Information & Requirements *for* Electric Supply below 600 volts

EVERSOURCE
Connecticut

2018 Edition

www.eversource.com

This publication supersedes similar publications as issued by Eversource Connecticut.

INTRODUCTION

This booklet is published for the benefit of our customers, architects, engineers, municipal inspectors, employees and contractors to provide a convenient reference. ***Design or construction should not be undertaken until complete information is obtained from us.*** Such information and assistance is available from our Field Engineering Design Group, Account Executives, Meters and Service, or Electric Service Support Center . Eversource should be contacted a minimum of 15 days before starting work.

We supply electricity subject to our Information and Requirements listed in this booklet and Terms and Conditions, policies and procedures, rate schedules, and industry standards; all of which are made a part of these requirements. These requirements are not included in this booklet but are available upon request.

Legal restrictions, changes in the art, judgment and safety require this booklet to be revised from time to time, and we reserve the right to make such revisions.

We endeavor to supply electricity adequately and reliably. We do not guarantee a continuous supply and do not assume liability for direct or consequential loss or damage to persons or property due to the supply delivered, or as a result of any interruption or variation in the supply. Momentary interruptions can occur due to the normal operation of our system's protective devices.

Failure to comply with our requirements, applicable codes, or orders of an enforcement authority can result in our refusal to energize the service or in the disconnection of an existing service.

Eversource Energy would like to acknowledge the Electrical Contractors Associations, State of Connecticut and Town Officials (especially Electrical Inspectors) for their efforts and cooperation with Eversource to provide the customers in the State of Connecticut with safe and reliable power. We wish to thank you for your assistance and look forward to working with all of you in the future to ensure the safety of our customers and operations.

Significant changes to the 2018 Information and Requirements Booklet.

1. Cut and Reconnect Policy has been revised (refer to Section 2, pages 9-12) and will be effective beginning May 1, 2018.

PREPARED BY THE

2018 REVISION COMMITTEE

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TO CONTACT US

Call our Customer Service Department

1-800-286-2000 ***or*** Hartford 860-947-2000
24 hours a day 7 days a week

Ask for the "Field Engineering Designer"
in the appropriate Eversource office
or
Registered contractors can go to the
Eversource website **www.eversource.com**
to access our Field Engineering Designer Directory

Call our Eversource Electric Service Support Center

1-888-544-4826, Fax:1-877-285-4448
Monday through Friday 7:00 AM to 4:30 PM

Email:
CTNewService@eversource.com

To submit an Eversource Service Request

Go to the Eversource web site at **www.eversource.com** ***or***
Call the Electric Service Support Center at 1-888-544-4826

Eversource Distributed Generation

For regulations and information, go to the Eversource web site
https://www.eversource.com/Content/ct-e/residential/programs-services/interconnections-net-metering

Request a copy of guidelines by phone (1-866-324-2437), ***or***
Email: (**distributed_resources@eversource.com).**

Call Before You Dig

Dial 811 or call toll-free 1-800-922-4455

EVERSOURCE
Connecticut

CONNECTICUT

AREA WORK CENTER LOCATIONS

Cheshire Office
705 West Johnson Ave.
Cheshire, CT 06410

East Hampton Office
22 E. High St.
East Hampton, CT 06424

Hartford Office
410 Sheldon St.
Hartford, CT 06106

Madison Office
135 New Rd.
Madison, CT 06443

Newtown Office
20 Barnabas Rd.
Newtown, CT 06470

Norwalk Office
9 Tindall Ave.
Norwalk, CT 06851

Stamford Office
626 Glenbrook Rd.
Stamford, CT 06906

Tolland Office
48 Tolland Stage Rd.
Tolland, CT 06084

Torrington Office
174 Franklin St.
Torrington, CT 06790

Waterford Office
63 Myrock Ave.
Waterford, CT 06385

TOWN	EVERSOURCE OFFICE	TOWN	EVERSOURCE OFFICE
Abington	Danielson	Central Village	Danielson
Addison	East Hampton	Chaplin	Danielson
Almyville	Danielson	Cheshire	Cheshire
Amston	East Hampton	Chester	Madison
Andover	Tolland	Clarks Corner	Danielson
Ashford	Tolland	Clinton	Madison
Attawaugan	Danielson	Cobalt	East Hampton
Atwoodville	Tolland	Colchester	East Hampton
Avon	Hartford	Colebrook	Torrington
Baileyville	East Hampton	Collinsville	Torrington
Baltic	Danielson	Columbia	East Hampton
Bantam	Torrington	Cornwall	Torrington
Barkhamsted	Torrington	Cornwall Bridge	Torrington
Bashan	East Hampton	Cos Cob	Stamford
Beacon Falls	Newtown	Coventry	Tolland
Berlin	Cheshire	Cromwell	Hartford
Bethany	Cheshire	Crystal Lake	East Hampton
Bethel	Newtown	Danbury	Newtown
Bethlehem	Torrington	Danielson	Danielson
Black Hall	New London	Darien	Stamford
Bloomfield	Hartford	Dayville	Danielson
Bolton	Hartford	Deep River	Madison
Branford	Madison	Dobsonville	Tolland
Bridgewater	Newtown	Durham	Cheshire
Bristol	Cheshire	Eagleville	Tolland
Broad Brook	Tolland	East Berlin	Cheshire
Brookfield	Newtown	East Canaan	Torrington
Brooklyn	Danielson	East Granby	Tolland
Buckingham	East Hampton	East Haddam	East Hampton
Burlington	Torrington	East Hampton	East Hampton
Canaan	Torrington	East Hartford	Hartford
Canterbury	Danielson	East Hartland	Torrington
Canton	Torrington	East Lyme	New London
Centerbrook	Madison	East Windsor	Tolland

TOWN	EVERSOURCE OFFICE	TOWN	EVERSOURCE OFFICE
Eastford	Danielson	Hampton	Danielson
Ekonk	Danielson	Hanover	Danielson
Ellington	Tolland	Hartford	Hartford
Elmville	Danielson	Hartland	Torrington
Elmwood	Hartford	Harwinton	Torrington
Enfield	Tolland	Hazardville	Tolland
Essex	Madison	Hebron	East Hampton
Fabyan	Danielson	Higganum	Madison
Falls Village	Torrington	Hop River	East Hampton
Farmington	Cheshire	Hydeville	Tolland
Fenwick	Madison	Indian Neck	Madison
Forestville	Cheshire	Ivoryton	Madison
Franklin	East Hampton	Kensington	Cheshire
Gales Ferry	New London	Kent	Torrington
Gaylordsville	New Milford	Killingly	Danielson
Georgetown	Norwalk	Killingworth	Madison
Gildersleeve	East Hampton	Knollwood	Madison
Gilead	East Hampton	Lakeside	Torrington
Glasgo	Danielson	Lakeville	Torrington
Glastonbury	East Hampton	Lebanon	East Hampton
Goshen	Torrington	Ledyard	New London
Granby	Tolland	Leetes Island	Madison
Greenwich	Stamford	Liberty Hill	East Hampton
Griswold	Danielson	Lime Rock	Torrington
Grosvenordale	Danielson	Lisbon	Danielson
Groton	New London	Litchfield	Torrington
Grove Beach	Madison	Little Haddam	East Hampton
Guilford	Madison	Lyme	New London
Gurleyville	Tolland	Madison	Madison
Haddam	Madison	Manchester	Hartford
Haddam Neck	Madison	Mansfield	Tolland
Hadlyme	New London	Mansfield Center	Tolland
Hallville	New London	Marble Dale	Newtown
Hamburg	New London	Marion	Cheshire

TOWN	EVERSOURCE OFFICE	TOWN	EVERSOURCE OFFICE
Marlborough	East Hampton	Northfield	Torrington
Mechanicsville	Danielson	Norwalk	Norwalk
Melrose	Tolland	Nut Plains	Madison
Meriden	Cheshire	Oakdale	New London
Merrow	Tolland	Oakville	Torrington
Middle Haddam	East Hampton	Old Lyme	New London
Middlebury	Cheshire	Old Mystic	New London
Middlefield	Cheshire	Old Saybrook	Madison
Middletown	East Hampton	Oneco	Danielson
Milldale	Cheshire	Orcuttville	Tolland
Millington	East Hampton	Oxford	Newtown
Monroe	Newtown	Pachaug	Danielson
Montville	New London	Pawcatuck	New London
Moodus	East Hampton	Pequabuck	Cheshire
Moosup	Danielson	Phoenixville	Danielson
Morris	Torrington	Pine Meadow	Torrington
Mystic	New London	Pine Orchard	Madison
Naugatuck	Cheshire	Plainfield	Danielson
New Britain	Cheshire	Plainville	Cheshire
New Canaan	Norwalk	Plantsville	Cheshire
New Fairfield	Newtown	Pleasant Valley	Torrington
New Hartford	Torrington	Plymouth	Torrington
New London	New London	Plymouth	Cheshire
New Milford	Newtown	Pomfret	Danielson
New Preston	Newtown	Pond Meadow	Madison
Newfield	East Hampton	Ponset	Madison
Newington	Cheshire	Poquetanuck	New London
Newtown	Newtown	Portland	East Hampton
Niantic	New London	Preston	New London
Noank	New London	Prospect	Waterbury
Norfolk	Torrington	Putnam	Danielson
North Canaan	Torrington	Putnam Heights	Danielson
North Stonington	New London	Quaddick	Danielson
N.Thompsonville	Tolland	Quaker Hill	New London

TOWN	EVERSOURCE OFFICE	TOWN	EVERSOURCE OFFICE
Quinebaug	Danielson	Stafford Springs	Tolland
Redding	Newtown	Staffordville	Tolland
Redding Ridge	Norwalk	Stamford	Stamford
Ridgefield	Newtown	Sterling	Danielson
Rockfall	Cheshire	Sterling Hill	Danielson
Rockland	Madison	Stonington	New London
Rockville	Tolland	Storrs	Tolland
Rocky Hill	Hartford	Suffield	Tolland
Rogers	Danielson	Taconic	Torrington
Rowayton	Norwalk	Talcottville	Tolland
Roxbury	Newtown	Terryville	Cheshire
Sadds Mill	Tolland	Thomaston	Torrington
Salem	New London	Thompson	Danielson
Salisbury	Torrington	Tolland	Tolland
Saybrook Point	Madison	Torrington	Torrington
Scantic	Tolland	Tylerville	Madison
Scotland	Danielson	Uncasville	New London
Seymour	Newtown	Union	Tolland
Sharon	Torrington	Union City	Cheshire
Sherman	Newtown	Unionville	Cheshire
Short Beach	Madison	Vernon	Tolland
Simsbury	Hartford	Versailles	Danielson
Somers	Tolland	Voluntown	Danielson
Somersville	Tolland	Warehouse Point	Tolland
Sound View	New London	Warren	Torrington
South Glastonbury	East Haddam	Warrenville	Tolland
South Kent	Torrington	Washington	Newtown
South Lyme	New London	Washington Depot	Newtown
South Windsor	Tolland	Waterbury	Cheshire
Southbury	Newtown	Waterford	New London
Southington	Cheshire	Watertown	Torrington
Sprague	Danielson	Wauregan	Danielson
Spring Hill	Danielson	Weatogue	Hartford
Stafford	Tolland	Wequetequock	New London
West Ashford	Tolland	Willimantic	East Hampton

TOWN	EVERSOURCE OFFICE	TOWN	EVERSOURCE OFFICE
West Cornwall	Torrington	Wilton	Norwalk
West Granby	Tolland	Winchester	Torrington
West Hartford	Hartford	Windemere	Tolland
West Hartland	Torrington	Windham	East Hampton
West Mystic	New London	Windsor	Hartford
West Redding	Norwalk	Windsor Locks	Tolland
West Simsbury	Hartford	Windsorville	Tolland
Westbrook	Madison	Winsted	Torrington
Westchester	East Hampton	Winthrop	Madison
Westfield	East Hampton	Wolcott	Cheshire
Westminster	Danielson	Woodbridge	Cheshire
Weston	Norwalk	Woodbury	Newtown
Westport	Norwalk	Woodstock	Danielson
Wethersfield	Hartford	Woodstock Valley	Danielson
Willington	Tolland		

DEFINITIONS

For additional definitions, refer to Section 100 of the National Electrical Code.

AMR:
Automatic Meter Reading

Approved Equipment:
Published list of metering equipment approved by Eversource for use by electrical contractors.

Code(s):
The State of Connecticut approved version of the National Electrical Code and/or applicable state or local codes and ordinances.

Conduit System:
Our electrical distribution facilities installed underground, in electrical grade Schedule 40 PVC conduit.

Electric Service Support Center:
The central contact for all construction related service requests. To request or inquire on an electric service request call toll free 1-888-544-4826 or visit the Eversource web site www.eversource.com.

Instrument Transformer Installations:
An electrical service that requires current transformers and/or potential transformers.

Labeled:
Equipment or material to which a label, symbol, or other identifying mark of an organization has been attached and that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Licensed Electrician:
Master electrician holding a valid E-1 or E-9 license issued by the State of Connecticut, Department of Consumer Protection - Occupational & Professional Licensing Division. The Licensed Electrician is responsible for all work performed under this policy.

- E-2 License holder can only perform electrical work while under the employ of a contractor licensed for such work.
- E-9 License holder is restricted to residential and light commercial work only.

Listed:
Equipment, materials, or services included in a list published by an organization and concerned with evaluation or products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or services meets identified standards or has been tested and found suitable for a specified purpose.

Local Municipal Authority:
A duly appointed building code official, responsible for inspecting and ensuring that contractor work is in compliance with all applicable local, State and Federal regulations.

Metering Sequence:

- **Cold Sequence**: Main disconnect required before the self-contained meter or instrument transformers.
- **Hot Sequence**: No main disconnect before meter.

Network System
A distribution system which connects the secondary of multiple distribution transformers for supplying power to a customer's service. These are special systems generally located in downtown areas of cities.

Primary/High Voltage Service:
Above 600 volts (this booklet does not cover these services).

***Secondary Service**:*
600 volts or below (the rules of this booklet apply)

- Simple Service: A secondary service that can be provided with an overhead service drop or underground service lateral from our system to the service equipment requiring no further utility construction.
- Complex Service: A secondary service requiring additional utility construction (e.g., poles, conductors, transformers, etc.).

***Self-Contained Meter**:*
A meter capable of measuring the entire amperage of the electric service without the use of current and/or voltage transformers.

***Service**:*
The conductors and equipment for delivery of electric energy from our distribution (supply system) to the service point.

***Service Drop**:*
Eversource overhead service conductors run between our facilities and your structure.

***Service Entrance Capacity**:*
This is the rating of the service entrance equipment in amperes.

***Service Equipment**:*
The necessary equipment, usually consisting of the main control or circuit breaker, and/or fuses and their accessories, and intended to constitute the main control and means of cutoff of the supply.

Service Lateral:
The underground service conductors and conduit starting at the street main, at the top of a riser on a pole, from a transformer or other structure, and connecting to the service point.

Service Location:
The approved point of attachment of our service drop or the approved point of entry of our service lateral to building.

Service Point:
The point of connection between the facilities of the serving utility and the premises wiring.

Slip Meter Riser:
(Slip Joint) for use in electrical service entrance applications with incoming service conduit diameters ranging from 3" to 4". Complies with NEC 300-5 which requires protection for buried cables in areas subject to frost heave, ground settlement, etc.

Spoils: - The soil removed from an excavation.

Suitable Backfill:
Soil that does not contain ashes, cinders, shell, frozen material, loose debris or stones larger than 2" in maximum dimension.

Underground Manhole System:
Our electrical distribution facilities installed in the ground in manholes, vault, duct banks, pads, etc.

