughout the state.

New Service Tap

***NOTE:** Small or large taps purchased prior to 8/21/2020 with the tap connection to be made before 10/1/2020, will fall under the old tap process where the plumber installs the service line and meter box, MOAW makes the tap and sets the meter. If the pre-purchased small or large taps cannot be installed and the tap connection made in accordance with the stated time frame, the costs of the tap connection will be refunded to the original purchaser and the new process and costs will apply. There may be exceptions to this rule, we will review on a case by case basis. Please see the new process below:

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Small taps (2 1/2" and smaller)

- The customer's plumber will install the service line from the foundation of the building to (4) ft from the proposed meter box location.
 - The copper service will be installed up to ground level and terminated. Meter box to be installed by MOAW within (5) ft of the property line on the main or building side of the property line.
- The customer's representative will purchase the tap from MOAW at least two (2) weeks in advance of needing the connection to allow for scheduling.
- The customer's portion of the service line must be installed prior to purchasing the tap from MOAW.
- At the time of purchase, provide the following:
 - Tap fee; includes the tap to the water main, service line installation from the water main to (4) ft beyond the meter box location, meter box, and the meter setter.
 - Copy of the plumbing permit.
 - DNR form 1
- Once MOAW receives the above documents and fees the customer's account will be set up and the tap connection and installation will be scheduled.
- MOAW will be responsible to excavate the OSHA safe excavation for the service connection, the service connection, the installation of the service line from the water main to (4) ft beyond the meter box location, the meter box, meter setter and meter.
- The customer or the customer's representative will ensure the property line is clearly identified, and must remain so, during installation of the service and meter box.
- The meter will be set at the time of the main being tapped for the connection for 3/4" and 1" meters. 1 1/2" and 2" meters will be installed within approximately a week of the tap connection.
- The installation will include connecting to the customer's previously installed copper service line that was terminated at ground level.

** Tap fees are attached and are subject to change without notice.*

Large taps (3" and larger)

- Project plans, including service line design, are to be submitted to MOAW for conflict review between proposed improvements and MOAW existing facilities along with the proposed service line review.
- Once the conflicts are resolved, and the service line layout is approved, the plans for the proposed service line will be sent out for bid for the installation. **Please note** that the bid process will not begin until all conflicts with our existing facilities have been resolved. The bid process can take up to (2) two weeks.
- The price of the connection, service line and meter box / vault installation will be communicated to the developer/customer.
- The customer's contractor will install the service line(s) (Fire, Domestic, Irrigation) from the foundation of the building to (4) ft from the proposed meter box location for services smaller than (3) inches.
 - If the service line size is 3" or larger, then the service line will be installed within (6) ft of the proposed meter box location.
 - Service lines smaller than (3) inches; the copper service will be installed up to ground level and terminated.
 - Service lines larger than (3) inches; the Plumbing Code approved piping material will be installed, capped, and at the required elevation below grade (42"-48" of cover).





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- Meter box / Vaults to be installed within (5) ft of either side of the property line between the main and the building.
- To allow for scheduling, the customer's representative must purchase the tap from MOAW at least two (2) weeks in advance of needing the connection.
 - If the service involves a full flow fire meter, up to four (4) weeks' notice in advance of needing the connection will be required.
- The customer's portion of the service line must be installed prior to purchasing the tap from MOAW.
- At the time of purchase, provide the following:
 - Tap fee; includes the tap to the water main, service line installation from the water main to the customers installed service line (s), meter box/ vault, the meter setter/ internal plumbing within the vault, detector check and fire flow meter (If applicable) .
 - Copy of the plumbing permit.
 - DNR form 1 or 1A, depending on the municipality
 - Completed Application for Special Connection. (which includes requested flow requirements)
- Once MOAW receives the above documents and fees, the customer's account will be set up. Then the tap connection and installation will be scheduled.
- MOAW will be responsible to excavate the OSHA safe excavation for the service connection, the service connection, the installation of the service line from the water main to (6) ft beyond the meter box location for services 3" or larger and (4) ft beyond the meter box location for services smaller than 3", the meter setter and meter (s).
- The customer or the customer's representative will ensure the property line is clearly identified, and must remain so, during installation of the service and meter box.
- The meter(s) will be set within approximately (2) weeks of the main being tapped for the connection.
- The installation will include connecting to the customers previously installed service line(s).

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