



SHASTA LAKE FIRE PROTECTION DISTRICT

4126 ASHBY COURT

SHASTA LAKE, CALIFORNIA 96019-9215

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REQUIREMENTS FOR RESIDENTIAL INSTALLATIONS OF LIQUIFIED PETROLEUM GAS (LPG)

1. All locations will be approved by the Shasta Lake Fire Protection District prior to installation. Provide a plot plan showing size of tank, location of tank in reference to buildings, public ways, lot lines of adjoining property that can be built upon, and any trees or vegetation that is proposed to remain within 30 feet of the tank. See Table 6104.3.
2. All piping and electrical services will need to be approved by the Building Department and designed and installed per the currently adopted California Code of Regulation Title 24. Permits are required for these activities.
3. All horizontal metallic piping shall have a minimum of 12 inches of earth cover and have a machine-applied, protective coating. All joints must be wrapped with an approved material. Horizontal piping above ground must be a minimum of six inches above finished grade. Underground outdoor plastic gas piping shall have at least 18 inches of earth cover and have a 14 AWG or larger (with yellow insulation) tracer wire attached to the pipe. (There is no approved substitute for the 14 AWG wire attached to the pipe.) See California Plumbing Code, Chapter 12 for additional requirements.
4. Gas piping must be inspected and approved prior to covering the trench.
5. Prior to calling the Building Department for an inspection, the gas line must be pressurized to a minimum of 10 psi. Be sure that the pressure is holding. The pressure gauge must be of 1/10 pounds of pressure incrimination or less.
6. Underground ferrous gas piping shall be electrically isolated from the rest of the gas system with listed or approved isolation fittings installed a minimum of six inches above grade.
7. A building shut-off valve is required on the outside of the building being served and must be accessible at all times. If using a ground joint union, it must be immediately on the discharge side of the building shut-off valve.
8. Liquefied petroleum facilities shall not be located in any pit or basement, under windows or interior stairways, in engine, boiler, heater, or electric meter rooms.
9. Distributors shall not fill an LP-gas container or connect the piping system for which a permit is required unless the pipe has been tagged as inspected and approved (CFC, Section 6101.2).
10. Equipment and piping shall not be installed in locations where such equipment and piping are prohibited by the California Mechanical Code (CMC, Chapter 13, and CFC, Section 6103.3).
11. Containers of 2,000 gallon water capacity or less shall be placed on concrete or masonry foundations. A 3½" thick concrete slab is an acceptable method of meeting this requirement. The slab shall be sized at least 4 feet by 8 feet. (See attached page for diagram, SLFPD Standard Drawing F020.)
12. Containers shall also be located with respect to special hazards such as above ground flammable or combustible liquid tanks, oxygen or gaseous hydrogen containers, flooding or electric power lines as specified in CFC, Standard No. 82-1, Section 3-2.2.6.

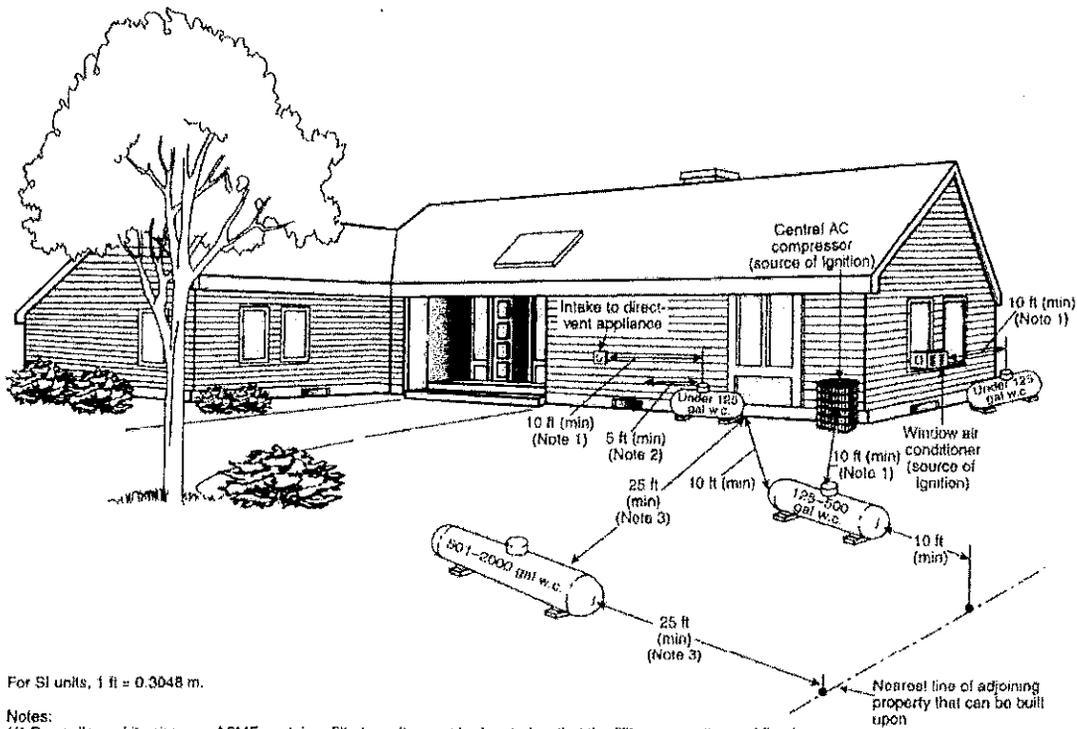
13. Liquefied petroleum gas shall not be used for the purpose of operating devices or equipment unless such device or equipment is approved for use with LP-gas (CFC, Section 6105.1).
14. Liquefied petroleum gas shall not be released to the atmosphere, except through an approved liquid-level gauge or other approved device (CFC, Section 6105.2).
15. Weed, grass, brush, trash and other combustible materials shall be kept not less than 10 feet from LP-gas tanks or containers (CFC, Section 6107.3).
16. When exposed to vehicular damage due to proximity to alleys, driveways or parking areas, LP-gas containers, regulators and piping shall be suitably protected by bollards (CFC, Section 6107.4). (See attached page for diagram, SLFPD Standard Drawing F021.).
17. **An onsite inspection of the placement of the tank and pad must be completed by the Shasta Lake Fire Protection District and the City of Shasta Lake Building Departments prior to the tank being filled by the LP-gas vendor.**

