

5th  
Edition

# RESIDENTIAL ELECTRIC SERVICE INSTALLATION

A CONSUMER'S GUIDE

TO HAVING YOUR

HOME'S ELECTRIC

SERVICE INSTALLED

OR REVISED.

**ComEd**®

An Exelon Company

## **When the lights go out on a stormy night, how long are you willing to wait?**

Imagine it was your job to restore electric service in a driving rain. You're searching in the dark through strange back yards for a camouflaged 3 ft. x 3 ft. steel box. Perhaps it is hidden by a fence, under a bush or behind a garden. All you know for sure is that it's near the property line. Your family and neighbors are waiting for you to find it, unlock it, open it and use a 8-foot long pole to actuate a 12,000-volt switch and turn everyone's lights back on.

If this was your job, you can appreciate how customers can do their part to help ComEd get their lights back on quickly.

Power lines, underground cables, poles and ground-level equipment need space. To maintain and operate our equipment, and to avoid damage to your property, we need your cooperation in where you place flower beds, gardens, bushes and fences.

Help us keep your power on and trouble-free. Leave 10 feet open in front of ground-level transformers (the side with numbers) and allow access to poles and underground cables so our repair crews can find and repair electrical equipment without damaging your property.

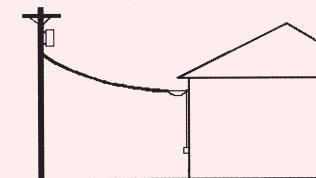
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## Basic Service Types

### Overhead

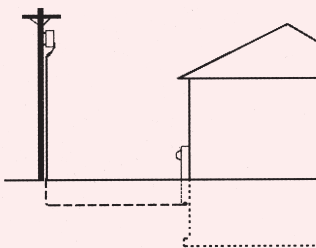
If your property is adjacent to ComEd overhead facilities, in most cases your service will be an overhead service wire, installed between the pole and your service wire attachment.



### Overhead to Underground

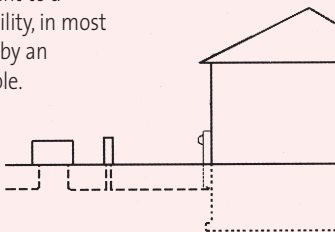
If you desire direct buried cable because of obstructions or aesthetics, ComEd will provide such installation if practical. ComEd may elect to install a service pedestal near the base of the pole.

*Note: Some municipalities require conduit.*



### Underground

If your property is adjacent to a ComEd underground facility, in most cases you will be served by an underground service cable.



*Note: Some municipalities require conduit.*

#### *Note:*

*Charges may apply to any of the above installations.*

*For specific service installation details, see the applicable section in this booklet.*

*For overhead service wire length limitations and considerations, see page 11.*

*For underground service considerations, see page 29.*

# Installing or Revising Electric Service

There are five simple steps you must take to have electric service installed for the first time or revised at your residence. See pages 4-10 for details.

## Step 1

**Contact an electrician or electrical contractor**

## Step 2

**Contact ComEd  
(and other utilities if involved)**

## Step 3

**Contact your local governing body**

## Step 4

**Complete all work required of you  
and your electrician**

## Step 5

**Notify ComEd and your  
local governing body  
when the work is completed**

Before you begin, you should have a clear idea of what you want to accomplish. You also should look ahead and decide if you're likely to make future improvements that could affect the work you're about to do. For example, if a room addition, deck, patio or pool is in your future, where is it likely to be and how will it co-exist with your current project? Even if your future intentions are only vague notions at this stage, you should talk about them with your electrician and ComEd, they can suggest alternatives that can avoid costly relocations, or future problems with service restorations, or having to undo all the work you are about to undertake.

### Note:

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*This booklet contains some of ComEd's policies, rules and requirements as of the date of this publication. Because this booklet is not intended to be complete and guidelines are subject to change, ComEd should be contacted for the latest and most complete requirements as they pertain to your residence.*

*All electrical work performed by the customer must follow the National Electric Code (NEC). Detailed information for all types of service installations can be obtained on the New Business website at <http://www.exeloncorp.com/ComEd/NewBusiness>*

## Step 1

# CONTACT YOUR ELECTRICIAN

Since the safety of you and your loved ones is a top priority, ComEd strongly recommends (and most municipalities require) that you select a *licensed* (certified by a governing body) and *bonded* (an employee placed under guarantee by a financial institution for unforeseen financial loss) electrician to perform any electrical work. To ensure quality and your safety, the electrician's work will be reviewed and approved by your local governing body after the work is completed.

**Never consider the electrical work to be complete until the local governing body has inspected and approved the work performed and ComEd has successfully made final connections and installed a meter.**

As you discuss your electrical needs with the electrician, the following service requirements need to be determined:

- ◆ Will the new electric service be overhead or underground?
- ◆ Will the new service be rated at 100, 200 or 320 amps?
- ◆ What is the required voltage?
- ◆ What is the preferred location of the new meter fitting?
- ◆ Will the existing service need to be relocated? Charges may apply.

There are several factors to consider when planning your new service location and wire/cable route. The rule here is to think ahead. The service route should not conflict with future improvements to your property. Advance planning at this stage pays big dividends later. For example, pouring a cement patio over an underground service route may seem harmless now, but what happens when you have to break it up to have a failed cable repaired? Disasters like this are easy to avoid with advanced planning – a few feet of conduit installed at the outset can make a big difference later.

After a clear understanding is established of the type of service that the electrician plans to install, refer to the sections in this booklet that apply to that service.

The electrician's quote normally is based on his labor and material. It does not reflect any charges that may be applied by ComEd or other utilities. We recommend that your electrician not start work on your residence until the requested metering equipment, type of service and location of the meter have been agreed upon by your ComEd representative, and necessary permits have been obtained from your local governing body.

## Step 2

# CONTACT COMED

Contact ComEd as soon as possible after you and your electrician have come to an agreement of what will be required. Advance notice will enable us to complete our work within your time schedule.

During normal business hours, call our toll-free number, 1-866-NEW-ELEC (1-866-639-3532). Be prepared to provide:

- ◆ Service address, as assigned by the postal authorities, or a ComEd account number.
- ◆ The customer's name.
- ◆ The customer's Social Security Number, or in the case of a company, a tax id number.
- ◆ The customer's home and daytime phone numbers.
- ◆ The mailing address to which all correspondence and billing will be sent.
- ◆ The electrician's name and phone number.
- ◆ Type of service (overhead or underground)
- ◆ A brief description of why the work is being done, and future plans as they apply to your residence (upgrading, building addition, installing swimming pool, patio, garage, deck, new residence, septic field locations, etc.)
- ◆ The preferred meter location.
- ◆ The voltage and amperage requirements.
- ◆ Whether a meeting is required with a ComEd representative to clear up any questions.

Service Application Worksheets have been provided on page 51 and 52 for your convenience.



The information that you furnish in this initial contact will be forwarded to a ComEd representative for review. Shortly thereafter, the ComEd representative will contact you or your electrician by phone or mail.

For underground installations, a signed Residential Underground Agreement with sketch will be required before ComEd work can be scheduled. You may be advised to utilize an alternate plan or make certain changes to your property or residence to facilitate your request.

Charges may apply based upon type of service requested.

**Contact your local phone, cable TV and other utilities for work that involves their facilities which are affected by your project.**

*Note:*

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*ComEd will inform you of the location that the electric service will enter your property. Specific service wire clearances will apply to your request. See page 26.*

*Minimum and maximum meter mounting heights, as well as minimum acceptable front and side clearances also apply. See page 28.*

### Step 3

# CONTACT YOUR LOCAL GOVERNING BODY

## for Permits, Inspections & Approvals

You are responsible for the following items prior to ComEd providing service.

- ◆ Obtaining all permits and approvals required by your local governmental authorities.
- ◆ Any costs or fees incurred in obtaining permits, inspections or approvals.
- ◆ Inspections and approval of your electrical facilities for compliance with Electrical Codes.

If a governmental authority requires ComEd to disconnect electric service because of a violation of the Electrical Code, ComEd will restore service only after approval by the local authority and after payment by you of charges for disconnection and restoration of service.

