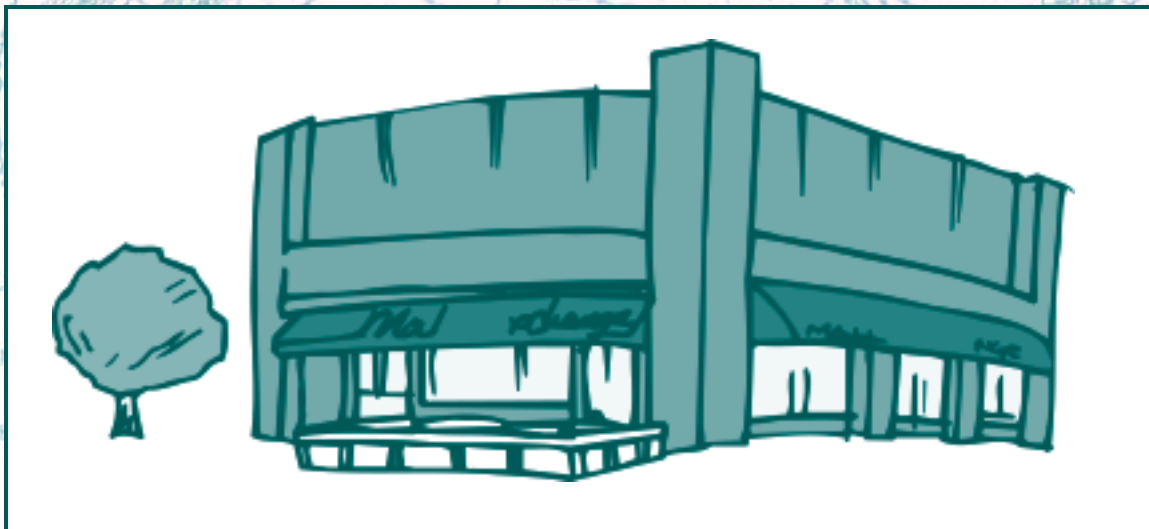


Installation of Gas and Electric Service to Flexible Warehouse/Office and Retail Buildings

General Guidelines



July 2009

Addendum to the
BGE Commercial and Industrial
Customer Information Booklet



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- Attach completed site plans
- Receive e-mail confirmation and reference number in seconds

Check Job Status and review Job Requirements 24 hours a day

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- View project next steps and scheduling dates
- Check pre-site inspection results

Get information and make service arrangements

- New gas or electric service
- Pending jobs and construction
- Relocation of BGE equipment
- Significant increases in load
- Increase in service entrance size

For inquiries or information pertaining to these services call:

Gas and Electric New Business
410-637-8713 or 800-233-1854
7:00 a.m. to 4:30 p.m., Mon. – Fri.

- Removal of BGE equipment
- Voltage problems
- Certificates of inspection
- Planned outages
- Fault current values
- Schedule work to be performed

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Introduction

The information in this Addendum provides general guidelines for the installation of gas and electric service to horizontally-constructed warehouses and retail buildings with flexible spaces for multiple tenants.

BGE intends for these guidelines to help developers, general contractors, builders, architects, engineers, electricians and plumbers better plan for the space requirements and reconfiguration of gas and electric meter assemblies in flexible space buildings.

Following these guidelines should result in more economical use of metering space to meet multiple tenant demands for gas and electric service over the life of the building. Meter reconfiguration due to tenant turn over should be more efficient and less costly and should allow for faster turnaround from BGE.

BGE hopes this Addendum provides you clearer and more consistent guidelines on the requirements for gas and electric service to multi-tenant warehouse and retail buildings. Specific examples of gas and electric metering configurations are also included.

These additional guidelines will be helpful in conjunction with BGE's comprehensive Commercial and Industrial Customer Information Booklet and the BGE Gas and Electric Metering Manual. *For your convenience, both manuals are available online at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

General Guidelines

Gas and Electric Supply Points

BGE will supply flexible warehouses and retail buildings for multi-tenants with one location for electric service and one location for natural gas service. It is standard practice to install one gas meter and one electric meter for each tenant.

Transformer Location

The builder or developer and BGE will confer and mutually agree upon the location of the transformer. The transformer for a multi-tenant building is pad mounted and generally located between 20 feet and 100 feet from the meter location, depending on specific demand and voltage requirements.

For more information, see the detailed requirements on pages 21-27 of the Commercial and Industrial Customer Information Booklet. *Available online at BGE.com/New Construction Services.*

Electric Meter Location

Multi-tenant buildings will require a central meter location for all meters wherever practical. As with the transformer location, the builder/developer and BGE will mutually agree upon the location of the electric metering equipment.

- Meters must be located either outside the building in a central location on an exterior wall, or inside the building in a central meter room.
- Meters must be located on the ground floor.
- Each meter must be readily accessible to the tenant served by it and BGE personnel.
- Each tenant's service switch or disconnect must be legible and durably marked with paint at the meter to designate the service location.
- In the event it becomes necessary to change the meter installation, the new meter location must conform to BGE standards at the time of reconfiguration.

