

# CHAPTER 2

## Commercial Electric Service General Information

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### Service installation responsibilities

Installing a new electrical service to a commercial structure is a cooperative effort between the customer and Clark Public Utilities in which both share responsibility.

#### *Clark Public Utilities is responsible for:*

- ▶ Providing an electrical design based on Clark Public Utilities' construction standards that best suits the customer's needs.
- ▶ Applying for right-of-way trenching and crossing permits within Clark County unincorporated and all crossings of state highways. Fees for these permits will be added to the customer's Clark Public Utilities construction bill.
- ▶ Connecting the inspected and approved service.
- ▶ Setting the electric meter in a customer-installed and maintained meter base.

#### *Customer is responsible for:*

- ▶ Requesting electrical service and establishing an electric account.
- ▶ Hiring a utility-approved electrical contractor to supply and install all required primary (high voltage) electrical equipment based on the utility-provided electrical design.
- ▶ Obtaining right-of-way trenching and crossing permits within any incorporated city limits.
- ▶ All trenching related to the installation.
- ▶ Installing the primary and **secondary service** including the required primary and secondary facilities, trenches, **conduit**, conductor and **metering equipment**.
- ▶ Obtaining electrical wiring permits and inspections from state or local municipalities.
- ▶ Maintaining the service line and associated metering equipment, excluding the meter. See **Ownership and Maintenance Responsibilities** section for additional information.
- ▶ Keeping the meter equipment accessible to Clark Public Utilities personnel 24 hours a day, seven days a week.
- ▶ Maintaining electrical equipment safety **clearances** for both existing and new installations of primary and secondary equipment.

**NOTE:** Adding additional load to an existing commercial service may require upgrades to the existing facilities and distribution system. Costs for required upgrades are the responsibility of the customer.

## Ownership and maintenance responsibilities

Once the new service passes electrical inspection, is backfilled by the customer and energized by the utility, Clark Public Utilities assumes ownership of the primary voltage facilities. The utility is then responsible for repairing and maintaining the primary voltage system and related equipment.

All service equipment, conductors and wiring on the customer side of the **transformer** is owned and maintained by the customer. Commercial services that include a **secondary junction box/pedestal** are customer-owned on the load side of the secondary connectors. The customer is responsible for facilitating any necessary repairs or changes to the underground service line, meter equipment, switchgear, and electrical paneling.

## Starting the installation process

### *Setting up an account*

A billing account will be established at the time the customer calls to request new electric service or completes and submits the **New or Altered Commercial Electric Service Worksheet** found on page 43 in the appendix of this handbook.

Construction Services can be reached at (360) 992-8558. The construction services representative will ask for billing information and the address of the new service site. **Chapter 3** provides a detailed list of information required to initiate a commercial service request.

## Service voltage

**Table 1** provides a listing of commercial voltages offered by Clark Public Utilities.

**Table 1** Commercial service voltages

Service Type	Voltage
Single-phase	120/208 Volt, 3 wire* (limited applications) 120/240 Volt, 3 wire 240/480 Volt, 3 wire* (limited applications)
Three-phase	120/208 Volt, 4 wire wye, grounded 120/240 Volt, 4 wire delta* (limited applications) 277/480 Volt, 4 wire wye, grounded

\* Requires pre-approval from a utility representative.

## Motor loads

Commercial customers with large motor loads are responsible for providing and maintaining code-approved protective devices. These devices are required to protect motors against overloading, short circuits, ground faults, low voltage, and single phasing of three-phase motors.

**NOTE:** Motor loads of 100 hp or larger will require a “soft start” device.

## Meter equipment location requirements

The meter base and associated devices (CT enclosure, switchgear, etc.) must be attached to a permanent fixed structure. This location is to remain accessible to Clark Public Utilities personnel 24 hours a day, without the need to call for an appointment.

Location requirements:

- ▶ On the outside of the structure being served.
- ▶ On the ground floor, with the center of the meter 5 to 6 feet above finished grade (5 feet preferred).
- ▶ Readily accessible to utility personnel 24 hours a day.
- ▶ Inside **electrical equipment rooms** that have an exterior entrance and allow the utility 24-hour access. This location must be approved by a utility representative prior to construction.

These approved locations allow Clark Public Utilities to:

- ▶ Read the meter in a cost-effective manner.
- ▶ Maintain the **metering equipment** efficiently.
- ▶ Disconnect the electrical service quickly in case of emergency.

**NOTE:** See *Chapter 4, Commercial Metering* for more information.

## Trenching

The licensed and bonded, approved primary electrical contractor hired by the customer is responsible for digging the primary electric and secondary service trenches and calling the utility for inspection of the primary voltage trench. The contractor backfills and compacts all trenches after required inspections have taken place.

For additional trenching information, see *Chapter 3, Commercial Underground Services*.