## Step 4

# WORK DONE BY YOU AND YOUR ELECTRICIAN

While exercising the skills and knowledge required to construct a safe and reliable electric service at your residence, your electrician will be following all local and national Electric Codes, and must meet ComEd requirements.

Once the electrician has completed the work, your new or revised electric service may be temporarily connected to allow your residence to receive electricity through your new meter fitting.

For revised services, the electrician is required to make all temporary connections from the outside of your residence. This can be accomplished by installing temporary wires from your old service installation to the new service installation. This is necessary to allow the electrician to energize the newly installed equipment to assure that the system is functional and permit continuity of service.

Your meter may be unplugged during this time period and you will receive an estimated bill based on your normal energy use.

**Exercise caution near temporary wiring.**

## Step 5

# NOTIFY COMED AND YOUR LOCAL GOVERNING BODY

When the electrician's work has been completed and the site is ready, please contact your local governing body for an electrical inspection.

After the local governing body has approved the new/revised installation, ComEd will be notified directly. ComEd must receive this notification before your service request can be scheduled for field completion. Chicago customers must notify their ComEd Field Representative of the approval.

ComEd will determine site readiness based on:

- ◆ Fences or other obstructions which may be in the way.
- ◆ Trees that may require trimming.
- ◆ Locations of customer-owned underground facilities.
- ◆ Preparation of proper final grade and clearances.
- ◆ Any other conditions which may hinder installation of electric service.

ComEd may refuse to connect service if your metering equipment and installation fails to meet all requirements.

**You are responsible for the adequacy, conformance to codes, safety and reliability of the equipment and facilities owned, installed and maintained by you and your electrician.**

**ComEd reserves the right to examine and test any equipment connected to its lines, and to require the customer to furnish information necessary to determine the operating characteristics of the equipment.**

**Examination of your equipment by ComEd *shall* not be assumed as evidence of compliance with all applicable codes.**

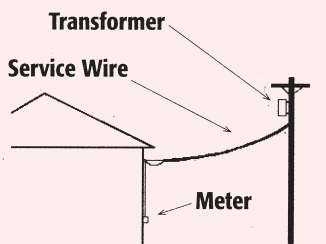
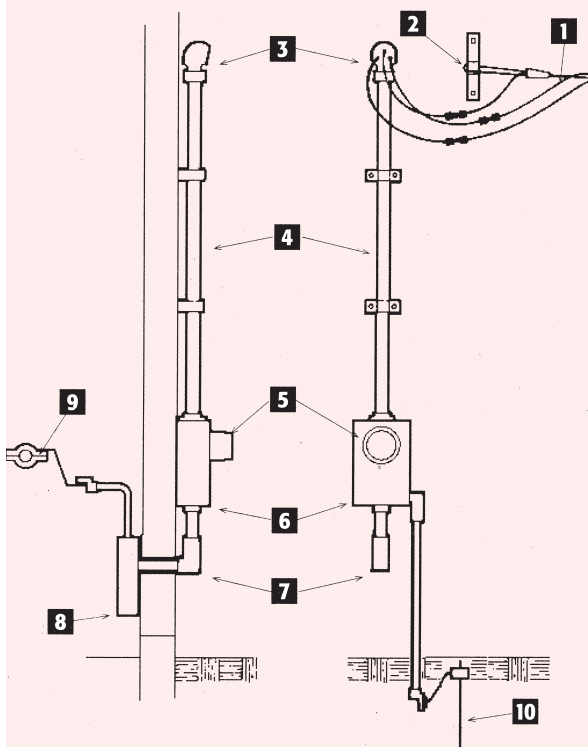


# OVERHEAD SERVICE

## Items to consider

- ◆ The maximum length of the service wire from the ComEd pole to the point of attachment on your residence is 150 feet, if practical.
- ◆ See page 26 for clearances. If your plans don't meet the minimums, see pages 20-25 for ways to gain additional height.
- ◆ **Your service wire installation must be positioned so that it may be reached safely from a ladder positioned on solid ground.**

## Overhead Service



## Glossary of Terms

### Electric Service Entrance Equipment

- 1 Overhead service wire** – the wire from the pole that attaches to the house.
- 2 Service wire attachment** – a metal plate or bolt that supports the service wire to the building. You may elect to install a riser or roof plate to maintain minimum clearances for the service wire.
- 3 Service head** – a weather-tight fitting attached to the end of the service run to prevent water from entering the pipe.
- 4 Service run** – the wires installed between the service head and the meter fitting.
- 5 Meter** – a device that measures the amount of electricity used by a customer.
- 6 Meter fitting** – a device that the meter plugs into.
- 7 Service entrance** – the wires installed between the meter fitting connection device and the disconnecting means.
- 8 Disconnecting means** – the main breaker, fuse box or breaker panel inside your home.
- 9 Water pipe ground** – a safety connection to provide an electrical path to ground.
- 10 Driven ground** – a safety connection to provide an electrical path to earth.

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#### *Note:*

*For clearances see  
pages 26-28.*

*For grounding reference  
see page 47.*

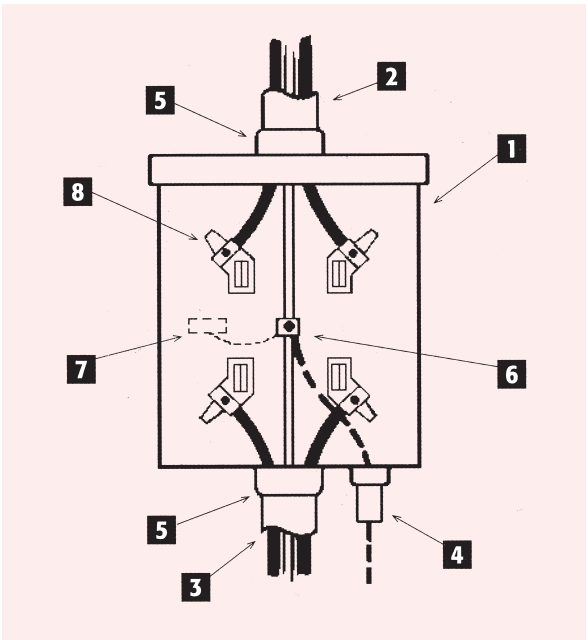
*Check local codes for  
requirements.*

## Overhead Metering Self-Contained Meter Fitting

### Single Phase, Three-Wire 120/240 or 120/208 Volts

#### Customer furnishes, installs and maintains:

- 1** Meter fitting (200 amperes maximum)
- 2** Conduit and conductors of service run (line)
- 3** Conduit and conductors of service run (load)
- 4** Ground connection per local code
- 5** Insulated metallic bushing on line and load conduits
- 6** Neutral terminal
- 7** Fifth terminal with potential tap (#12 copper wire or equivalent) from neutral terminal (120/208 volt service only)
- 8** Horn type bypass (so the service will not be interrupted when a meter is removed from the socket)



#### Note:

Only meter connection devices labeled by the manufacturer with the letters

"CECHA" are approved for use in the ComEd service area.

