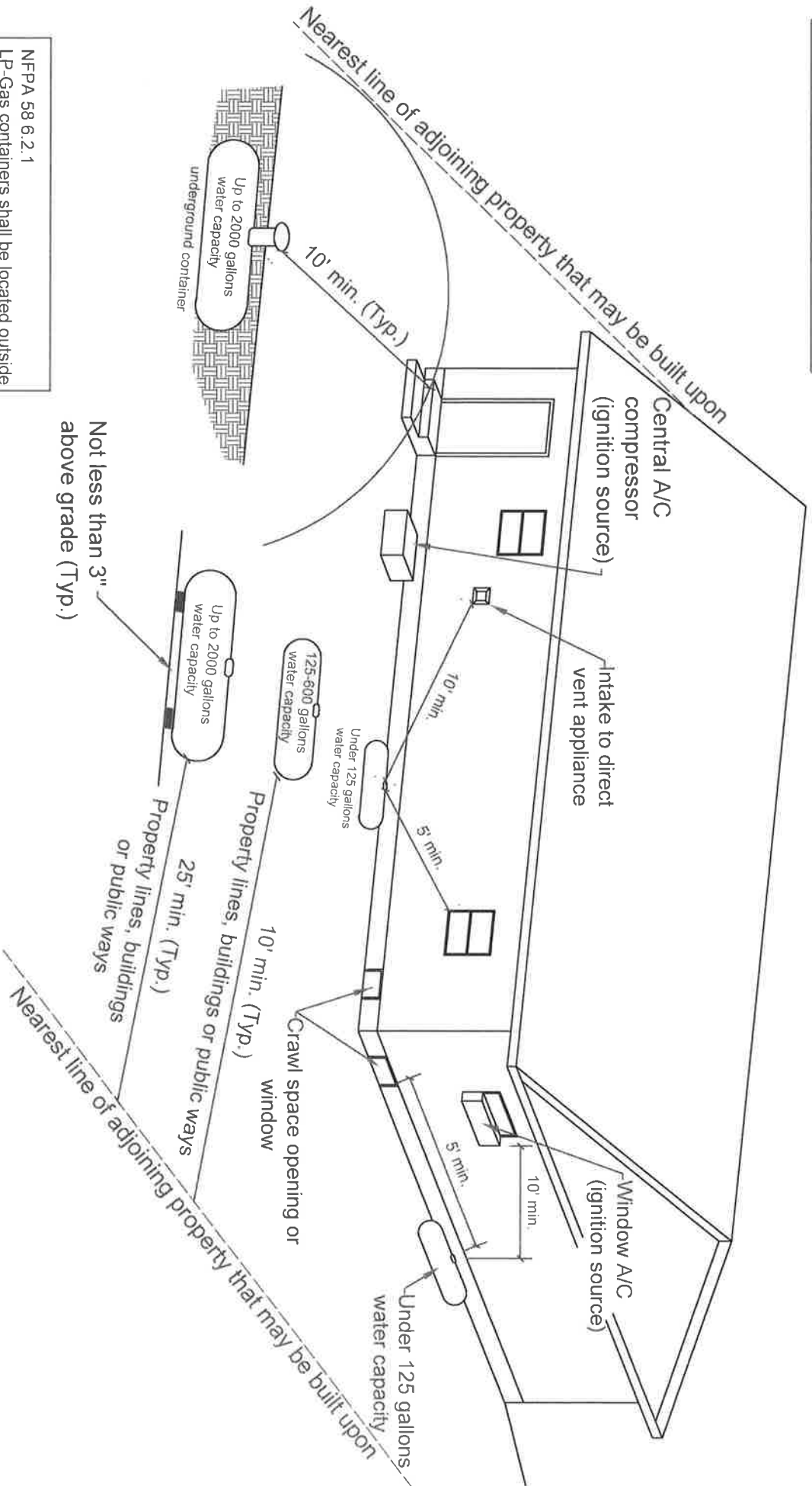


This handout is general in nature. For specific requirements, please contact the Building Department. All installations are subject to permitting and inspection requirements.

