Residential Electric Service Handbook

HILL COUNTY ELECTRIC COOPERATIVE

A Touchstone Energy® Cooperative

Introduction

Hill County Electric Cooperative (HCE) put together this handbook to help you, our Member, to understand the process of bringing electric service to your property. It includes information and general specifications about the supply and use of electricity from HCE. For more detailed information regarding HCE's construction requirements, please contact HCE. Adherence to these procedures and standards will promote safe electrical installations and reliable service.

This handbook is based on utility standards to guide you through the basic requirements for installing a new service and is not meant as a design tool. It should be used as a reference guide for construction and metering standards recognized by HCE. Please also consult other sources such as the National Electric Code (NEC), Electric Utility Service Equipment Requirements (EUSERC), your electrical inspector, and other standards governing electrical equipment and installations.

For questions regarding availability of power or service locations please contact our HCE at (406) 394-7804. HCE desires to provide a safe and reliable electric service in a courteous and efficient manner. Cooperation between members, their contractors and the Cooperative is imperative in the development of plans leading to new or upgraded service to your facility.

For Information regarding the installation of permanent service for multi-family and non-residential services such as commercial buildings, condominium complexes, apartment buildings, and mobile home parks, contact HCE's office at (406) 394-7804 or 1-877-394-7804 if long distance applies.

HCE hopes by providing this information, it may help avoid and prevent any problems during electrical service installation.

***Willie Wiredhand** was created on October 30, 1950, by the late Andrew "Drew" McLay, a freelance artist working for the National Rural Electric Cooperative Association (NRECA)based in Washington, D.C. Employees working on the Rural Electrification magazine tossed out the idea that the symbol should portray rural electric service as the farmer's hired hand. Drew created "Willie the Wired Hand." NRECA's membership selected the symbol and shortened it to "Willie Wiredhand," as their animated ambassador in 1951.*

***Reddy Kilowatt** made his first published appearance on March 14, 1926 in an advertisement in The Birmingham News for the Alabama Power Company (APC). The character was the brainchild of the company's 40-year old commercial manager, Ashton B. Collins, Sr.*

Contents

Getting Started

Contact the HCE office at (406) 394-7804 or 1-877-394-7804 to begin the process of installing new service, to ask any questions you may have and set an initial appointment for our Technician to visit your site. The technician may discuss general billing information, fees and request the address for your new service.

Installing new electrical service to a home is a joint project between you and HCE. HCE is responsible for installing the service lines to bring power to the meter, and for installing a meter in the meter base.

You are responsible for:

- Determining if you want overhead or underground service.
- Purchasing and paying for installation of the meter base.
- Wiring from the meter base or pedestal to your residence.
- All electrical wiring in your residence.
- Obtaining permits and inspections.
- Maintaining your equipment.
- Keeping the meter base visible and accessible.
- Providing and maintaining access to the overhead service lines. (i.e. equipment, haystacks, etc.)

This handbook will also help you to answer questions like:

- Where should I install the meter base?
- Where will the service route be?
- How tall does my service mast have to be?
- What are the size requirements for the meter base?
- What do I have to do for an underground service?
- How do I install my meter base?
- How do I get the existing underground utilities located before I dig?

If you have any additional questions, please call our office.

Overhead or Underground Service

Two types of electrical service are available, overhead and underground. It is your responsibility to be aware of any applicable local codes and ordinances. You can determine if HCE's system is overhead or underground by checking for our facilities along the road. If the power system is overhead, a series of poles similar to *Figure 1-1 (right)* will be visible. If the power system is underground, there will be items like those in *Figures 1-2 through 1-4 (below).* If our system is overhead, and you wish to have an overhead service installed, the requirements for overhead services can be found in the Overhead Services section of this book starting on page 15. If the system is overhead, but you wish to have an underground service, those requirements are in the Underground Services section of this book starting on page 8. If HCE's system is underground, your only option is an underground service. Refer to the Underground Services section of this book for those requirements.

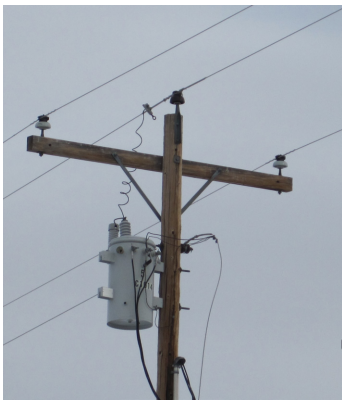


Figure 1-1

Contacting other Utilities

New construction typically involves the installation of water, sewer, telephone, and natural gas lines, as well as power cables. It is your responsibility to notify each of the utilities that you wish to provide service to your home. You will need to obtain the name and phone number for a contact at each utility.

Estimates

Due to the multitude of variations that each project can possibly experience, HCE does not give out "per foot" estimates. If you would like a cost estimate, contact HCE for a proposal.

Figure 1-2

Figure 1-3

Figure 1-4

Overview Of Hookup Procedures

The following is a general checklist on how to obtain a new electrical service for a single-family residential structure. This outline assumes that HCE has existing power facilities near your site. If power is not readily available, HCE will need to design a primary line to your location.

Service Request Checklist:

Name _____**WO#**_____**Date/Initials**_____

_____ Project Cost – HCE will provide a written proposal, which will need to be paid prior to construction.

_____ Plot Plan will consist of the Water/Sewer System, Foundation, Roads/Driveway, Any other non-utility owned facilities on the property

_____ Electrical Permit – State, City, or County.

_____ Easements – The cooperative requires an easement when placing any primary line on your property. This easement will be drawn up by HCE and has to be signed and notarized by the titled property owner(s).

_____ Membership – All consumers will become a member of the cooperative. A deposit may be required to complete membership.