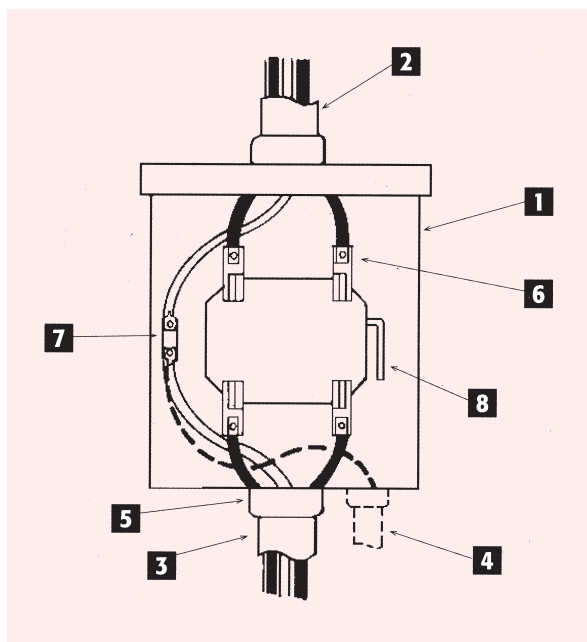


## Overhead Metering Self-Contained Outdoor Class 320

### Single Position Meter Fitting Single-Phase, Three-Wire 120/240 Volts

#### Customer furnishes, installs and maintains:

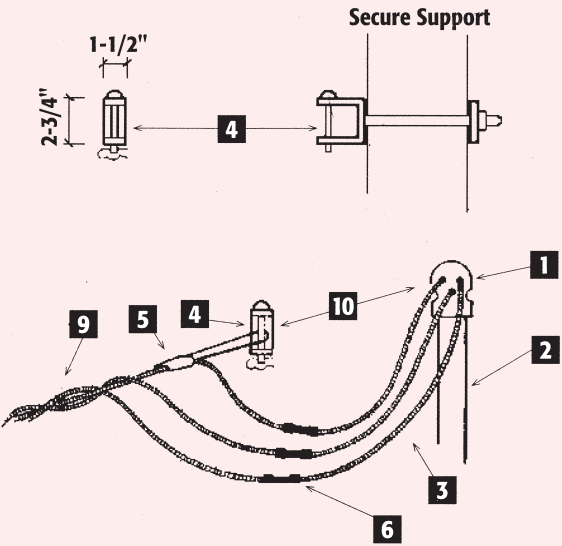
- 1** Meter connection device with lever actuated bypass (320 amperes maximum)
- 2** Conduit and conductors (line)
- 3** Conduit and conductors (load)
- 4** Ground connection per local code
- 5** Insulated metallic bushing on line and load conduits
- 6** Compression lugs for line and load conductors
- 7** Neutral terminal
- 8** Bypass arm



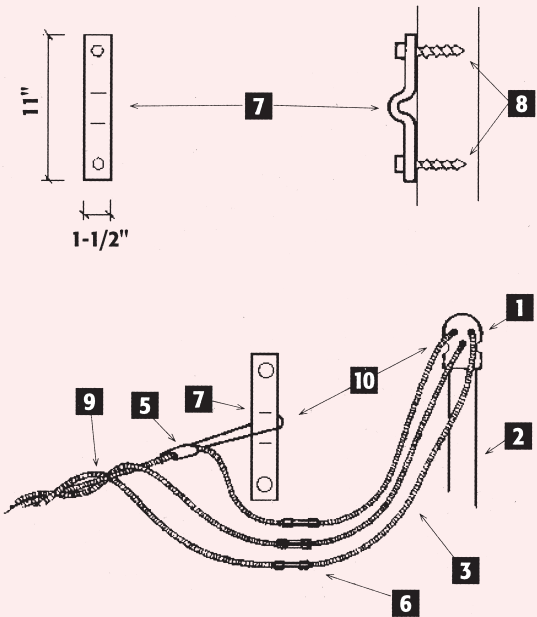
(Not available for 120/208 Volts Service)

# Overhead Service Attachment

## Fork Bolt



## I-Plate



# Overhead Service Attachment Fork Bolt and I-Plate

## Customer furnishes, installs and maintains:

- 1 Service head
- 2 Service run
- 3 Service run wires  
(allow a minimum of 18 in. beyond the service head to make connections to service drop wires)
- 4 Service attachment

## ComEd furnishes, installs and maintains:

- 5 Service drop dead-end
- 6 Connectors for connecting customer wires to service drop

For an existing structure where it is impractical to install a fork bolt, the customer should install an I-plate.

- 7 I-plate
- 8 Customer to securely install I-plate
- 9 Service wire

- 10 A 4 in. to 18 in. clearance (in any direction) must be maintained between the service head and the center of the service attachment

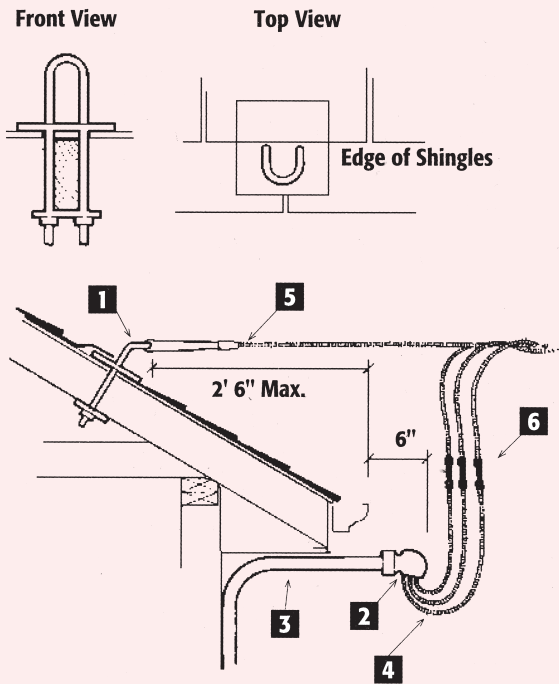
### Note:

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*Under no circumstances shall a service attachment be made to a parapet or a chimney. The service head and attachment shall be located so that:*

- a.) The exposed wires will adequately clear all building components including downspouts, gutters, etc., and*
- b.) The wires will be out of reach from windows, porches, or any other parts of the building that are accessible to the occupants or the public.*

**Overhead Service Attachment  
Roof Plate**



# Overhead Service Attachment Roof Plate

## Customer furnishes, installs and maintains:

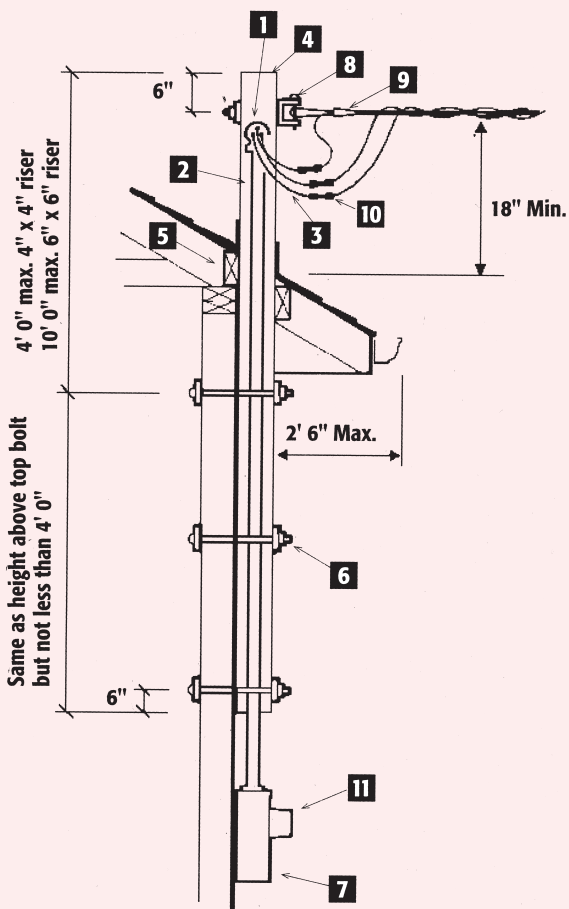
- 1 Roof plate
- 2 Service head  
(if the service run extends through the roof, the service head shall be so located that it is 6 in. on either side of the service drop and extends 18 in. above the roof.)
- 3 Service run
- 4 Service run wires  
(allow a minimum of 18 in. beyond the service head to make connections to service drop wires)

## ComEd furnishes, installs and maintains:

- 5 Service drop dead-end
- 6 Connectors for connecting customer's wires to service drop