Us-We-Our:
Eversource

Work Request Number:
A seven digit number assigned to track all service work requested by customers, electricians, contractors, etc. Contact the Electric Service Support Center to create a work request number and/or have this number available when making inquiries.

You-Your:
The person or entity responsible for paying our bill or their agents who are responsible for work being done.

Section 1

General

EVERSOURCE

SECTION 1: General

A. Safety - The First Priority

1. Any contact with our wires may cause serious injury or death. Treat all downed, low hanging or burning wires as though they are "LIVE" - energized - and stay away from them. ***Do not regard the covering which may be observed on our wires as insulation.***

2. Report any downed, low hanging or burning wires to Eversource at 1-800-286-2000 or the police or fire department. In the Hartford area you must dial 860-947-2000.

3. Connecticut State law requires contacting ***"Call Before You Dig"*** two (2) full working days prior to doing any excavation, digging holes, or driving posts regardless of whether it is within the street or on private property. Obtain information by calling, in Connecticut, 1-800-922-4455.

4. Equipment such as ladders, scaffolding, etc., regardless of what they are made of, can become electrified if brought in contact with wires. Use extra caution when installing siding, painting, cleaning gutters or other reasons to work near our facilities. ***It is recommended that you call to have Eversource facilities covered before starting work.***

5. Removal or relocation of existing Eversource overhead or underground service equipment is prohibited. Contact Eversource if removal or relocation is necessary.

6. ***Do not enter or open existing electrical structures such as hand holes, transformer pads or switch vaults.*** Call Eversource at 1-800-286-2000 or 860-947-2000 in the Hartford area and ask for the Field Engineering Designer in the project area.

7. Equipment such as cranes, backhoes, etc., shall never be operated within 10 ft. of our overhead distribution conductors. Refer to OSHA limit of approach regulations.

8. Swimming pools and spas ***must not*** be installed beneath our overhead facilities or above our underground facilities in accordance with Code.

9. Where hazards exist, ground fault circuit interrupters must be used in accordance with Code. In addition, we strongly recommend their installation on existing wiring.

10. Never replace/install fuses or breakers, for main switch or branch circuits, with other than the proper size for the installation in accordance with Code.

11. Proper installation of emergency generators or other power sources is essential to avoid electrical source feeding back into our lines and endangering unsuspecting utility workers. A municipal electrical permit and inspection is required for all transfer switch installations with the sole exception of a Meter Socket Transfer Switch (GENERLINK) ***Refer to Section 10 and contact Eversource prior to connecting to your system.*** See Section 11, Figure 30 (page 89).

12. Antennas, banners, flags, customer lighting, signs or similar customer equipment shall not be attached to our poles.

B. Service Request

1. Our Service Request procedure is meant to do the following:

   a. Provide methods for responding to and processing your Service Request.

   b. Encourage you to contact us a minimum of 15 days in advance to allow for proper planning.

   c. Provide you with information which will:
      - designate the service location.
      - specify the type and character of supply that is available.

- specify the location and requirements for our metering equipment.
- provide the available fault current for your specific installation.
- advise you of advance charges, if any.
- advise you of any special requirements.
- advise you of an estimated completion date.

2. A Service Request for electric service must be submitted for any new, changed, removed or temporary service. A Service Request for electric service can be submitted via phone (1-888-544-4826) or Internet (www.eversource.com). ***The request should be submitted at least 15 days in advance and filled out completely, including load data.*** Eversource is not responsible for making service requests to others: i.e., telephone, cable TV, gas, water and for coordinating their activities.

3. A "**repair"**, emergency or non-emergency, that involves the replacement of service equipment is considered a change and requires a Service Request and a permit. This includes the meter socket, service entrance conductors, conduit and mast.

4. If an emergency arises after business hours, weekends or holidays it is permissible to perform repair or replacement. However the electrical contractor must take out a service request and obtain a municipal permit within one business day as per State of CT Building Code, Section R105.2.1.

C. Approvals

1. We will not energize a service until it is approved by the local municipal authority and it meets the requirements outlined in this booklet.

D. Our Equipment on Private Property

All our equipment located on your premises, such as poles, conductors, meters, instrument transformers, auxiliary metering equipment, transformers, ducts, etc., shall remain our property and may be removed by us in the event such equipment is no longer needed.

E. Safe Access to Installation

We reserve the right to enter your premises at any time to erect, remove, operate or maintain our facilities and to read and test our meters. The access area must be clear of obstacles and capable of carrying heavy vehicles and equipment if they are required. We are not responsible for restoring trees, shrubs and/or grass if we cause damage because of inadequate access.

F. Changes to Building Structure Affecting Service Entrance Equipment

When changes, alterations or additions to an existing structure affect the attachment of service entrance equipment, the attachment point and installation must conform to both our current requirements and applicable codes. No structures, such as decks, patios, sidewalks or swimming pools, shall be constructed over buried service equipment.

G. Work Performed by Homeowners

Homeowners are allowed by Connecticut State law to perform electrical work on their single family, owner-occupied residence ***ONLY***. All of the work must be performed by the homeowner personally and all required permits must be obtained. ***Homeowners are not allowed to cut and reconnect their service or remove the Eversource meter.*** Homeowner work must be inspected and approved by the local municipal authority

The homeowner has two options to complete this work:

1. The homeowner builds a parallel service; service entrance, weatherhead and conduit, meter box, main breaker, etc. This service can be backfed on the customer's side of the main switch to the existing service until a municipal inspection approval is issued. At that time we will cut and reconnect the new service equipment at the weatherhead.

2. The homeowner can coordinate with Eversource to cut the service, perform the service upgrade, obtain a municipal inspection approval and call us back to reconnect the service.

Under both options the homeowner must take out a municipal permit and a Service Request. Contact Eversource in advance to review the planned work, i.e., service location change, upgrade, etc. and to coordinate the service cut and reconnect. The upgraded service shall not be energized until a municipal approval is given. It is the responsibility of the homeowner to schedule an appointment with Eversource and the local municipal code-enforcement official.

Important:

If work is going to be performed by a homeowner (under a permit taken out by the homeowner) a licensed electrician is not allowed to perform any electrical work or cut and reconnect the service. If a licensed electrician is going to perform the cut and reconnect they must abide by the State-approved Cut and Reconnect policy and take out the permit under their license.

h. Inspections

Eversource's inspection of your service facilities or wiring is not an approval of conformance to applicable codes. The purpose of our inspection is to ensure that our requirements are met with respect to line, load, and ground connections, the meter installations, and that the installation is in conformance with this booklet.

i. Employee Identification

All Company employees carry photo identification which they will present on request.

J. Theft of Electric Service

Connecticut General Statutes C.G.S. Section 53a-127(c) prohibits theft of electric service.

Theft of electrical service is defined as the taking, or acceptance, of electric service without the knowledge or consent of the Company. This includes any method or device used by any person(s) which prevents an electric meter from accurately registering the quantity of electricity supplied by the Company. ***Theft of electric service is unlawful, unsafe and can result in serious injuries, electrocution, fires, explosions and death!***

Where there is evidence of meter tampering and/or the diversion of electric service, such person or persons responsible shall be liable for criminal prosecution under the penalty of all applicable laws. All lost revenue, intended or unintended, is subject to recovery by the Company.

To report suspected meter tampering, or diversion of electric service, please report it to Eversource's confidential energy theft hotline at **1-800-286-5350**. You will not be asked to identify yourself.

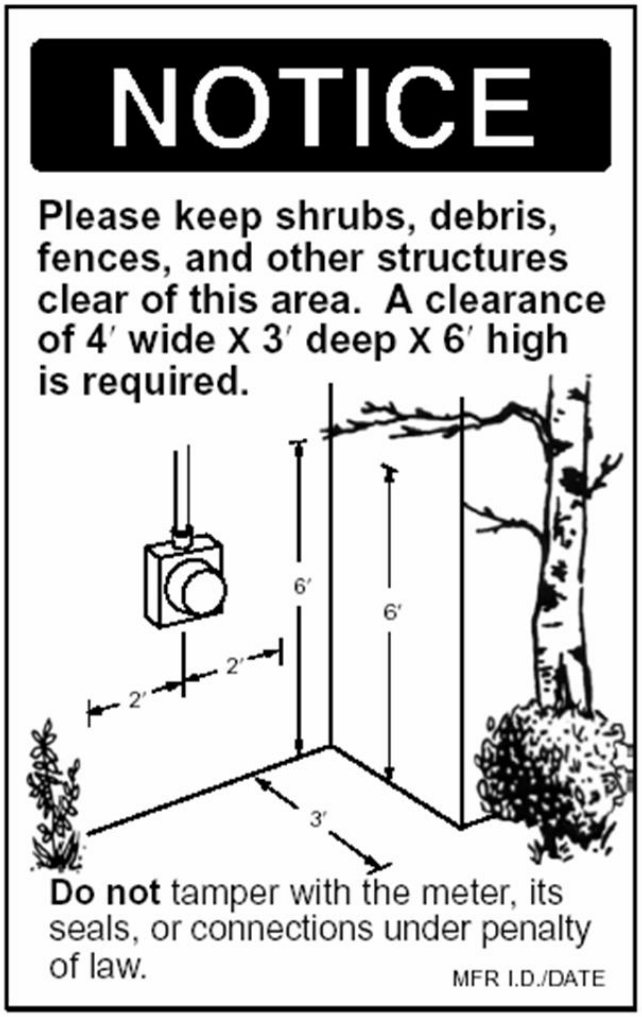
K. Buildings Vacant for Periods Greater Than Six Months

State of Connecticut House Bill 6292: If an owner of a building or portion of a building that has been unoccupied and disconnected from the electric distribution system for a period of six months or longer wishes to resume delivery of electricity to such building or portion of such building, the owner shall contract with an electrician licensed pursuant to chapter 393 of the general statutes, at the expense of the owner of such building, to inspect the electric conductors and equipment up to and including the main device to disconnect electric power to such building. The electrician shall provide written notice to the electric distribution company, as defined in section 16-1 of the general statutes, authorized to provide electric distribution services to the service area in which such building is located that such equipment is electrically safe and does not constitute a public safety hazard. Upon receipt of the written notice, the electric distribution company shall promptly resume delivery of electricity to such building or portion of such building.

Contact Eversource at 1-800-286-2000 or 860-947-2000 in the Hartford area to provide notice in compliance with this law.

L. Services Disconnected Due to Flood, Fire or Similar Circumstance

If a service has been disconnected due to damage caused by flood, fire or similar circumstance it will not be reconnected without notification by an appropriate public official such as the Fire Marshall or Code Enforcement Official.


NOTICE
Please keep shrubs, debris, fences, and other structures clear of this area. A clearance of 4′ wide X 3′ deep X 6′ high is required.
6′
6′
2′
2′
3′
Do not tamper with the meter, its seals, or connections under penalty of law.
MFR I.D./DATE

Section 2

Residential
Cut and Reconnect Policy

EVERSOURCE

SECTION 2: Residential Cut and Reconnect Policy

The Residential Cut and Reconnect Policy is restricted to overhead residential services of 400 amps or less of the following types:

- ***two-wire 120 volt***
- ***three-wire 120/240 volt***
- ***three-wire 120/208 volt single-phase***

Definitions

Licensed Electrician
A Master electrician holding a valid E-1 or E-9 license issued by the State of Connecticut Department of Consumer Protection – Occupational & Professional Licensing Division.

The Licensed Electrician (hereinafter referred to as the electrician) is responsible for all work performed under this policy

E-2 License
An E-2 license holder can perform electrical work while under the employ of an electrician licensed for such work only.

E-9 License
An E-9 license-holder is restricted to residential and light commercial work only.

Authority Having Jurisdiction
A duly appointed building code official (formerly referred to as Local Municipal Authority), responsible for inspecting and ensuring that electrical contractor work is complying with all applicable local, State and Federal regulations.

Self-Contained Meter
A meter capable of measuring the entire amperage of the electric service without the use of current and/or voltage transformers.

Policy

1. **Homeowners are not authorized to cut and reconnect electric services**.
   - Refer to Section 1 – General, Part G – Work Performed by Homeowners of Eversource's Information and Requirements publication for a description of homeowner service changes.
   - If a permit has been issued to a homeowner, an electrician is not allowed to perform any electrical work, including the Cut and Reconnect of the service.

2. If a permit has been issued to an electrician, the State-approved Residential Cut and Reconnect policy must be abided by. All electricians who hold a valid State of Connecticut E-1 or E-9 license are permitted to perform cut and reconnect services as outline within this policy. To maintain this privilege, all requirements of the Residential Cut and Reconnect policy must be strictly adhered to. Violations of the policy will result in termination of these privileges.
3. The electrician must contact Eversource and obtain a valid service request number at least 15 days prior to starting work to avoid potential code violations or non-compliance with Eversource requirements.
4. The electrician must obtain a valid service request number, either through the Eversource website (www.eversource.com) or by telephone (1-888-544-4826).

a. The service request job description must indicate that the work involves a **Residential Cut and Reconnect**.

b. The work must be completed within 60 days from the date of the service request.

c. If an emergency arises outside of Eversource business hours, weekends or holidays, it is permissible to perform repair or replacement. However, the electrician must obtain a valid service request number from Eversource and a municipal permit within 1 business day (as per State of Connecticut Building Code, Section R105.2.1 - Emergency Repairs).

5. The electrician shall cut the service entrance cable at the point of attachment (weatherhead) on the line side of the existing service drop connectors, replace or repair the service, and re-connect the service in compliance with Eversource requirements.

a. This work may be performed by an E-2 Journeyman or Apprentice working under the direct supervision of an E-1 or E-9 licensee.

b. All applicable rules of the State of Connecticut Department of Consumer Protection - Occupational & Professional Licensing Division apply.

6. If the point of attachment is going to be changed or there are existing clearance conflicts, the electrician must receive Eversource approval prior to starting work.

The service drop shall be relocated by Eversource only.

7. The electrician is responsible for obtaining the appropriate permits from the Authority Having Jurisdiction in advance of starting work.
8. The electrician is responsible for taking all necessary steps to ensure the meter(s) are reinstalled into the same service location from which they were removed.

a. For all multiple meter installations, each house, store, office, apartment, or area serviced must be permanently marked with its unique identification on the inside and cover of the associated meter socket and load disconnect for which the service is provided (to avoid erroneous customer billing conditions).

b. Each meter and meter socket should be marked with the unique identification for the location serviced prior to the start of any service work to ensure compliance with this requirement.

9. The service must be reconnected utilizing properly sized connectors as listed below.

Phase/Hot Leg /Conductor:

- Properly taped Parallel Groove Connector
- Properly taped Pliers-applied Wedge Connector Neutral Conductor
- Bare Parallel Groove Connector
- Bare Pliers-applied Wedge Connector

10. Upon completion of the job, the electrician will be responsible for re-installing the meter into the new meter socket under the following conditions:

a) The existing meter is appropriate for the new service such as:
- Replacing a meter socket where the service disconnect size remains the same.
- Upgrading from a 60-100A single phase, 3 wire service to a 100-200A single phase, 3-wire service.
- Replacing 320A meter socket with a 320A meter socket.

b) The meter has not been damaged either prior to or during the service upgrade.

Note 1: **Installation of a meter does not supersede the inspection requirements by the Authority Having Jurisdiction.**

Note 2: For multiple metering locations, the electrician shall reinstall the meter into the same service location from which it was removed (to avoid erroneous customer billing conditions).

11. If any conditions as stated in (a) or (b) above prevents the meter from being reinstalled or if a meter is not available to be installed, the electrician shall contact the Electric Service Support Center (1-888-544-4826) within 1 business day to either make appropriate arrangements to install a meter or request permission to install Eversource approved jumpers and clear meter socket covers. Any type of commercially available jumper and clear meter socket cover designed for such use will be approved.

