

5 Clearances

5.1 Meter Clearances and Locations

The Customer must provide suitable space and provisions for mounting a meter base at a location acceptable to PGE. It is in the mutual interest of both the Customer and PGE to provide a suitable location resulting in the most convenience to both parties for reading, testing, and replacing meters.

The minimum unobstructed working space required in front of a single meter is 78" high, 30" wide, and 36" deep per NEC 110.26 (see [Figure 5-1](#) and [Figure 5-2](#)). Meters installed in a cabinet require a minimum space of 48" deep to open the cabinet door. **Locate all meters and metering equipment at least 36" horizontally from a gas meter.**

Install *residential* meters and CT cabinets outdoors at a location acceptable to PGE. Generally locate the meter on the side of the structure closest to PGE lines or within 10 feet of the front (street) side to prevent meters from being located behind yard fences. Avoid installations on exterior bedroom or bathroom walls or patios as well as exterior walls that are likely to be fenced in. Never install the meter over window wells, steps in stairways, or in other unsafe or inconvenient locations. Keep shrubs and landscaping from obstructing access to metering equipment (e.g., meter base, CT cabinet, etc.).

Locate *nonresidential* meters and CT cabinets outdoors unless PGE confirms prior to installation that no acceptable outdoor location exists. Any indoor location must have prior written approval by PGE. Make all meter locations accessible to PGE during daytime working hours (8:00 a.m. to 4:30 p.m.). Do not locate indoor meters in show windows, closets, bathrooms, over sinks or laundry tubs, or in any location not safe, convenient, or readily accessible.

Where the point of delivery is located in the Customer's building, PGE will only install service connections to customers metering equipment at the main or entry floor level.

Set the center of any meter socket located *outdoors* to no more than 6' or less than 4' above the finished grade or floor immediately in front of the meter, except for the center of meter sockets in pedestals which are set for 42" minimum above finished grade. In the case of vertical four-gang meter bases, set the center of the lowest meter socket to no less than 42" above final grade and upper meter socket no higher than 75" maximum (see [Figure 8.2](#)).

Customer is responsible for obtaining base floodplain elevation requirements from the local jurisdiction, and ensuring that all customer owned switchgear and metering equipment is installed in accordance with these requirements.

If a Customer makes a meter inaccessible (in the opinion of PGE) such as by installing a fence or enclosure, the Customer must, at his or her own expense, provide access acceptable to PGE or move the meter socket to a location acceptable to PGE.

PGE will not install meters on mobile structures such as trailers, barges, cranes, dredges, draglines, or any mobile pumping equipment or on floating dwelling units such as houseboats.

5.2 Meter or PGE Electrical Equipment Rooms

Rooms containing meters or metering equipment, or other PGE electrical equipment rated 120-volts and higher, shall be illuminated rooms accessible to PGE personnel and limited to PGE, telecommunications, and fire alarm systems. As a minimum, the room shall be sheet rocked and taped. Rooms are not considered to be accessible unless keyed for a PGE lock or equipped with a PGE-provided lock box containing a key to the door for each meter room. For entry ways to meter or electrical equipment rooms, doors must open outward and be equipped with a “panic bar”.

Rooms shall not be used for storage of equipment, cleaning supplies, or other materials.

Electrical or Meter Room Checklist

Access Door (Reference Sections 3.3,5.2, and Appendix)

- The door shall be keyed for a PGE lock or a door key shall be provided and stored in a PGE approved lock box.
- Door must open outward and be equipped with a “panic bar”.
- Door must have minimum dimensions of 30” wide and 6’-6” high.
- Door must open to the outside of the building or access a hallway that leads straight to the outside of the building.
- 36” of clear space in front, back, and to the sides of the access door.

Working Space (Reference Figure 5-2)

- 48” of clear space in front of electrical cabinets with door. Doors must not block egress.
- Minimum 78” high by 30” wide by 36” deep working space in front of meter bases per NEC 110.26.

Storage (Reference Section 5.2)

- Rooms shall not be used for storage of equipment, cleaning supplies, or other materials.