## Locating and notifying underground utilities

### ***Locating existing underground utilities***

State law requires that the customer call the underground utilities locating service at least two full business days (48 hours) before trenching, directional drilling/boring or excavating for underground electric services. Customers

**Table 2** Color codes for locating underground utilities

Color	Underground Service
Red	Electric
Yellow	Gas, Oil, Steam
Orange	Telephone, Cable television, Fiber optic
Blue	Water
Purple	Reclaimed water
Green	Sewer, Storm drain
Pink	Temporary survey marks
White	Proposed excavation

within Clark County can call the national ***“Call Before You Dig”*** number, 811 or 1-800-424-5555. One call to the locating service notifies all utilities that locates have been requested. Underground electric distribution lines owned and maintained by Clark Public Utilities will be located. This service is free of charge. The customer is responsible for facilitating locates for privately-owned, underground utilities. **Table 2** shows the color code for marking the location of each utility.

**NOTE:** Any digging within 24 inches of location marks must be done by hand with wood or fiberglass handled tools. Do not use digging bars in the vicinity of buried cables.

### ***Notifying other utilities about new electric service installations***

New construction typically involves the installation of telephone lines, cable television cables and natural gas lines as well as electric power cables. It is the customer’s responsibility to notify each utility about the intended electric service installation.

## **Joint use facilities**

**Joint use** describes a group of utilities that share pole space or trenches in an effort to keep installation and maintenance costs lower for the customer. In Clark County, there are joint use agreements with phone, cable television and fiber optic services.

### ***Joint use trench***

The customer may place telephone, cable television, or other communication wires in a trench with electric service conductors, providing the installation meets the requirements of Clark Public Utilities and all other parties sharing the trench. In certain cases, natural gas and water services may be installed in a common trench. See **Chapter 3, Commercial Underground Services** for additional trenching information.

**NOTE:** Sewer lines, water mains and storm drainage systems are **not** allowed in a joint trench with Clark Public Utilities’ electric service lines.

### ***Overhead joint use***

Whenever an existing Clark Public Utilities pole is replaced or an overhead service is converted to underground and the pole has joint users attached, the pole will be abandoned (left on site) to the remaining joint users on that pole. The utility has no authority to remove or relocate other utilities on the pole. It is the customer's responsibility to contact all joint use utilities for conversion of their services and to coordinate the removal of the pole(s) *prior* to beginning the project.

## **Conduit**

All new underground single-phase and three-phase primary electrical systems serving commercial structures require continuous runs of conduit. The electrical design provided by the utility will list the size and number of primary voltage conduits required.

The design firm hired by the customer will provide conduit specifications for the secondary service. These requirements are dictated by the National Electric Code (NEC) and fall under the jurisdiction of the Washington State Department of Labor and Industries or the City of Vancouver.

The number of secondary service circuits and size of conduit may be limited by the **source** facility. A Clark Public Utilities designer will review the secondary service design and advise on the number of secondary circuits and size of conduit allowed. See *Secondary service conduit* on page 15 for additional information.

Contact the **authority having jurisdiction** for additional information on electrical service conduit requirements.

## **Work clearances around transformers**

A minimum of 10 feet of clear, level working space is required in front of a padmounted transformer, three feet from the back and sides. This allows utility personnel enough room to perform transformer switching (rerouting of high voltage power) and maintenance. Landscaping, fences and other obstructions must not encroach on these clearances.

Additional information about clearances around padmounted equipment and transformer placement can be found in *Chapter 3, Commercial Underground Services*.

## **Cost for service**

Charges vary depending on the location of existing electrical facilities, the size of service requested and the type of metering required. Following is a brief description of the charges that may be applied to commercial electric service requests. These charges are subject to change. Contact Clark Public Utilities' Construction Services department at (360) 992-8558, or visit our website **[www.clarkpublicutilities.com](http://www.clarkpublicutilities.com)** for verification of current rates. Electric service requests on file longer than six months will require updating to current charges.

### ***System development charge***

This charge covers costs incurred by the utility to increase the capacity of the existing electric distribution system. Charges are based on phase, voltage and panel size of the new or altered service.

Service panel changes and upgrades may also require payment of the system development charge.

### ***Miscellaneous construction charges***

New and upgraded services that require an extension of primary facilities or upgrades to existing secondary or primary facilities may have additional charges applied. These charges cover the cost of labor and materials used to modify the utility's existing system when connecting additional services.

A utility representative will evaluate the job site and advise of any miscellaneous construction charges that may apply.

## **Temporary services**

Commercial customers may request a metered ***temporary service*** to provide electrical service during the building process. A utility representative will provide a design for the requested temporary service. The customer provides and installs the meter base, underground conductor and panel(s) as required by the electrical design and the local governing office. Once the service passes an electrical inspection and the trench is backfilled by the customer, the utility will connect the service and set the meter.

Overhead temporary services require the customer to provide and install the meter post, meter base, panel(s) and weatherhead. The utility will provide the overhead conductor, meter and connect the service once the electrical inspection has been completed.

## **Permits**

Clark Public Utilities will process and apply for all right-of-way work permits required for primary voltage electric services installed within unincorporated Clark County. This includes permitting required for county, state and railway property right-of-way trenching and crossing.

Fees for these permits vary depending on the requirements of the job and will be added to the customer's construction billing.

If the job site is within any incorporated city limit, it is the customer's responsibility to apply for and secure the required permits.

*Visit our website, [www.clarkpublicutilities.com](http://www.clarkpublicutilities.com), or contact a **Clark Public Utilities representative** regarding questions about construction fees or to access a listing of current charges.*