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 ^{a,d}	10	5 ^e	None
125 to 250	10	10	None
251 to 500	10	10	3
501 to 2,000	10	25 ^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.

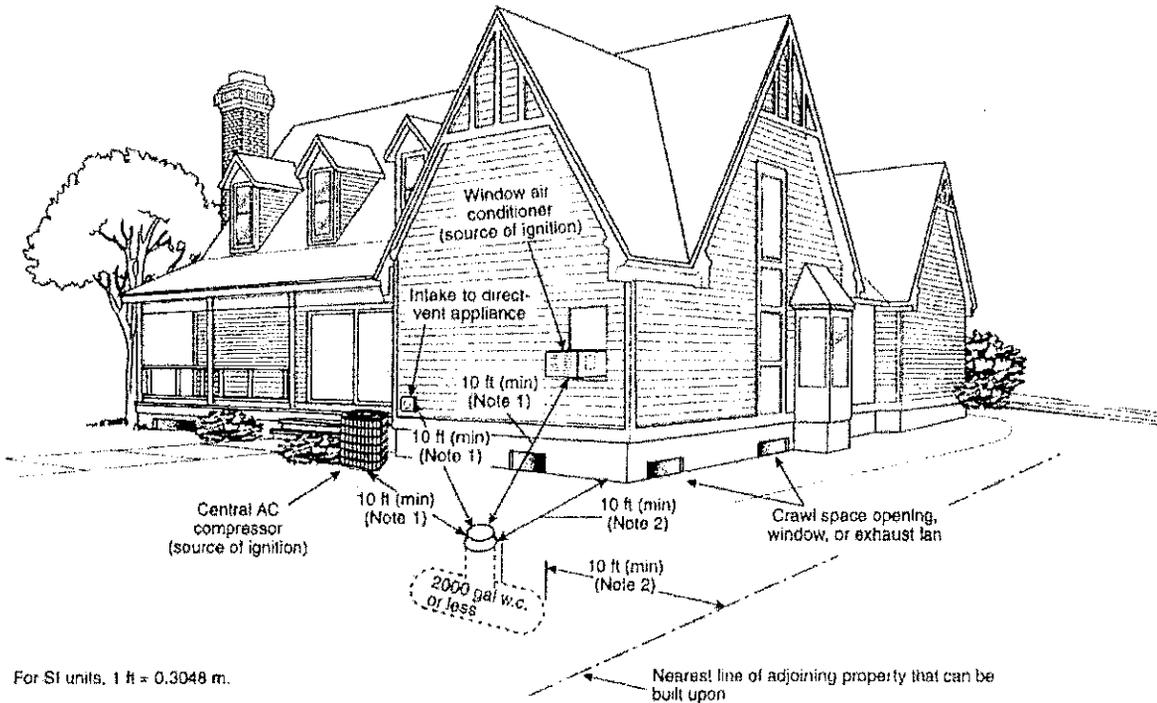


For SI units, 1 ft = 0.3048 m.