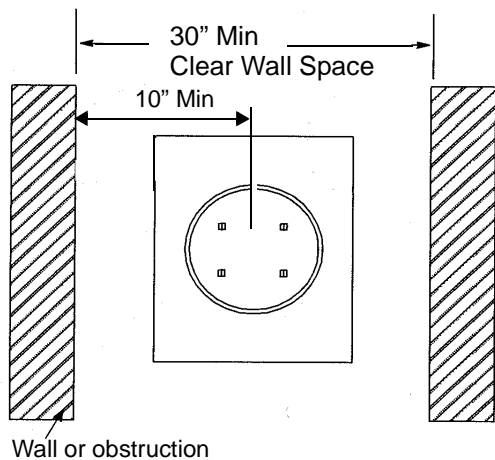
Electrical Panels/Switchboards/CT Cabinets (Reference Section 10)

- Review by PGE engineer, Service & Design Consultant, and/or Meter Services.

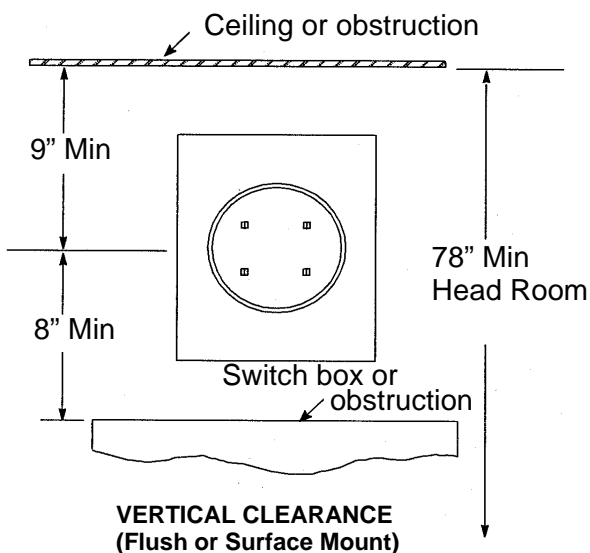
Miscellaneous (Reference Section 5.1/5.2, Appendix)

- Room shall be illuminated.
- Walls shall be finished with sheetrock and taped.
- Ensure switchgear and metering equipment is installed meeting local jurisdiction’s floodplain requirements, if applicable.
- Consult NEC, Section 110 for other electrical requirements.

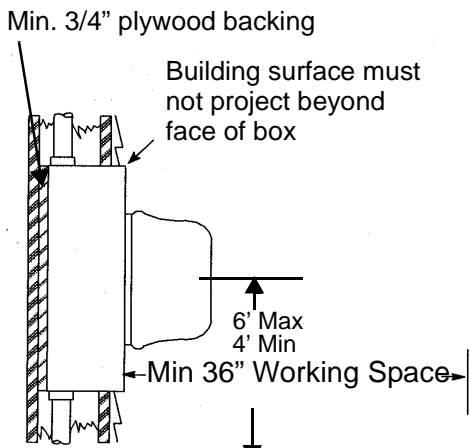
Figure 5-1 Meter Socket Clearance Requirements for Single Meter Installations



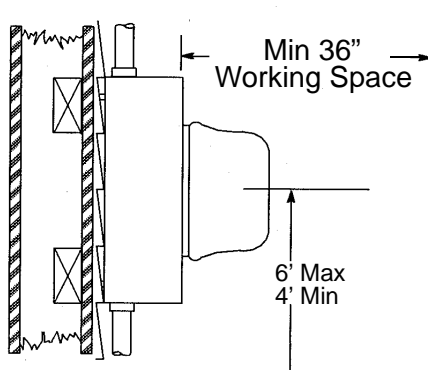
**HORIZONTAL CLEARANCE
(Flush or Surface Mount)**