Electric metering equipment should be constructed in a manner that allows for future

expansion and reconfiguration. Typical electric meter arrangements are shown in Figures 3 and 7 on the following pages. For more details, see Section MM 400 of the BGE Gas and Electric Metering Manual. *Available online at BGE.com/New Construction Services.*

Gas Meter Location

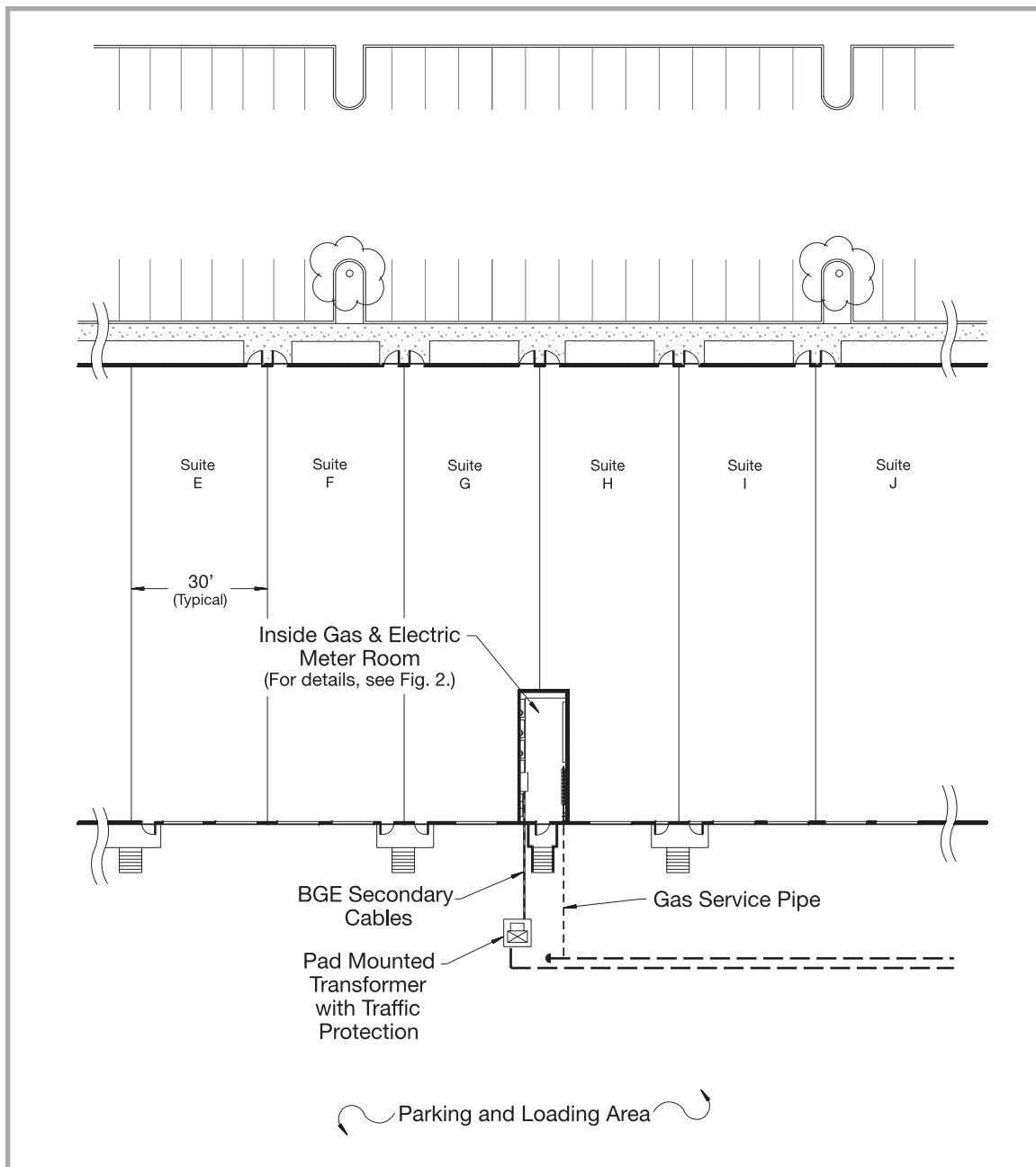
The builder or developer and BGE will confer and mutually agree upon the location of the gas meters. Inside meter locations require approval by BGE and every effort must be made to keep the regulation outdoors.

- For indoor gas meters the distance of the gas service pipe shall not extend further than 5 feet into the building.
- Indoor gas meters must be installed at least 3 feet from any customer equipment with an open flame or subject to electric arcing (e.g., water heaters, panels, etc.).
- Gas meters must be installed in areas where the clearance from the front of the meter to the opposite wall is not less than 4 feet.
- Gas meters must be installed so that there is at least 4 feet of clearance from the front of the meter to the wall directly opposite where an electric meter is located.
- Gas meters must not be installed where it will be necessary to remove one meter to make possible the removal of another.
- Outside gas meters must be installed at least 10 feet from an opening used for ventilation.
- Gas meters must not be installed in unventilated space.
- Gas meters must be located on an unobstructed, structural wall.
- In the event it becomes necessary to change the meter installation, the new meter location must conform to BGE standards at the time of reconfiguration.