LOCATION OF LP-GAS CONTAINERS



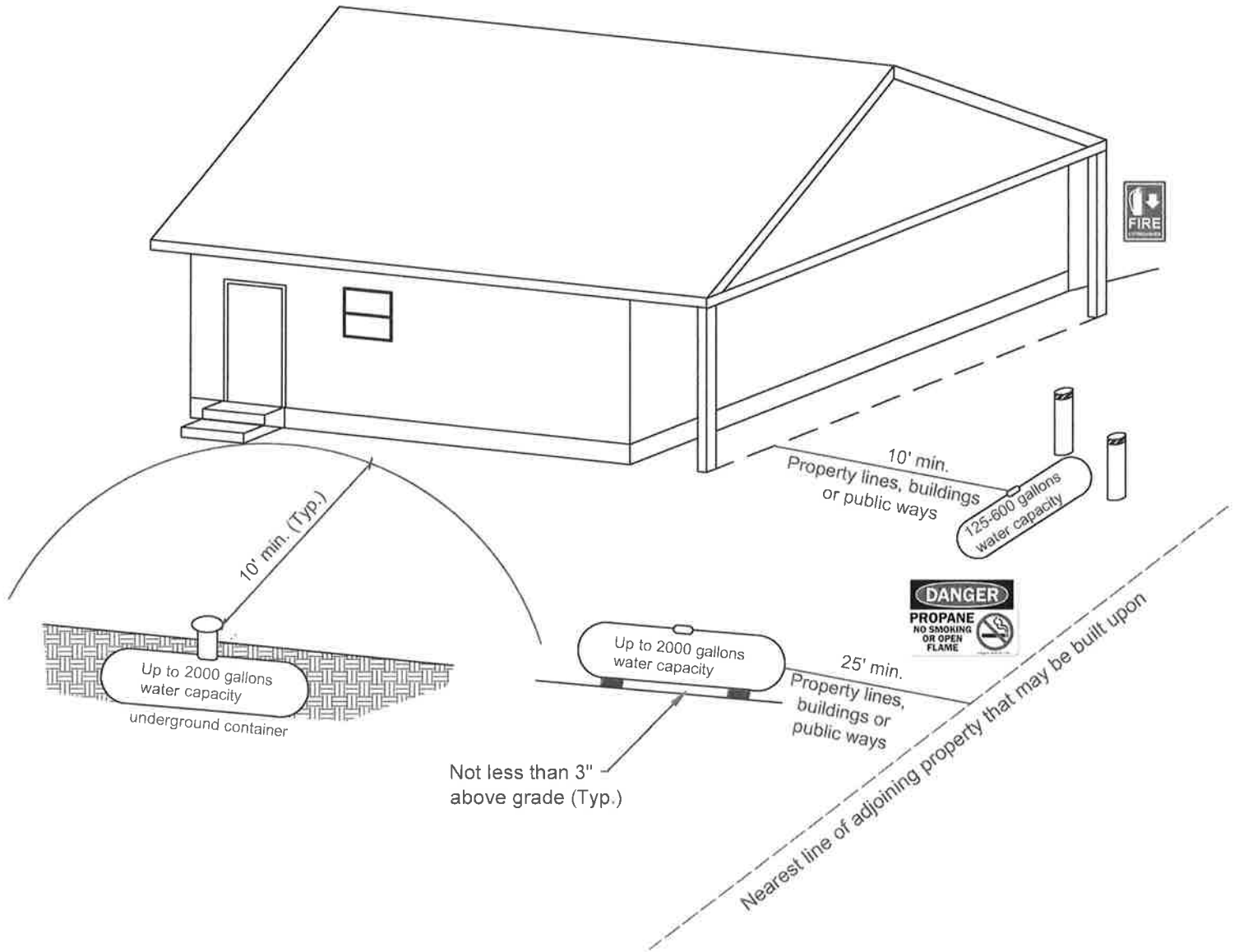
NFPA 58 6.2.1
 LP-Gas containers shall be located outside of buildings unless they are specifically allowed to be located inside of buildings.

LOCATION OF LP-GAS CONTAINERS - NON-RESIDENTIAL

This handout is general in nature. For specific requirements, please contact the Building Department. All installations are subject to permitting and inspection requirements.

NFPA 58 6.2.1

LP-Gas containers shall be located outside of buildings unless they are specifically allowed to be located inside of buildings.



* "No Smoking" signs shall be posted. Smoking within 25 feet shall be prohibited.

* Weeds, grass, brush, trash and other combustible materials shall be kept not less than 10 feet from LP-Gas tanks and containers.

* Where exposed to vehicular damage due to proximity to alleys, driveways or parking areas, LP-Gas containers, regulators and piping shall be protected in accordance with NFPA 58.

* Portable fire extinguishers shall be provided. Class 2-A minimum with a travel distance not to exceed 75 feet.

* Storage, handling, and transportation of liquefied petroleum gas (LP-Gas) and the installation of LP-Gas equipment shall comply with NFPA 58, and Section 2307 and Chapter 61 of the International Fire Code.