_____ Primary Heat Source- _____ (i.e. electric, propane, other)

_____ Construction will be scheduled after all of the following requirements have been met:

- Payment in full for all construction costs.
- Copy of the Approved Electrical Permit.
- Signed & Notarized Easement(s)/Right-of-Way.
- Approved Trench/Conduit/Clearing of Route, if required.
- HCE cannot guarantee construction due to weather conditions. HCE reserves the right to determine when construction can be completed.

Terms: Power is available when the project construction is complete. At that time, the monthly base rate charges will apply. Member is responsible for wiring from meter base to location and all wiring inside the location. HCE recommends a qualified, licensed electrician complete the work. All construction will be to HCE standards outlined in HCE's Electrical Service Handbook.

Consumer Signature_____ **Date**_____

HCE Rep _____ **Date**_____

HCE Application for New Service

Service Type:

☐ Residential ☐ Commercial ☐ Irrigation ☐ New Construction ☐ Other_____

Date: _____ Customer Name: _____

Email: _____ Phone #: _____

Please Provide the Following Information:

Electrician: _____ Phone#:_____

Builder/Contractor:_____ Phone#:_____

Property Information:

Address: _____ City: _____ Subdivision: _____

Lot#: _____ Township: _____ Range: _____ Section: _____ ¼ Section: _____

Please Provide a Drawing Including: Water/sewer system locations, building locations, roads, driveways, and other facilities on (or planned on) property. Desired location and routing of new power cable.

New Load Info: Building Size_____ sq ft Estimated Peak Load_____ amps

Heat: ☐ Electric ☐ Gas Air Conditioning: ☐ Yes ☐ No

Requested Voltage: ☐ 1-PH 120/240 ☐ 3-PH 120/208 ☐ 3-PH 277/480

Electric Panel Size_____ amps ☐ Overhead ☐ Underground

If this is an irrigation service, please indicate the size of pump to be installed _____HP

Please Check Any That Will Apply To This Project:

☐ Meter on House ☐ Meter on Pole ☐ Meter Pedestal ☐ 200 Amp Service ☐ TTC Phone
☐ 320 Amp Service ☐ 400 Amp Service ☐ Single Phase ☐ Three Phase ☐ Security Light

Additional Notes: _____

_____

**Please contact HCE with any quesitons you may have with this form.*

General Requirements For Installation Of Service

Easement: An easement is required for all HCE supplied facilities. Easements must be signed by those legally authorized to do so. This document is required prior to installation of HCE facilities.

Electrical Permits: Electrical Permits are required prior to energization of line by HCE. The Member or your Electrician is responsible for filing an Electrical Permit with the State.

Cooperative Membership: A signed membership application is required for each person or entity that request service from HCE.

Transformer Location: Transformers must be located a minimum of ten (10) feet from a building wall. A cleared area ten (10) feet from all other sides of the transformer must be maintained for proper cooling, operation and access for HCE employees.

Cost Proposal and Scheduling: HCE will provide the Member with a cost proposal for Aid to Construction. The job will not be scheduled until the Aid to Construction is paid and above requirements are met. Expect work to be completed two (2) weeks after receipt of payment. Work completion may be longer depending on workload and weather.

Sketch Below or Provide as an Attachment:

Underground Lines

HCE's guidelines must be followed. Any deviation from these requirements must be approved by HCE prior to construction. Failure to do so may result in the rejection of the installation and delay in service. Please contact HCE, if there are any questions regarding underground lines.

Member Trenching

For logistical and cost savings to both parties, HCE's policy allows members to supply trench and conduit for electrical services. The information below lists the member's responsibility when providing trench and conduit for electrical service. HCE reserves the right to reject any trench and conduit system that does not meet HCE requirements. It is the member or member's contractor's responsibility to perform excavation and install conduit safely and to adhere to any and all State, local and HCE requirements.

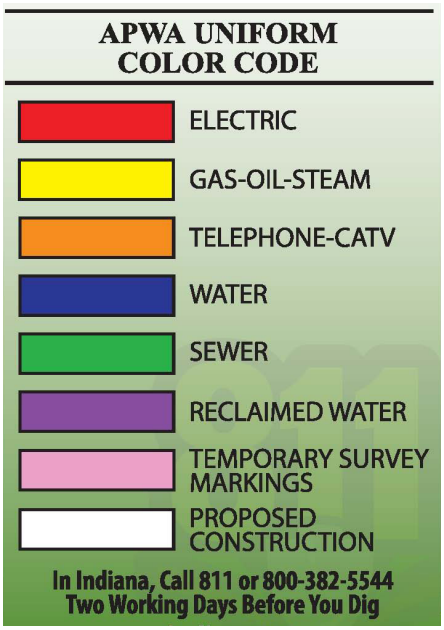
Call Before You Dig- It's the Law | www.montana811.org

Call 811 or visit the site online two (2) full business days before any project, big or small, that includes digging. This is a free service that with a single call or online request will notify the utility companies affected by the project. Damaging underground utility lines while digging can result in injuries, disruption of service and result in fines and repair costs.

Crossing Underground Locates

If the designed route requires that you parallel or cross any existing underground utilities, any digging done within 18 inches of the locate mark must be done by hand. You may hire a professional Excavation Contractor or request an HCE representative to be present when crossing the HCE line. For crossing lines that are not HCE's, please contact the appropriate utility or 811.

Can I Dig There?



Know whose property you are on! Be sure you have the legal right to dig on the property. HCE will not install electric lines on property where we do not have the consent of the owner. Local, state and federal agencies have jurisdiction on public property. Contact the appropriate agency for exact details.

Typical Trenching Specifications and Procedures for Primary and Secondary Services

- All trenches for **primary** service should be a minimum of 36"+ the cable/conduit size in depth unless otherwise specified by HCE. Maximum depth shall not exceed 48".
- All **secondary** service trenches should be a minimum of 24" + the cable/conduit size in depth unless otherwise specified by HCE. Maximum depth shall not exceed 36".

