

# CITY OF MILPITAS

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

[www.ci.milpitas.ca.gov](http://www.ci.milpitas.ca.gov)



## RESIDENTIAL SEWER LINE

### 1. PERMIT INFORMATION:

- This permit only includes work between the building and the property line/back of City sidewalk.
- If any work will be performed outside the owner's property/underneath the City sidewalk or street, an encroachment permit must be obtained in person at the Permit Center, Building & Safety Department, 455 E. Calaveras Blvd. Encroachment permits may only be issued to licensed contractors who provide certificates of insurance to the City.
- A Permit may be issued only to a State of California Licensed Contractor or the Homeowner.
- If the work is performed by the Homeowner 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 Homeowner hires workers, State Law requires the Homeowner 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 2013 California Building Code (CBC) or 2013 California Residential Code (CRC), 2013 California Plumbing Code (CPC) and 2013 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 7-1).
  - 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 301.1.1).
  - 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 301.1.2) Cast-iron pipe shall be marked with country of origin and identification of the original manufacturer (CPC 701.1.6).
  - Materials for piping and fittings shall be in accordance with the applicable standards referenced in Table 7-1 (CPC 701.0).
- Joints and connections:**
  - Joints and connections shall be in accordance with CPC Section 316.0.
  - A solvent cement transition joint between ABS and PVC building drain and building sewer shall be made using a listed transition solvent cement (CPC 705.10.4).

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 7-8. No building sewer shall be smaller than the building drain. (CPC 717.0) No building sewer serving 1 to 3 toilets shall be smaller than 3" with 1/4" per foot slope (CPC Table 7-5).
- 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 313.2)
- 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 313.3, 718.3)
- Vitrified clay pipe shall be kept not less than 12 inches below ground (CPC 701.1.3).
- 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 IAPMO IS-26.
  - 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 7-6).
- 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:

- 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 315.1).
- 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 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 315.4)

**3. SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:**

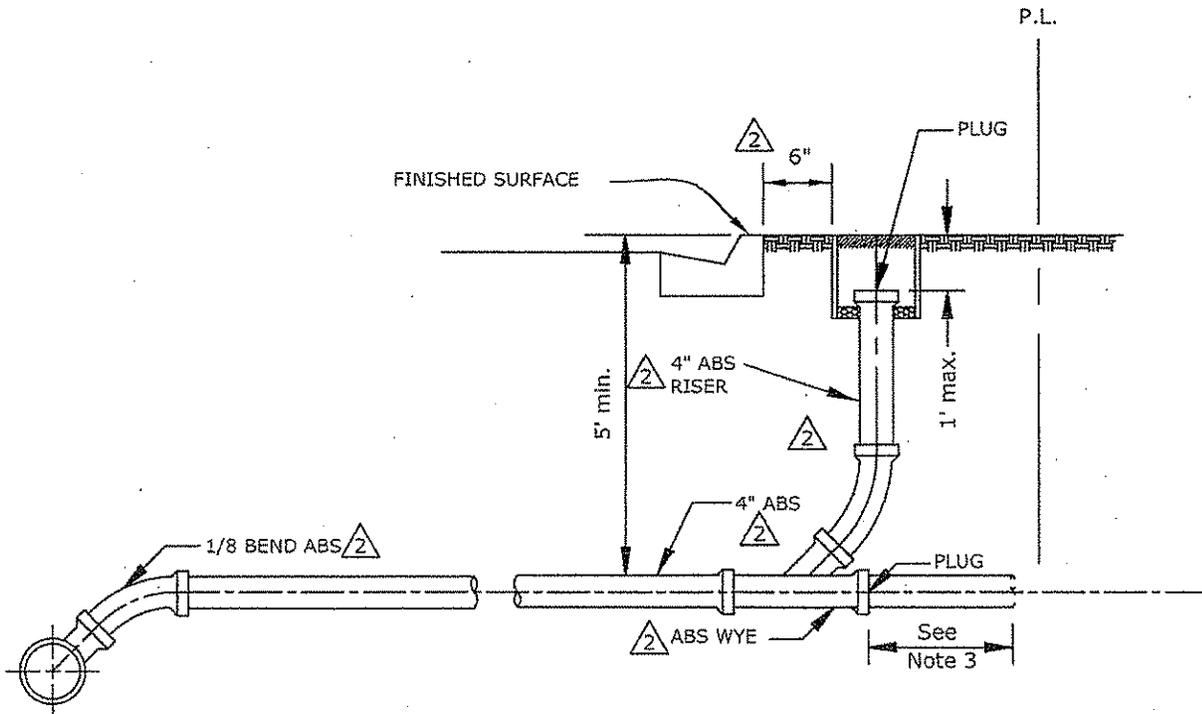
- ❑ In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters on all chimneys is required prior to the final inspection. Refer to the “*Smoke Alarm, Carbon Monoxide Alarm and Spark Arrester Certificate*” attached for detailed information.

**4. INSPECTION PROCEDURES**

- ❑ Two inspections are required for sewer line replacements, a rough and a final (see comments under trenchless above for additional information). 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.