For more details, see Section MM 700 of the BGE Gas and Electric Metering Manual. *Available online at BGE.com/New Construction Services.*

Flexible Warehouse/Office Building

Figure 1 – Typical Flexible Warehouse/Office Building Layout

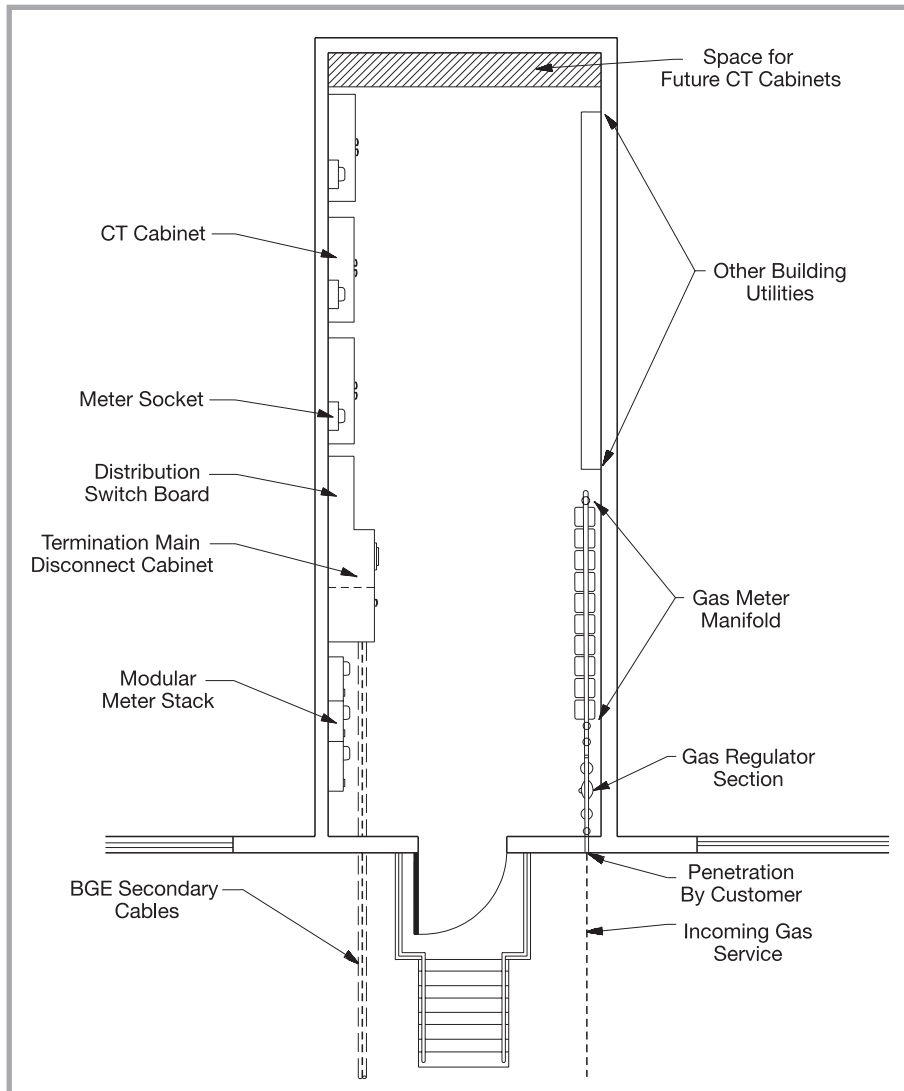


- Transformer is located in the rear of the building between 20 feet and 100 feet from the location of the meters.
- Meter room for gas and electric is located inside the center of the building with the long side of the room parallel to the building bays to minimize loss of exterior doors, loading docks and other useable space.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

Flexible Warehouse/Office Building

Figure 2 – Typical Gas and Electric Meter Room Layout

The room layout and equipment shown below provide for the economical use of space and for future reconfigurations to meet changing tenant requirements over the life of the building.