LOCATION OF LP-GAS CONTAINERS

- * Regardless of its size, and ASME container filled on site must be located so that the filling connection and fixed maximum liquid level gauge are at least 10' from any external source of ignition (open flame, window A/C, compressor, etc.), intake to direct-vent appliance, or intake to a mechanical ventilation system.
- * Gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.
- * Minimum burial depth is 12". Plastic piping shall be buried with a yellow insulated tracer wire.
- * Weeds, grass, brush, trash and other combustible materials shall be kept a minimum of 10' from LP-gas tanks and containers.
- * Where exposed to vehicular damage due to proximity to alleys, driveways, or parking areas, LP-gas containers, regulators and piping shall be protected by approved method.
- * Piping shall be under test at a minimum 10 psig, at the time of inspection, for a minimum of 10 minutes duration.
- * Pipe protective coatings and wrappings shall be approved for the application and shall be factory applied. Piping shall be of approved material for the method of installation.
- * LP-gas containers shall not be used in a basement, pit or similar location where heavier-than-air gas might collect. LP-gas containers shall not be used in an above-grade under floor space or basement unless such location is provided with an approved means of ventilation.
- * No part of an underground container shall be less than 10' from an important building or line of adjoining property that may be built upon.

DOT SPECIFICATION CONTAINERS

- * Typical replaceable DOT cylinders 60# or 100#: 5' minimum between relief valve discharge and external source of ignition, direct vent, or mechanical ventilation system.
- * Typical DOT cylinder filled from bulk truck (150#, 200#, 300#, or 420#): If the DOT cylinder is filled on site from a bulk truck, the filling connection and vent valve must be at least 10' from any external source of ignition, direct vent, or mechanical ventilation system.

GAS PIPING/APPLIANCES

- 301.7** Appliances shall be designed for use with the type of fuel gas that will be supplied to them. (Natural Gas, L.P. or Propane)
- 303.2** Appliances shall not be located in a hazardous location unless *listed* and *approved* for the specific location.
- 303.5 Indoor Locations.** Furnaces and boilers installed in closets and alcoves shall be *listed* for such installation.
- 303.6 Outdoor Locations.** Appliances installed in outdoor locations shall be either *listed* for outdoor installation or provided with protection from outdoor environmental factors that influence the operability, durability and safety of the appliances.
- 303.7 Pit Locations.** Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil. The sides of the pit or excavation shall be held back a minimum of 12" from the appliance. Where the depth exceeds 12" below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry, such concrete or masonry shall extend a minimum of 4" above adjoining grade and shall have sufficient lateral load-bearing capacity to resist collapse. The appliance shall be protected from flooding in an approved manner.
- 305.1** Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of listing, the manufacturer's instructions and this code.
- 402.1** Piping systems shall be of such size and so installed as to provide a supply of gas sufficient to meet the maximum demand and supply gas to each appliance inlet at not less than the minimum supply pressure required by the appliance.
- 403.4** Metallic pipe shall be listed for use with the type of gas being piped. Cast-iron pipe shall not be used.
- 403.4.4** Aluminum-alloy pipe shall be coated to protect against external corrosion where it is in contact with masonry, plaster or insulation, or is subject to repeated wettings by such liquid as water, detergents or sewage. Aluminum-alloy pipe shall not be used in exterior locations or underground.
- 404.6** Gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.
- 404.11.2** Pipe protective coatings and wrappings shall be approved for the application and shall be factory applied.
- 404.12** Underground piping systems shall be installed a minimum depth of 12" below grade.
- 404.13** The trench shall be graded so that the pipe has a firm, substantially continuous bearing on the bottom of the trench.
- 404.17.1** Plastic pipe shall be installed outdoors underground only. Plastic pipe shall not be used within or under any building or slab or be operated at pressures greater than 100 psig for natural gas or 30 psig for LP gas.
- 404.17.3** A yellow insulated copper tracer wire or other approved conductor shall be installed adjacent to underground nonmetallic 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 18 AWG and the insulation type shall be suitable for direct burial.
- 406.4.1** The test pressure to be used shall be not less than 1 ½ times the proposed maximum working pressure, but not less than 3 psig, irrespective of design pressure.
- 406.4.2** Test duration shall be not less than ½ hour for each 500 cubic feet of pipe volume or fraction thereof. When testing a system having a volume less than 10 cubic feet or a system in a single-family dwelling, the test duration shall be not less than 10 minutes.
- 409.1** Piping systems shall be provided with shutoff valves.