## Overhead Service Details

### Wood Riser



# Overhead Service Details

## Wood Riser

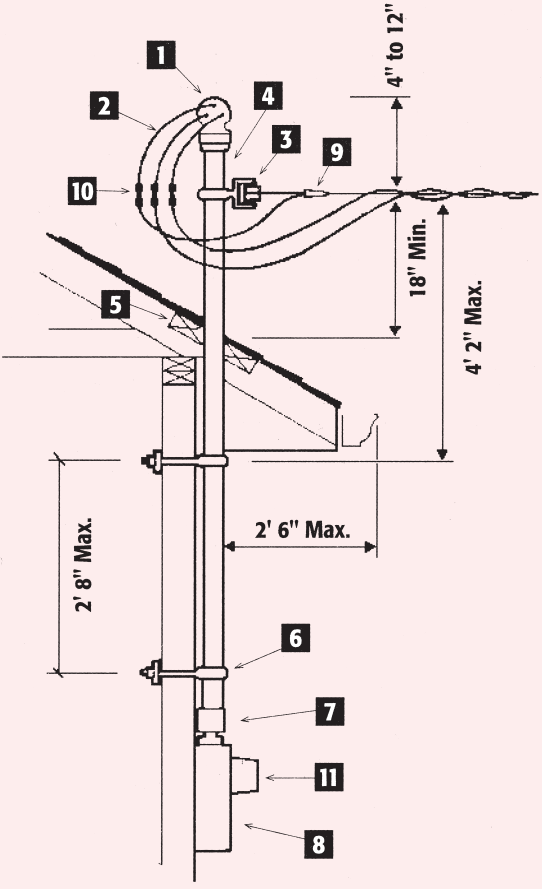
### Customer furnishes, installs and maintains:

- 1 Service head
- 2 Service run
- 3 Service run wires  
(allow a minimum of 18 in. beyond the service head to make all connections to service drop wires)
- 4 4 in. x.4 in. or 6 in. x 6 in. preservative treated wood post
- 5 2 in. x 4 in. blocking solidly installed between rafters
- 6 5/8 in. galvanized mounting bolts  
(with nuts and washers)
- 7 CECHA Meter fitting
- 8 Service attachment

### ComEd furnishes, installs and maintains:

- 9 Service drop dead-end
- 10 Connectors for connecting customer wires to service drop
- 11 Meter

**Overhead Service Details  
Steel Conduit Riser**





# Overhead Service Details

## Steel Conduit Riser

### Customer furnishes, installs and maintains:

- 1 Service head
- 2 Service run wires  
(allow a minimum of 18 in. beyond the service head to make connections to service drop wires)
- 3 Service attachment
- 4 Rigid steel conduit  
(2-1/2 in. for 100 ampere or smaller, or 3 in. for larger service entrance equipment)
- 5 2 in. x 4 in. blocking, solidly installed between rafters
- 6 Mounting clamp with 1/2 in. bolts, nuts and washers
- 7 Steel Conduit reducer
- 8 CECHA Meter fitting

### ComEd furnishes, installs and maintains:

- 9 Service drop dead-end
- 10 Connectors for connecting customer's wires to service drop
- 11 Meter

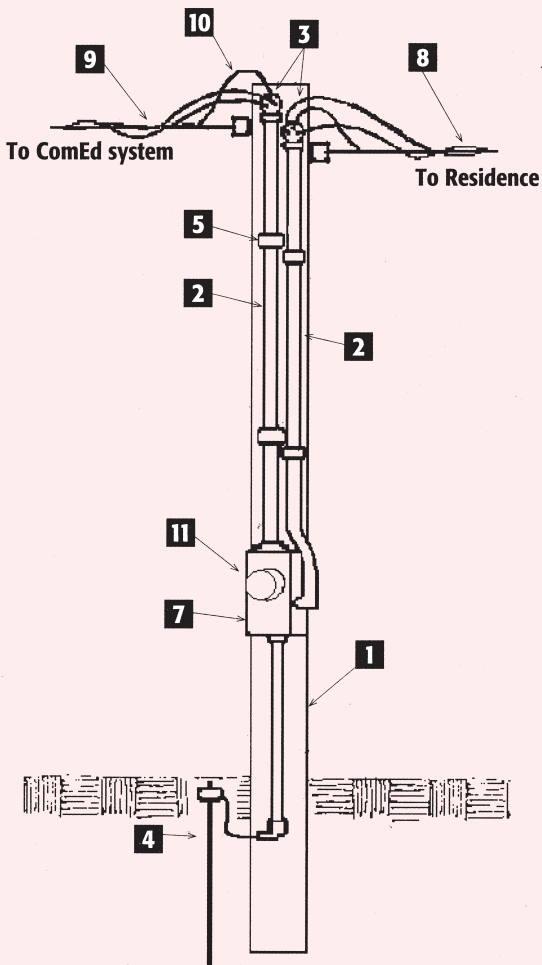
Note:

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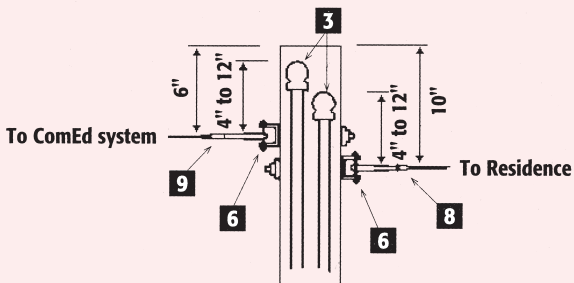
*All metal parts exposed to weather shall be hot galvanized or non-ferrous.*

## Overhead Service Details

### Customer Service Pole and Outdoor Fitting



### Pole Top Detail



# Overhead Service Details

## Customer Service Pole

### Customer furnishes, installs and maintains:

- 1 Treated pole  
(minimum requirements: class #7, length 25 ft.).  
Customer shall consult ComEd for minimum setting depth for the class and length of pole installed.
- 2 Service entrance cable or conductors in conduit. Allow sufficient wire to make connection to service drop wire.
- 3 Service heads
- 4 Ground rod
- 5 Cable clamps. Maximum spacing 3 ft.
- 6 Fork bolt
- 7 CECHA approved meter fitting
- 8 Service wire dead-end

### ComEd furnishes, installs and maintains the following equipment only if a service drop terminates at the pole:

- 9 Service drop dead-end
- 10 Connectors for connecting customer wire to service drop

### ComEd furnishes, installs and maintains:

- 11 Meter

## Service Clearances

### Minimum Clearances for Overhead Service Cable (120, 120/208 or 120/240 Volts)

<i>Location</i>	<i>Minimum Clearances</i>
Over streets, alleys, parking lots, public driveways, or over commercial, industrial, and farm private property driveways	<b>18 ft.</b>
Over residential private property driveways	<b>12 ft. 6 in.</b>
Spaces accessible to pedestrians only	<b>10 ft. 6 in.</b>
Above or below balconies and roofs* accessible to pedestrians	<b>11 ft.</b>
Above or below roofs* not accessible to pedestrians	<b>3 ft. 6 in.</b>
Horizontal clearance from windows, porches, balconies, fire escapes, signs or any part of a building normally accessible to individuals (including access for maintenance)	<b>5 ft.</b>
Horizontal clearance from communication or signal wires at the building	<b>1 ft.</b>

### Conductors are not permitted to pass over any swimming pool or tanks containing flammable materials.

Attachments cannot be made on chimneys.

Service wire attachment shall not exceed 25 ft. above the ground at final grade.

#### *Note:*

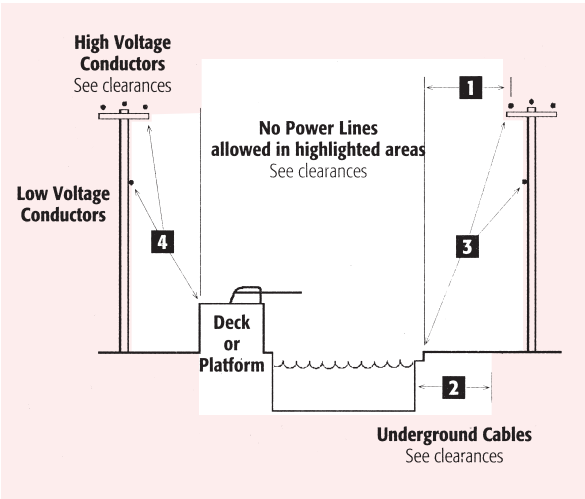
*\* A roof, balcony or area is considered accessible to pedestrians if the means of access is through a doorway, ramp, stairway or permanently-mounted ladder.*

***For higher voltages or variance from these clearances, contact your local ComEd representative.***

Service Clearances

Minimum Clearances  
Near Swimming Pools

- 1 Horizontal limit of aerial clearance will not measure less than 10 ft. from the inside wall of the pool.
- 2 Underground service cable shall not be permitted under the pool or within 5 ft. of the inside wall of the pool. When space limitations prevent service cables from being routed 5 ft. or more from the pool, such cables must be installed 24 in. deep in 4 in. conduit at customer’s expense.