Member Provided Trench

- The bottom of the trench must be smooth and level. This prevents 'bridging' of the cable or conduit, which can cause damage to the cable or cause the conduit to flatten or pull apart when the trench is backfilled.
- The trench will be free of sharp rocks, concrete waste and other construction debris. In extremely rocky areas, sand bedding may be required.
- Trench width will be sufficient to allow safe installation of cable or conduit, and provide proper separation from power and other utilities. One (1) foot of separation is required between power and communication cable , 3 feet of separation is required between power and gas lines.
- The trench must be a minimum of 5 feet from septic tanks and a minimum of 10 feet from a drain field.
- HCE requires inspection of primary trenches and HCE will install the primary cable in the provided trench. The member is responsible for backfilling and cleanup.
- NO cable will be energized unless the trench has been properly backfilled.

Conduit Installation

- Keep the inside of the conduit clean and free of foreign materials.
- A pull rope is required in all conduit runs.

Specifications

- Conduit size and number of conduits will be determined by HCE.
- Buried conduits must be Schedule 40 gray electrical PVC.
- Any exposed conduits must be Schedule 80 gray electrical PVC.

Sweeps/Elbows

- All sweeps must be wide radius sweeps. In conduit runs of less than 200 feet and 270 degrees of bend, PVC sweeps may be used. On runs in excess of 200 feet, you must use steel or burn proof fiberglass wide radius sweeps. In no case may you exceed 270 degrees of bend in a single conduit run.
- Heating and bending of conduits will be allowed, but must be inspected by HCE before backfilling. Be careful not to flatten the conduit when bending. This decreases the ability to pull electrical lines through the conduit.

Extending Cable/Conduit into HCE Enclosures & Poles

Member/Member Contractors shall not extend cable/conduit into any enclosure or pole without an HCE representative on site. HCE must review the project and mark a location where the trench will need to be dug to.

Cleanup/Restoration
Cleanup consists of removing any debris from trenches prior to backfilling and cleaning any debris and dirt out of vaults.

Meter Location
Your meter base must be installed in a location that is accessible to HCE at all times. All locations are subject to approval by HCE.

Service Equipment Installation Requirements

Requirements for properly locating your meter base:

- It must be outside.
- It must be located in an area that is not subject to being enclosed, such as patios, decks and porches.
- It must be located on an HCE approved structure.
- All meters shall be protected from livestock.
- HCE will not energize the meter until these requirements are met.

The reasons for these requirements are:

- HCE personnel can obtain periodic meter readings if needed.
- HCE can efficiently maintain the meter.
- If there is a fire or other disaster, we can disconnect your service.

HCE will not accept recessed, semi-flush or flush mounted meter base installations. Also all meter base installations must provide protection from ice, snow and debris unloading from the roof.

Clearance Requirements
The following clearances are required around all meter installations. It is your responsibility to provide and maintain these clearances. A minimum clearance of three (3) feet is required between overhead service lines and windows, doors, porches, fire escapes, or similar openings.

- The center of the meter must be between 4.5 and 6 feet above finished grade. For multi-meter enclosures contact HCE.

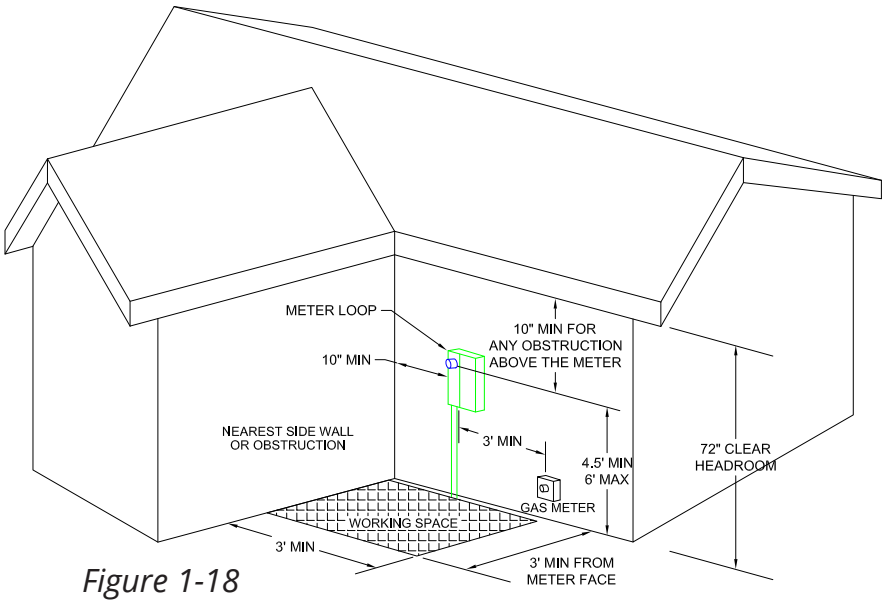


Figure 1-18

- A working space of 36 inches wide by 36 inches deep is required around the meter. *See Figure 1-18 (left).* This working space is to be kept clear of any obstructions including landscaping.
- There must be a minimum horizontal clearance of 3 feet between the center of the electric meter and gas meters.

Service Ratings Available

HCE offers several sizes of service for single family residential structures, and for outbuildings. The size of service you need depends upon the size of the home and the power requirements of the equipment you will be installing. HCE cannot determine your power requirements.

Voltage Ampere Rating Typical Use

- 120/240 volt 100/200 Amps small and medium sized homes (most common service size)
- 120/240 volt 320 Amps large homes
- 120/240 volt over 320 Amps very large homes or ranches

100 or 200 Amp service / Single Family Residential

The 120/240 volt, 100 or 200 ampere service is the most common service, and is typically installed for homes with a living space of less than 3,500 square feet.