    The use of non-approved home-made jumpers shall be prohibited.

12. All Eversource requirements, the National Electrical Code (NEC), State and Municipal building requirements must be met.
13. The electrician is responsible for obtaining approval from the Authority Having Jurisdiction as soon as the work is completed.
14. Unless notified of a building code violation by the Authority Having Jurisdiction, Eversource will either reseal or install a new meter.

Non-Compliance and Violations

1. Non-compliance with any of the requirements of the Residential Cut & Reconnect Policy, non-compliance with NEC, OSHA, and State and local building codes will result in Eversource sending a written inquiry to the electrician, customer, and the Authority Having Jurisdiction as necessary, to resolve the problem.
2. Repeated non-compliance violations by an electrician will result in notification to the appropriate State and Municipal authorities.
3. The electrician will be notified in writing that a violation letter has been sent and that their privilege to perform work under the Residential Cut & Reconnect Policy may be suspended. In the case where risk of public safety is a factor; Eversource will **immediately** suspend Residential Cut & Reconnect privileges for said electrician.
4. The State of Connecticut Department of Consumer protection - Occupational & Professional Licensing Division will review violations to determine if Connecticut General Statute, Section 20-334 has been violated and will take appropriate action, up to and including penalties as described in the Connecticut General Statute, Section 20-341.
5. The electrician will be billed for all costs that may be incurred by Eversource to correct any violation.

Section 3

Types of Electric Service

EVERSOURCE

SECTION 3: Types of Electric Service

A. Electric Service Request

When we receive the Electric Service Request we will determine the type of service, based on your location and the size and character of the proposed load.

B. Line Extensions

You should consult with us at a very early date about any situation that will require a single or three-phase line extension along a town road, state highway, or into new residential developments, commercial complexes, or industrial parks. Under certain circumstances, customer charges will apply. In addition, we have special policies for line extensions into new residential developments.

C. Primary/High Voltage Service

Requirements for primary/high voltage service (over 600 volts) are not included in this booklet. To provide such service, we need early and detailed consultation with you.

D. Types of Secondary Service

(Refer to Section 4: Characteristics of Supply)

1. Overhead service from overhead system.

a. We will attach our service drop to the structure at the approved location which is accessible to our line mechanic and high enough to provide adequate clearance. See Section 11, Figures 4, 5, 6 and 7.
The minimum clearances are:

- ***Twelve feet*** above finished grade, sidewalks, residential driveways and commercial areas not subject to truck traffic and located more than 25 feet in any direction from a swimming pool, swimming area, or diving platform.

- ***Sixteen feet*** over roads, streets, alleys, parking lots or other areas subject to truck traffic.

b. Your service entrance conductors or cable shall be terminated with an approved detachable weatherhead and be safely accessible from a ladder on the ground. See Section 11, Figure 5, (page 63).

c. The location of your weatherhead shall be positioned to permit the installation of our service drop at or below the weatherhead. A minimum of 20 inches of conductor must extend from the weatherhead to make a connection to the service drop with a proper drip loop. See Section 11, Figure 6, (page 64).

d. You are responsible for providing adequate tree trimming and/or tree removals for your service.

2. Service Lateral from Overhead System or from Conduit System

Note: **Consult an Electric Service Designer for a conduit service 200 feet or longer.**

<u>You will be responsible for the following:</u>

a. Providing a trench with conduit at a depth that will provide a cover of 24 inches above the conduit and which will run from our designated service location at the foundation to our facilities. ***The designated service location shall be in direct line of sight to Eversource's distribution facilities. You must consult with the Company for any installations that may not conform to this requirement.*** See Section 8, Item C.1, (page 35). The conduit shall be electrical grade Schedule 40 PVC (minimum of 3 inch diameter.) Provide and install caution tape in the trench backfill even if the conduit is encased in concrete. **Note: Metallic foil tape is NOT acceptable.** See Section 11, Figure 9, note E (page 67).

b. Coordinating with other utilities such as telephone, cable TV, water and gas.

c. Providing and installing conduit, including an approved slip joint, from the metering equipment to the trench conduit. The line side conduit shall enter the meter cabinet through the bottom left knock-out. The slip joint shall be securely fastened to the building with one clamp. ***The end of the conduit at our facilities shall be capped and left accessible.*** See Section 11, Figure 3, (page 60). Contact us for conduit size (minimum of 3 inch diameter).

d. At the service end, providing and installing an electrical grade Schedule 40 PVC sweep (or steel, if required by us) with a 90 degree bend, 24 inch minimum radius from the slip joint to the conduit in the trench.

e. If the designated point on the distribution system is on the opposite side of the road, a conduit road crossing is preferable. Such road crossing is at the customer's expense. However, an overhead crossing, if allowed by the local municipality, may be installed at the customer's expense. This includes the pole, the length of customer-dedicated road crossing conductor and any required guying. If a road crossing pole exists or is provided by another utility, a customer's conduit service may be taken from that pole. Contact the Electric Service Designer whenever a road crossing is required.

f. Providing and installing a galvanized steel sweep (or electrical grade Schedule 40 PVC if approved by us in advance) and conduit with cap at the riser pole if from our overhead system. The sweep shall be a 90 degree bend with a minimum 24 inch radius. See Section 11, Figure 3B, (page 64).

g. Installing a 1/4 inch diameter nylon pulling line from the meter socket to the end of the conduit at our facilities (transformer pad, temporary dead-end, handhole or riser pole). Do not enter or open existing electrical structures such as handholes, transformer pads or switch vaults, when installing the pulling line. If access is needed, call the Eversource Electric Service Designer in the project area.

h. Providing and installing the ground assembly at the steel sweep at the customer's service entrance. The ground assembly shall consist of a ground clamp suitable for direct burial, No.6 bare copper wire, a ground rod connector and a five-eighth inch by eight foot ground rod. See Section 11, Figure 2, (page 59). We will install the grounding assembly on the steel sweep at the riser pole.

i. Backfilling the trench before we install the cable. Exercise care to avoid damaging the conduit by not dropping rocks or frozen earth onto it.

j. The trench shall be as straight as possible from the point of termination on the building to our facilities. **The total of all bends shall not exceed 225 degrees with no reverse bends.**

k. Ensuring that proper clearances for pad-mounted transformers are maintained from travel ways, windows, doors, and any other structures per the following table.

	Minimum Distance (in feet)		
Item	**In front of**	**To side of**	**Below**
Door	20	10	-
Air Intake	10	10	25
Window	10	3	5
Fire Escape	20	20	-
Combustible Wall	6	6	-
Noncombustible Wall	5	3	-
Fuel Tanks (above & below grade)	10	10	-
Natural gas or propane connections	3	3	-
Gasoline dispensing unit	20	20	-

L. **<u>Installation and maintenance responsibilities for conduit system service laterals:</u>**

a. **Residential Service.** We will install our conductors

in your conduit and terminate in your meter socket, main switch, trough, or other suitable device immediately adjacent to the wall entrance. The Company will repair damaged service conduits once service conductors have been installed.

b. **Commercial / Industrial Services to Service Entrance Capacity of 400 Amps Total or Less**. Eversource will furnish the cable, install it in your conduit and terminate it at your meter socket, main switch, trough, duct box or other suitable device immediately adjacent to the wall entrance. We will maintain our cable. You will furnish, install and maintain the conduit and all conductors and disconnecting device (breaker or fuse) beyond the termination point. Refer to Section 8, Table A (page 50) for types of metering available.

c. **Commercial / Industrial Services to Service Entrance Capacity of Over 400 Amps Total**. You will furnish, install, own and maintain all secondary conduit and conductors loosely make up all transformer connections (Eversource supplied) to the secondary bushings and ensure proper conductor length to avoid tension on the bushings. The Company will make the final connections.

NOTE: Transformer bushings should never be used as a stanchion in the course of pulling conductors.

3. Service Lateral from Underground Manhole System

Note**: **You must consult Eversource for this kind of service.

a. Your service shall include approved conduit from the service entrance location to the property line or a point on the distribution system designated by the Company. You will furnish and install this conduit, including replacement, if necessary, for service upgrades. The Company will repair damaged service conduits once service conductors have been installed. The service entrance location must be immediately adjacent to the outside wall. **Contact the Field Engineering Designer in advance for service changes in underground system areas.**

b. We will install our conductors in your conduit. Charges will be in accordance with our policy. We will furnish, install and own the seal between your conduit and our conductors. We will maintain this seal at your request but will not be responsible for damage due to a leaking seal. You will furnish, install, own and maintain the seal between your conduit and the wall.

E. Temporary Service

1. We will supply temporary service when it can be served from our existing lines or facilities. You must:

   a. Supply and maintain suitable service entrance equipment (weatherproof, if required). In accordance with the International Residential Code (R104.9.1), "Used material, equipment and devices shall not be reused unless approved by the building official."

   b. Pay, in advance, the cost of connecting and disconnecting this service. This includes the cost of installation and removal of any poles, wires, transformers, meter equipment, or other facilities. These charges are in addition to the regular rate applicable to the use of energy.

c. It is the customer's responsibility to notify Eversource when temporary service is to be discontinued, typically within one year. All electric service equipment will be removed at that time.

2. Requirements for temporary service are shown in Section 11, Figure 1 (page 57 and 58) and Figure 4 (page 61 and 62).

Section 4

Characteristics of Supply
(480 Volts and below)

EVERSOURCE

SECTION 4: Characteristics of Supply *(480 Volts and below)*

A. Supply Characteristics

1. Eversource will supply and meter alternating current with a nominal frequency of 60 Hertz (cycles per second) and a nominal voltage as described in item 3 below.

2. If you desire a new service or an increase in capacity, you should contact us **before** purchasing any equipment or beginning any electric construction. Eversource will designate the voltage and phase characteristics which will be available.

3. Normally, one of the following will be supplied:

Nominal Voltage	Phase	Wires	Comments
120/240	**1**	**3**	**a,b,c,d**
120/208	**1**	**3**	**c,e**
208Y/120	**3**	**4**	**f,g,h**
480Y/277	**3**	**4**	**f,g,h**

   a. In general, only single-phase service will be supplied to residential loads.

   b. Campgrounds and mobile home parks services must be 120/240 volts.

   c. **The maximum single-phase service from an overhead distribution system is 400 amps, including the total rated ampacity for multiple main switches.** Under some circumstances, a 400 amp main disconnect is required ahead of multiple sub-main switches whose total rated ampacity exceeds 400 amps (excluding the owners loop if it is rated at 60 amps).

Please consult with Eversource Field Engineering Designer for all services over 400 amps.

d. **Single-phase services exceeding 400 amps to a maximum of 1200 amps must be fed from a padmount transformer.** Please consult with Eversource Field Engineering Designer for all services over 1200 amps.

e. **The maximum three-phase service allowed from an overhead distribution system is 400 amps, including the total rated capacity for multiple main switches.** Under some circumstances, a 400 amp main disconnect may be required ahead of multiple sub-main switches whose total rated capacity exceeds 400 amps. Please consult with Eversource Field Engineering Designer for all services over 400 amps.

f. **The largest standard three-phase underground service Eversource can provide with one transformer is 3000 amps.** Please consult with Eversource Field Engineering Designer for all services over 3000 amps.

g. Three-phase service is normally available for supply loads of 75 KVA or larger only.

h. Three-phase supply is not normally available for single family housing. For large residential complexes, which may require a three-phase service to the building, individual residential customers will be served only with single-phase 120/208v.

4. Eversource cannot guarantee to maintain the voltage level of these nominal values under all conditions; however, voltage will normally be maintained within reasonable limits and as specified by the regulatory authority. We recommend the use of suitable voltage regulating devices where equipment sensitive to voltage is in use. See table in Section 4, item 3, (page 20).

5. The voltage rating of your equipment should be compatible with the normal voltage which Eversource will supply. See table in Section 4, item 3, (page 20).

B. Unusual Conditions

Eversource may refuse to supply electric service to loads which have characteristics which might adversely affect the supply to other customers, such as harmonic distortion, voltage fluctuations, noise or low power factor.

C. Two-Phase Supply

Eversource no longer offers new 2-phase supply. If your present service is 2-phase, consult with us before making any changes or additions.

D. Three-Phase, 3-Wire, Delta Supply

Eversource no longer offers new 3-phase, 3-wire, Delta supply. If you have this type of supply, consult with us before making any changes or additions.

Section 5

Our Service Facilities

EVERSOURCE

SECTION 5: Our Service Facilities

A. General

1. Eversource or its agents shall install all facilities which we will own, operate and maintain. Eversource or our agents shall perform all work on our poles and equipment except as noted in Section 6, Item E, (page 28).

2. You may be required to contribute to the cost of installing service facilities. Where Eversource assumes responsibility for future operation and maintenance, we shall hold title of ownership to such facilities.

3. Service installations involving special conditions due to size of load, physical limitations, rate application, environmental considerations, or other special requirements of the customer will be subject to joint study and agreement with us.

4. **All connections and disconnections between our facilities and your facilities will be made by us or our agents**. However, in case of single-phase residential services, qualified electricians will be permitted to cut and reconnect such services in compliance with our Cut & Reconnect policy. See Section 2.

B. Service Location

Eversource will designate the location for new, relocated or upgraded services. All services must meet the requirements of this booklet. ***A Service Request must be submitted prior to starting your work.*** It is your responsibility to request and obtain this information before you start work. A Service Request can be submitted via internet at (www.eversource.com) or phone (1-888-544-4826).

C. Number of Services

1. Normally, only one service will be installed to a single building or structure.

2. Multiple services of the same voltage to one building or structure will not be permitted without the written approval of the local authority. These services shall not be interconnected.

3. Each service will be separately metered and will be billed as serving a separate customer under the appropriate rate.

D. Disconnecting a Service at Your Request

1) Maintenance Work

Eversource will temporarily disconnect your underground service to allow you to perform maintenance work, on the load side of the service. We require sufficient advance notice to schedule the work. You will be responsible for reconnect notification. Consult the Electric Service Support Center to submit a maintenance work request.

2) Drop Service Appointment

Eversource will temporarily disconnect residential services, free of charge, for both single family, and multi-family houses, to allow for siding, painting, or tree removal work. Consult with the Electric Service Support Center to schedule an appointment.

E. Relocating a Service at Your Request

Eversource will designate the service location for all relocated services**.** Eversource will require sufficient advance notice to schedule the work. There may be a charge for this service. Consult our local office for details.

F. Permanent Removal of Electric Service at Your Request

1. Building Demolition

Eversource will remove all electrical services, meters and metering equipment, after receipt of your written request per State Law. All written requests shall be from the property owner. If the property to be demolished includes separately metered tenants the letter must be notarized. A form letter is available on our website.

Eversource will confirm in writing (within 5 working days) to you that the services, meters and metering equipment have been removed. The building owner is responsible for Eversource's gaining safe access to the structure to remove all of our electrical facilities.

2. Other than Demolition

If service, meters and metering equipment must be removed from a building or structure where no demolition is to take place, written request is required from the property owner. Eversource requires a minimum of five working days' notice to schedule the work. Written confirmation will be furnished upon request.

Section 6

Your Service Facilities

EVERSOURCE

SECTION 6: Your Service Facilities

A. Service Location

Eversource will designate the location for a new service or change of service which shall be on the front or side of the building. The front of the building is considered to be the side adjacent to our distribution facilities. It is your responsibility to request and obtain this information **before** you start work. See Section 1, Item B, (page 2).

B. Service Equipment

1. The service equipment must be properly rated for voltage, current, interrupting duty, and ground fault current. Upon request, we will furnish the information necessary to select proper equipment. Higher than usual interrupting duty is required for the main disconnect when supplied from a network system or transformer capacity of 75 KVA or greater. Contact us for detailed requirements.