Swimming Pool Clearances	0-750 V	750-15,000 V
3 Clearance in any direction from the edge of the pool	22' 6"	25'
4 Clearance in any direction to a platform	14' 6"	17'

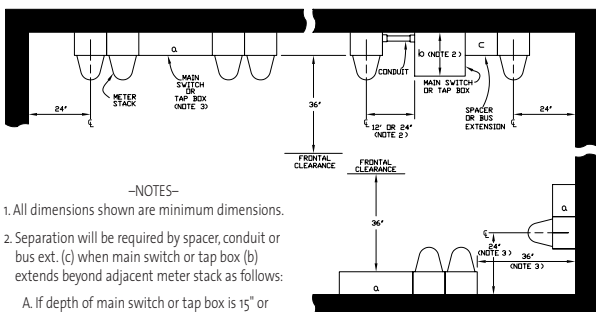
Exercise extreme caution near live wires.  
Do not attempt to measure exact distances to live wires due to danger of electrocution.

# Metering Clearances

## Clearances for Meter Connection Devices

### Outdoor Horizontal Clearances

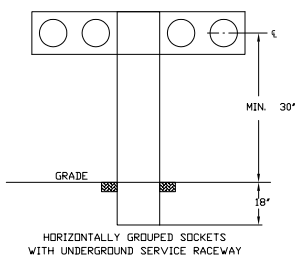
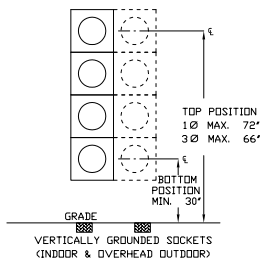
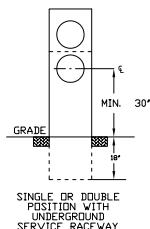
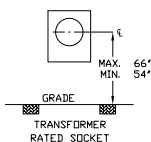
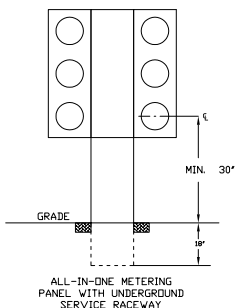
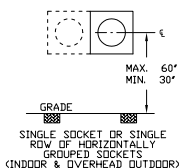
- a** This dimension applies to the second meter fitting when two or more are mounted on adjacent corners.
- b** Meters are not to be installed over a sidewalk, driveway or paved areas without protective barriers. Meters are not to be installed in locations susceptible to vehicle damage.



#### NOTES-

- All dimensions shown are minimum dimensions.
- Separation will be required by spacer, conduit or bus ext. (c) when main switch or tap box (b) extends beyond adjacent meter stack as follows:
  - If depth of main switch or tap box is 15" or less a side clearance of 12" to center line of adjacent meter stack is required.
  - If depth of main switch or tap box is greater than 15", a side clearance of 24" will be required.
- These dimensions apply when meter stacks are mounted on adjacent corner walls.

### Outdoor Horizontal Clearances



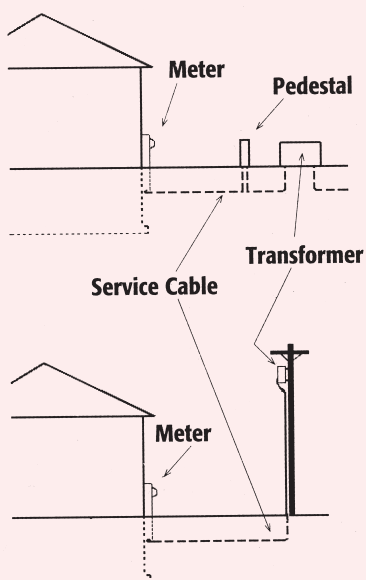
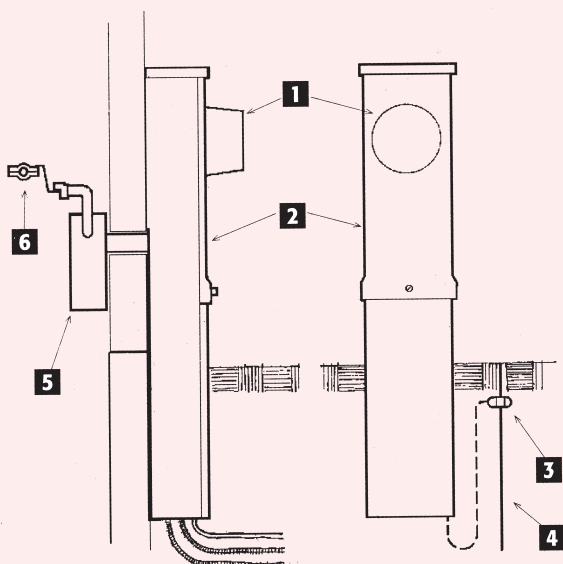


# UNDERGROUND SERVICE

## Items to consider

- ◆ If your trenching route has to be dug by hand, or if a cable must be installed under a paved surface, additional charges apply.
- ◆ If your service cable has to be moved later to make room for a new swimming pool, patio, deck, etc., new charges apply. Plan ahead!
- ◆ Underground cable will be buried only in a ComEd easement or in the property that it serves. Additional charges apply if your secondary service cable route is longer than 100feet.
- ◆ To avoid additional ComEd charges - a customer can perform the following: can dig their own trench, can install their own cable per municipality requirements - note the customer will then own and maintain the cable, can complete their own boring work per municipality requirements, and can dig their own splice pits.
- ◆ There will be charges from ComEd if you convert from overhead to underground service.
- ◆ You are responsible for making or exposing underground sprinkler systems, private wiring, sewers, drain tiles, etc.
- ◆ The trench route must be within 4 inches of final grade and clear of all obstacles (sheds, swing sets, tree stumps, landscaping, fencing, etc.).
- ◆ Generally, restoration of landscaping is the customer's responsibility.
- ◆ Conduit may be required under roads/pavement or by the municipality.

## Underground Service





# Glossary of Terms

## Underground Equipment

- 1 Meter** – a device that measures the amount of electricity used by a customer.
- 2 Upper protective cover** – of the meter fitting
- 3 Grounding connection.**
- 4 Grounding electrode** (ground rod).
- 5 Disconnecting means** – the main breaker, fuse box or breaker panel inside your home.
- 6 Water pipe grounding connection** – a safety connection to provide an electrical path to ground.
- 7 Conduit** – PVC pipe in which the service cable is installed. Must be a minimum of 3 in. schedule 40 or per local code.

*Notes:*

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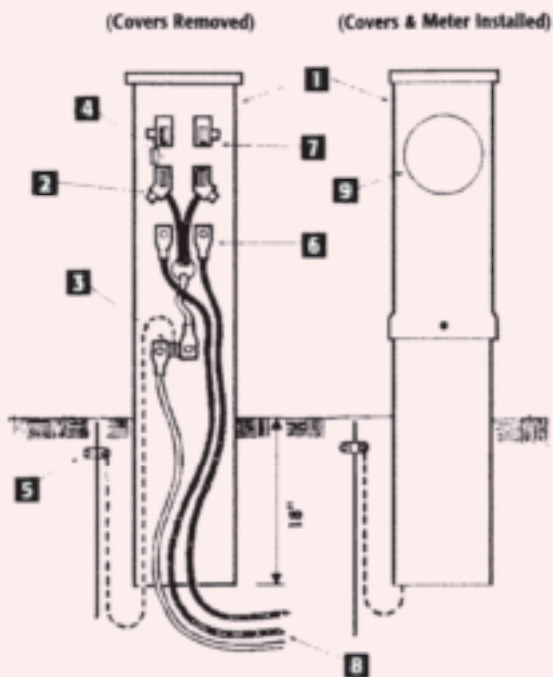
*See pages 26-28 for important clearances which must be observed.*