It is the member's responsibility to determine the electrical requirements and to notify HCE of the size service you would like. Meter bases for 100, 200 or 320 amp underground services must:

- Be UL (Underwriters Laboratory) approved.
- Be rated for exterior use, and be rain tight according to NEMA-3R. (HCE will not accept flush or semi-flush meter base installations).
- Be protected from ice, snow and debris unloading from the roof.
- Have all unused openings tightly sealed from the inside of the base.
- Must be plumb and securely fastened to the supporting structure.
- Have a main disconnect.
- Have a ring type meter socket. Ring-less meter sockets are not acceptable.
- Be rated for 120/240 volts and 100, 200 or 320 amps.
- Contain four meter jaws and one connection point for the neutral conductor.

Manufactured Homes

For service to a manufactured home, service equipment can be installed one of two ways:

1. On a meter pedestal

Or if the manufactured home is on a permanent foundation

2. On the manufactured home, if both of the following conditions are met:
   (a) The manufacturer installed the service equipment at the time the home was built.
   (b) The service equipment meets the meter base requirements listed below.

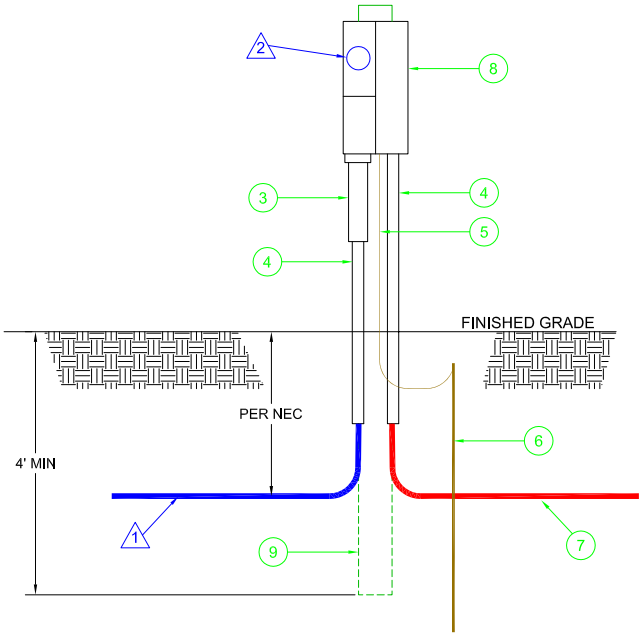
Meter bases installed on manufactured homes must:

- Must meet all NEC requirements.
- Be located on an outside wall of the home.
- Be between 4.5 and 6 feet above finished grade.
- Not be in a walkway, breezeway or carport.
- Not be in an area that is fenced or where decking or foliage will block easy access to it.
- Must be properly grounded and bonded.

If the home manufacturer did not install service equipment on the home when it was built, you must get approval from the local electrical inspection agency before you install a meter base on your manufactured home.

Meter pedestals

A meter pedestal is a structure that supports service equipment. If a meter pedestal is required for the project, it is the customer's responsibility to purchase and install it. The NEC requires that manufactured homes have a disconnect switch installed within 30 feet of the home. Normally, the meter base is installed at this same location. You have two meter pedestal options: Custom built - A pedestal that you or your electrical contractor builds. *See Figure 1-16 (below). Factory built - A pedestal that you purchase from a vendor. See Figure 1-17 (page 13). Also see Figure 1-17a (page 13) for an example.*



△ ITEMS OWNED & INSTALLED BY HCEC

1. SERVICE LINE
2. METER

◯ ITEMS OWNED & INSTALLED BY MEMBER

3. Slip Joint
4. Conduit with proper bushing, locknut and straps
5. Ground wire in accordance with NEC
6. 8' Ground rods in accordance with NEC
7. Customer owned sevice wire to house in accordance to NEC
8. Customer owned Meter Socket or pedestal
9. 6" X 6" fully pressure treated wood post, set 4' in ground

Figure 1-16

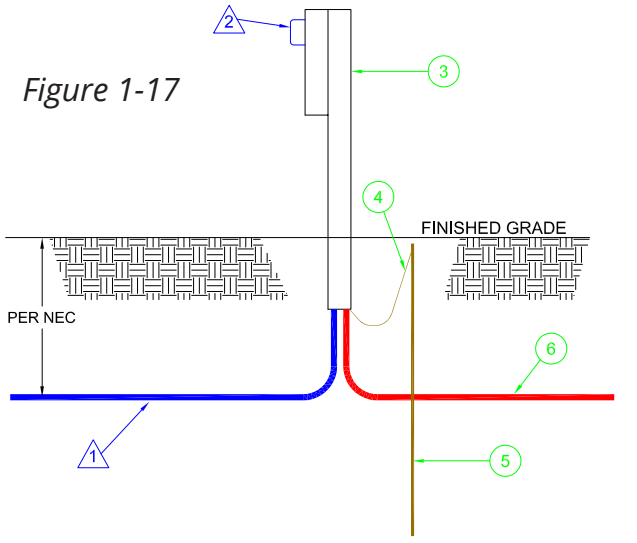


Figure 1-17

△ ITEMS OWNED & INSTALLED BY HCEC

1. SERVICE LINE
2. METER

○ ITEMS OWNED & INSTALLED BY MEMBER

3. Meter base with disconnect switch
4. Ground wire in accordance with NEC
5. (2) 8' copper ground rods in accordance with NEC
6. Customer owned sevice wire to house in accordance to NEC

Figure 1-17a

320 Amp Service

The meter base required for a 120/240 volt, 400 ampere service is called a “Class 320” meter base. It is larger than the 200 amp meter base, but it is still a self-contained meter base (it doesn’t require current transformers). It can be installed on residences where your continuous current rating is 320 amps or less. If your structure will require more than 320 amps continuous, you may be required to install a current transformer (CT) service. Please contact HCE to discuss your power requirements and get more information regarding services above 320 amps. Meter bases for 320 amp underground services must:

- Be UL (Underwriters Laboratory) approved.
- Be rated for exterior use, and be rain tight according to NEMA-3R. (HCE will not accept flush or semi-flush meter base installations).
- Be protected from ice, snow and debris unloading from the roof.
- Have all unused openings tightly sealed from the inside of the base.
- Must be plumb and securely fastened to the supporting structure.
- Have a main disconnect(s).
- Only ring type meter sockets are acceptable.
- Be rated for 120/ 240 volts and 320 amps continuous.
- Contain four meter jaws and one connection point for the neutral conductor.
- Contain provisions for the installation of Class 320 meter.