**VERTICAL CLEARANCE
(Flush or Surface Mount)**



FLUSH MOUNT METER

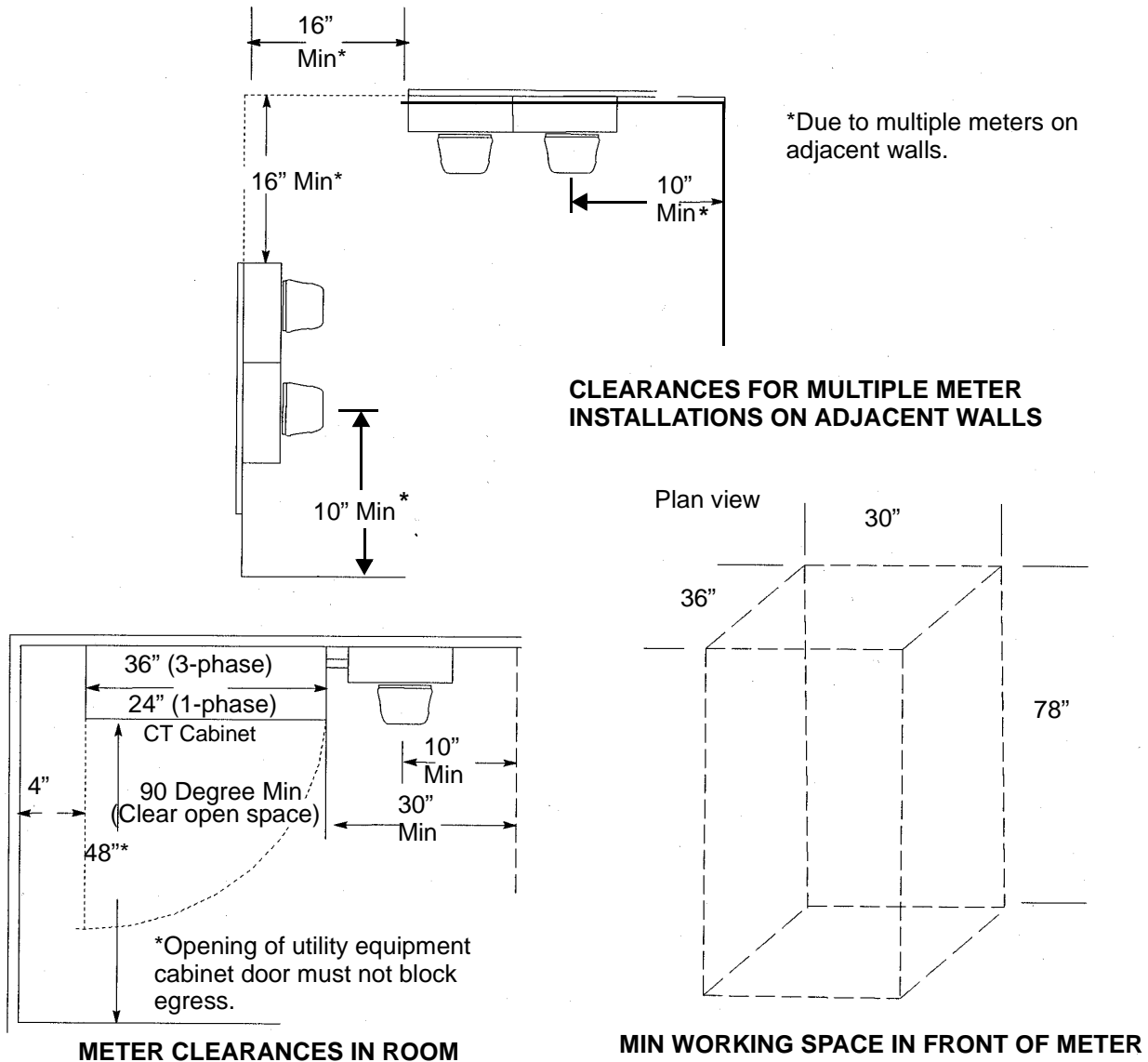


SURFACE MOUNT METER

Note:

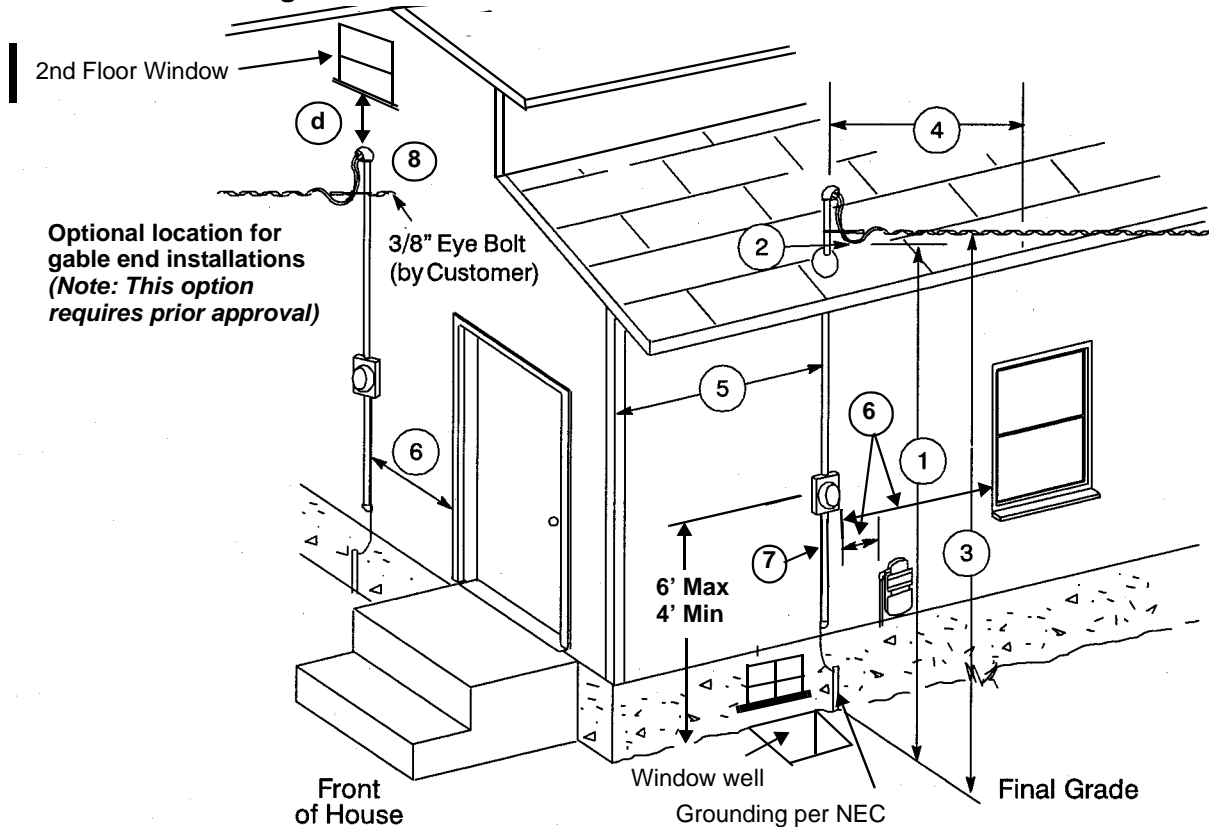
- a. PGE requires a minimum clear working space of 78" high by 30" wide by 36" deep in front of the meter base.
- b. Surface mount meters shall have minimum 2" x 4" backing.

Figure 5-2 Meter Working Space for Multiple Meter Installations



Notes:

- a. In a multiple meter socket installation, a minimum unobstructed working space is needed. See Figure 8-2 for additional clearances.
- b. PGE requires a minimum clear working space of 78" high by 30" wide by 36" deep in front of meter bases. (Reference NEC 110.26)
- c. **All doors to rooms that contain PGE metering and termination equipment (120 volts or higher) must open out. Doors must be equipped with "panic bars".**

Figure 5-3 Residential Clearances for Overhead Service**References:**

1. Refer to [Table 5-1](#) for minimum drip loop clearances.
2. The cable and drip loop (lowest point) must be at least 18" above an inaccessible roof as defined by the NESC. Weatherhead to be located a minimum of 24" above roof and within 4 feet of the roof edge. See [Figure 7-7](#) for guying requirements.
3. For Minimum Clearances for Service Drops see [Table 5-1](#).
4. Six-foot maximum of service cable length over roof surface.
5. Ten-foot maximum from corner of house closest to PGE lines.
6. Three-foot minimum distance from gas meter (see [Figure 5-6](#)), window or doors for customers privacy and clearance. (See note c this page.)
7. 30" clear working space from edge of window well required.
8. Point of attachment must be 3/8" eyebolt within 24" of the weatherhead.

Notes:

- a. Meter base and location must be approved by PGE prior to installation.
- b. Buildings should not be constructed under or adjacent to lines.
- c. The three foot distance from windows is not required if the window does not have a view of living space (e.g., garage). This applies to overhead and underground services.
- d. Local code enforcing agencies require 3' clearance to window openings.