*Check local codes for requirements, such as conduit requirements.*

*For grounding reference, see page 47.*

## Underground Metering

### Underground Meter Fitting and Raceway



**Underground Metering**  
**Underground Meter Fitting and Raceway**

**Single-Phase, Three-Wire 120/240 or 120/208 Volts, 200 Amps Maximum Rating**

**Customer furnishes, installs and maintains:**

- 1 Single position combination meter fitting and raceway (200 amps maximum per meter position)
- 2 Meter socket load wire terminals
- 3 Neutral terminal
- 4 Fifth terminal with potential tap ( # 12 copper wire or equivalent) from neutral terminal (120/208 volt service only)
- 5 Ground connection per local code
- 6 Compression lug connectors for phase and neutral cables\*\*
- 7 Horn type bypass

**ComEd usually furnishes, installs and maintains:**

- 8 Underground secondary service cables (slack in cables of at least 12 in. must be provided)

**ComEd furnishes, installs and maintains:**

- 9 Meter

*Notes:*

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*\*See pages 39 and 43 for some exceptions.*

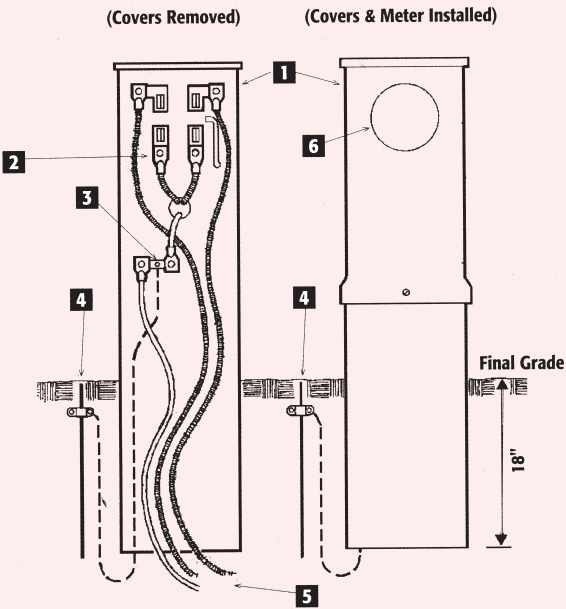
*Raceway also available with factory installed main circuit breaker.*

*Meter fittings must be CECHA approved.*

*\*\*Customer to install lugs only when secondary service cables are provided by the customer.*

*For overhead to underground installations, ComEd will supply cable protection on pole at customer's expense.*

**Underground Metering**  
**Class 320 Meter Fitting and Raceway**



**Underground Metering**  
**Class 320 Meter Fitting and Raceway**

**Single-Phase, Three-Wire 120/240**  
**400 Amps maximum rating**

**Customer furnishes, installs and maintains:**

- 1** Combination meter fitting and raceway with lever-actuated bypass
- 2** Compression lug connectors for load conductors
- 3** Neutral terminal
- 4** Ground connection, per local code

**ComEd usually furnishes, installs and maintains:**

- 5** Underground secondary service cables with compression lug connectors. Slack in cables of at least 12 in. must be provided

**ComEd furnishes, installs and maintains:**

- 6** Meter

*Note:*

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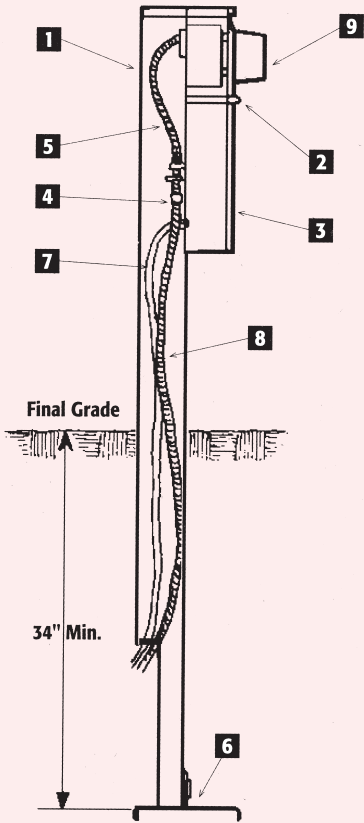
*\*See pages 39 and 43 for some exceptions.*

*Raceway also available with factory installed main circuit breaker.*

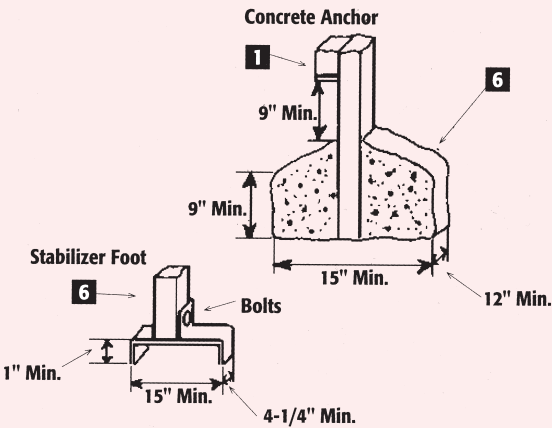
*Meter fittings must be CECHA approved.*

*For overhead to underground installations, ComEd will supply cable protection on pole at customer's expense.*

# **Underground Metering** **Meter Connection for Mobile Home**



Free-standing, remote from mobile home



**Underground Metering**  
**Meter Connection for Mobile Homes**

**Single-Phase, Three-Wire 120/240 or 120/208**  
**Volts, 200 Amperes Maximum Rating**

**Customer furnishes, installs and maintains:**

- 1** Combination meter fitting, raceway and pedestal (200 amperes maximum)
- 2** Meter connection device
- 3** Enclosure for disconnecting device and receptacles
- 4** Block for terminating secondary service cables
- 5** Conductors or bus extending from terminating block to meter socket line terminals
- 6** Stabilizer foot (#10 gauge metal) or 9 in. x 12 in. x 15 in. concrete anchor
- 7** Ground connection, per local code

**ComEd usually furnishes, installs and maintains:**

- 8** Underground secondary service cables with compression lug connectors. Slack in cables of at least 12 in. must be provided

**ComEd furnishes, installs and maintains:**

- 9** Meter

*Note:*

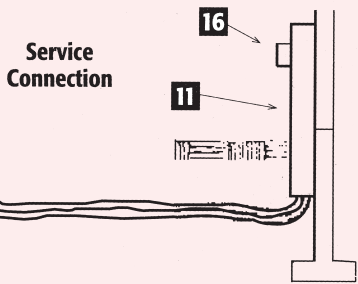
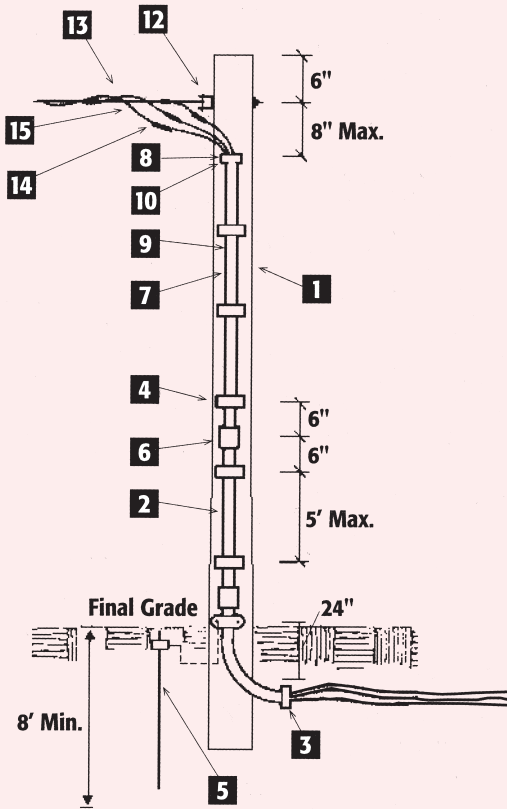
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*Raceway also available with factory installed main circuit breaker.*

*Meter fittings must be CECHA approved.*

*For overhead to underground installation, ComEd will supply cable protection on pole at customer's expense.*

**Underground Service  
Customer's Cable Pole**





## **Underground Service Customer's Cable Pole**

### **Customer's Cable Pole With Underground Secondary Service Connection**

#### **Customer furnishes, installs and maintains:**

- 1** Treated pole (Minimum requirements: Class #7, length 25 ft.). Customer shall consult ComEd for minimum setting depth for the class and length of pole installed.
- 2** Galvanized rigid metal conduit
- 3** Conduit bushing (if buried portion of cable is not in duct)
- 4** Galvanized conduit straps and/or lag screws as required

