

CITY OF MILPITAS

Building & Safety Department
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240

www.ci.milpitas.ca.gov



SEWER LINE COMMERCIAL

1. PERMIT INFORMATION:

- This permit only includes work between the building and the property line. A permit for any work inside the building or outside the property line must be obtained in person at the Permit Center, Building & Safety Department, 455 E. Calaveras Blvd.
- If any work will be performed inside the City right-of-way, such as installing a new City cleanout or a new connection to the City sewer main is required, an encroachment permit must be obtained in person at the Permit Center.
- A Permit may be issued only to a State of California Licensed Contractor with the proper license classification or the Homeowner.
- 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 Owner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS:

- Building Codes:** All work must comply with the 2016 California Building Code, 2016 California Electrical Code (CEC), 2016 California Mechanical Code (CMC), 2016 California Plumbing Code (CPC), 2016 California Energy Code, 2016 California Green Building Code and 2016 Milpitas Municipal Code (MMC).
- Materials:**
 - Pipe may be ABS Schedule 40, cast-iron, co-extruded ABS Schedule 40, co-extruded PVC Schedule 40, copper Type DWV, PVC Schedule 40, stainless steel 316L, or extra strength vitrified clay (CPC Table 701.2).
 - All pipe, pipe fittings, traps, fixtures, material, and devices used in a plumbing system shall be listed or labeled (third-party certified) by an approved listing agency (CPC 301.2).
 - Each length of pipe and each pipe fitting, trap, fixture, material, and device used in a plumbing system shall have cast, stamped, or indelibly marked on it the manufacturer's mark or name, which shall readily identify the manufacturer to the end user of the product. When required by the approved standard that applies, the product shall be marked with the weight and the quality of the product. Such marking shall be done by the manufacturer. Field markings shall not be acceptable. (CPC 301.2.1) Cast-iron pipe shall be marked with country of origin and identification of the original manufacturer (CPC 701.2(6)).
 - Materials for piping and fittings shall be in accordance with the applicable standards referenced in Table 701.2 & 301.2.2 and Chapter 17 of the California Plumbing Code (CPC).

Joints and connections:

- Joints and connections shall be in accordance with CPC Section 705.
- A solvent cement transition joint between ABS and PVC building drain and building sewer shall be made using a listed transition solvent cement (CPC 705.8.4).

General requirements:

- The minimum size of any sewer shall be determined on the basis of the total number of fixture units drained by such sewer, in accordance with Table 703.2. No building sewer shall be smaller than the building drain. (CPC 717.1) No building sewer serving 1 to 3 toilets shall be smaller than 3" with 1/4" per foot slope (CPC Table 703.2 Note 4).
- Building sewers shall be run in practical alignment and at a uniform slope of not less than 1/4" inch per foot slope toward the point of disposal. Where impractical, due to the depth of the street sewer or to the structural features or to the arrangement of any building or structure, to obtain a slope of 1/4 inch per foot, a pipe 4 inches through 6 inches shall be permitted to have a slope of not less than 1/8 inch per foot and a pipe 8 inches and larger shall be permitted to have a slope of not less than 1/16 inch per foot. (CPC 718.1)
- 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)
- No building sewer or other drainage piping or part thereof, which is constructed of materials other than those approved for use under or within a building, shall be installed under or within two feet of any building or structure, or less than one foot below the surface of the ground. This includes structures such as porches and steps, whether covered or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered driveways and similar structures or appurtenances. (CPC 312.3, 718.3)
- Vitrified clay pipe shall be kept not less than 12 inches below ground (CPC 701.2(3)).
- Building sewer piping of clay or materials that are not approved for use within a building shall not be run or laid in the same trench as the water pipes unless both of the following conditions are met: 1) the bottom of the water pipe, at all points, shall be not less than 12 inches 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 inches 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 inches above the sewer or drain pipe. (CPC 720.0)
- Replacement of existing sewer using trenchless methodology and materials shall be installed in accordance with ASTM F1216. (CPC 715.3)
 - At time of underground inspection, the pipe shall be plugged down stream from the connection to the existing pipe and filled with water up to the top of the building cleanout. A camera shall be onsite when the inspector arrives. After the piping with the plug in place has been inspected, the inspector will have the plug removed and the pipe inspected with the camera to verify there are no dips in the pipe, burrs or other problems that will require the pipe to be dug up and replaced.
- Abandoned sewer piping shall be plugged or capped in an approved manner within 5 feet of the property line (CPC 722.1).

Testing:

- Sewer piping shall be tested by plugging the end of the building sewer at its points of connection with the public sewer system and completely filling with water from its lowest to the highest point thereof, or by approved equivalent low-pressure air test using 4.0 pounds per square inch. Plastic DWV piping systems shall not be tested by the air test method. The building sewer shall be watertight at all points. (CPC 723.0)

Cleanouts:

- Cleanouts shall be placed inside the building near the connection between the building drain and the building sewer or installed outside the building at the lower end of the building drain and extended to grade. Additional sewer cleanouts shall be installed at intervals not to exceed 100 feet in straight runs and for each aggregate horizontal change in direction exceeding 135 degrees (CPC 719.1).
- When a building sewer or branch thereof does not exceed 10 feet in length and is a straight-line projection from a building drain that is provided with a cleanout, no cleanout will be required at its point of connection to the building drain (CPC 719.2).
- Required building sewer cleanouts shall be extended to grade (CPC 719.3).
- Each cleanout fitting for cast-iron pipe shall consist of a cast-iron or brass body and an approved plug (CPC 707.1).
- Plugs shall have raised square heads or approved countersunk rectangular slots (CPC 707.1).
- Each cleanout fitting and each cleanout plug or cap shall be of an approved type (CPC 707.2).
- Cleanouts shall be minimum of 2 ½ inches for 3 inch sewer pipe and 3 ½ inches for 4 inch and larger pipe (CPC Table 707.1).
- Each cleanout shall be installed so that it opens to allow cleaning in the direction of flow of the soil or waste or at right angles thereto and, except in the case of wye branch and end-of-line cleanouts, shall be installed vertically above the flow line of the pipe (CPC 719.4).
- Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes or by extending flush with paving with approved materials and shall be adequately protected (CPC 719.5).
- Approved manholes shall be permitted to be installed in lieu of cleanouts. The maximum distance between manholes shall be 300 feet. The inlet and outlet connections shall be made by the use of a flexible compression joint not less than 12 inches and not exceeding 3 feet from the manhole. No flexible compression joints shall be embedded in the manhole base. (CPC 719.6)