**5. QUESTIONS:**

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

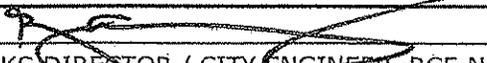


LATERAL

Notes:

- △ 1. Clean out shall be installed as shown hereon. Clean out box shall be Christy G-5 BOX and G5C Lid and G5GR Grade Ring or approved equal with "C.O." or "S" marking. Cast iron traffic cover (Christy G-5 or approved equal) is required in sidewalk & driveway.
- 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. Minimum grade of lateral shall be 1/4" per foot.
- △ 5. Riser shall be the same size as sewer lateral.
- △ 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		<b>SANITARY SEWER LATERAL - RESIDENTIAL</b>	STANDARD DRAWING <b>NO. 620</b>
REVISION	DATE		DATE : 6/15/10
△ 1	1966	APPROVED BY:  PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE No. 40283	SHEET 1 OF 1
△ 2	2001		
△ 3	2010		



## SMOKE ALARM, CARBON MONOXIDE ALARM and SPARK ARRESTER CERTIFICATE

This "Certificate" can be signed by the property owner and provided to the Building Inspector prior to final inspection if access to the interior of the dwelling for inspection of the smoke and carbon monoxide alarms is not possible and the permitted work being performed is exterior only (such as re-roofing, re-siding, patio covers, swimming pools and the like).

In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters is required prior to the final inspection as follows:

**Smoke Alarms** shall be listed and labeled in accordance with UL 217 and installed in accordance with the provisions of the code and the household fire warning equipment provisions of NFPA 72. Systems and components shall be California State Fire Marshal listed and approved. Alarms shall be tested and maintained in accordance with the manufacturer's instructions. Alarms that no longer function shall be replaced. Conventional ionization smoke alarms that are solely battery powered shall be equipped with a ten-year battery and have a silence feature. **Alarms installed in one and two-family dwellings shall be replaced after 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.** (CRC R314)

**Smoke detection systems.** Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an approved supervising station and be maintained in accordance with NFPA 72.

**Location. Smoke alarms shall be installed in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms and on each story of the dwelling.** In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level. Apartment complexes and other multiple-dwelling complexes shall have a smoke detector installed in the common stairwells. For R-3.1 occupancies (Residential Care Facilities), refer to CBC Section 907.2.11.2. The installation of smoke alarms and smoke detectors shall also comply with the following requirements:

1. Smoke alarms shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.
2. Smoke alarms shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F or exceed 100°F.
3. Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, alarms shall be mounted on an inside wall.
4. Smoke alarms shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance, except Ionization smoke alarms with an alarm-silencing switch or Photoelectric smoke alarms shall be permitted to be installed 10 feet or greater from a permanently installed cooking appliance and Photoelectric smoke alarms shall be permitted to be installed greater than 6 feet from a permanently installed cooking appliance where the kitchen or cooking area and adjacent spaces have no clear interior partitions and the 10 foot distances would prohibit the placement of a required smoke alarm or smoke detector. Smoke alarms listed for use in close proximity to a permanently installed cooking appliance can be installed in accordance with their listing.
5. Smoke alarms shall be installed not less than a 3 foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by the code.
6. Smoke alarms shall not be installed within a 36 inch horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
7. Smoke alarms shall not be installed within a 36 inch horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan.
8. Where stairs lead to other occupied levels, alarm shall be located so that smoke rising in the stairway cannot be prevented from reaching the alarm by an intervening door or obstruction.

9. For stairways leading up from a basement, alarms shall be located on the basement ceiling near the entry to the stairs.
10. For tray-shaped ceilings (coffered ceilings), alarms shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 inch vertically down from the highest point.
11. Smoke alarms installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.7.3.2.4.
12. Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of NFPA 72, Section 17.6.3.

**Carbon Monoxide Alarms:** An approved carbon monoxide alarm listed as complying with UL 2034, approved and listed by the California State Fire Marshal, installed and maintained in accordance with NFPA 720 and the manufacturer's instructions shall be installed if they do not already exist in existing dwellings or sleeping units having a fossil fuel-burning heater or appliance, fireplace or an attached garage as follows: **outside each separate dwelling unit sleeping area in the immediate vicinity of bedroom(s) and on every level of dwelling unit.** Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained as required for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. (CRC R315)

**Power supply:** Smoke and carbon monoxide alarms shall receive their primary power from the building wiring and shall be equipped with a battery back-up. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Smoke and carbon monoxide alarm wiring shall be directly connected to the permanent building wiring without a disconnecting switch other than as required for overcurrent protection. Smoke and carbon monoxide alarms are permitted to be solely battery operated (carbon monoxide alarms can also be plug-in with battery back-up) in existing buildings where no construction is taking place; in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure unless there is an attic or crawl space available which could provide access for building wiring without the removal of interior finishes; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure; and, for carbon monoxide alarms, when other power sources recognized for use by NFPA 720 are used.

**Interconnection:** Where more than one smoke or carbon monoxide alarm is required to be installed within an individual dwelling or sleeping unit, the alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit, except interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind; where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure unless there is an attic or crawl space available which could provide access for interconnection without the removal of interior finishes and no previous method for interconnection existed; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

**Spark arresters:** When a permit has been issued and the value of the work exceeds \$1,000, a spark arrester must be installed on all fireplace chimneys, if one does not already exist, per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section 1003.9.2.

**\* CERTIFICATION \***

**I understand the above requirements and certify that I now have smoke alarms, carbon monoxide alarms and spark arrestors installed as required above.**

HOMEOWNERS NAME (please print): \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_ PERMIT NO. \_\_\_\_\_