2. Service equipment shall be installed on the load side of the self-contained meters up to 240 volts.

3. The following exceptions are installations where the main disconnect will be installed on the line side of the meter (cold sequence).

   a. All 480 volt services.

   b. Services fed from a Eversource network (208Y/120v) system. Contact us for detailed requirements, such as R type fuses, 100,000 amp fault current rating, and rejection clips. See Section 11, Figure 11, (page 69), Figure 12, (page 70) and Figure 18, (page 76).

   c. Single phase, overhead, residential installations with multiple meter positions exceeding 400 Amps, as described in See Section 4, Item A.3.c (page 20). You must consult with Eversource for these types of installations.

d. Services fed from a transformer capacity of 75 KVA or greater.

4. Network service may require you to furnish a cable limiter cabinet. Consult with us in such instances.

5. There shall be no more than 6 disconnects per service grouped in any one location. See Section 11, Figure 19, (page 77), Figure 20 (page 78) and NEC Section 230-71(a).

   Utilizing a main disconnect is the preferred installation to allow for additional meters beyond six. See Section 11, Figure 18, (page 76) and Figure 28 (page 87).

6. Fire Pumps - refer to NEC Article 695 for requirements. All fire pump and alarm circuits shall be metered. If the authority having jurisdiction requires that the fire pump or alarm service connections be ahead of the normal metering, then a separate service and meter shall be installed at the customer's expense. Consult with us in such instances. See Section 8, Item J.3.c, (page 45) for details.

7. For multiple unit residential buildings, all common facilities (hallway lighting, alarm systems, well pumps, etc.) must be metered separately per NEC, Section 210-25 (For multiple unit residential buildings prior to 1970 compliance with State Statute Sec. 16-262e regarding Non-Exclusive Use). This is commonly referred to as an owner's meter.

8. When changes or alterations are made to your service equipment, the service entrance and meter installations must conform to both our current requirements and applicable Codes.

C. Service Entrance Conductors

1. Where a main switch or circuit breaker constitutes the service equipment for a residential single-phase installation, the minimum ampacity of the service entrance conductors and socket meter trough shall be at least equal to the rating of the main circuit breaker or the largest main fuse which can be installed in the service equipment.

2. For a single-phase installation to an individual customer where more than one switch or circuit breaker is permitted as the service equipment, the ampacity of the service entrance conductors and socket-meter trough shall be a minimum of 100 amperes but not less than Code requirements.

3. For multiple-occupancy buildings, where up to six individual switches or circuit breakers function as the disconnecting means, the service entrance conductors must have adequate ampacity for the load as determined by applying the methods and rules set forth in the National Electrical Code.

4. Metered and unmetered conductors **shall not** be contained in the same raceway or conduit.

5. Metered conductors from more than one meter **shall not** be contained in the same raceway or conduit.

D. Pole Mounted Service Equipment and Metering (Special Installation)

Service equipment and metering is permitted only on private property poles as shown in Section 11, Figure 13, (page 71) and Figure 14, (page 72). ***With the exception of the pole and meter, all facilities beyond this service point will be furnished, installed, owned and maintained by the customer.*** Only one meter will be allowed on a private property pole. Consultation with Eversource is required.

E. Identification of Non-Eversource Facilities

The contractor or electrician shall post their name, address, and telephone number at each installation to facilitate contacting the proper person.

Section 7

Third Party Attachments to Eversource Distribution System Facilities

EVERSOURCE

SECTION 7: Third Party Attachments to Eversource Distribution System Facilities

A. Scope

This section addresses the requirements for the attachment of third party equipment to Eversource distribution system facilities. These devices, both pole mounted and pad mounted, are powered by 120 volt AC as their normal power source and are equipped with auxiliary power sources, either batteries or generators, utilized when the normal source is not available. This does not address the installation of communication antennas installed on or near transmission structures. Such installations are covered in a separate guideline entitled, "*NU General Guidelines for Communication Antennas Proposed On or Near Electric Transmission Structures*".

All Third Parties who propose to install generation and operate in parallel with the Eversource distribution system must follow a formal procedure by submitting an application to start the process, and by complying with the "CL&P (Eversource) & UI Guidelines for Generator Interconnections" dated 12/21/2007, which has been approved by the Connecticut Department of Public Utility Control.

Eversource will assign a Company Facilitator who will serve as the primary point of contact for any interconnection of Generation Facilities to the Eversource distribution system.

Interested parties can obtain copies of the Guidelines, information, and can process the application at the Eversource web site: **www.eversource.com**. Select "Generator Interconnections".

B. General

1. A Service Request shall be made for each installation prior to starting your work.

2. Eversource, telephone, and third party company representatives should agree on the particular location of this equipment. Remote or enclosed metered sites and access roads to these sites must be accessible for meter reading.

3. Installations shall be in compliance with the National Electrical Safety Code (NESC). This equipment shall be inspected by the municipal inspection authority unless the third party company is regulated by Public Utilities Regulatory Administration (PURA).

4. Requests for installation of equipment on Eversource property shall be received by phone or in writing to the Real Estate Department, Northeast Utilities, 107 Selden Street, Berlin, CT 06037.

C. Protection Issues

Third party company equipment utilizing generators, batteries, inverters or rectifiers are possible devices of backfeed into the Eversource distribution system. All steps to prevent any and all backfeeds shall be taken:

1. ***No equipment shall be connected to the Eversource distribution system without prior approval and testing by Eversource personnel to ensure that backfeed will not occur.*** Equipment with permanently connected generators and inverters shall have an automatic, positive, and fail safe method to prevent backfeed. Equipment which demonstrates backfeed capability must be modified by the third party company prior to connection to the Eversource distribution system. This restriction applies to both new and existing installations.

2. A break-before-make transfer switch or cable removal before connection to portable generators is required.

3. The third party company requesting service may have more than one design of backup supply furnished by either the same or several suppliers. The specifications for each model shall be submitted to our Protection and Controls Engineering Department, to determine if backfeed could occur and if so, what protective devices shall be required. This model approval shall be determined by specific test required and witnessed by Eversource System Engineering and Test Department personnel. The tests shall be performed by the third party company at their expense. Any modifications to previously approved models which may permit backfeed must be reported by the third party company to Eversource. Contact the Distributed Generation Department, Eversource Energy, 107 Selden Street, Berlin, CT 06037 for a list of approved devices for communications equipment applications.

4. The third party company is responsible for protecting its equipment from faults or abnormal voltages within its facilities and on the Eversource distribution system. Eversource shall not be responsible for damaging fault currents or voltages to the third party company's equipment.

5. Eversource shall be held harmless for damages to third party company equipment resulting from transients due to lightning strikes, load swings, faults, capacitor switching, system switching, etc.

6. Eversource may reduce its voltage level up to an additional 5% during times of system capacity emergency or during designated test periods. The third party company may wish to ensure that this action will cause no adverse effect on its equipment or operation.

7. The interconnection of the third party company's facilities with the Eversource distribution system shall not cause any reduction in the quality of service being provided to our customers. The third party company shall adhere to IEEE Standard 519 for harmonics. The introduction of harmonics, frequencies, flicker, etc., shall not be permitted and the third party company's equipment shall be disconnected until corrected.

8. Eversource recommends that the third party company install suitable surge arresters on both the source-side and load-side of its system.

9. The third party company shall ensure that any overcurrent protective device on its system coordinates with Eversource primary and/or secondary protective devices. Each third party company shall submit its overcurrent characteristics to System Engineering for review and approval.

D. Metering

1. Services to power supplies shall be single phase, three-wire and shall be metered, unless the service meets the requirements for unmetered services.

2. Pad mounted meter units shall not be installed below the 5 foot level without the approval of the Meter Department.

3. All pole mounted installations and the orientation of the meter socket must be approved by Eversource prior to installation.

4. Meters shall not be installed on poles unless the control unit itself is also installed on the pole. The meter location for pole mounted control units should be at the 5 foot level.

5 An approved lever operated manual bypass is required on sockets. 100 amp sockets may be supplied with non-locking jaws. Sockets greater than 100 amps must be supplied with locking jaws.

6. Grounds shall not be installed in meter sockets.

7. A minimum 3 inch conduit with slip joint is required when the service is underground.

E. Grounding

1. The control cabinets and messengers on the pole shall be grounded and bonded to the Eversource grounds and messengers.

2. This bonding shall be an irreversible connection and made at the time of installation by the third party company. The attachment point of the bond to the utility pole ground shall be no higher than the communication gain level.

3. If our primary supply circuit is delta or uni-ground connected, the bonding shall be to the secondary ground, and ***not*** to the primary equipment/arrester ground. Do not bond to utility grounds on any pole where transformers, arresters, or any other primary equipment is installed.

F. Pole Mounted Equipment

The NESC requirements for clearance heights above ground shall be followed. The NESC requirement for effectively grounded equipment cases is 15 feet minimum over roads and areas subject to vehicular traffic and 11 feet over ways subject to pedestrians and restricted vehicular traffic. There is an exception for effectively grounded equipment cases such as control boxes which allows the equipment to be mounted at a lower level for accessibility "provided such cases do not unduly obstruct a walkway". In addition to the above requirements, the following restrictions apply:

1. Eversource, telephone & third party company representatives should agree on the specific location of this equipment.

2. Equipment exceeding 2 feet in height shall only be installed on poles that can be accessed by aerial device vehicles.

3. Equipment exceeding 16 inches in width shall not be installed on riser poles.

Section 8

Meter Installation

EVERSOURCE

SECTION 8: Meter Installation

A. General

1. Under ***no circumstances*** will electricity be supplied without being metered or otherwise accounted for under special written arrangements made with Eversource. Contractors are ***not allowed*** to install jumpers on commercial, industrial or new residential services. If all requirements of the Cut and Reconnect policy are met jumpers ***are allowed*** on residential service upgrades only. This includes the owners meter on multi family services. Refer to Section 2.
2. All services greater than 400 amps shall be transformer rated and cold sequenced. Refer to Section 8, table A, p. 50.
3. You shall furnish, install, own and maintain the meter socket and the instrument transformer enclosure, if required.
4. Eversource will furnish, own and maintain all metering equipment.
5. Single residential houses must have and display a unique street number to avoid billing errors.
6. For ***all multiple meter installations*****,** each house, store, office, apartment, or area serviced ***must be permanently marked on the door with its unique identification***. This unique, permanent identification ***must be indelibly marked (no magic markers) on the inside and cover of the associated meter socket, and load disconnect before the meter will be installed***, to avoid billing errors.
7. All self-contained meter sockets shall have ringless covers and must be included in our list of approved equipment. (See Section 12, Approved Metering Equipment)
8. Primary metering and totalized metering are not a customer option. It may be allowed, under special conditions, if approved by Meter Engineering staff.
9. The meter socket shall not be used as a junction box, raceway or as a grounding point.

10. When requesting a new or upgraded commercial service and/or an additional meter, the customer or their contractor will be required to submit a one-line schematic diagram showing the service entrance, the customer's main switch and the proposed meter location.

11. For customers planning to install generation – residential customers planning to install over 10KW and all commercial customers planning to install generation – each must submit a schematic diagram showing the service entrance, the customer's main switch, the existing or proposed meter trough(s) and how the generator will be tied in so that
    a. Eversource can order the correct meter.

B. Standard Meter Installations

1. The two types of standard metering installations are:
   a. Self-contained
   b. Instrument transformer
2. The type of meter installation is determined by the voltage, phase, and total name plate rating of the associated disconnect(s). Refer to Table A on page 50 of this section.

C. Meter Locations

1. Eversource will designate meter locations for new or upgraded services.

   a. All residential meters shall be located outdoors
   On the front or front side corner of the structure. The front is considered to be the side adjacent to our distribution facilities.

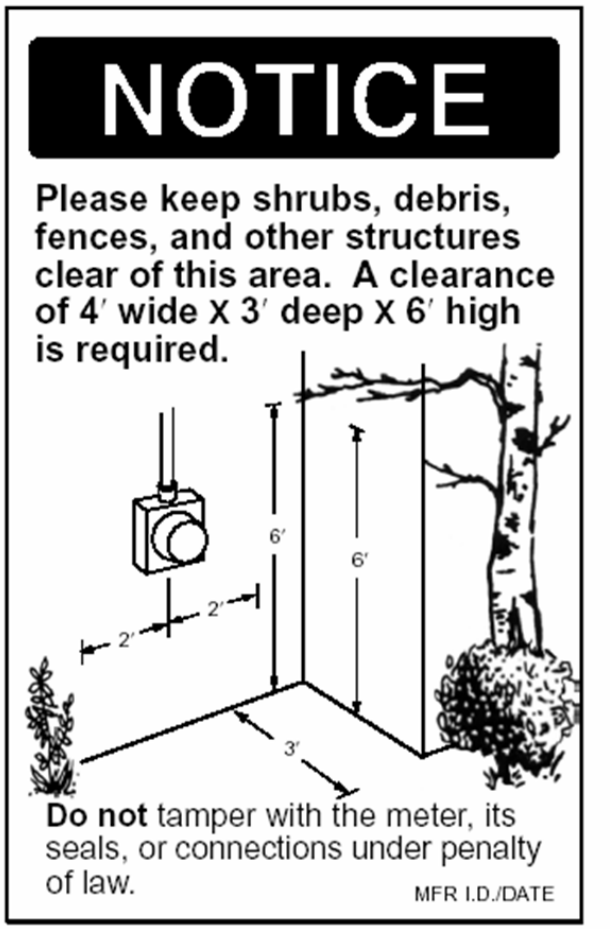
   b. Commercial meters shall be located outdoors.
   Any deviation from this requires pre-installation approval from the Eversource Meter Service Department.

   c. For a service in a Designated Flood Plain area refer to Sec. 11, Figure 33, (page 92).

   d. Meters shall be grouped so as to keep the number of metering points at a minimum.

e. Instrument transformer enclosures should be located indoors in a suitable area readily accessible to Eversource.

2. You shall maintain a clear, safe work space directly in front of each meter location and a suitable approach to it. Such work space shall be at least 4 feet wide, shall extend out from the meter at least 3 feet, and up to a height of at least 6 feet. In addition, the meter socket must be located at least 3 feet measured horizontally from a gas meter, regulator, propane cylinder or any other fuel storage vessel.



3. In areas where meter equipment is subject to vehicular traffic, doors, etc. you will be required to install additional protection, such as bollards.

4. Private property pole-mounted meters are permitted. This is a special installation. Early and detailed consultation with us is required. See Section 11, Figure 13, (page 71) for overhead and Section 11, Figure 14, (page 72) for a conduit system.

5. Private property metering pedestals for a conduit service are permitted; this is a special installation. ***Early and detailed consultation with us is required***. Section 11, Figure 15, (page 73) and Figure 16, (page 74).

D. Meter Equipment Mounting and Supports

1. Meter sockets shall be mounted plumb and securely fastened to a permanent rigid wall. Section 11, Figure 10 (page 68). Rust-resistant sheet metal screws of sufficient size shall be used to hold the socket secure. Standard expansion bolts or anchors shall be used on masonry.

2. An individual meter, or meters mounted adjacent to each other horizontally, shall be installed so that the center is approximately 5 feet from the floor or final grade. Section 11, Figure 19, (page 77) and Figure 20, (page 78).

3. Height requirements for vertically positioned, multiple meter installations. Section 11, Figure 18, (Page 76).

    a. Maximum height at top of meter is 6 feet from the floor or finished grade.

    b. Minimum height at bottom of meter is 2 feet from the floor or finished grade.

4. Meter sockets should be mounted on the finished surface of the building or structure. Consult with Eversource for recessed or other non-surface mounted installations.

    a. Meter sockets may be attached to adequately braced panels or frames in metal enclosures. With our specific approval, meters may be installed on pre-punched sheet metal panels to be provided by you in metal enclosure.