### **Installation of Customer's Cable Pole and Underground Secondary Service Connection**

#### **Customer furnishes, installs and maintains:**

- 5** Ground rod, conductor and clamps for grounding metallic conduit on pole
- 6** Outdoor adapter coupling for metallic to non-metallic conduit (Conduit bushing to be installed if "U" guard is used above first 10 ft. section)
- 7** Non-metallic rigid conduit or "U" guard
- 8** Cable support
- 9** Cable in conduit. Cable to extend beyond conduit with enough extra to make connections on pole
- 10** Sealing compound
- 11** CECHA Meter fitting
- 12** Fork bolt

#### **ComEd furnishes, installs and maintains:**

- 13** Service drop dead-end
- 14** Connectors for connecting customer cable
- 15** Service drop cable
- 16** Meter





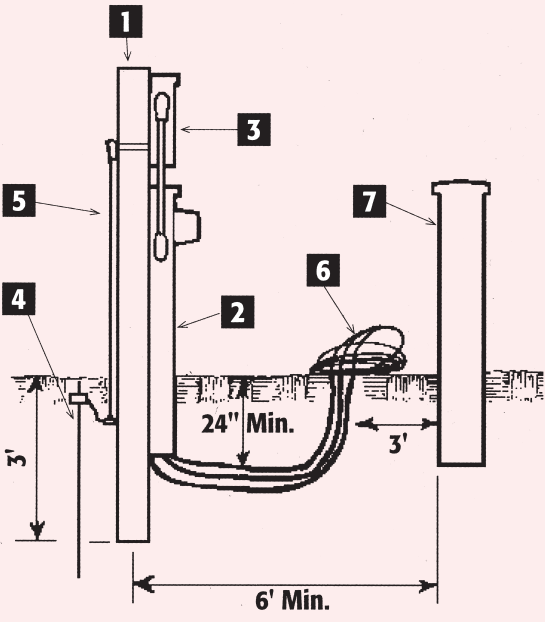
# TEMPORARY SERVICE

## Items to consider

◆ Notify ComEd as soon as possible to allow ample lead time to meet your requirements.

◆ Charges will apply. Your ComEd representative will provide actual costs based on your requirements.

**Temporary Service  
Underground Service & Outdoor  
Meter Fitting**



# Temporary Service

## Underground Service & Outdoor Meter Fitting

### Customer furnishes, installs and maintains:

- 1 Service support, Treated timber (4 in. x 4 in. x 8 ft. minimum) to be set a minimum of 3 ft. in the ground on private property.
- 2 CECHA approved meter fitting
- 3 Lockable, weather-tight service disconnect for disconnecting means and distribution facilities.
- 4 Ground rod, conductor and associated conduit and clamps per local code.
- 5 Conduit, service conductors, insulated bushings and conduit clamps per local code.
- 6 Service cable.
  - ◆ Sized to conform to local code requirements.
  - ◆ Customer will direct bury cable as shown but not closer than 3 ft. from ComEd's transformer pad or pedestal.
  - ◆ Any trenching by customers in easement must be done as directed by ComEd.
  - ◆ Before digging call at least 48 hours in advance for Cable locating. (See back cover for phone numbers)
  - ◆ Seal cable ends from moisture
  - ◆ Mark cable end to identify neutral conductor.
  - ◆ Customer to provide an additional 10 ft. of cable for ComEd to make connections inside the transformer or pedestal.

### ComEd furnishes, installs and maintains:

- 7 ComEd service pedestal or transformer located in easement. ComEd will provide connectors for and connect customer's cables within the ComEd closure.

**Customer shall not move or tamper with temporary service facilities as long as service is energized.**

**Customer is responsible to lock the service disconnect equipment to protect persons from electrical contact.**

*Note:*

*All work performed and equipment provided by ComEd will be at the customer's expense.*

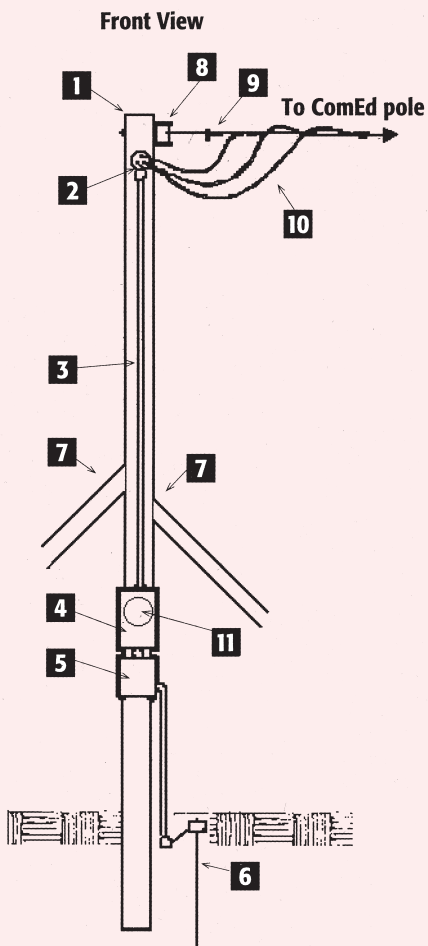
*Conduit may be required under roads/pavement or by the municipality.*

*Service trench must be back-filled with clean material.*

*Customer shall notify ComEd promptly when service is no longer required.*

## Temporary Service Customer Service Pole

### Overhead Service



# Temporary Service Customer Service Pole

## Installation of Customer Service Pole and Outdoor Meter Fitting

### Customer furnishes, installs and maintains:

- 1 Treated pole (Minimum requirements: Class #7, length 25 ft.). Or a braced, 6 in. x 6 in. timber of an appropriate length. Customer shall consult ComEd for minimum setting depth for the class and length of pole installed.
- 2 Service head.
- 3 Service entrance cable or conductors in conduit with clamps spaced at a maximum of three feet. Allow sufficient wire to make connection to service drop.
- 4 CECHA approved meter fitting.
- 5 Lockable, weather-tight enclosure for disconnecting means.
- 6 Ground rod, conductor, and associated conduit and clamps for grounding metallic components.
- 7 When a 6 in. x 6 in. timber is used, install 2 in. x 4 in. braces and stakes fastened by 5/8 in. machine bolts with two washers and two nuts.
- 8 Fork bolt.

### ComEd furnishes, installs and maintains at customer's expense the following equipment only if service drop terminates at the pole:

- 9 Service drop dead-end
- 10 Connectors for connecting customer's cable to service drop. Customer to notify ComEd of cable size.

### ComEd furnishes, installs and maintains at the customer's expense

- 11 Meter

*Note:*

*See Temporary Service Pole Bracing, page 46.*

*All work performed and equipment provided by ComEd will be at the customer's expense.*

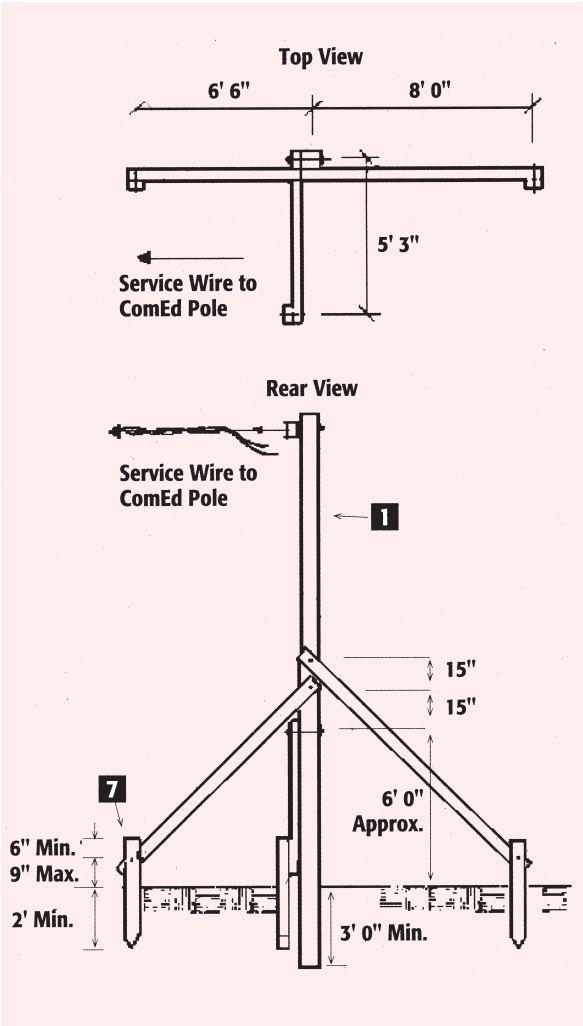
*Customer shall notify ComEd promptly when service is no longer required.*