Table 5-1. Minimum Clearances for Service Drops
(750 Volt and Below, Based on NESC)

Minimum service drop clearance (NESC Table 232-1)

- Over roads, streets, and other areas subject to truck traffic. 18 Feet*
- Over or along alleys, parking lots, and nonresidential driveways. 18 Feet*
- Over land travelled by vehicles. 18 Feet*
- Over state highways (ODOT may require greater clearances). 19 Feet*

Minimum clearances over or along residential driveways (NESC Table 232-1)

- If height of attachment will permit. 18 Feet*
- If not; (see note 1 on next page)
 - For service drops 120/240 and 208/120 volts, provided trucks are not anticipated. 14 Feet*
 - For drip loops of service drops 120/240 volts 12 Feet*

Minimum clearances over spaces and ways subject to pedestrians/restricted traffic only (NESC Table 232-1)

- At height of attachment. 14 Feet*
- Drip loops of service drops (NESC Table 232-1, Note 8)
 - For 120/240, 208Y/120 volts, and 480Y/277 volts 12 Feet*

Minimum clearances from buildings for service drops not attached to the building (Table 234-1)

- Vertical clearance over or under balconies and roofs (see Note 2 on next page)
 - Accessible to pedestrians 13 Feet*
 - Not accessible to pedestrians 3.5 Feet
- Horizontal clearance to walls, projections, windows, balconies and areas accessible to pedestrians (see note 2 on next page)
 - Accessible to pedestrians 5 Feet
 - Not accessible to pedestrians 3.5 Feet
- Radio and television antennas
 - Not accessible to pedestrians 3.0 Feet

Minimum clearances from service drops attached to a building or other installation (over or along the installation to which they are attached) (Rule 234C-3 & Figure 234-2)

- From the highest point of roofs, decks or balconies over which they pass (see Note 2 on next page)
 - If readily accessible 11 Feet
 - Above a not-readily-accessible roof and terminating at a (through-the roof) service conduit or approved support, the service and its drip loops set not less than 18-inches above the roof. Not more than 6-feet of the service cable over the roof or within 4-feet of the roof edge 1.5 Feet
 - In any direction from window openings (except from above). 3 Feet
 - In any direction from doors, porches, fire escape, etc. 3 Feet

*Includes requirements to meet the NESC clearances for ice and wind loading.

Service drop in this table is defined as multiplex insulated conductors cabled on and supported by a bare neutral messenger.

5.2.1 Definition Notes for Clearances Table 5-1

1. Areas not subject to truck (heights of 8 - 14 feet) traffic include places where truck traffic normally never occurs or is not reasonably anticipated.
2. The NESC considers a roof, balcony, or area to be readily accessible to pedestrians if it can be casually accessed through a doorway, ramp, window, stairway, or permanently-mounted ladder, by a person on foot who neither exerts extraordinary physical effort nor employs special tools or devices to gain entry. The NESC does not consider a permanently-mounted ladder as a means of access if its bottom rung is eight feet or more from the ground or other permanently-installed accessible surface.

5.3 Clearances from Pools and Hot Tubs**5.3.1 Overhead Clearances to Pools and Diving Structures**

Pools and diving structures shall not be located within 10 feet horizontally of an overhead utility multiplex service drop, or secondary (0-750 volts), or 25 feet horizontally of any open wire secondary or primary.

5.3.2 Underground Clearances

Underground conductors shall not be under or horizontally within 5 feet of the inside wall of a pool or spa. For trench depth, cover, and conduit requirements see [Figure 6-2](#) and [Figure 6-3](#).

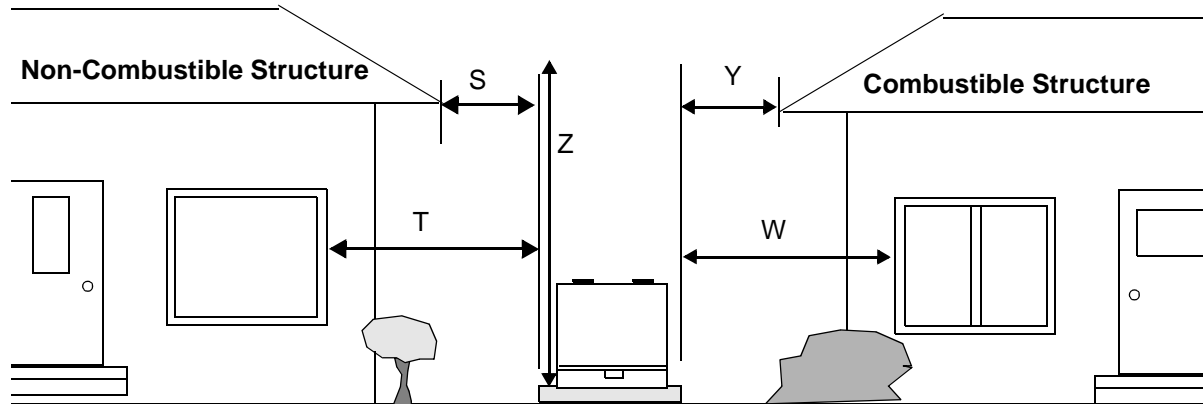
5.4 Clearance from Underground Fuel Storage Tanks

Underground service conduits shall have a minimum of 10 feet of separation between the conduit run and the nearest point to a buried fuel storage of any construction (metal, fiberglass, etc.).