E. Grounding

1. ***The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor <u>shall not</u> be run through the meter socket.***

    a. ***An exception to this will be allowed on a Cold Sequenced self-contained service <u>only</u>. For this type of service the grounding electrode conductor will be allowed to travel through the meter socket along with the feeder conductors.***

2. The requirements of the Code shall be followed relative to grounding practices.

3. Your service entrance installation shall have a neutral or identified phase conductor which is grounded as required by Code.

4. To avoid corrosion problems, Eversource strongly recommends the use of copper for your grounding conductor.

5. Copper and aluminum shall never be in physical contact with each other. Where electrical connection is necessary, use special devices designed for this purpose.

6. The grounding conductor shall not be connected to any part of a gas or fuel oil system.

7. The meter socket shall not be used as a grounding point.

F. Cover Plates

1. After the meter socket has been installed, it is your responsibility to protect the interior of the socket by installing an approved optically clear cover obtained from the local inspector or Eversource.

G. Meter and Equipment Seals

1. All meters and all points of access to unmetered wiring, i.e. wiring troughs, on your premises shall have sealing provisions. All disconnecting switches over 400 amps must have locking provisions for Eversource.

2. The breaking of our seals, connecting, disconnecting or tampering with our metering equipment by unauthorized persons is ***strictly prohibited***. The law provides penalties for theft of electricity**.**

3. If it becomes necessary to gain access to any of this sealed equipment, you shall contact us to receive permission to do so. At that time, Eversource will make arrangements to reseal the installation.

H. Self-Contained Single-Phase Meter Installations

Refer to Table A, page 50 of this Section for services where this type of meter installation is required.

1. Metering Equipment

a. You shall furnish, install, own and maintain approved, single-phase ringless meter sockets with factory installed bypass. Our approved sockets are listed in Section 12.

b. Eversource will furnish, install, own and maintain the electric meter.

c. Where damage occurs or is anticipated, outdoor Meter sockets shall be protected by a suitable metal enclosure with locking provisions. Eversource will determine if a protective enclosure is required. This enclosure shall be furnished, installed, owned and maintained by you. Eversource will provide the lock.

2. Sequence of Meter and Service Equipment for Single-Phase Installations.

Single-phase service equipment shall be installed on the load side of self-contained meters except on network systems. Section 11, Figure 17, (page 75) and Figure 25, (page 83). For services fed from a network system the main disconnect with overcurrent protection shall be installed on the line side of the meter (cold sequence).

3. Meter Socket Connections

Line-side conductors are always connected to the top terminals of meter sockets and the load side conductors to the bottom terminals. Section 11, Figure 17, (page 75) Service conductors for all underground-fed meter sockets shall enter from the bottom left knockout. Section 11, Figure 10 (page 68).

4. Grouped Metering

Custom-made installations and modular panels may be used for groups of meters, such as in apartment houses. Prints of these arrangements must be submitted to us and approved by us ***prior to installation***. Section 11, Figure 18, (page 76) As an alternative, you may furnish, install, own and maintain a suitable wiring trough with sealing provisions to feed multiple installations of meter sockets. Section 11, Figure 19, (page 77) and Figure 20, (page 78).

5. Metering for Mobile Homes, Campgrounds, and Marinas

a. Mobile home metering facilities shall be provided by the owner on permanent supports not physically attached to the home. The supports shall be adequate for one or more meter installations and shall be set at a 4 foot minimum depth. They shall be galvanized steel set in concrete. Section 11, Figure 19 (page 77).

   An exception may be allowed for mobile homes permanently installed on a foundation and approved by the local municipal authority. In this case, all requirements for a normal, permanent service apply.

b. Eversource will not provide individual metered services to locations in campgrounds and marinas used for transient purposes.

c. Services for mobile homes, marinas and campgrounds shall be 120/240 volts.

I. Self-Contained Three-Phase Meter Installations

Refer to Table A, page 50 of this Section for services where this type of meter installation is required.

1. Metering Equipment

a. You shall furnish, install, own and maintain approved, three-phase ringless sockets with factory-installed lever-operated bypass and jaw release, complete with flash shield and sealing provision for all three-phase self-contained installations shown in Table A, page 50 of this Section. Refer to Section 12 for approved meter sockets.

b. Eversource will furnish, install, own and maintain the electric meter.

c. Where damage occurs or is anticipated, outdoor socket meters shall be protected by a suitable metal enclosure with locking provisions. Eversource will determine if a protective enclosure is required. This enclosure shall be furnished, installed, owned and maintained by you. Eversource will provide the lock.

2. Sequence of Meter and Service Equipment for Three-Phase Installations

All service equipment shall be installed on the load side of the self-contained meters, unless otherwise specifically approved or requested by Eversource. Section 11, Figure 10, (page 68) and Figure 12, (page 70).

The following ***exceptions*** are installations where the main disconnect with overcurrent protection shall be installed on the line side of the meter (cold sequence).

a. All 480 volt services. Section 11, Figure 11, (page 69) and Figure 12, (page 70).

b. All services fed from an Eversource network system. Contact us for detailed requirements, such as R type fuses, 100,000 amp fault current rating, and rejection clips. Section 11, Figure 11, (page 69) and Figure 12 (page 70).

3. Meter Socket Connections

Line side conductors are always connected to the top terminals of meter sockets and the load-side conductors to the bottom terminals. Section 11, Figure 21, (page 79). Service conductors for all underground-fed meter sockets shall enter from the bottom left knockout. Section 11, Figure 10, (page 68).

J. Instrument (Current and Voltage)

Transformer Installations

Refer to Table A, page 50 of this Section for services where this type of meter installation is required.

- Every installation which may require instrument transformers shall be referred to Eversource for approval before work is started. See Section 6.
- Your service will not be energized until the metering equipment has been inspected and approved by us.

1. Metering Equipment - Instrument Transformer Enclosure/Conduit/Socket

a. You shall furnish, install, own and maintain a metal enclosure for the instrument transformers, approved by us. This enclosure shall have provisions for an Eversource lock. Current and voltage (when required) transformers shall be installed in the same compartment. Refer to Section 12, item 7, (page 98) for transformer requirements. This enclosure is for the exclusive use of Eversource and non-company equipment is not allowed. All meters and all points of access to unmetered wiring on your premises shall have sealing provisions.

All disconnecting switches over 400 amps must have locking provisions for Eversource.

This enclosure may be one of the following:

- An individual cabinet for instrument transformers only.
- Combined entrance switch and instrument transformer enclosure with barriers to isolate the two compartments, Section 11, Figure 24, (page 82) and Figure 25, (page 83).
- A separate compartment in a metal-enclosed switch gear enclosure built from your prints, which Eversource has previously approved. Such enclosures shall include barriers to isolate the instrument transformer compartment. Wiring in the instrument transformer enclosure shall be limited to that pertinent to the meter installation.

b. **You shall furnish, install, own and maintain an approved, pre-wired combination meter socket and test switch. Entry through the hub opening at the top of the meter socket is not allowed.** See Section 12 for approved equipment. See Section 11, Figure 22, (page 80), Figure 24, (page 82) and Figure 25, (page 83 and 84).

c. You shall furnish, install, own and maintain approved conduit of specified size, minimum 1-1/2 inch, between the instrument transformer enclosures and the combination meter socket. The conduit must be continuous from the instrument transformer enclosure to the side or bottom of the meter socket test switch enclosure. The conduit must be a minimum of 6 inches and a maximum of 50 feet in length. When PVC conduit is used you shall install a separate equipment grounding conductor in this conduit according to the Code. See Section 11, Figure 22, (page 80), Figure 24, (page 82) and Figure 25, (page 83 and 84).

2. Meter, Instrument Transformers, Test Switch, Wiring Installation

a. Eversource shall:

- Provide for you to install, the instrument transformers.
- Provide, install and maintain the instrument transformer wiring.
- Provide, install, and maintain the electric meter.
- Maintain the test switch and instrument transformers.

b. You Shall:

- Pick up the instrument transformers from us.
- Eversource Office locations are listed in the front of this book.
- Provide an approved enclosure with adequate support and clearances for the current and voltage transformers and the service conductors.
- Install current transformers. **The secondary shorting devices on each transformer must be left in the closed position.** See Section 11, Figure 23, (page 81).
- Connect your line conductors to the current transformers so that the polarity mark on the current transformer is on the line side. Use approved connectors on 480/277 volt service, install the voltage transformers and current transformers. See Section 11, Figure 23,(page 81).

c. The connection of your equipment to or before the meter or to the secondary of the instrument transformers is prohibited. Any exceptions to this requirement must be approved by the local Meter Department.

3. Sequence of Meter and Service Equipment

a. For instrument transformer installations, you shall furnish, install, own and maintain a main switch or circuit breaker, for your load only, to be located on the line side of the instrument transformers. See Section 11, Figure 24, (page 82) and Figure 25, (page 83 and 84). This is referred to as cold sequence.

b. For all other installations, Eversource may grant an exception to the sequence. **Any exception will require review and written approval from us prior to the start of work.** The following are required:

- Eversource's power transformer(s) supplies a single customer.
- Eversource will provide, install, and maintain a primary supply load break device ahead of the power transformer(s) which will allow interrupting the supply to your single customer load. In spot network installations, network protectors may be used for this purpose.
- You shall be responsible to arrange for an outage within a reasonable time frame to allow for repairs in the event of a failure to our metering equipment.
- Your installation conforms to all Code requirements.

Submit your request for an exception to us early in your planning stage in order for Eversource to determine if the proposed installation will be approved.

c. **Fire pump services only**.

All fire pump services shall be hot sequenced and transformer rated. The CT's and VT's are to be installed in an approved Instrument Transformer enclosure.

K. Gold Service Options

1. If required, the customer shall provide a telephone line as required by the applicable rate.

2. The following telemetering options are available:

Option 1: Phone Automatic Meter Reading (AMR)

This very reliable option, which uses a dedicated telephone line, enables us to remotely read and collect your monthly billing determinates. The meter can also record load profile data – in intervals of 15 minutes.

Over time, this data will build an excellent profile of your load. The data from this accurate load profile is then provided to ISO New England (instead of estimated hourly data). ***Should the ability to access and communicate with the recording meter be lost, Eversource would revert to an estimation process for the reporting of your load to ISO New England.***

This option allows customers or energy suppliers to choose their billing cycle or specific monthly billing date (i.e., first day of the month, end of the month, 15th of each month or some other monthly schedule).

This option requires a dedicated, direct-dialed, and analog-type telephone line and RJ-11 jack, situated within 3" of the meter socket. The telephone line must be in working order with an assigned telephone number written legibly on the RJ-11 jack. This telephone number must be given to Eversource before a Phone AMR meter is installed. See our Fee Schedules for more information.

For an approved fee, Eversource will acquire, own, install and maintain the appropriate telephone access recording meter (phone AMR meter) and a meter interface enclosure. Eversource will relocate the RJ-11 telephone jack to be within the interface enclosure at the time of installation.

For some meter types (normally involving co-generators, distributed resources, etc.), an RJ31X jack or DSL modem or Ethernet connection may be required for proper meter communications. See Section 10 for locations.

Option 2: Load Pulse Outputs

Eversource offers this service to customers or energy suppliers who desire a real-time, analog pulse output from Eversource's meter. This meter has the ability to output load pulses that provide real-time, analog customer load information. Customers or energy suppliers may use this output to interface with their own energy monitoring or management systems, or with external telephone access recording equipment. See Section 11, Figure 26, (page 85).

For an approved fee, Eversource will acquire and install the appropriate Load Pulse metering equipment and meter interface enclosure. This real-time Load Pulse output is a dry-contact (Form A) arrangement that provides change of state of contact closure for a specific amount of kilowatt-hours.

Suppliers who choose Eversource load estimation but wish to own their own equipment for bill calculations or other services may purchase a Telemetering hourly recorder from the list of Eversource approved equipment suppliers. (Contact Meter-Services@eversource.com or call 800-882-2768 for a current listing of Eversource -approved Telemetering recorders.) The customer or supplier may choose the actual hourly load reporting by Eversource to ISO-NE in lieu of a load estimation process. You must provide a dedicated, direct-dialed and analog-type telephone line to the recorder to be accessible by Eversource. Note: both the recorder and the communications line may be removed at any time.

Should the ability to access and communicate with the recorder be lost, Eversource would revert to an estimation process for the reporting of your load to ISO New England.

Option 3: Load Pulse Outputs & Phone AMR

This option provides customers or suppliers with a combination of both the features and advantages of Phone AMR (Option 1) and Load Pulse output (Option 2). The pulse output feature provides the ability to connect into a customer's energy management system. Customers/suppliers must supply a dedicated, direct-dialed phone line. See Section 11, Figure 27, (page 86).

Option 99: Special Request Metering

Eversource will work with customers or energy suppliers to integrate new products into their own operations. Customers or energy suppliers may request the installation of a particular meter, or our communications device, as long as it meets all applicable standards and our requirements.

- Devices installed on our meter can not interfere with the operation of the meter.
- Communications devices or meters approved for installation by us shall be owned, controlled and maintained by Eversource.
- Customers or suppliers shall bear all costs associated with the new product approval process as well as the installation, ownership and maintenance of the communications device or meter.
- Customers or suppliers may purchase their own software to access their own meter data.

  For further requirements and/or requests for this option,
  E-mail: **Meter-Services@eversource.com** or Call: (800)-882-2768.

L. Platinum Service Options

Eversource's premier service offers "Phone AMR" customers (option 1 or 3 in Gold Service Options) daily access to interval data through the internet. Energy Profiler Online operates through interactive software on the web. Customers pay an annual fee and gain access to their energy usage data via a personalized password and ID. Facility managers can download the information and use it to determine peak demand and manage their long-term energy usage. This is a valuable service for customers preparing for restructuring and comparing licensed suppliers, since suppliers will need to know the hourly demands.

With Energy Profiler Online:

- Get cost-effective access to data with no special software
- See individual meters, accounts, or aggregations
- Download data to Excel, Access, Lotus 1-2-3, or Dbase
- Compare multiple meters, multiple time periods
- Maintain up to three years of historical data
- Use standard web browsers
- View calculated data and daily or monthly demand and usage
- Point and click to select various graphs and reports

How to get Online

Customers or suppliers should contact their Eversource Account Executives or EPO Admin Team at (EPOAdmin@eversource.com).

Table A - Available Metering

Supply Characteristics			Self Contained Metering			Instrument Transformer Metering		
			Total Name Plate			Total Name Plate		
Nominal Voltage	Phase	Wire	Rating of Disconnects	Reference	Figure	Rating of Disconnects	Reference	Figure
120/240	1	3	400 Amps and less	Sec 8 pg 40-42 Item H	Sec 11 Pg 78 Fig 17	Over 400 Amps	Sec 8 Pg 44-45 Item J	Sec 11 Pg 83-86 Fig 22-25
120/208	1	3	400 Amps and less	Sec 8 pg 40-42 Item H	Sec 11 Pg 78 Fig 17	Not Available		
208Y/120	3	4	400 Amps and less	Sec 8 pg 42 Item I	Sec 11 Pg 82 Fig 21	Over 400 Amps	Sec 8 Pg 44-45 Item J	Sec 11 Pg 83-86 Fig 22-25
480Y/277	3	4	400 Amps and less	Sec 8 Pg 42-43 Item I	Sec 11 Pg 82 Fig 21	Over 400 Amps	Sec 8 Pg 44-45 Item J	Sec 11 Pg 83-86 Fig 22-25
Fire Pump	3	4	400 Amps and less	Sec 8 pg 42-43 Item I Sec 6 Pg 27 Item 6	Sec 11 Pg 82 Fig 21	400 Amps or greater	Sec 8 Pg 6 Item J Sec 6 Pg 27 Item 6	Sec 11 Pg 83-86 Fig 22-25

Section 9

Your Utilization Equipment

EVERSOURCE

SECTION 9: Your Utilization Equipment

A. General

1. Eversource reserves the right to disconnect your supply upon proper notice when your equipment interferes with the operation of any components of our system or the electric supply to others. You must consult with us in advance of making any commitments for large motors, welders, x-ray machines, or other equipment which may have a high instantaneous electric demand.