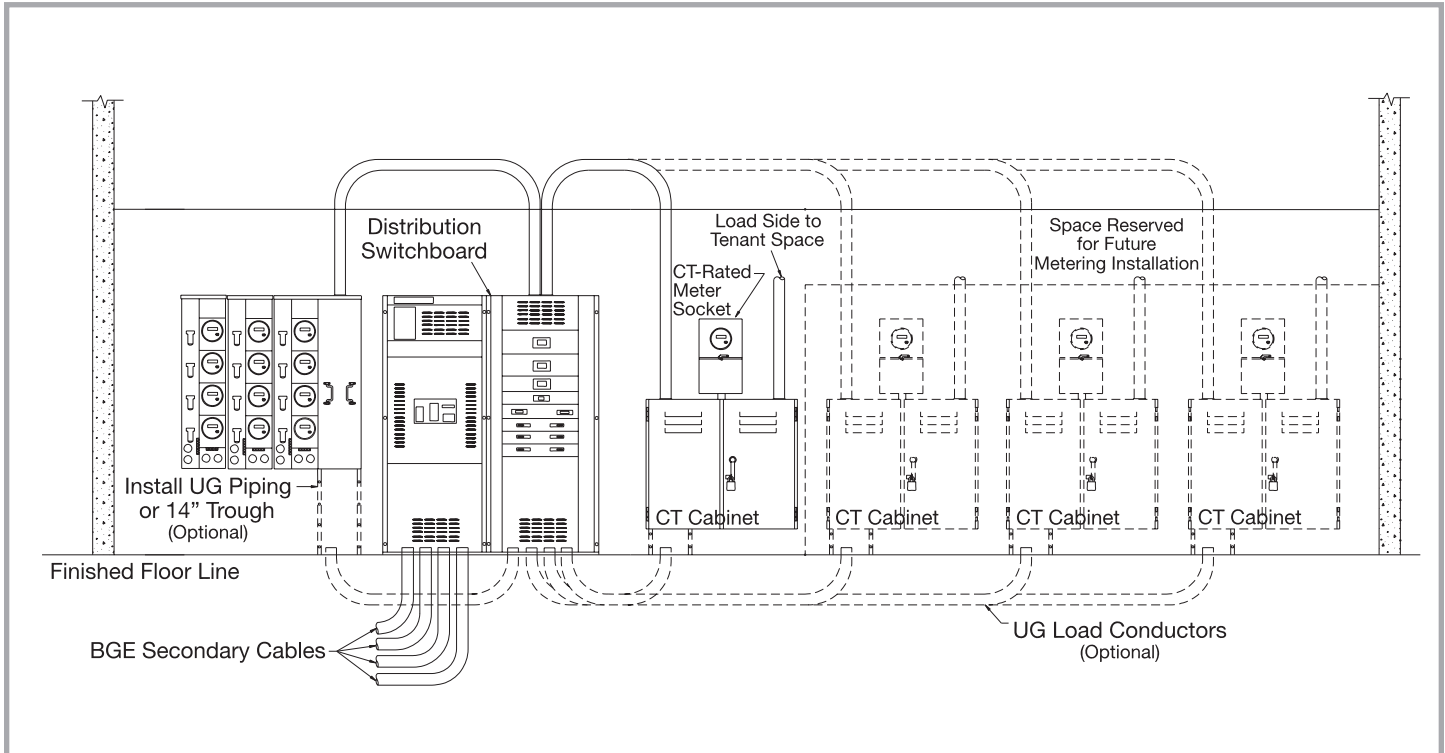


- Example shows a 12' x 30' meter room for a 16-bay flexible warehouse/office building.
- BGE service cables feed the distribution switchboard. Switchboard feeds a modular meter stack for 200-amp meters or smaller. It also feeds CT cabinets for meters greater than 200 amps.
- Gas meter manifold has capacity for up to 18 (275 CFH) meters and can accommodate larger meters; see Fig. 4.
- Gas regulation is shown inside the building, requiring a vent pipe to run outside from the regulators. (Inside regulators require approval from BGE.)
- See Fig. 3 for typical electrical meter installation.
- Example shows space for two additional CT cabinets for future reconfiguration of the bays.
- Builder/owner will be responsible for the design of the meter room to meet specific needs and BGE standards.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at BGE.com/New Construction Services.*

Flexible Warehouse/Office Building

Figure 3 – Typical Indoor Electrical Meter Installation

The configuration of a distribution switchboard and modular meter stack is shown below. This arrangement can provide economical use of space compared to the conventional arrangement of the trough and individual meter cans with disconnects.