Trenching and backfill:

- 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 piping. Trenches shall be backfilled in thin layers to 12 inches above the top of the piping with clean earth, which shall not contain stones, boulders, cinderfill, 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)

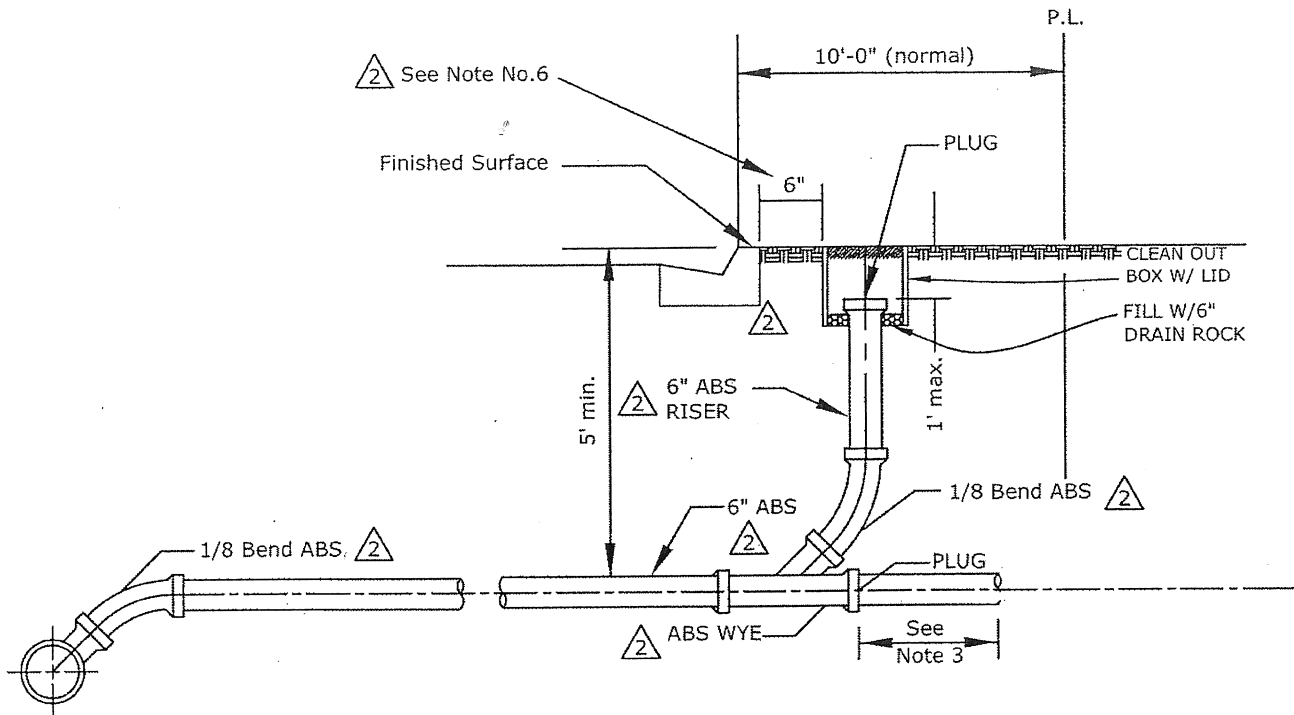
- Piping shall be laid on a firm bed throughout its entire length, and piping laid in made or filled-in ground shall be laid on a bed of approved materials and shall be properly supported as required by the City (CPC 718.2).
- Trenches deeper than the footing of any building or structure and paralleling the same shall be not less than 45 degrees therefrom (CPC 314.1).

3. **INSPECTION PROCEDURES**

- Two inspections are required for sewer line replacements, a rough and a final. The rough inspection should be scheduled when the new sewer line is installed and filled with water to check for any leaks (but before it is connected to the City connection and before any trenches are back-filled). The final inspection should be scheduled when all work is completed. For each inspection, the Permit Card and the Approved Job Copy of the Drawings (if any) must be presented to the inspector. Permits expire 180 days after issuance or last inspection passed, whichever is the latest.

4. **QUESTIONS:**

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




LATERAL

Notes:

1. Cleanout box and lid shall be per Standard Drawing No. 602.
2. Plug shall be vitrified clay or rubber.
3. Customer service connection shall be made under the supervision of the Building department. (If on private property)
4. Riser shall be the same size as sewer lateral.
5. Minimum grade at lateral shall be 1/4" per foot.
- 2 6. Pipe material shall be ABS from main to C.O.. Cleanout should be placed 6" behind street curb or as approved by City Engineer.

NOT TO SCALE

CITY OF MILPITAS, ENGINEERING DIVISION		SANITARY SEWER LATERAL - COMM./INDUSTRIAL	STANDARD DRAWING NO. 618
REVISION	DATE		DATE : 6/15/10
1	1991	APPROVED BY:  PUBLIC WORKS DIRECTOR / CITY ENGINEER - RCE No. 40283	SHEET 1 OF 1
2	2001		
3	2010		