2. The operation of equipment having a relatively high load of short duration, such as welding equipment, x-ray machines, elevators, and compressor motors, may make it necessary for us to install special or larger than usual facilities in order to render satisfactory supply. In such cases, you shall pay an additional charge, over and above the regular rate, based on the cost of the additional facilities required.

3. All loads shall be electrically balanced. On three-phase supply, single-phase loads shall be as evenly divided as possible between each of the phases. On single-phase supply, the load should be evenly divided between the two energized conductors and the neutral.

4. Street light equipment not owned by Eversource comes under the jurisdiction of the local building inspectors. Consult local building officials and the National Electrical Code for requirements. Street light equipment owned by Eversource will follow the requirements of the National Electrical Safety Code.

B. Motor Installation

1. For most efficient operation, motors over ¾ horsepower in size should ***not*** be operated on 120 volt systems.

2. You should consult with us to determine if ***three-phase is available*** before planning work and purchasing utilization equipment. Three-phase supply is not normally provided for residential use or for commercial and industrial use where all motors are smaller than 7-1/2 horsepower. Exceptions may be made where three-phase is available from existing secondary distribution facilities or where the total load justifies three-phase.

   Motors should be nameplate rated at 208 volts for use on a 208 volt system. Motors rated at 230 volts may not operate properly on a 208 volt system.

C. Motor Starting Current

1. The starting current of a motor is much greater than the normal running current. The magnitude differs with the motor size and type. While this starting current exists for only a short time, the frequency with which it occurs is a major cause of supply disturbances.

2. ***Before*** installing single-phase motors over 3 horsepower or three-phase motors over 20 horsepower, consult us for assurance of adequate supply.

3. The maximum locked-rotor current anticipated shall be the sum of the starting currents of all motors which are started simultaneously.

4. Eversource will specify motor starting limitations. When required, reduced voltage starters or other devices must be furnished, installed, owned and maintained by you.

D. Motor Protective Devices

1. All motors should be controlled and protected from damage that could be caused by continued operation under abnormal conditions such as single phasing. Eversource is not responsible for equipment damage. ***You should consider installing a single phasing protection device on each three-phase motor.***

2. There are advantages to incorporating ***timed under-voltage relays*** for motors on certain applications. Due to the normal, rapid reclosure of our supply circuit breakers, many manual restarts can be avoided by delaying the opening of the motor contactor. Conversely, some devices or processes require disconnection immediately upon loss of voltage in order to protect the operation involved.

E. Power Factor

1. Where any equipment having low power factor characteristics is installed, it is to your advantage to furnish, install, own and maintain corrective equipment which will result in an overall power factor approaching unity. ***Customers installing capacitors to improve the power factor of their loads should contact us so advice may be given regarding supply system characteristics and essential coordination details*****.** This will improve your voltage regulation and reduce the size of the attendant electrical equipment**.**

F. System Disturbances

1. Certain electronic equipment, such as computers and micro processors, and some manufacturing processes, are extremely sensitive to and can be damaged by disturbances which are inherent in all supply systems. Therefore, you must furnish, install, own and maintain equipment ***needed to protect your operations.***

2. Secondary lightning (surge) arresters may be furnished, owned, installed and maintained by you on the load side of your protective devices.

Section 10

Your Alternate
Electric Energy Sources

EVERSOURCE

A. Non-parallel Generation (Standby or Emergency)

When you have on site generation that will never run in parallel with the Eversource system, (called OPEN TRANSITION) you must provide an adequately sized double-throw transfer switch that is on the load side of the main disconnect switch and the metering equipment. This transfer switch is of a "break before make" style. The transfer switch shall open all ungrounded conductors from either the normal supply or alternate supply before the connection is made to the other supply. The installation shall be in accordance with the requirements of the applicable Codes. Section 11, Figure 30, (Page 89).

B. Parallel Generation

A Closed Transition "make before break" generating facility must be synchronized with the electric power system prior to transfer occurring. When you are considering any on site generating facilities that will operate in parallel with the Eversource system you must follow all of the applicable requirements of this booklet in addition to the applicable "Guidelines for Generator Interconnections" and applicable technical specifications. Any customer or business interconnecting a generator must also file an interconnection application and receive approval from Eversource prior to operating the generator. A copy of the guidelines can be found on-line at: ***https://www.eversource.com/Content/ct-/residential/programs-services/customer-generation.***

A copy of the guidelines can also be requested by phone, email or US Mail:

Phone: **1-866-324-2437**
Email: **distributed_resources@eversource.com**

US Mail: Eversource
Distributed Resources Group
P.O. Box 1409

C. Net Metering

Renewable generating facilities may qualify for net metering; which is a method of measuring the energy consumed and produced by a customer's generating facility. Net metering allows a customer to reduce the amount of energy purchased from an energy supplier and to provide a value for the excess energy (exported energy to the Grid) produced by your Generator.

- **Please Note: Under no circumstances shall the generator be interconnected inside the meter socket or the metering instrument transformer compartment.**

Please refer to our website for more information regarding Net Metering:

http://www.eversource.com/generatorinter/netmetering.aspx

For information regarding Net Metering Rates and Tariffs, please contact the Distributed Resources Department at: 1-866-324-2437.

1. How to read your net meter:

a. The energy supplied by Eversource when your load (consumption) exceeds your amount of generation is captured on ID 04 of your net meter.

(ID 04 = Total cumulative kWh delivered by Eversource on the meter.)

b. The energy received by Eversource when your generation exceeds your load (excess Generation) is captured on ID 10 of your net meter.

(ID 10 = Net total cumulative kWh received by Eversource on the meter.)

Section 11

ILLUSTRATIONS

EVERSOURCE

FIGURE 1
Temporary Electric Service Conduit System

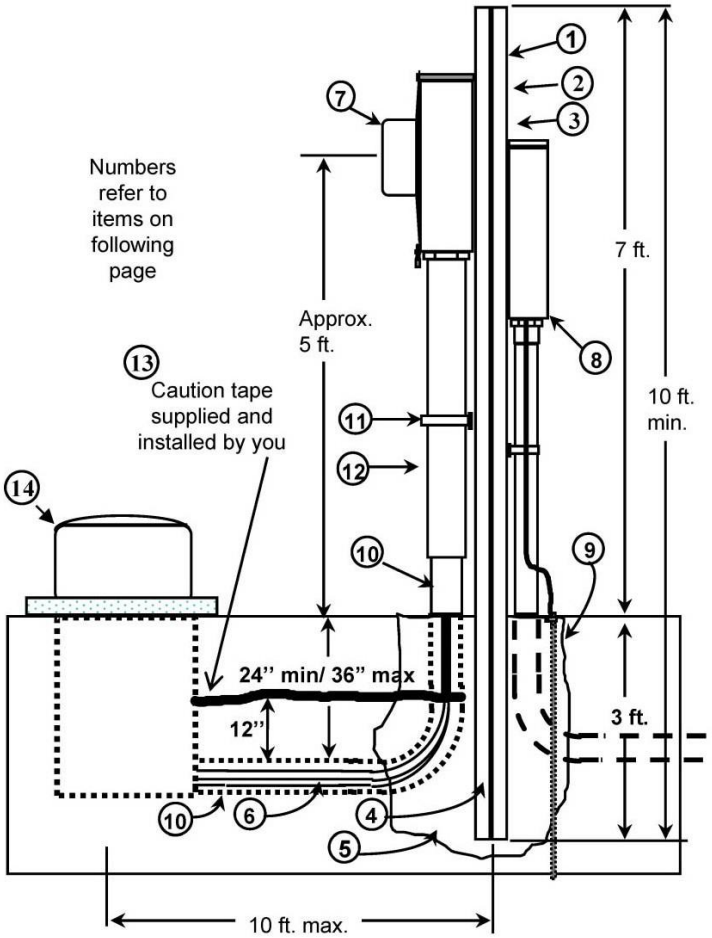


FIGURE 1 NOTES

Temporary Electric Service, Conduit System

We will install our conductors for a temporary electric service that is erected by you and meets the requirements listed below.

NOTE: All conduit shall be inspected by the local municipal authority prior to backfilling.

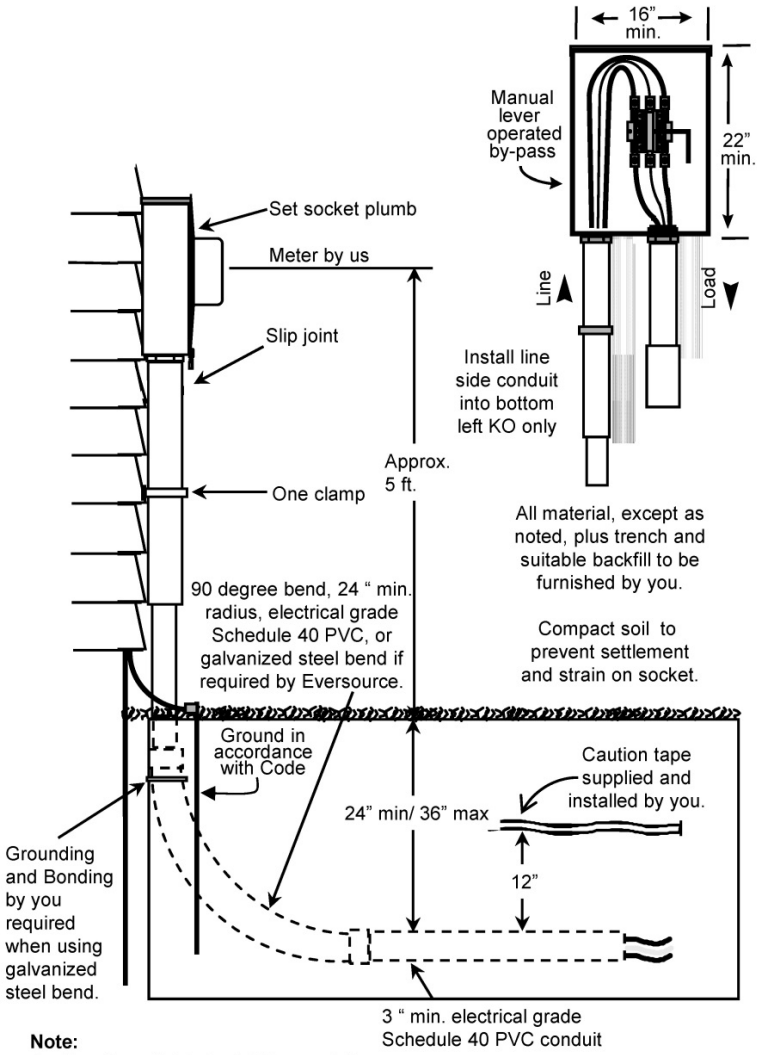
1. Location of temporary service timber is to be specified by us.
2. The timber is to be structural grade fir or pine with cross section not less than nominal solid 6" x 6" or two 2" x 8" spiked together on 8" centers.
3. The temporary service timber is to be at least 10 ft. long.
4. The temporary service timber is to be set a min. of 3 ft. in firm ground with well-tamped backfill.
5. There is to be no excavation near the temporary service timber which might reduce its stability.
6. Service cable by us.
7. Approved manual lever operated by-pass meter socket is to be installed approximately 5 ft. above ground.
8. Outdoor type service equipment rated in accordance with NEC Sections 230.79 and 230.90 is to be installed on load side of meter socket and within 12" of approved meter socket. Install ground fault interrupter protection.
9. Ground in accordance with code.
10. Electrical grade Schedule 40 PVC conduit supplied and installed by you. All conduit will be listed and labeled for Direct Buried and above ground use.
11. Pipe strap or clamp.
12. Minimum 3" slip joint required.
13. You will provide and install the caution tape which meets the requirements of Section 16-345-3 of the Regulations of Connecticut State Agencies. This tape shall be red with the following continuous printed warning message printed in black;

    "Caution - Electrical Line Buried Below"
    Metallic Foil tape is NOT acceptable.

14. Do not enter or open existing electrical structures such as handholes, transformer pads or switch vaults, when installing the pulling line. Call Eversource at 1-800-286-2000 or 947-2000 in Hartford and ask for the Field Engineering Designer in the project area

FIGURE 2

Conduit Service: House End



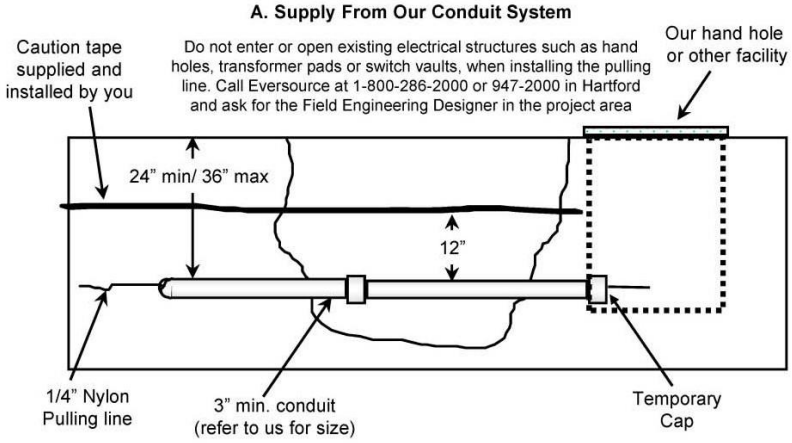
Note:

1. Provide suitable backfill (no rocks)
2. All conduit shall be inspected by the local municipal authority prior to backfilling.

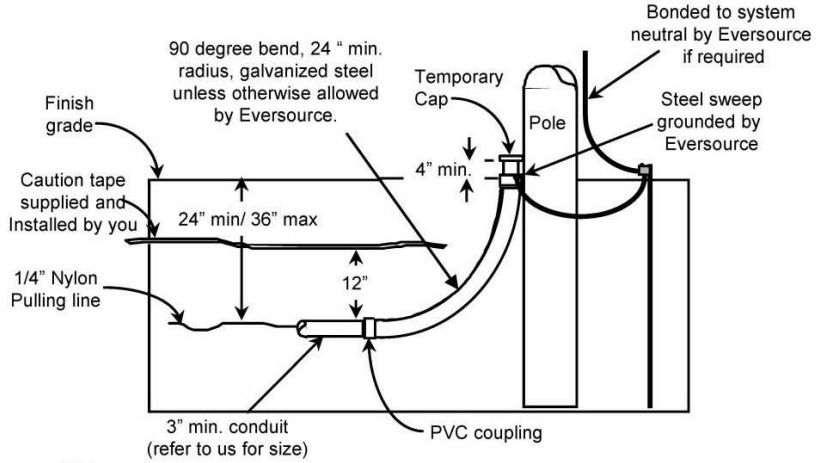
FIGURE 3

Conduit Service: Supply End

A. Supply From Our Conduit System



B. Supply From Our Overhead System



Note:

1. Provide suitable backfill (no rocks)
2. All conduit shall be inspected by the local municipal authority prior to backfilling.
3. Electric service sweeps shall be located on the pole side away from oncoming traffic.