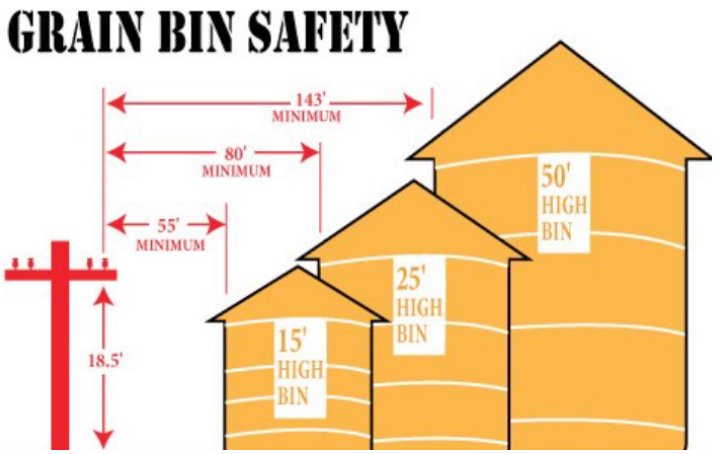
- Have lugs that will accept 350 MCM aluminum wire.
- Have 8.5 inches of clearance between the bottom of the lugs and the bottom of the enclosure.

Services 400 Amps and Above

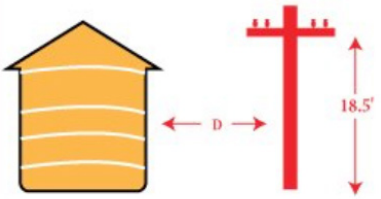
120/240 volt services with over 400 amps and above require CT metering. Please contact the HCE office at 1-877-394-7804.

Three-Phase, Irrigation or Grain Bin Services

Contact the HCE office at 1-877-394-7807 if you need three-phase, irrigation or grain bin services.



Height of grain storage structure	D=Minimum distance from line to bin wall*
15 ft.	55 ft.
20 ft.	68 ft.
25 ft.	80 ft.
30 ft.	93 ft.
35 ft.	104 ft.
40 ft.	118 ft.
50 ft.	143 ft.
60 ft.	168 ft.
70 ft.	193 ft.
80 ft.	218 ft.



*Based on a typical power line having a vertical clearance of 18.5 feet above the ground and a supply line phase to ground voltage of more than 0V to 22KV; National Electrical Safety Code Rule 232.

Grounding Requirements

Meter bases, enclosures, and conduit must be bonded and grounded in accordance with the NEC. If you elect to use a "UFER" ground installation that is poured into the footing of your structure, HCE requires that you provide an inspection certificate from your electrical inspector verifying that the re-bar and ground were properly installed in the foundation. If you elect to use driven ground rods, HCE will require that you install two 8' long rods spaced 6' apart and bonded together.

Options for Meter Base Location

When choosing the location of your service there are serveral options:

- **Meter base on home or building -** Can be fed overhead or underground.
- **Meter base on posts or pedestal -** Advantages include no overhead wires. Plus, pedestals can be centrally located to serve several buildings.
- **Meter base on transformer pole -** Must be installed by HCE. This is an economical option.
- **Meter base on meter pole -** Can serve yards with overhead lines. Requires a double mast loop with stand-offs.

Figure 1-15b

Service Equipment Installation Requirements

After determining the meter base location, the service route, and the size of your service equipment (100 amp, 200 amp, 320 amp, etc.), you are ready to begin installing your service equipment. When you install your meter base, make sure the center of the meter will be between 4.5 and 6 feet above finished ground level. In addition make sure you have installed the correct slip joint in the service entrance conduit. *See Figure 1-15b (left)* for a typical surface mounted meter socket.

The size of service determines the options for the size of the service entrance conduit. The options for the various sizes are:

Service Size Minimum Conduit Requirement

- 0-125 Amps 1 1/4-inch.
- 200 Amps 2-inch.
- 320-400 Amps and above contact HCE.

General Requirements for Overhead Services

The following is a checklist that will assist you in preparing your project for the installation of your overhead service. After you have completed these items, HCE will install your service line and meter.

- Make sure you're in an overhead area.
- Check to see if local ordinances or covenants prevent you from installing an overhead service.
- Apply for the local, city or state electrical inspection.
- Determine an acceptable location for your meter base. See page 10.
- Install your meter base.
- Install your service entrance conductors from weather head down to meter base - (leave 2 feet exposed at the weather head).
- Verify that the service mast height requirements have been met.

The first step when installing a new overhead service is to determine which power pole your service will be taken from. HCE will help determine the location of the meter base. The meter base shall be located outside in an area that is accessible to HCE personnel at all times. If the service line will be passing through trees, HCE must provide and maintain a clear path for the overhead service lines.

Another factor to consider when choosing the location for the meter base is what types of terrain the service line will be crossing. Whenever possible you avoid service line routes that will cross a driveway. Service lines crossing driveways can be hit by vehicles and cause damage to service equipment, and even to the home. *See Figure 1-6 (next page)* for a typical overhead service installation.

