CITY OF MILPITAS
Office of Building Safety
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Milpitas, CA 95035
408-586-3240
www.milpitas.gov

POTABLE WATER SERVICE PIPING (COMMERCIAL)

1. PERMIT INFORMATION:

- ❑ This permit is for the replacement of the existing water service between the meter and the building *that does NOT serve a fire suppression system*. Replacement of piping which serves both potable and fire suppression systems requires a C16 licensed contractor and a permit obtained from both the Building Safety and Fire departments.

- ❑ This permit does not include adding a new water service if a new City water meter is being installed.

- ❑ A Building Permit may be issued only to the Building Owner or their Authorized Agent [CBC 105.1].
  - See also *Authorized Agent Sample Letter*.
  - Where the Contractor is acting as the Owner's Authorized Agent, they must be a State of California Licensed Contractor with the proper license classification.

- ❑ If the work is performed by the Building Owner personally or by his/her workers and an inspection indicates the work cannot be completed satisfactorily, then a licensed contractor must perform the work.

- ❑ If the Building Owner hires workers, State Law requires the Building Owner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS

- ❑ **CODES:** All work must comply with the California Plumbing Code (CPC), California Green Building Code, Milpitas Municipal Code (MMC), and other adopted codes as applicable.

- ❑ Contractor is responsible for any excavation on site to be 811 marked and maintained (re-marked) and current tag prior to digging and approved procedures and safety protocols (like hand digging) are used during excavation. See www.usanorth811.org.

- ❑ The size of each water supply pipe from the meter to the building shall be per CPC 610.

  - The building supply pipe shall not be less than ¾ inch in diameter [CPC 610.8].

  - Trenching, excavation, backfill, and tunneling and driving shall be per CPC 314.

  - Trenches deeper than the footing of any building or structure, and paralleling the same, shall be located not less than 45 degrees from the bottom exterior edge of the footing [CPC 314.1].

  - Water service yard piping shall be not less than 12″ below finish grade [CPC 609.1].

  - Piping in the ground shall be laid on a firm bed for its entire length [CPC 313.5].

  - Plumbing systems shall be installed in a workmanlike manner [CPC 309.4, 609.1].

  - Materials for building supply piping shall be as allowed per CPC 604 and Table 604.1.

- Plastic pipe used for water service piping outside underground shall have a blue insulated copper tracer wire, or other approved conductor, installed adjacent to the piping. Access shall be provided to the tracer wire, or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 14 AWG and the insulation type shall be suitable for direct burial [CPC 604.10.1].

- Water piping shall not be run or laid in the same trench as building sewer or drainage piping constructed of clay or materials that are not approved for use within a building unless both of the following conditions are met [CPC 609.2]:
  1) The bottom of the water pipe, at all points, shall be not less than 12″ above the top of the sewer or drain line.
  2) The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a clear horizontal distance of not less than 12″ from the sewer or drain line.

- Water pipes crossing sewer or drainage piping constructed of clay or materials that are not approved for use within a building shall be laid not less than 12″ above the sewer or drain pipe [CPC 609.2].

- Shut off valves shall be installed for each individual building served by water service piping [CPC 606.2].

- A shut off valve shall be provided on the discharge side of each water meter and each unmetered water supply [CPC 606.2].

- No building water supply piping shall be located on a lot other than the lot of the building it serves [CPC 609.6].

- A union shall be installed in the water supply piping not more than 12″ from regulating equipment, water heating, conditioning tanks, and similar equipment that requires service by removal or replacement [CPC 609.5].

- Dielectric unions shall be used at all points of connection where there is a dissimilarity of metals [CPC 605.15].

- Joints between various materials shall be installed in accordance with CPC 605.16.

- Piping in connection with a plumbing system shall be so installed that piping or connections will not be subject to undue strains or stresses, and provisions shall be made for expansion, contraction, and structural settlement. No plumbing piping shall be directly embedded in concrete or masonry. [CPC 312.2]

- Water pressure exceeding 80 psi shall be regulated down and expansion tanks shall be installed [CPC 608.2].

- Upon completion and prior to backfilling of the entire building water supply piping, it shall be tested and proved tight by connecting to the water supply pressure or, except for plastic piping, using a 50-psi air pressure test. In either method, the piping shall withstand the test without leaking for a period of not less than 15 minutes [CPC 609.4]. Test gauge shall have incrementation of 1 psi or less and shall not exceed 100 psi [CPC 318].

- Excavations shall be completely backfilled as soon after inspection and approval as practicable. Adequate precaution shall be taken to ensure proper compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to 12″ above the top of the piping with clean earth, which shall not contain stones, boulders, cinder fill, frozen earth, construction debris, or other materials that would damage or break the piping or cause corrosive action. Mechanical devices such as bulldozers, graders, etc. shall be permitted to then be used to complete backfill to grade. Fill shall be properly compacted. Suitable precautions shall be taken to ensure permanent stability for pipe laid in filled or made ground. [CPC 314.4]

- Cross-contamination must be prevented, and backflow prevention provided, in compliance with CPC 602. Cross-connection control shall be provided in accordance with CPC 603.

- Disinfection of the potable water service is required prior to use [CPC 609.10].

- All grounding electrodes that are present at each building served shall be bonded together [CEC 250.50].

- Metal water and gas piping systems shall be bonded if modified or removed/replaced during the water service line replacement [CEC Section 250.104].

- Grounding and bonding of the electrical service is required to be in accordance with the California Electrical Code Article 250 when the water piping is replaced. If the new metal underground water pipe is the only grounding electrode per CEC 250.52 or if the existing metal underground water pipe is being replaced with non-metallic material, additional grounding electrode(s) must be installed as required per CEC 250.52 and 250.53. **The metal underground water service pipe shall not be used as the sole grounding means; it must be supplemented with an additional electrode per CEC 250.53(D)(2) and (3).** Grounding/bonding of the metal underground water pipe shall occur within the first 5 feet of the piping entering the building per CEC 250.68(C)(1).

3. INSPECTION PROCEDURES

- ❑ Typically, two inspections are required for new water service piping.
  - **Underground Plumbing.** An underground plumbing inspection should be scheduled once the new water line is installed and provided with test pressure, but before it is covered up.
  - **Final Plumbing.** A final inspection should be scheduled after all work is completed including backfill and hardscaping repairs.
- ❑ For each inspection, the permit card and the approved job copy of the plans (if any) shall be presented to the inspector.

4. QUESTIONS:

If you have any questions regarding your project, please contact the Office of Building Safety at (408) 586-3240.