FIGURE 4
Temporary Service From Overhead System`

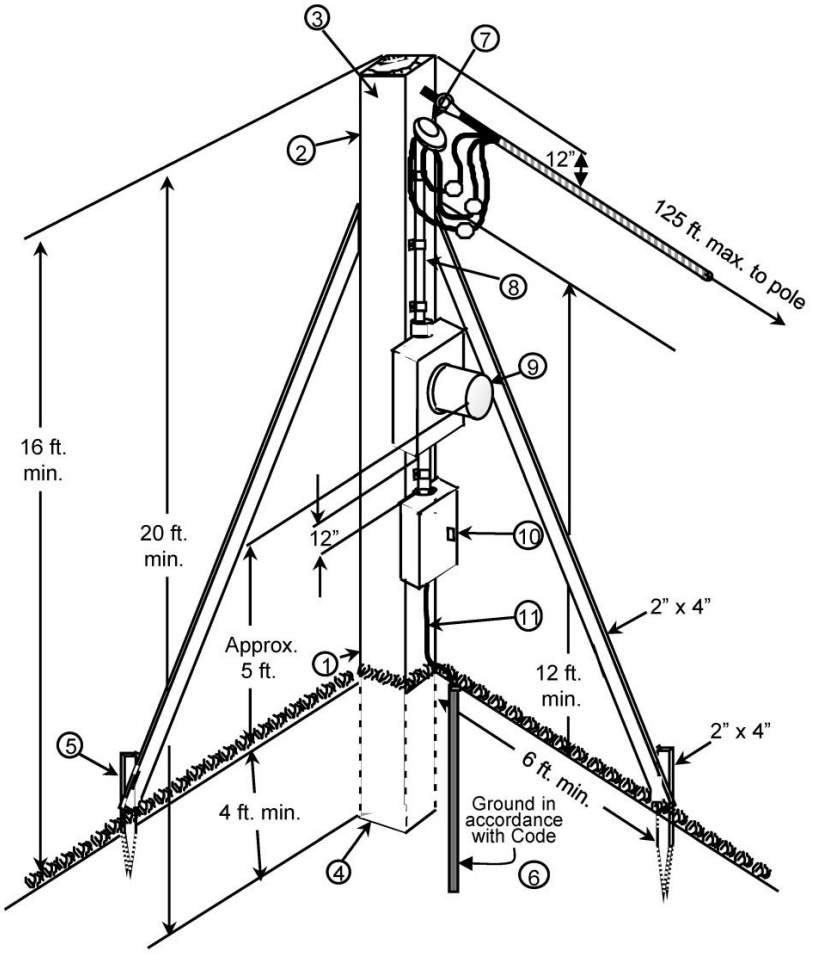


FIGURE 4 NOTES

Temporary Service From Overhead

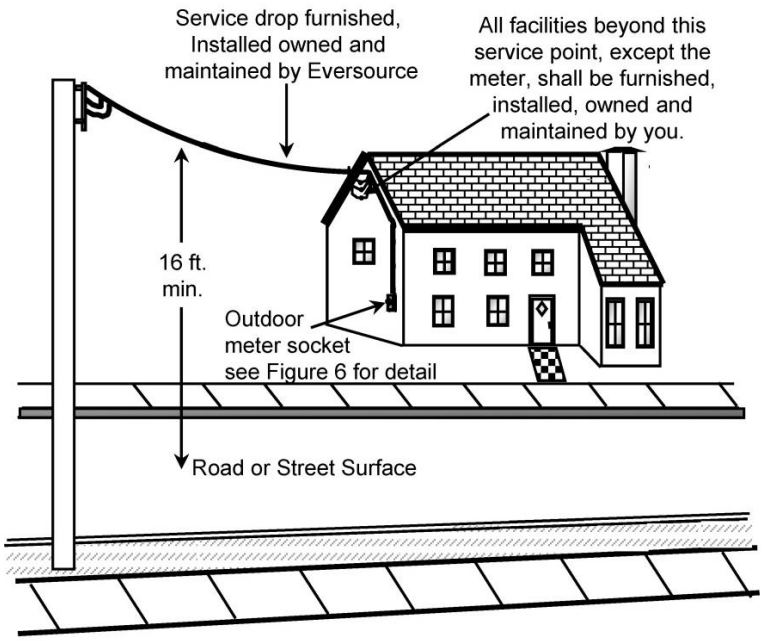
We will deadend our service drop for temporary electric service on a pole or timber which is to be erected by you and is to meet the requirements listed below;

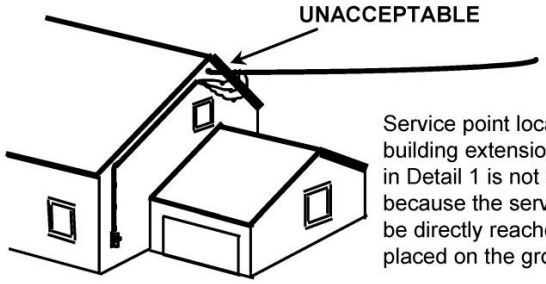
1. Location of temporary service pole is to be specified by us such that the service span does not exceed 125 feet measured from our pole to your pole. If the service drop will not be transferred to a permanent location there will be additional charges.
2. If a timber is used, it is to be structural grade fir or pine with cross section not less than nominal 6" x 6" or four 2" x 6" spiked together on 8" centers.
3. The temporary service pole is to be 20 feet minimum. Additional length may be required in order to provide service drop clearance of 16 feet min. over the road and driveway and 12 feet minimum over other areas.
4. The temporary service pole is to be set a minimum of 4 feet in in firm ground and well compacted backfill.
5. The temporary service pole is to be adequately braced to support at its top both a man on a ladder and a service drop tension of 600 pounds. A minimum of two, 2" x 4" braces at right angles to each other, with one in line with the service drop, are to be installed. Braces are to be well spiked flat against the side of the pole at least 12 ft. above ground and to solidly driven 2" x 4" stakes 3 ft. minimum located a minimum 6 ft. from the service pole.
6. There is to be no excavation near the temporary service pole or its braces which might reduce its stability.

Approved electric service is to be installed to meet the following requirements and to be in accordance with the code(s).

7. A weatherhead is to be installed approximately 12" from top of pole and 14 ft. minimum above ground.
8. Service entrance conductors are to be a minimum 3-wire no. 2 aluminum, securely fastened to the pole.
9. An approved manual lever operated by-pass meter socket is to be installed approximately 5 ft. above ground on the side nearest our pole.
10. Outdoor type service equipment rated in accordance with the NEC is to be installed on load side of meter socket within 12" there of. Ground fault interrupter protection shall also be installed.
11. Ground in accordance with NEC. The grounding conductor electrode connection shall be made at an accessible location in the service equipment and not in the meter socket.

FIGURE 5
Overhead Service



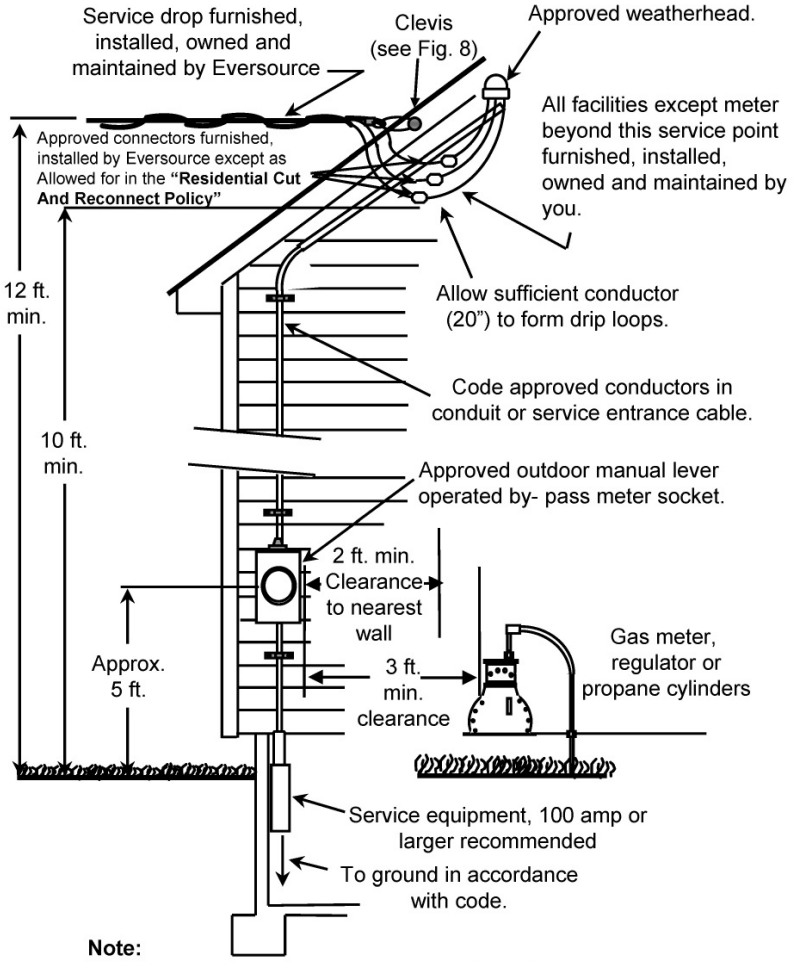


Service point located above building extension as represented in Detail 1 is not acceptable because the service point cannot be directly reached from a ladder placed on the ground.

Detail 1

FIGURE 6

Overhead Service Entrance Facilities

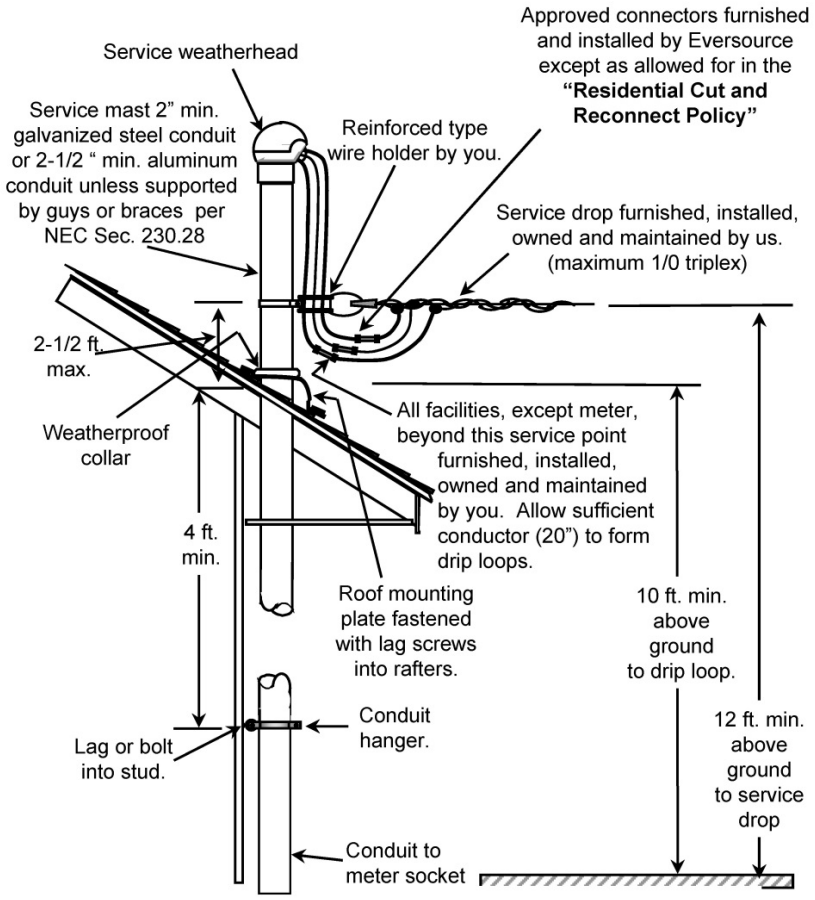


Note:

A. Electrical contractor must mark stud location for Eversource service wire holder.

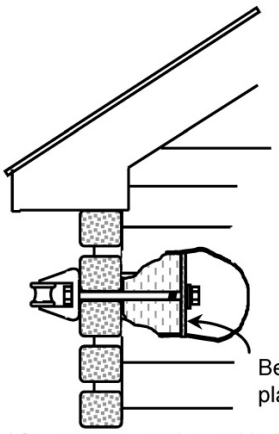
B. For service attachment points exceeding 20 ft. in height contact us.

FIGURE 7
Service Mast



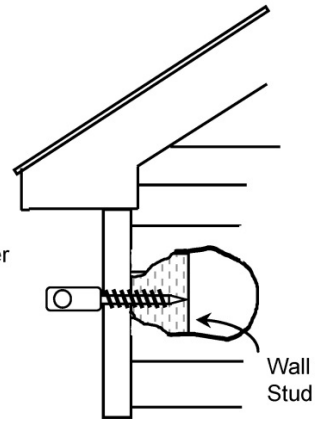
Note:
Only power service drop conductors shall be permitted to be attached to a service mast (per NEC Section 230.28).

FIGURE 8
Service Attachments



Notes:

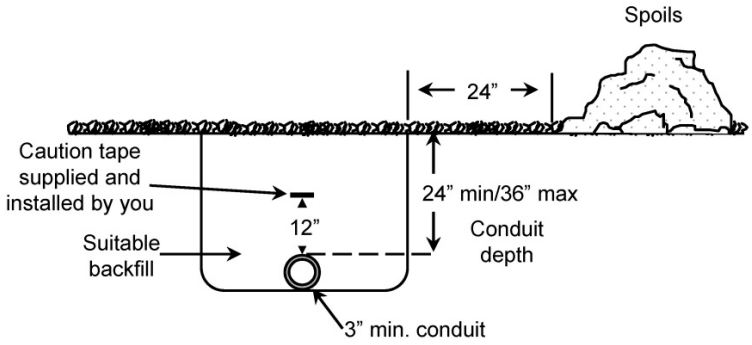
A. Required for masonry and metal buildings
B. Will be required for large and/or long services. (ex. 1/0 service or service greater than 140 ft.)



Note:

Electrical contractor must mark stud location for Eversource service wire holder.

FIGURE 9
Trenching Requirements



Notes:

A. OSHA standards require that spoils shall be placed 24” from edge of trench.

B. Suitable backfill shall not contain ash, cinder, shell, frozen material, loose debris or stones larger than 2” max. dimension.

C. All Electrical grade Schedule 40 PVC conduit will be listed and labeled for Direct Buried and above ground use.

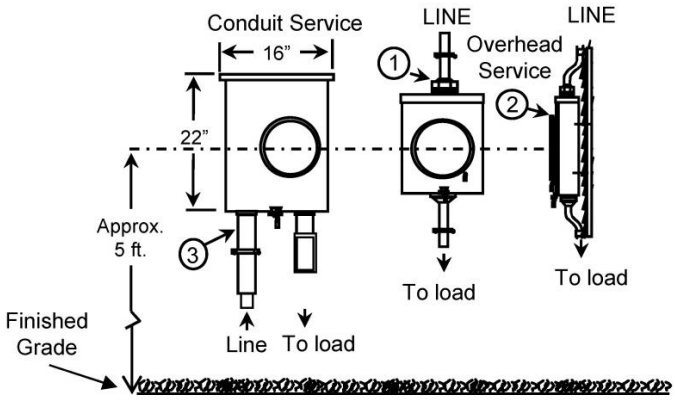
D. **Horizontal Clearance** - shall be 12 inches minimum or more as necessary to permit access for maintenance of all facilities without damage to the others. This includes private wiring. Fuel (Gas and Oil) and Water Lines shall be no closer than 18 inches in all directions.
Vertical Crossing Clearance - shall be so constructed and supported that upper facility will not transfer harmful load onto any lower facility. There shall be adequate vertical clearance to permit access for maintenance of all facilities without damage to the others. In general, 12 inches is considered adequate separation, but the parties involved may agree to a lesser separation. Fuel (Gas and Oil) and Water Lines shall be no closer than 18 inches in all directions.