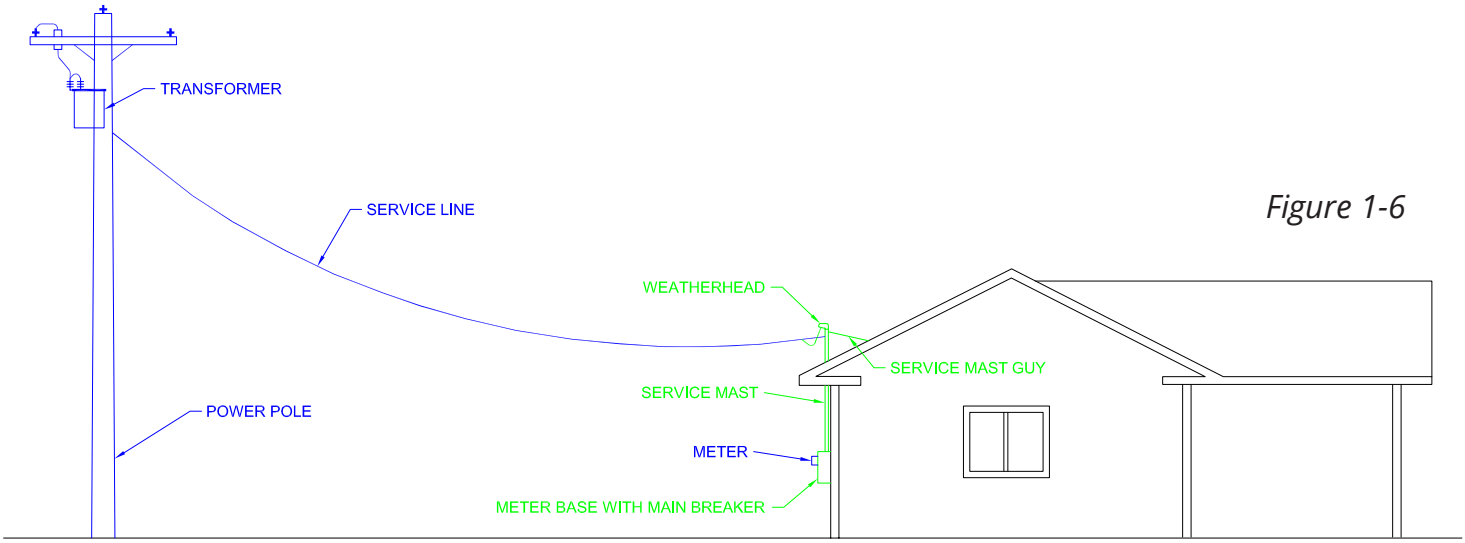


Figure 1-6

Height Requirements

The top of a service mast must be at least 13 feet above final grade so that the clearances over your property can be maintained. Additional height may be required depending upon the location and type of structure or terrain your service line passes over. *Figure 1-7(below)* illustrates some of the minimum clearances that must be maintained.

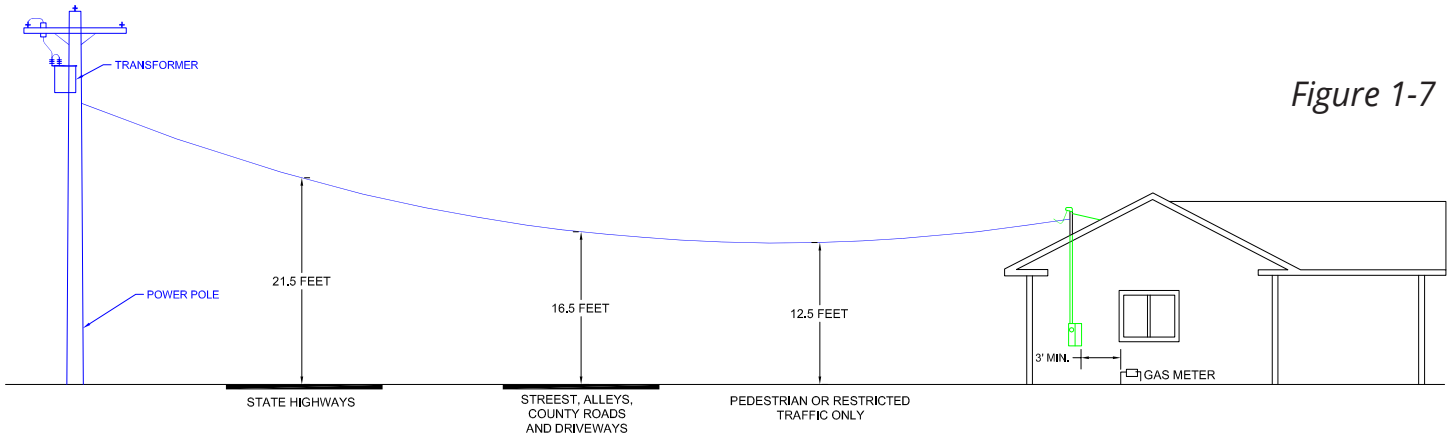


Figure 1-7

Service Mast Requirements

A service mast is a conduit that runs vertically from the top of the meter base through your roof. It contains service entrance conductors and typically supports one end of your service line. Service masts are necessary when installing an overhead service, and are installed by you or your electrical contractor. The service mast must be rigid aluminum or steel conduit. HCE will supply a service mast wire holder which provides the connection between your service mast and our service wire.

The requirements for the installation of your service mast are covered in the National Electric Code. Some of the more common methods are included in this section for your information.