SECTION 6104 LOCATION OF LP-GAS CONTAINERS

6104.1 General. The storage and handling of LP-gas and the installation and maintenance of related equipment shall comply with NFPA 58 and be subject to the approval of the *fire code official*, except as provided in this chapter.

6104.2 Maximum capacity within established limits. Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L) (see Section 3 of the Sample Legislation for Adoption of the *International Fire Code* on page xxi).

Exception: In particular installations, this capacity limit shall be determined by the *fire code official*, after consid-

eration of special features such as topographical conditions, nature of occupancy, and proximity to buildings, capacity of proposed LP-gas containers, degree of fire protection to be provided and capabilities of the local fire department.

6104.3 Container location. LP-gas containers shall be located with respect to buildings, *public ways* and *lot lines* of adjoining property that can be built upon, in accordance with Table 6104.3.

6104.3.1 Installation on roof prohibited. LP-gas containers used in stationary installations shall not be located on the roofs of buildings.

6104.3.2 Special hazards. LP-gas containers shall be located with respect to special hazards including, but not limited to, above-ground flammable or *combustible liquid*

**TABLE 6104.3
LOCATION OF LP-GAS CONTAINERS**

LP-GAS CONTAINER CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS AND BUILDINGS, PUBLIC WAYS OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS ^{b,c} (feet)
	Mounded or underground LP-gas containers ^a (feet)	Above-ground LP-gas containers ^b (feet)	
Less than 125 ^d	10	5 ^e	None
125 to 250	10	10	None
251 to 500	10	10	3
501 to 2,000	10	25 ^{e,f}	3
2,001 to 30,000	50	50	5
30,001 to 70,000	50	75	(0.25 of sum of diameters of adjacent LP-gas containers)
70,001 to 90,000	50	100	
90,001 to 120,000	50	125	

For SI: 1 foot = 304.8 mm, 1 gallon = 3.785 L.

- a. Minimum distance for underground LP-gas containers shall be measured from the pressure relief device and the filling or liquid-level gauge vent connection at the container, except that all parts of an underground LP-gas container shall be not less than 10 feet from a building or lot line of adjoining property that can be built upon.
- b. For other than installations in which the overhanging structure is 50 feet or more above the relief-valve discharge outlet. In applying the distance between buildings and ASME LP-gas containers with a water capacity of 125 gallons or more, not less than 50 percent of this horizontal distance shall also apply to all portions of the building that project more than 5 feet from the building wall and that are higher than the relief valve discharge outlet. This horizontal distance shall be measured from a point determined by projecting the outside edge of such overhanging structure vertically downward to grade or other level upon which the LP-gas container is installed. Distances to the building wall shall be not less than those prescribed in this table.
- c. Where underground multicontainer installations are composed of individual LP-gas containers having a water capacity of 125 gallons or more, such containers shall be installed so as to provide access at their ends or sides to facilitate working with cranes or hoists.
- d. At a consumer site, if the aggregate water capacity of a multicontainer installation, comprised of individual LP-gas containers having a water capacity of less than 125 gallons, is 500 gallons or more, the minimum distance shall comply with the appropriate portion of Table 6104.3, applying the aggregate capacity rather than the capacity per LP-gas container. If more than one such installation is made, each installation shall be separated from other installations by not less than 25 feet. Minimum distances between LP-gas containers need not be applied.
- e. The following shall apply to above-ground containers installed alongside buildings:
 1. LP-gas containers of less than a 125-gallon water capacity are allowed next to the building they serve where in compliance with Items 2, 3 and 4.
 2. Department of Transportation (DOTn) specification LP-gas containers shall be located and installed so that the discharge from the container pressure relief device is not less than 3 feet horizontally from building openings below the level of such discharge and shall not be beneath buildings unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from LP-gas container pressure relief devices shall be located not less than 5 feet from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
 3. ASME LP-gas containers of less than a 125-gallon water capacity shall be located and installed such that the discharge from pressure relief devices shall not terminate in or beneath buildings and shall be located not less than 5 feet horizontally from building openings below the level of such discharge and not less than 5 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.
 4. The filling connection and the vent from liquid-level gauges on either DOTn or ASME LP-gas containers filled at the point of installation shall be not less than 10 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances or mechanical ventilation air intakes.
- f. This distance is allowed to be reduced to not less than 10 feet for a single LP-gas container of 1,200-gallon water capacity or less, provided such container is not less than 25 feet from other LP-gas containers of more than 125-gallon water capacity.