5.5 Clearance from Padmounted Transformers

[Figure 5-4](#), Padmounted Transformer Clearances, shows appropriate clearances from padmounted equipment

Figure 5-4 Padmounted Transformer Clearances



Note: Clearances are the same for submersible transformers.

Table 5-2. Separation of Structures from PGE Mineral Oil-Filled & Less-Fammable Oil-Filled Equipment

Minimum Distances Required from Structure to Equipment Pad/Vault Edge	
Distance	Structure Features
Y = 8 Ft	To nearest combustible component (building wall or overhang) if structure is combustible.
S = 3 Ft	To nearest component if structure is non-combustible & there are no openings closer than 8 Ft
W = 8 Ft	To any opening (i.e., windows which open, doors, upper level fire escapes)
T = 3 Ft	To non-opening window
Z = 25 Ft	From top of pad to any barrier above the transformer, allowing access for rigging and lifting equipment.
Y, S = 3 Ft	To nearest combustible or non-combustible component for less-flammable oil-filled transformer*
W, T = 5 Ft	To any opening (i.e., doors, fire escapes, windows) for less-flammable oil-filled transformer*

* edible seed-oil filled transformer

General Notes

- a. Where exposed to motorized vehicles, the Customer must install PGE approved barrier posts to protect padmounted transformers (see [Figure 6-4](#)).
- b. Locate transformers within 15 feet of a maintained drivable surface.

Table 5-3. Separation of PGE Mineral Oil-Filled Equipment from Other Oil-Filled Equipment
(Electrical Equipment, Fuel Storage Tanks, etc.)

Minimum Distances Required Between Structure Edges	
Mineral Oil/Fluid Capacity of Either Container (Gal)	Horizontal Distance
0 - 499	5 Ft
500 - 5000	25 Ft
5001+	50 Ft