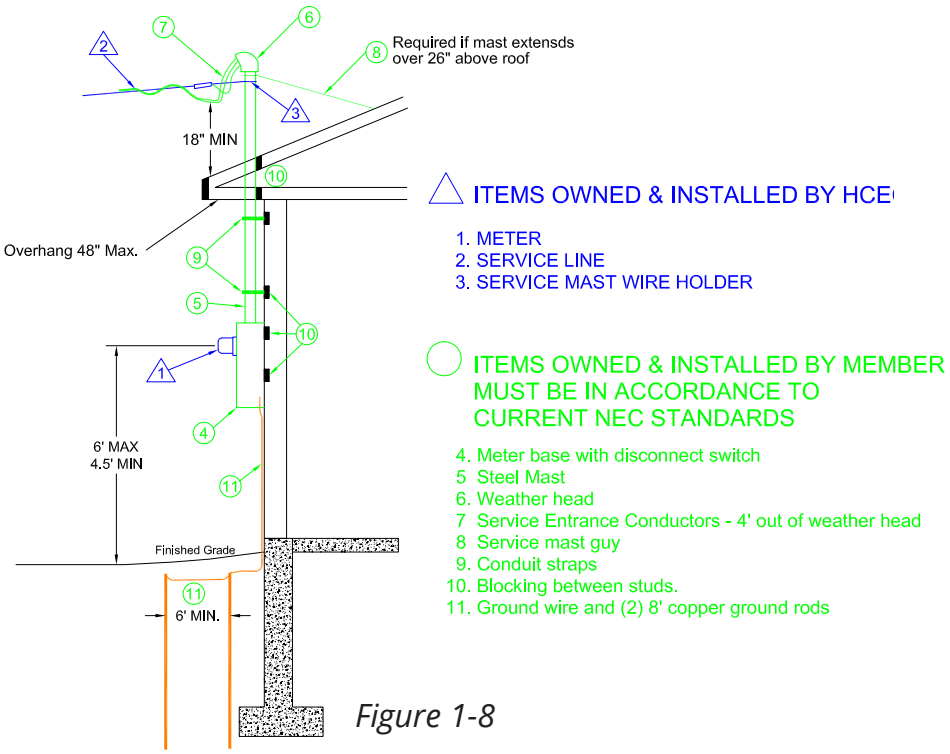


Figure 1-8

The NEC also requires that the service mast maintain minimum clearance above your roof. The clearance required depends upon the slope of your roof, and whether or not the service line is attached to the structure. Figure 1-8 *(left)* is one example of a service mast installation with the service line attached to the mast. This is HCE's preferred method.

Service lines passing over the roof of another structure or decks must maintain the minimum clearances shown in *Figure 1-9 (below)*. If you have questions about the proper mast height, call us.

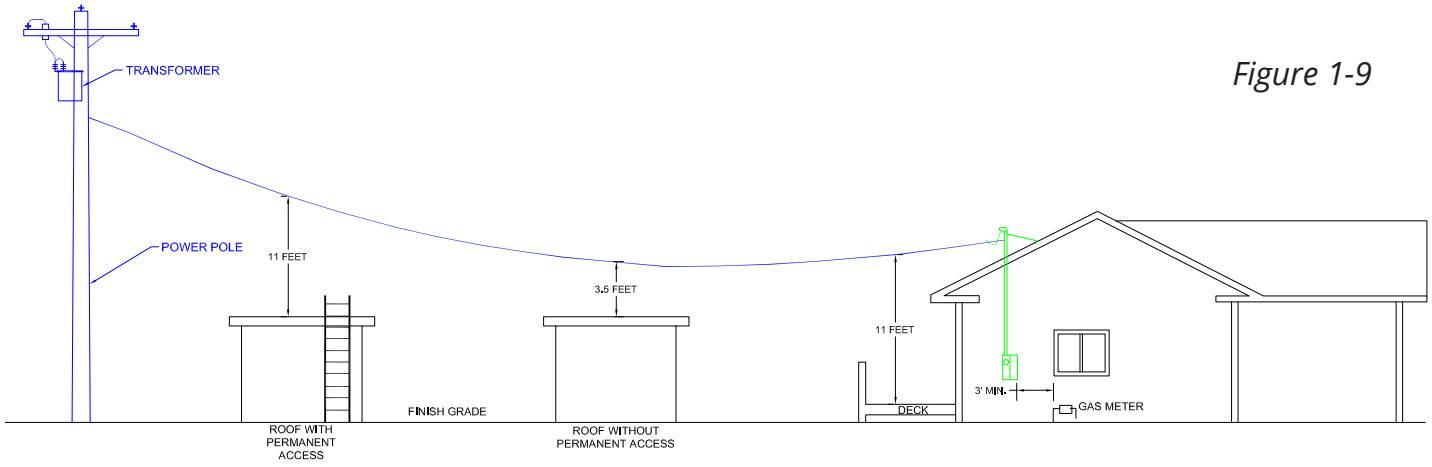


Figure 1-9

Additional Mast Supports

Typically a guy or a brace, are required for any service line over 100 feet long. Guys and braces are installed to prevent the weight of the service line from pulling the service mast away from your home. Further information regarding guying and bracing service masts is available in the NEC. Additional mast supports are required when the top of the service mast is more than 26 inches above the roof.

Service Equipment Installation Requirements

After determining the meter base location, the service route, the height of your service mast, and the size of your service equipment, you are ready to begin installing your service equipment. HCE only allows surface mounted meter bases. Meter bases and loops are available through the HCE warehouse. You can also contact HCE's Master Electrician to have your loop installed.

Once you have installed the meter base and mast, you are ready to install your service entrance conductor. The service entrance conductor is the wiring that is connected to the top lugs in your meter base and runs upward through the service mast. The service entrance conductors must be sized according to the NEC and to the rating of your meter base. When installing the wire, leave at least 2 feet of wire exposed at the end of the weather head to allow HCE to connect the service line to your wire. When you install your meter base, make sure the center of the meter will be between 4.5 and 6 feet above finished ground level. If you have any questions regarding the installation of your service equipment we suggest that you consult the NEC, contact an electrical inspector or contact HCE's Master Electrician to have your service equipment professionally installed.

For services with more than one occupied dwelling connected to the same meter, HCE will apply a monthly recurring (base) charge for each occupiable dwelling.

Outbuildings

An outbuilding is a stand-alone structure which is located on residential property and is not a living space. Typical outbuildings are barns, pump houses, garages, shops, storage sheds, etc. If you wish to install a separate service to your outbuilding, you are required to provide a clear path/trench and conduit to our equipment, a properly located meter base, and service equipment as required in the NEC. It will be your responsibility to install the meter base and service equipment. Depending on the size of service equipment and the type of facility that is being served, the meter base may be required to have provisions for or have manual bypass blocks. Meter bases for 100 to 320 amp services to outbuildings that will be used for personal use (for example, garages, shops, single family wells, non-commercial barns) must meet all the requirements listed above.