Notes:

- (1) Regardless of its size, any ASME container filled on site must be located so that the filling connection and fixed maximum liquid level gauge are at least 10 ft from any external source of ignition (e.g., open flame, window AC, compressor), intake to direct-vented gas appliance, or intake to a mechanical ventilation system. Refer to 6.3.4.4.
- (2) Refer to 6.3.4.3.
- (3) This distance can be reduced to no less than 10 ft for a single container of 1200 gal (4.5 m³) water capacity or less, provided such container is at least 25 ft from any other LP-Gas container of more than 125 gal (0.5 m³) water capacity. Refer to 6.3.1.3.

FIGURE 1.1(b) Aboveground ASME Containers. (Figure for illustrative purposes only; code compliance required.)



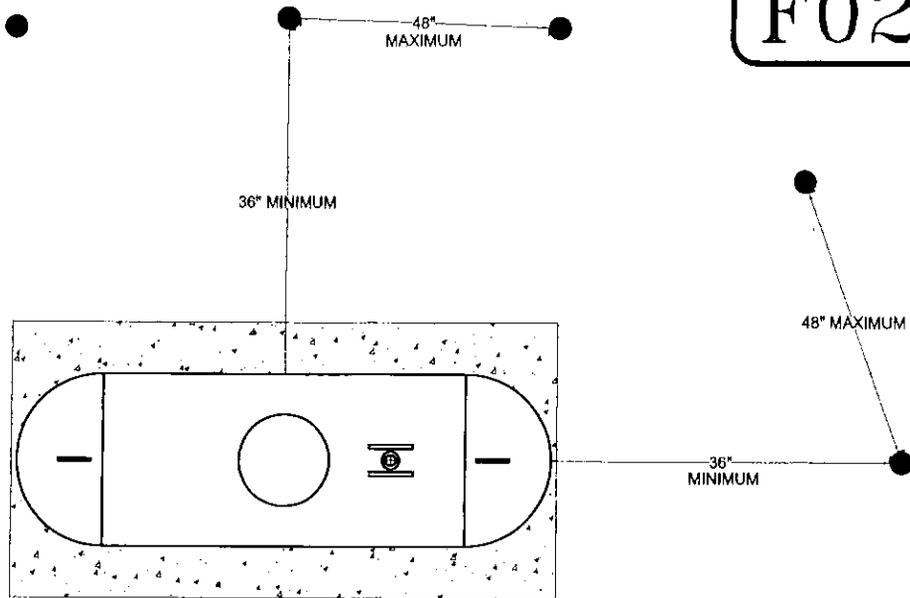
For SI units, 1 ft = 0.3048 m.

Notes:

- (1) The relief valve, filling connection, and fixed maximum liquid level gauge vent connection at the container must be at least 10 ft from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 6.3.4.4.
- (2) No part of an underground container can be less than 10 ft from an important building or line of adjoining property that can be built upon. Refer to 6.3.2.3.

FIGURE 1.1(c) Underground ASME Containers. (Figure for illustrative purposes only; code compliance required.)

F021

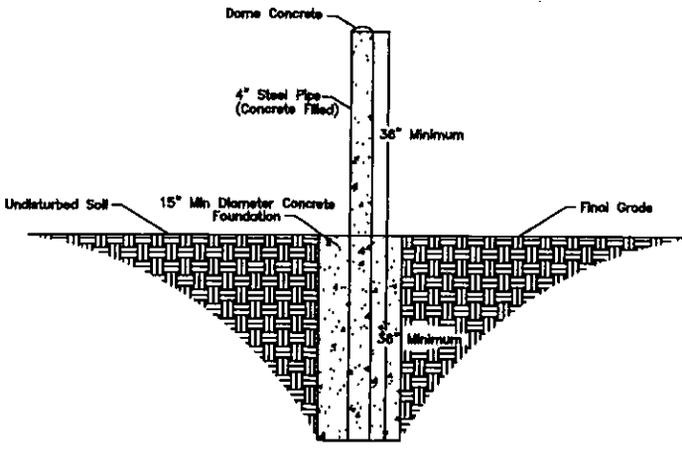


TOP VIEW

CALIFORNIA FIRE CODE, SECTION 312, VEHICLE IMPACT PROTECTION: GUARD POSTS OR OTHER APPROVED MEANS SHALL BE PROVIDED TO PROTECT STORAGE TANKS AND CONNECTED PIPING, VALVES AND FITTINGS; DISPENSING AREAS; AND USE AREAS SUBJECT TO VEHICULAR DAMAGE. WHEN GUARD POSTS ARE INSTALLED, THE POSTS SHALL BE:

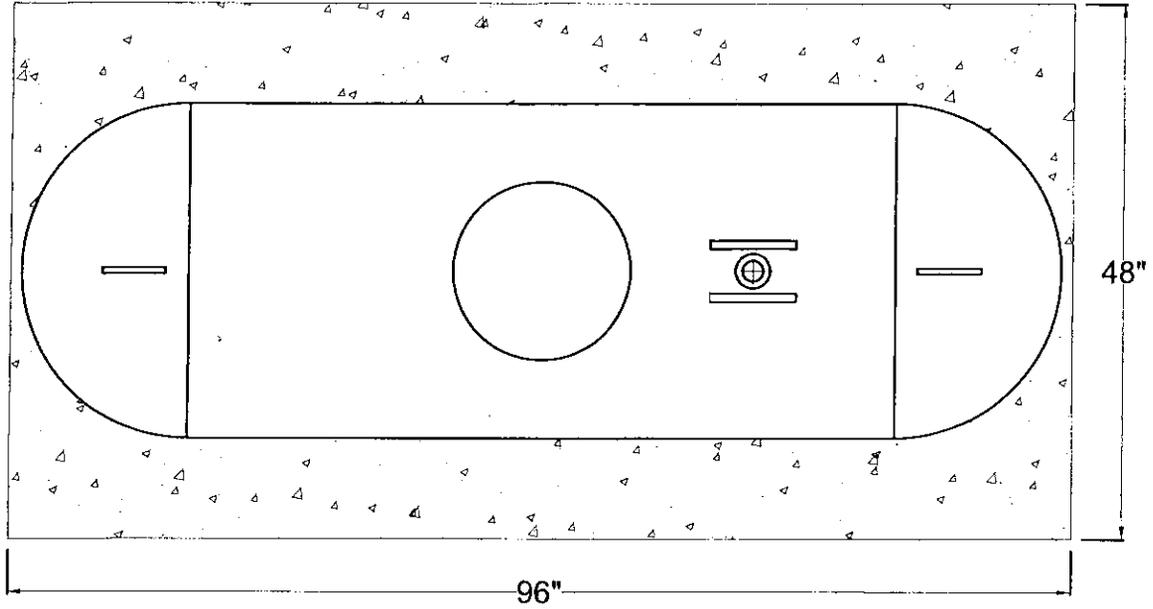
1. CONSTRUCTED OF STEEL NOT LESS THAN 4 INCHES (101.6mm) IN DIAMETER AND CONCRETE FILLED.
2. SPACED NOT MORE THAN 4 FEET (1219mm) BETWEEN POSTS ON CENTER.
3. SET NOT LESS THAN 3 FEET (914mm) DEEP IN CONCRETE FOOTING OF NOT LESS THAN A 15-INCH (381mm) DIAMETER.
4. SET WITH THE TOP OF THE POSTS NOT LESS THAN 3 FEET (914mm) ABOVE GROUND.
5. LOCATED NOT LESS THAN 3 FEET (914mm) FROM THE TANK.
6. CONCRETE MUST BE DOMED AT THE TOP OF THE BARRIER POST. REMOVE ANY SHARP EDGES OR BURRS FROM STEEL POSTS.

NOTE: * * * PROTECTION BOLLARDS ARE ONLY REQUIRED ON THE SIDE OF THE TANK SUBJECT TO VEHICLE (TRAFFIC) IMPOSED DAMAGE.

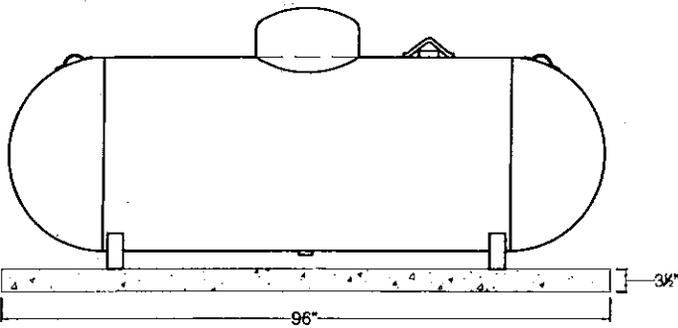


DWG DATE:1/1/2019	SCALE: NTS	SHASTA LAKE FIRE PROTECTION DISTRICT
DWG NAME:SLFDF021.DWG		
<h1>LPG TANK</h1> <h2>TRAFFIC PROTECTION BOLLARD</h2>		

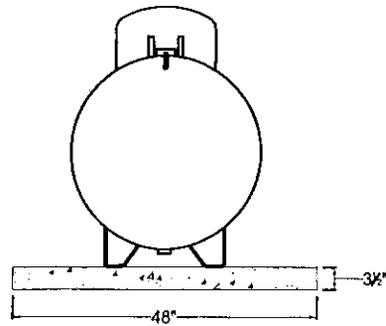
F020



TOP VIEW



SIDE ELEVATION



END VIEW

DWG DATE: 1/1/2019 SCALE: NTS

SHASTA LAKE FIRE PROTECTION DISTRICT

DWG NAME: SLDF020.DWG

LPG TANK
SLAB FOUNDATION SYSTEM