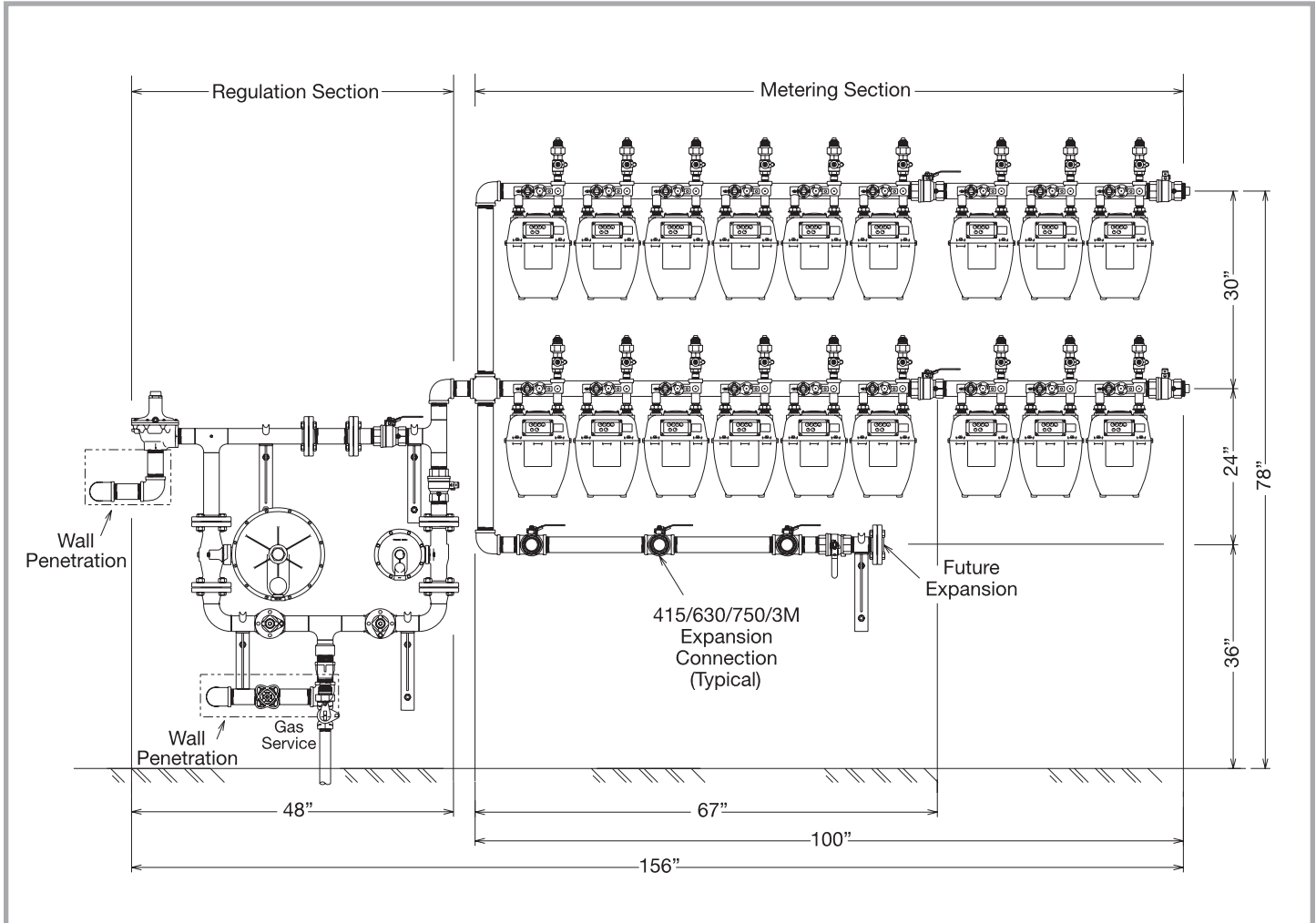


- Example of the configuration of indoor electric meters with adequate space for future expansion.
- Using equipment shown, each additional service greater than 200 amps will require a minimum of 48 inches of wall space.
- Customer-installed load conductors may be fed either underground or overhead.
- When it is required by the inspection authority having jurisdiction, the main disconnecting means shall be a sealable circuit breaker, or a fused switch with sealable barriers, which encloses all unmetered conductors/connections except the fuses.
- Builder/owner must provide a means to lock off all the line side switches ahead of the CT cabinets.
- BGE service cables will terminate in the distribution switchboard. All cables on the load side of the switchboard will be supplied by the builder/owner.
- For equipment details and other options, see the *BGE Gas and Electric Metering Manual, Section MM 500* available at BGE.com/New_Construction_Services.

Flexible Warehouse/Office Building

Figure 4 – Typical Indoor/Outdoor Gas Meter Manifold

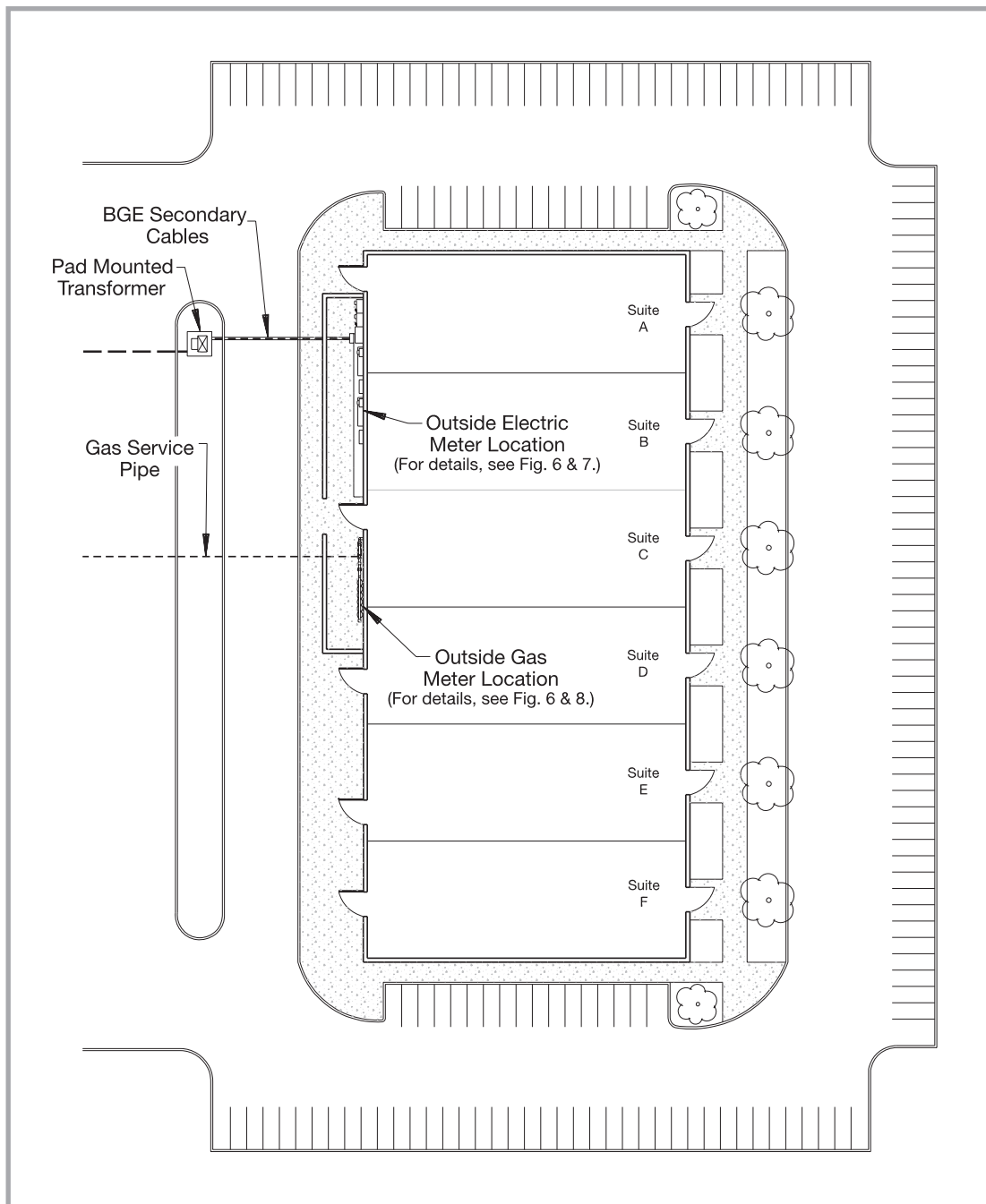
The gas meter manifold is designed for future reconfiguration to meet tenant needs.



