

## ELECTRIC SERVICE REQUIREMENTS

It is understood and agreed that the permanent electrical service for new construction at \_\_\_\_\_

will be furnished by Bountiful City Light & Power (BCL&P) under the following conditions:

1. You need to make an application for permanent service and pay the connection fee and monthly charges. By requesting and accepting electrical service you agree to abide by the terms and conditions outlined in the Electric Service Policies and Electric Service Agreements of BCL&P. A copy of these policies is available from BCL&P and is available online at [www.BountifulUtah.gov](http://www.BountifulUtah.gov).
2. All residential electrical services greater than 200 amps in size require prior approval from BCL&P for the location of the meter, conduit system, and service cable size.
3. As the property owner you need to install the meter base and main disconnect switch according to applicable codes, within 10 feet of the corner of the building closest to the power source, and 4 to 6 feet above grade. You are required to keep the area in front of and immediately around the meter clear to allow maintenance and reading of the meter.
4. A minimum of two working days will be required for BCL&P to complete the electrical connection after you have complied with all construction installation requirements, applied for electrical service, paid the applicable connection fee, and received clearance for permanent electrical service from the Building Inspector.

### In areas of overhead service:

1. As the property owner you must install the riser on the side of the building approved by BCL&P. The riser height, weatherhead, and service cable size must be in compliance with the National Electric Code (NEC). You must contact BCL&P to apply to install the meter on the back of the house if the service is from the rear.
2. BCL&P will provide and install the overhead service wire to the riser.

### In areas of underground service:

As the property owner you must install the underground conduit system and service cable according to the attached Supplemental Information for Installation of Underground Residential Electric Service Conduit System and Service Cables. Listed below are highlights from the guide.

1. You are to install the service cable and conduit system to the point of connection to BCL&P electrical facilities at the property line. You must contact BCL&P to properly identify the location of the point of connection.
2. The service cable size must be in compliance with the NEC.
3. The minimum conduit size is 2". Larger diameter conduit may be required, depending on the size of the required service cable according to the attached guide. The minimum burial depth to the top of conduit must be 24" both at the time of installation, and after all landscaping has been completed.
4. You are required to warranty the service cable & conduit system for a minimum of 12 months from the time of connection for permanent service.

Dated \_\_\_\_\_ Permittee \_\_\_\_\_

# Bountiful City Light & Power

## Supplemental Information for Installation of Underground Residential Electric Service Conduit Systems and Service Cables

### Service Cables

When installed by the customer, the sizing of the service cable is determined by the National Electrical Code (NEC), Section 310. In addition, the service cable must be sized so that the calculated voltage drop does not exceed 1% under full-load conditions. This may require that the service cable be sized larger than those shown in Section 310. Listed below are service cable and conduit sizes correlated to common service panel sizes. The maximum distance shown is based upon fully loading the panel according to NEC standards of 80% of nameplate.

In all cases the conductor size must be limited to 500 kcmil or smaller. Some installations may require parallel runs of cable instead of one large run.

**Note: All services greater than 200 amps must be approved by BCL&P prior to initiating construction for meter location, conduit sizing, and service cable sizing.**

### Service Cable Conduit Sizing

Listed below is a table of the required conduit and elbow sizes based upon service ratings and cable sizes. It is important that the proper size conduit be installed to accommodate the expected cable size. An improperly designed conduit system may result in cable damage during installation, and possibly render the conduit system useless to replace the service cable in the future.

Only long sweep elbows are to be used on the conduit system. Elbows must have a long enough sweep to keep the pulling tensions and cable sidewall pressures within a reasonable level, and must be able to physically withstand the rigors of pulling in the cable along with its associated pulling rope or cable. The maximum number of allowable elbows in a conduit system is three. An excessive number of elbows will increase the pulling tension beyond what the cable can stand. Steel elbows shall be utilized on all vertical bends or when the conduit system contains more than two 90-degree bends.

Service Rating	Al Service Cable Size	Cu Service Cable Size	Maximum Distance	Minimum Conduit Size	Minimum Elbow Radius
125	1/0 Al Triplex	#2 Cu Triplex	60 ft.	2"	24" sweep
150	2/0 Al Triplex	#1 Cu Triplex	65 ft.	2"	24" sweep
200	4/0 Al Triplex	2/0 Cu Triplex	70 ft.	2"	24" sweep
300*	350 kcmil Al Triplex	250 kcmil Cu Triplex	80 ft.	3"	36" sweep
350*	500 kcmil Al Triplex	350 kcmil Cu Triplex	100 ft.	3"	36" sweep
400*	2 X 4/0 Al Triplex	400 kcmil Cu Triplex	100 ft.	2 X 3"	36" sweep

\* Please contact BCLP& before using these values.

Some residential panels cannot accommodate conduits larger than 3 ½ inches or multiple conduits. Care should be exercised in selecting the proper panel for this application.

All exposed conduit, as well as all vertical elbows must be rigid steel. All underground straight conduit must be either Schedule 40 PVC gray electrical grade conduit or rigid steel conduit.

### **Point of Service Connection**

Most residential electrical service will be provided from an underground secondary junction box. Even if a transformer is located nearby, there is usually a secondary junction box adjacent to it. If you are having difficulty locating it, please contact BCL&P for assistance. Some new installations will require BCL&P to install a new secondary junction box, a new transformer, or relocate or modify existing electrical facilities. If the customer installs his conduit and service cable to the wrong piece of equipment, it is his responsibility to re-route the conduit and service cable, and if needed replace the service cable to provide sufficient length to make the service connection. **The splicing of service cables in new installations is not permitted.**

If the customer requires a 200 amps service connection or smaller, and if a meter pedestal is located on his property line, that will be the point of electrical service connection. If the service is larger than 200 amps, a new secondary junction box may be installed, and the meter may need to be installed on the house.

### **Service Cable Conduit Installation**

As required by Utah law, contact Blue Stakes and have all underground utilities located before starting digging. All digging within 24" of the locate marks must be done by hand or other low-impact methods.

The conduit system must be buried to a depth of at least 24" to the top of the conduit, both when initially installed and after all landscaping has been finished. The trench is to extend to within two feet of BCL&P's equipment. The customer is not to undercut BCL&P's equipment when digging the trench. It must be noted that energized electrical cables will be in the vicinity of BCL&P's equipment, and all digging within 4 feet of this equipment should be carefully done by hand. The conduit system is to extend to within three feet of BCL&P's equipment.

The conduit system is to be left in an open trench and inspected by the Electrical Inspector so that the proper burial depth can be verified before backfilling the trench. Whenever possible the last five or six feet of the trench by BCL&P's equipment should be left open to allow BCL&P crews to make the final electrical connection. Where BCL&P's equipment is in the park strip, the conduit is to be pushed under the sidewalk to the park strip area, with the hole left open from the sidewalk to within 2 feet of BCL&P's equipment.

The conduit must be lubricated with an appropriate cable pulling compound to reduce the pulling tension and limit the possibility of damaging the service cable as it's pulled into the conduit system.

The service cable is to extend beyond the end of the conduit system to reach the connection point in BCL&P's equipment, plus have a minimum of five feet of extra cable to permit proper routing of the cable into the equipment. The customer is to make the electrical connections to his equipment, and BCL&P will make the connections to its equipment.

### **Installations Other than Shown in Table**

For cable runs longer than the maximums shown in the table, or for panels larger than shown, contact an electrical engineer to determine the required cable size needed to provide less than a 1% voltage drop under the anticipated panel loading conditions. For panels larger than shown, use no smaller than 4" conduit for all runs. BCL&P can give guidance in making these calculations.