Source is Factory Mutual Property Loss Prevention Data Sheets, Paragraph 2.4.11

Figure 5-5 Working Clearances Around Padmounted Transformers

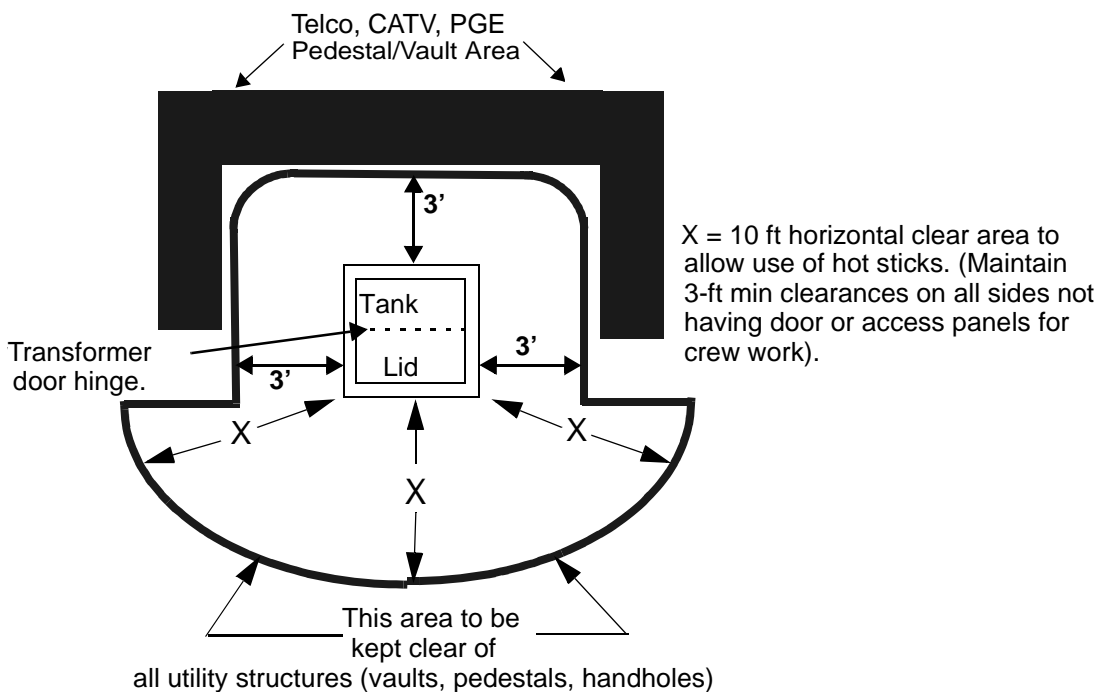
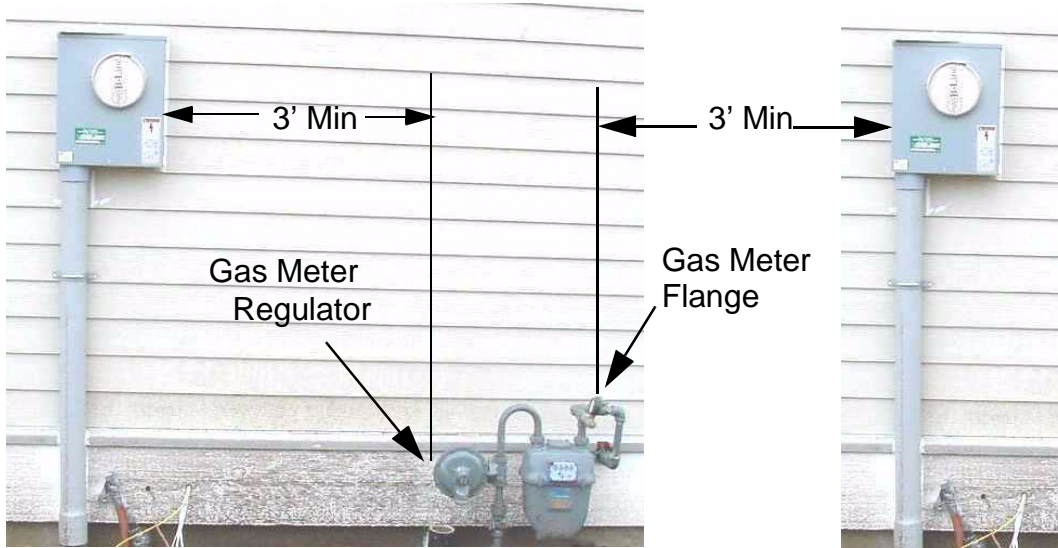
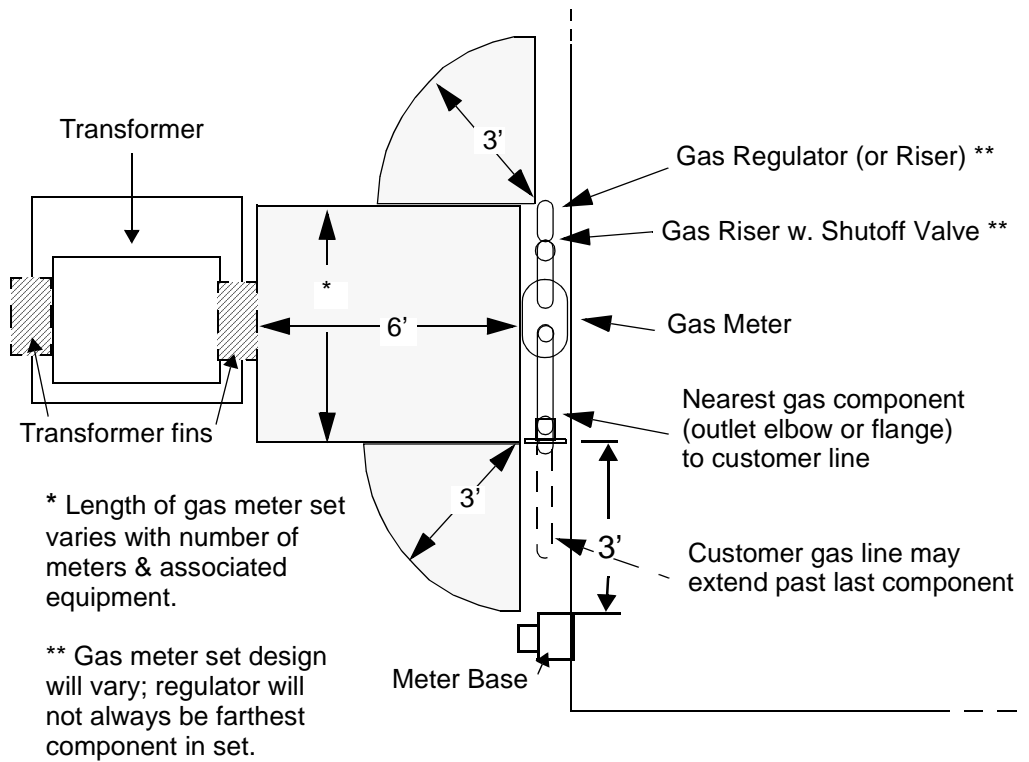