- Builder/owner will provide wall penetration as shown if the manifold is located inside the building.
- Assembly dimensions are 160" W x 90" H x 16" D.
- The minimum clear work space required is 184" W x 102" H x 54" D.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

Retail Strip Center

Figure 5 – Typical Retail Strip Center Layout

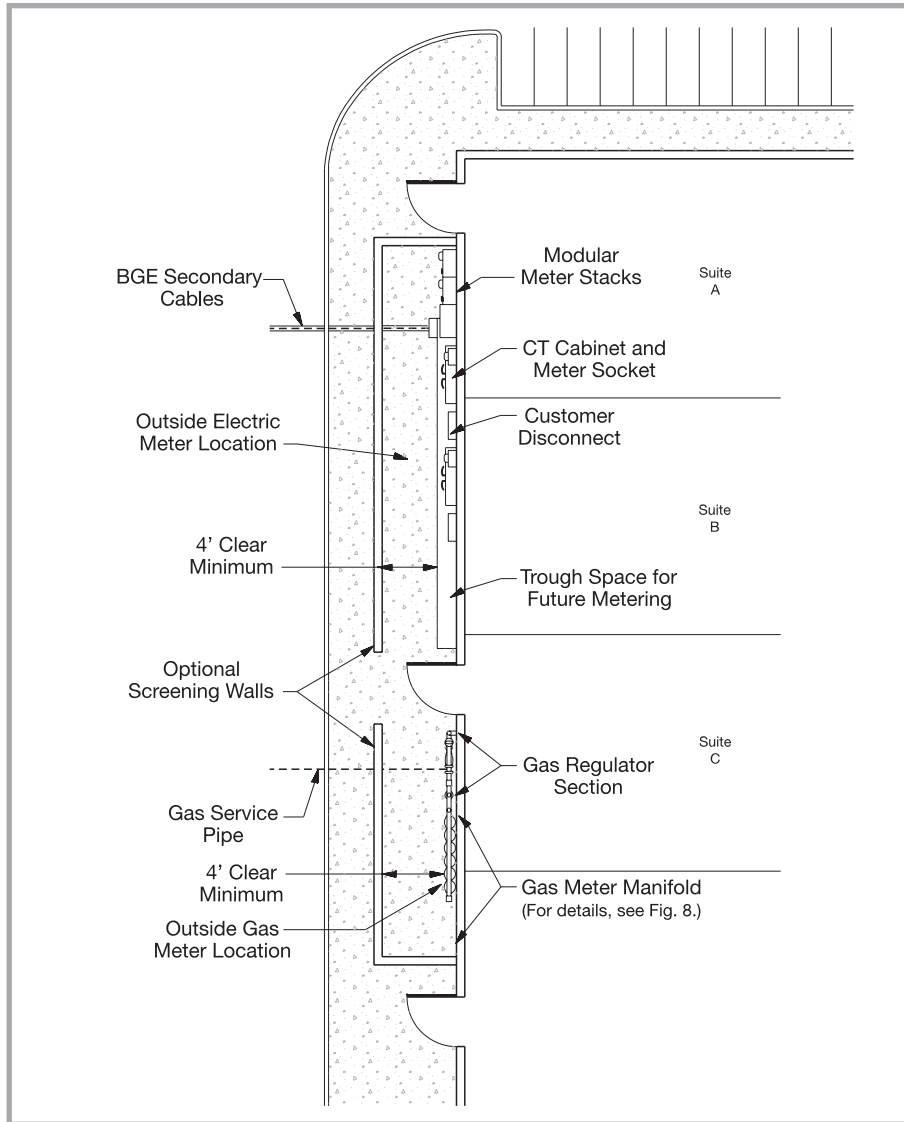


- Transformer is located between 20 feet and 100 feet from the electric meter location.
- Gas and electric meters are shown installed on the outside exterior wall.
- Builder/owner may install screening wall to conceal metering equipment.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

Retail Strip Center

Figure 6 – Typical Outdoor Gas and Electric Metering

The room layout and equipment shown below provide for the economical use of space and for future reconfigurations to meet changing tenant requirements over the life of the building.