Temporary Service

Most service installations can be coordinated to provide you permanent service early on in the construction process. This will eliminate the need for a temporary service. This in turn eliminates an additional visit to your construction site and eliminates additional costs to you. If temporary service is required for your project, HCE will connect it under the following conditions:

- A $250 deposit must be paid for temporary service. This will be refunded or applied to HCE bill.
- Temporary meter loops and pedestals will be provided by you or your contractor.
- You or your electrician must submit to HCE a state electrical inspection permit.
- There will be a separate charge for temporary services.
- Your temporary service should only be located adjacent to a transformer and have enough wire stubbed out to connect directly to our facilities. If an existing transformer is not in the area, temporary service may not be available at your location. Contact HCE for other options.
- The costs for permanent services replacing temporaries will be treated as new services.
- Member Pays for Temporary Services.

Removing and Installing Meters

Only authorized HCE personnel shall remove and install meters.

Emergency or Standby Generators

In the event of a power interruption please call 406-394-7804. Troubles can be reported 24 hours a day, seven days a week. Before reporting trouble please check your breakers, the main breaker at the meter and with neighbors to see if their power is out. When reporting an interruption after hours please have your meter number and billing name on the account available to help us serve you better.

Most of us take it for granted, but electrical service can be interrupted. Especially during natural disasters and extreme weather conditions, these power interruptions are often extended for long periods of time. Which also happens to be the time when people need their power the most.

Your cooperative encourages members to have standby generators, especially for heating. Standby generators assure electricity during power failures. However, one that is not wired through a double-throw transfer switch is illegal and creates deadly possibilities. Without a double-throw switch, power can feed into the transformer and back out on power lines. Think of a suddenly energized down line and the lineman repairing it or a downed line on a fence and the neighbor's cattle that brush against it or the neighbor or the neighbor's children.

Since the safety requirements are quite technical, it's best to have a certified electrician install your standby generator. You can also contact HCE's Electrician, at 406-394-2832 when planning to buy a standby generator. He will provide you with a consultation on safe and legal installation of a standby generator or on the safe use of an existing unit.

Standby Generator Tips:

- Purchase the right size generator for what you need to power.
- Install generator in a proper location, outside for ventilation and away from areas susceptible to flooding
- Follow all manufacturer's recommendations.
- Inspect the unit at least annually.
- Hire a qualified technician when repairs are necessary.
- Don't remove or tamper with safety devices; they are there to protect you and your property.
- Don't touch the unit while it's operating, as serious burns can occur.
- Learn how to disconnect from your utility service before turning on your standby generator.

GLOSSARY OF TERMS

Clearance - An obstruction-free distance between two objects.

Common Ground Point - The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service.

Conduit - A listed or approved pipe with a smooth interior surface to permit easy drawing-in of electrical conductors. A conduit may be metallic or nonmetallic, depending on its usage, in accordance with codes and standards.

Corrosion Inhibitor - Electrical joint compound used to retard oxidation of electrical connections.

Direct Burial - The installation of electrical conductors in a trench, without the use of conduit.

Drip Loop - A loop formed in overhead secondary conductors at the weather head, to prevent the entrance of water into the service entrance conduit and equipment.

Electrical Inspection Agency - The qualified representative of a city, county or State of Montana, who has been authorized by governmental agencies to inspect electric service installations.

Guy - A cable or brace used to relieve the strain of overhead conductors on masts and poles.

HCE - Hill County Electric Cooperative Association, Inc.

Listed - Equipment or material accepted by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation.

Meter Jaws - Spring-loaded receptacles inside a meter base that connect the terminals of a meter to the source and load conductors of the service.

Meter Base - The mounting device for socket-type meters, consisting of meter jaws, connectors, and an enclosure.

NEC - National Electrical Code which governs the installation of member electrical equipment.

NEMA - National Electrical Manufacturers Association.

NESC - National Electrical Safety Code which governs HCE electrical equipment.

Neutral - The grounded conductor in a single-phase, three-wire or three-phase, four-wire system.

The service conductor at zero potential to ground.

Point of Attachment - The point where the HCE's service line and the member's system are interconnected.

Primary Voltage - The voltage at which electricity is delivered from substations to the service transformer at your location. Primary voltage is typically greater than 600 volts. HCE's primary distribution lines are operated at 7,200 volts line-to-ground.

Seal - A locking device to secure a meter or service entrance equipment to assure safety.

Secondary Voltage - The voltage at which electricity is delivered from the service transformer into your house/barn/shop. Secondary voltage is typically less than 600 volts.

Select Backfill - Native soil or soil brought in from another area, free from sharp objects, rocks, scrap building material, and corrosive material.

Self-Contained - In reference to meter bases: a device designed and rated to continuously carry the entire capacity of the service. The maximum self-contained meter base current rating typically used is 400 amperes (also called a single-phase Class 320 Amp meter).

Service Line - Conductors from HCE's system to the customer's point of delivery which can be overhead or underground.

Service Entrance Conductors - On overhead services, customer owned conductors which extend between the meter base and the point of delivery.

Service Entrance Equipment - Service conduit, conductors, weather head, meter base, pedestal, enclosures, service disconnect, and service panel.

Service Mast - The conduit above the meter used to provide mechanical protection for the service conductors and to support the service drop.

Temporary Service - An electrical service installed by the member and connected by HCE to provide power on a temporary basis (less than one year).

UL - Underwriters' Laboratories, a recognized test laboratory which lists materials it has tested and accepted.

Electrician Services

Hill County Electric's Master Electrician is available to assist members with all their electrical needs. If you need electrical work, whether it's something new or something you need fixed call HCE's Master Electrician at 406-394-2832 to get a free quote. If you are without power please call 406-394-7804.

1.877.394.7804
hillcountyelectric.coop