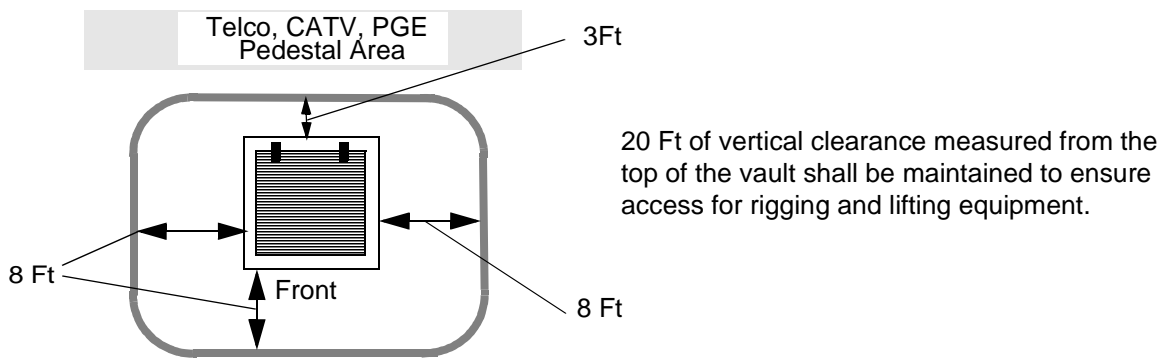
Figure 5-6 Separation of Electrical Equipment and Meter Bases from Gas Meter Sets



5.6 PGE Secondary Voltage Pedestals and Handholes

PGE pedestals and handholes shall have three feet of horizontal separation from the gas meter set. Since these installations do not have switches inside the pedestals or handholes, and thus are not a concern of the gas company, this separation is a PGE requirement for working space only.

Figure 5-7 Line Crew Working Clearances Around PGE Submersible Equipment



5.7 Separation of PGE Electrical Equipment from LP Gas (Propane, Butane, etc.) Containers

All PGE electrical equipment (transformers, switches, vaults, padmounted boxes, meter bases, and pedestals) are considered to be a source of ignition and shall be separated from LP gas containers as required in the National Fire Protection Assn. Liquefied Petroleum Gas Code, Article 58. In general for PGE purposes, separation is determined as the distance from either the pressure-relief valve on any portable container, or from the filling connection(s) or vent valve(s) for containers filled on site from a bulk truck, to the PGE electrical equipment.

The following separations shall apply for installation of above-listed PGE equipment on the customer's property having LP gas containers.

Table 5-4. Separation Between PGE Electrical Equipment and LP Gas Containers

Container Type ³	Installation Design	Container Size (Gal. WC) ²	Minimum Distance (Ft) from Ignition Source (Any Direction)	
			From Relief Valve of Container Not Filled on Site	From Fill Tubes or Relief / Vent Valves of Containers Filled on Site
DOT	Above ground	All Sizes	5	10
ASME	Above ground	All Sizes	N/A	10
ASME	Below ground	0 - 2000	N/A	10
ASME	Below ground	2001 - 120000	N/A	50

NOTE: 1. Source is NFPA Liquefied Petroleum Gas Code, Article 58, pages 26-27 and Appendix I (Container Spacing)
 2. Container Sizes are rated in gallons of water capacity (WC) in the English System.
 3. Federal Department of Transportation rating (DOT)

Figure 5-8 Minimum Distances from LP Storage Tanks