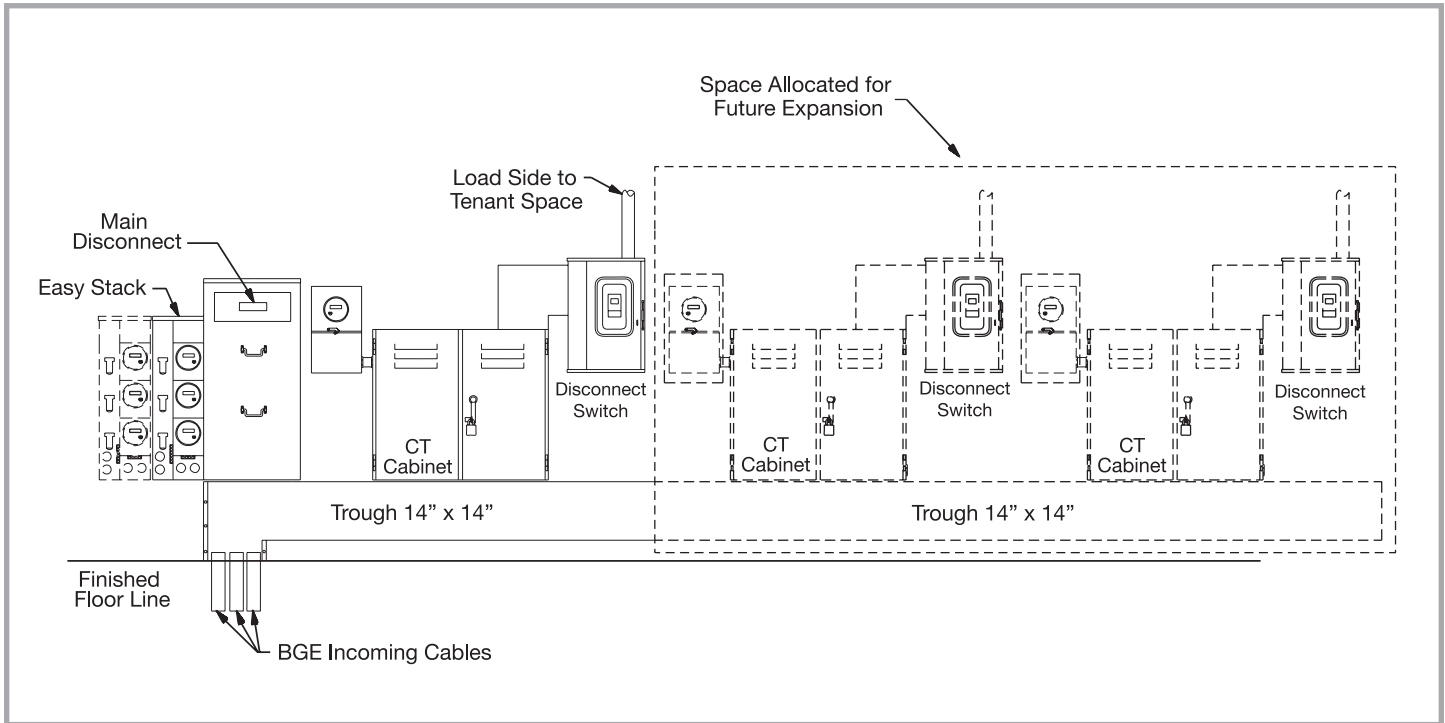


- BGE service cables feed a trough mounted on the exterior wall.
- Trough feeds a modular meter stack through a main breaker for 200-amp meters or less; trough has room above it to feed CT cabinets for 200-amp meters or more.
- See Fig. 7 for details of typical electric meter installation for a retail strip center.
- Gas meter manifold has capacity for six (275 CFH) meters and can accommodate larger meters.
- See Fig. 8 for details of typical gas meter manifold for a retail strip center.
- Builder/owner will be responsible for the design of the metering area to meet specific needs and BGE standards.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

Retail Strip Center

Figure 7 – Typical Outdoor Electric Meter Installation

The figure below shows modular meter stacks and main disconnect instead of the conventional arrangement of individual cans and disconnects, plus additional trough space for future CT cabinets.