# Temporary Service Pole Bracing

*Note:*

*Braced, 6 in. x 6 in. timber is not approved for locations at which people congregate, such as picnic or carnival grounds.*

*See Temporary Service Pole Detail, page 44.*







# GROUNDING

## Items to consider

◆ Grounding is one of the most important, but least understood, aspects of a home electric system. It is a safety system that helps protect you and your family from dangerous shocks and devastating fires. Make certain that your electrician carefully follows all grounding provisions of the electrical code that applies to your home.

◆ The National Electrical Code is the *minimum* standard by which grounding systems are judged. Local ordinances often are more strict and must be satisfied before ComEd will connect service.

## Grounding

All metallic components and conductors of the service entrance equipment must be permanently grounded so that if a metallic component should come in contact with any wire, no dangerous current will pass through a person who may touch it

Check the local codes in your area for details about how the ground connection should exist. ComEd adopted the minimum acceptable standard as outlined in the National Electrical Code. However if the local standard is more stringent than this, the more stringent standard will apply.

The minimum standards as described by the National Electrical Code are as follows:

*The other end of the ground wire should, whenever possible, be connected to a continuous underground water piping system such as a municipal water system. Your electrician should measure the effectiveness of your water piping system as a ground by testing its resistance to electric current. The resistance will usually measure less than 0.1 Ohms, thereby ensuring effectiveness. If your water piping system cannot effectively be used as a ground, the utilization of a ground electrode (ground rod) will be necessary.*

### **The proper installation of a grounding system to an underground water piping system is as follows:**

- ◆ The ground wire will originate from the grounding screw in the cabinet of the first disconnect or fuse.
- ◆ The metallic protection of the ground wire must be connected to the cabinet that it originates from.
- ◆ The ground wire size must conform to the National Electrical Code standards.
- ◆ The ground wire will be identified by using green insulation.
- ◆ The other end of the ground wire will attach to a *cold* water pipe.
- ◆ An approved ground *clamp* shall be used to attach the wire to the pipe.

- ◆ A metal tag shall be installed to the ground clamp with the words “Do not disconnect - Caution” stamped into it.
- ◆ If a water meter is present in your residence, it is required to install a wire equal in size to the ground wire as a bypass around the meter. This bypass wire will be secured to the pipes connected to each side of the water meter. An approved ground clamp must be used to attach the wire to the pipe.

**The proper installation of a grounding system when utilizing a ground electrode (ground rod) is as follows:**

- ◆ The ground wire will originate from the grounding screw located in the cabinet of the first disconnect or fuse.
- ◆ The metallic protection of the ground wire must be connected to the cabinet from which it originated.
- ◆ If the metallic protection of the ground wire is connected to the meter fitting, the grounding wire shall be connected to the ground stud in that cabinet.
- ◆ The ground wire size must conform to the National Electrical Code standards.
- ◆ The ground wire will be identified by using green insulation.
- ◆ The ground electrode shall be made of one of the following materials:
  - ◆ A galvanized pipe made of iron or steel not smaller than 3/4 in. trade size.
  - ◆ A galvanized rod made of iron or steel not smaller than 5/8 in. diameter.
  - ◆ A copper or stainless steel rod not less than 1/2 in. diameter.
- ◆ Aluminum electrodes shall not be permitted.
- ◆ The electrode must be installed to a depth not less than 8 ft.
- ◆ The upper end of the electrode shall be flush with final grade unless the above-ground end and the grounding electrode conductor attachment are protected against physical damage.
- ◆ The electrode must test to have a resistance to ground of 25 Ohms or less to be effective.
- ◆ The electrode must not be inside or in front of the meter fitting.



# Service Application Worksheet

This page is provided to help you organize your information before you call for service.

Customer name

For new customers, Social Security Number or Tax ID

ComEd account number

Daytime telephone Home telephone

Electrician/contractor's name

Telephone

Name of inspector/contact at local governing body

Telephone

## Service Information

Address where service is to be provided

Street City

- ☐ New Service
- ☐ Revise Existing Service (Relocate)
- ☐ Upgrade Existing Service

Type of Service:	<input type="checkbox"/> Overhead	<input type="checkbox"/> Underground
	<input type="checkbox"/> Overhead to Underground	
Voltage:	<input type="checkbox"/> 120/240	<input type="checkbox"/> 120/208
Amperage:	<input type="checkbox"/> 100	<input type="checkbox"/> 200
	<input type="checkbox"/> 320	<input type="checkbox"/> Other_____

Size of customer cable

Preferred meter location

Date electrician will complete work

Date you want ComEd to complete service installation

Possible future improvements to be considered:

<input type="checkbox"/> Shed	<input type="checkbox"/> Garage	<input type="checkbox"/> Deck
<input type="checkbox"/> Patio	<input type="checkbox"/> Pool	<input type="checkbox"/> Room Addition
<input type="checkbox"/> Fence	<input type="checkbox"/> Other_____	

**Notify your local phone, cable TV and other utilities if your project will involve their facilities.**

# Service Application Worksheet

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Telephone

## Service Information

Address where service is to be provided

Street

City

☐ **New Service**

☐ **Revise Existing Service (Relocate)**

☐ **Upgrade Existing Service**

Type of Service:    ☐ Overhead    ☐ Underground  
                                 ☐ Overhead to Underground

Voltage:    ☐ 120/240    ☐ 120/208

Amperage:    ☐ 100    ☐ 200  
                         ☐ 320    ☐ Other \_\_\_\_\_

Size of customer cable

Preferred meter location

Date electrician will complete work

Date you want ComEd to complete service installation

Possible future improvements to be considered:

☐ Shed    ☐ Garage    ☐ Deck  
☐ Patio    ☐ Pool    ☐ Room Addition  
☐ Fence    ☐ Other \_\_\_\_\_

**Notify your local phone, cable TV and other utilities if your project will involve their facilities.**

**A**t ComEd our goal is to provide safe and reliable electric service to you in the shortest time possible.

Whether you require a new service or are revising your existing service, our goal is your satisfaction. Close communication and cooperation between you, your electrician and ComEd will enable us to provide electric service to your home in a timely and professional manner.

This booklet has been designed to help you work with your electrician and ComEd to have electric service installed or updated at your residence. The contents of this booklet detail ComEd's minimum requirements. You must also check with your local governing body for Electrical Codes that may exceed these minimum requirements.

We sincerely hope this booklet will give you a better understanding of the work to be performed, and that it will help you receive the quality service that you expect and deserve.

New Business Department  
1-866-NEW-ELEC (1-866-639-3532)  
<http://www.exeloncorp.com/ComEd/NewBusiness>

**For all your New Business needs such as new services, relocations, or temporary services:**

1-866-NEW-ELEC (1-866-639-3532)

<http://www.exeloncorp.com/ComEd/NewBusiness>

**For your other ComEd needs such as electrical emergencies, billing inquiries, disconnection of service, etc.:**

1-800-Edison-1 (1-800-334-7661)

Critical utility services are buried near your home. Before you dig, call for free underground utility locating service at least 48 hours before you begin.

**Chicago residents call DIGGER, 312-744-7000. Outside Chicago, call JULIE, 1-800-892-0123.**

Striking a buried utility line not only can result in interrupted service to you and your neighbors, it also is likely to result in severe injuries or fatalities.

Commonwealth Edison  
Company  
P.O. Box 805379  
Chicago, IL 60680-5379  
1-800-334-7661

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