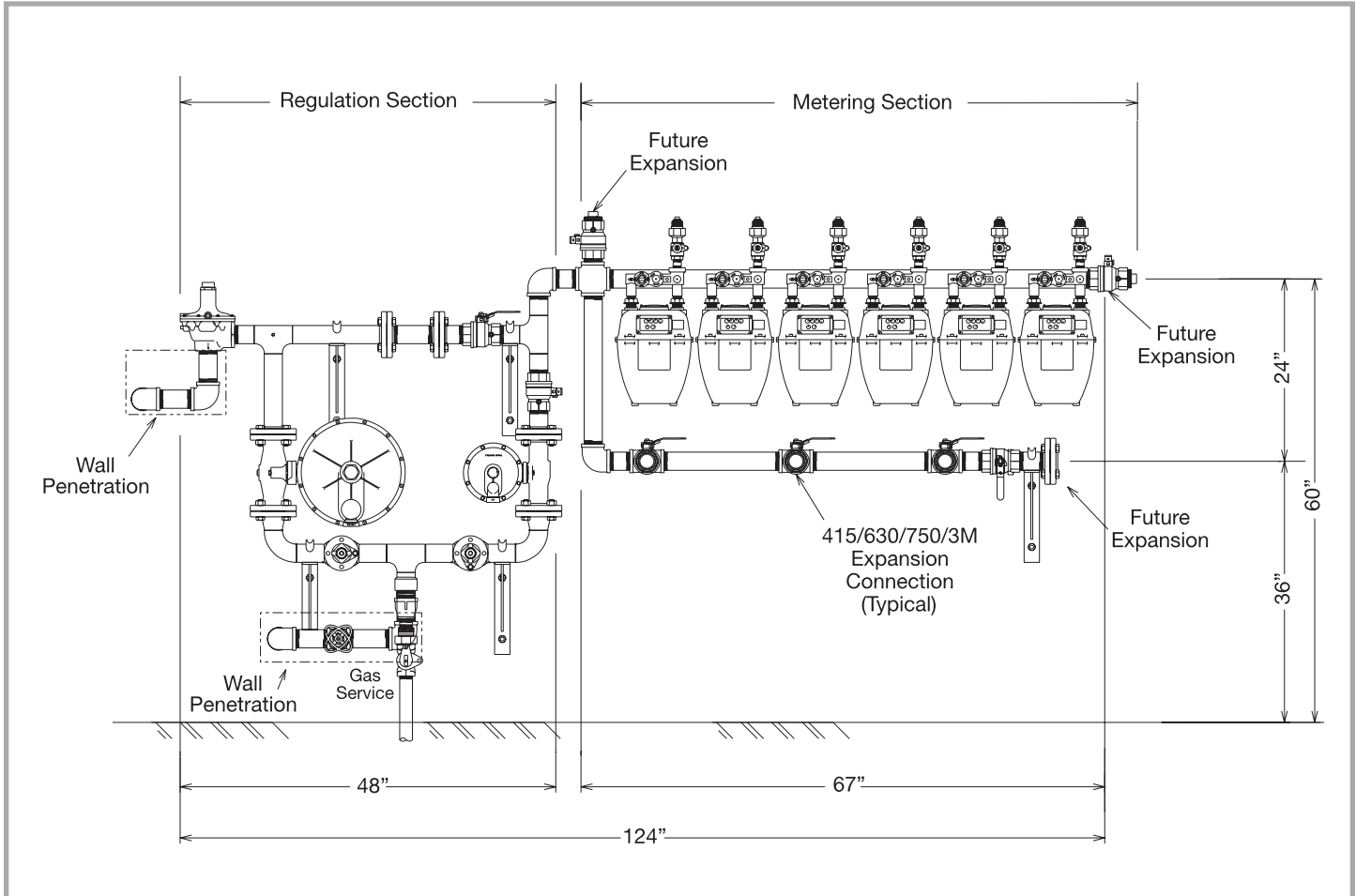


- Example of the front view of outdoor electric meters.
- Using equipment shown, each additional service greater than 200 amps will require approximately 96 inches.
- BGE service cables will terminate in the 14" x 14" trough. All cables on the load side of the trough will be supplied by the builder/owner.
- *For equipment details and additional requirements that may apply, see the BGE Gas and Electric Metering Manual, Section MM 500 available at BGE.com/New_Construction_Services.*

Retail Strip Center

Figure 8 – Typical Outdoor Gas Meter Manifold

The gas meter manifold is designed for future reconfiguration to meet tenant needs.



- Builder/owner will provide wall penetration as shown if the manifold is located inside the building.
- Assembly dimensions are 128" W x 90" H x 16" D.
- The minimum clear work space required is 152" W x 102" H x 54" D.
- *Additional requirements may apply. See the BGE Gas and Electric Metering Manual available at [BGE.com/New Construction Services](http://BGE.com/NewConstructionServices).*

Is Your Site Ready?

1. Customer ducts and transformer pad must be installed as shown on your signed BGE Design plan and in accordance with BGE specifications. Materials are available and may be purchased from BGE.
2. Please make sure you have complied with the following agreed-upon site preparation for our equipment:
 - Site must be within six inches of final grade.
 - Install and mark in 3' intervals: water, sewer, storm drain and all other non-BGE utilities.
 - Locate and clearly mark all private underground facilities on private property. Examples include: well water line, septic field, private lighting, underground sprinkler system, invisible fence wires, etc.
 - Clear the site of all building materials, trees, stumps, and other obstructions along the route of the proposed BGE facilities.
 - Locate and clearly mark proposed property/curb lines on your job site.
 - Locate and clearly mark proposed transformer locations.
 - Install transformer pads and conduits with pull strings.
 - Install Load Cable/Gas Piping through building wall.

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One call to Miss Utility can save time, money and lives.

Before you pick up any equipment, pick up the phone and call Miss Utility. Miss Utility will notify all applicable utility companies and see to it that your job site is marked for all underground utility lines. One simple phone call can save you the time and hassle of dealing with job site mistakes and delays. Not to mention decrease liability, prevent damage, reduce injuries and possibly save lives. After all, safety is everyone's job.

Call Miss Utility, at least 48 hours prior to work, at 1-800-257-7777.

Dig Safely. CHECKLIST

1. Call Miss Utility at 1-800-257-7777 at least 48 hours prior to work.
2. Allow the required time for utilities to mark the underground lines.
3. Respect and protect all marks/flags.
4. Excavate with care. Take all reasonable actions to properly protect, support and backfill underground utility lines.
5. Immediately notify the utility if an underground utility line is damaged.
6. If damage creates an emergency, take immediate steps to safeguard life, health and property.

Please check with your individual jurisdictions with regard to waiting times and specific digging guidelines.

For more information, contact Miss Utility or check online at www.missutility.net.



BGE - Customer Planning Dept.
Service Application Unit
1068 N. Front Street, Rm 500
Baltimore, MD 21202