E. You will provide and install the caution tape which meets the requirements of Section 16-345-3 of the Regulations of Connecticut State Agencies. The tape shall be red polyethylene, 6” wide X 4 mils thick with black lettering of a minimum letter size of 120 Helvetica Light. It shall contain the following continuous printed warning:
“Caution - Electric Line Buried Below”
Metallic Foil tape is NOT acceptable.

F. All conduit shall be inspected by the local municipal authority prior to backfilling.

FIGURE 10

Self-Contained Meter Socket Sequence and Mounting Arrangement



1. Weatherproof joint with removable or non-removable hub.
2. Socket shall be mounted plumb. On clapboard shingle siding, socket shall be located on the high point of two clapboards.
3. Slip joint for conduit service shall be installed on left side of meter socket only.

Notes:

A. All network and 480Y/277 volt services will require a main disconnect ahead of the meter (cold sequence).

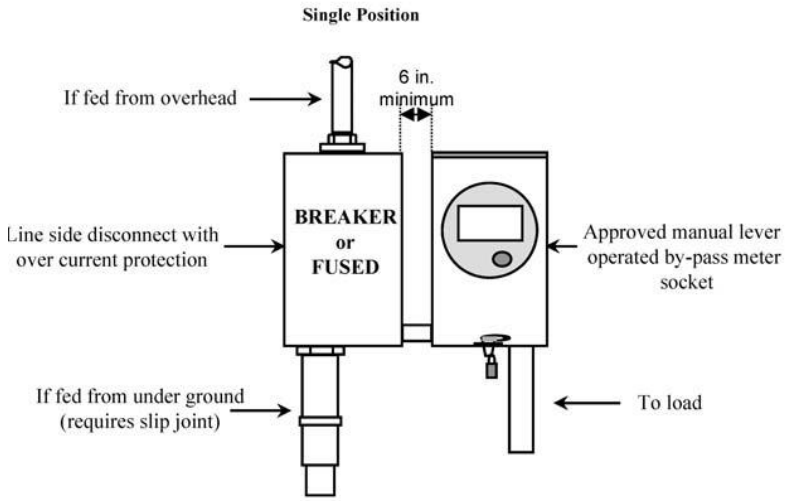
B. Self-contained meter sockets are required for:
   - Single-phase 120/240 volt, 400 amp service entrance capacity or less.
   - Single-phase 120/208 volt, 400 amp service entrance capacity or less.
   - Three-phase 400 amp service entrance capacity or less.

C. All equipment (except meter) furnished, installed, owned and maintained by you.

D. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket. For Cold Sequenced service see p 39 Section 8.E.1a,

FIGURE 11

Sequence of meter and service equipment for self-contained 208Y/120v Network services and 480Y/277v services (Cold Sequence - Refer to section 6.B)

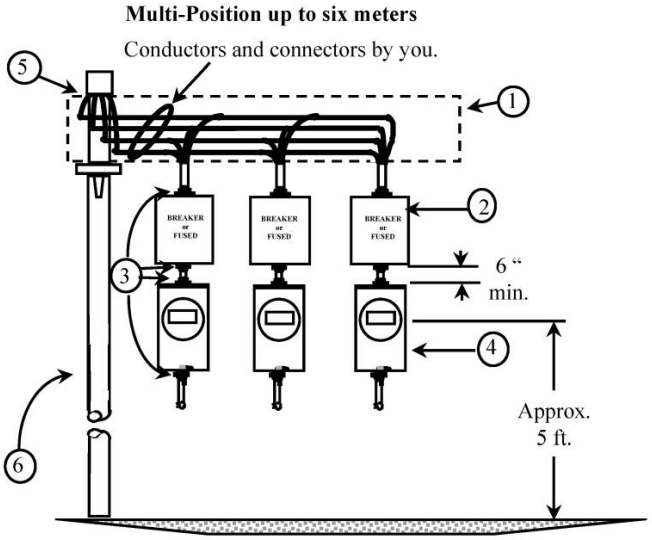


Notes:

A. All wiring beyond the service point installed, owned and maintained by you.
B. An approved lever operated manual bypass with jaw release and flash shield is required.
C. Maintain clearances as specified in Section 8.C.2.
D. Line side disconnect must be adjacent to the meter socket and accessible to Eversource at all times. For services feed from the underground network only, see exemption on p 41, Section 8.H.2
E. For cold sequence services only, the equipment grounding conductor is permitted to travel through the meter socket.
F. Provisions must be made to accommodate Eversource's conductors. A sealable pull box may be required. Consult with Eversource prior to installation.

FIGURE 12

Sequence of meter and service equipment for three-phase self-contained 208Y/120v Network services and 480Y/277v services (Cold Sequence – Refer to section 6.B)



1. Wiring trough with suitable connectors for us to terminate our conductors. Sealing provisions are required.
2. Line side disconnect with over current protection, 400 amps or less.
3. Weatherproof joints.
4. Approved manual lever operated by-pass meter socket.
5. Line, if supply is overhead and total ampacity is 400 amps or less.
6. Line, if supply is conduit system (a slip joint is required .for outside installations)

Notes:

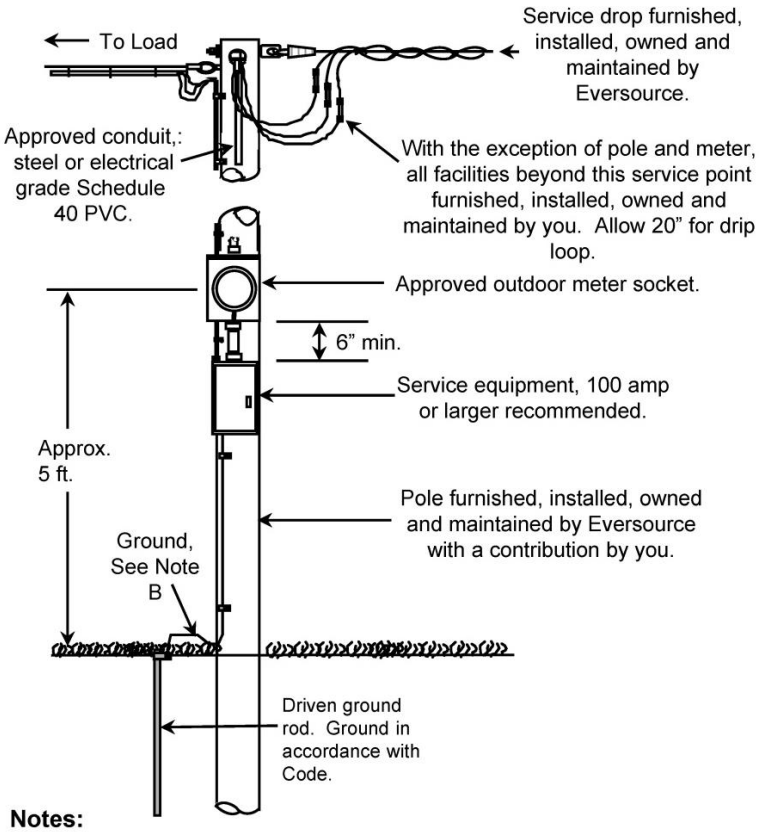
A. Each area serviced must be permanently marked on the door with its unique, permanent identification. This unique identification must be permanently marked on the associated meter socket, on meter socket cover and inside load center before the meter will be installed.

B. Maintain clearances as specified in Section 8.C.2.

C. Line side disconnect must be adjacent to the meter socket and accessible to Eversource at all times. For services feed from the underground network only, see exemption on p 41, Section 8.H.2

FIGURE 13

Meter Installation-Private Property Pole
Your Conductors Overhead



Notes:

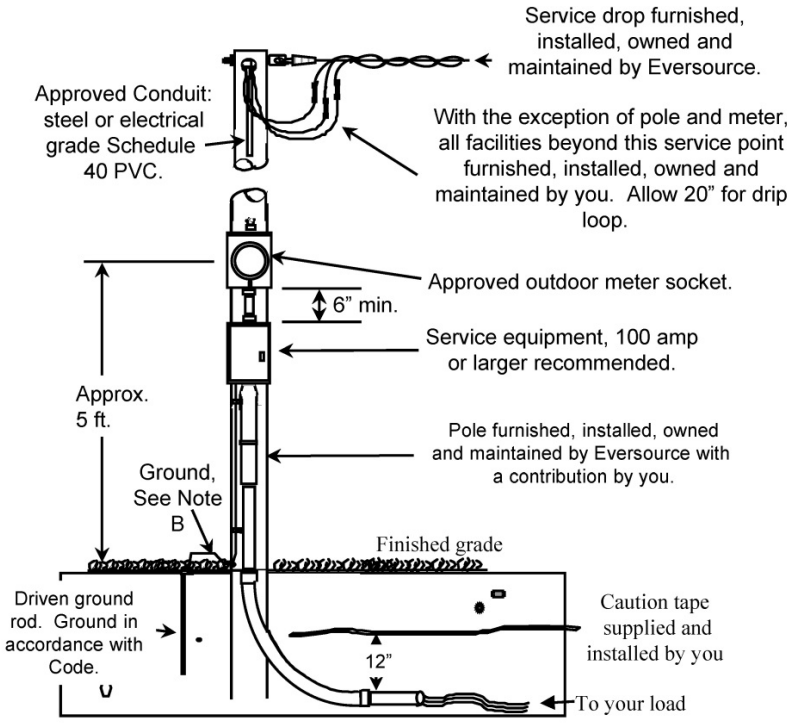
A. Only one meter to be installed on pole

B. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket.

C. Single-phase 120/208 volt Network, Three-phase 208Y/120 volt Network and Three-phase 480Y/277 volt services shall be cold sequenced.

D. The customer is responsible for relocating their equipment if the pole is replaced.

FIGURE 14
Meter Installation-Private Property Pole
Your Conductors Underground



Notes:

A. Only one meter to be installed on pole.

B. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket.

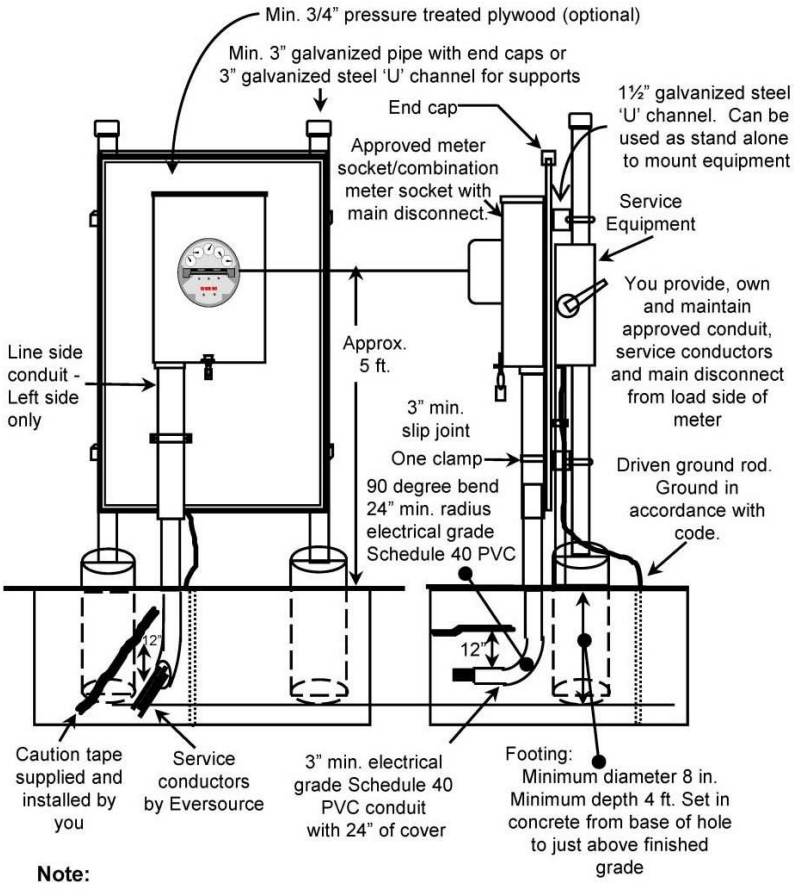
C. Single-phase 120/208 volt Network, Three-phase 208Y/120 volt Network and Three-phase 480Y/277 volt services shall be cold sequenced.

D. The customer is responsible for relocating their equipment if the pole is replaced.

FIGURE 15

Permanent Pedestal Service - Site Built

(Manufactured Meter Pedestals May Be Used - Refer To Approval List)



Note:

Single-phase 120/208 volt Network, Three-phase 208Y/120 volt Network and Three-phase 480Y/277 volt services shall be cold sequenced.

FIGURE 16
Manufactured Pedestal Service
(Typical)

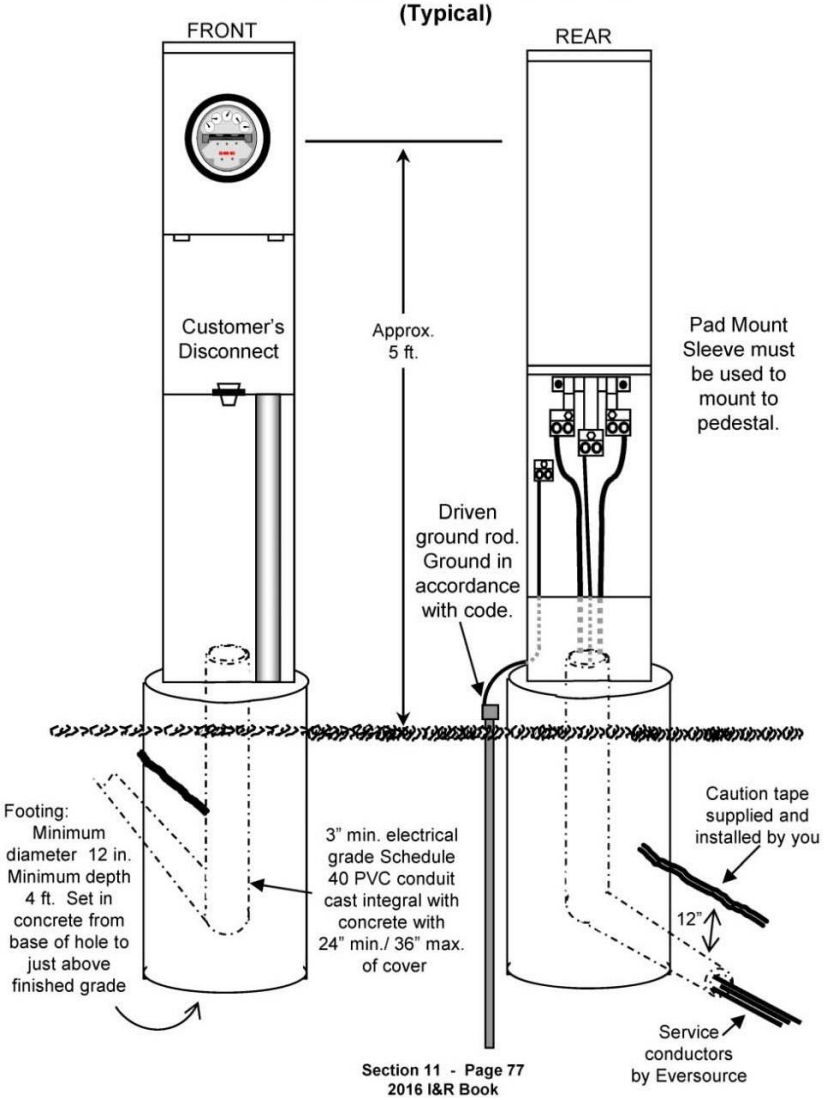
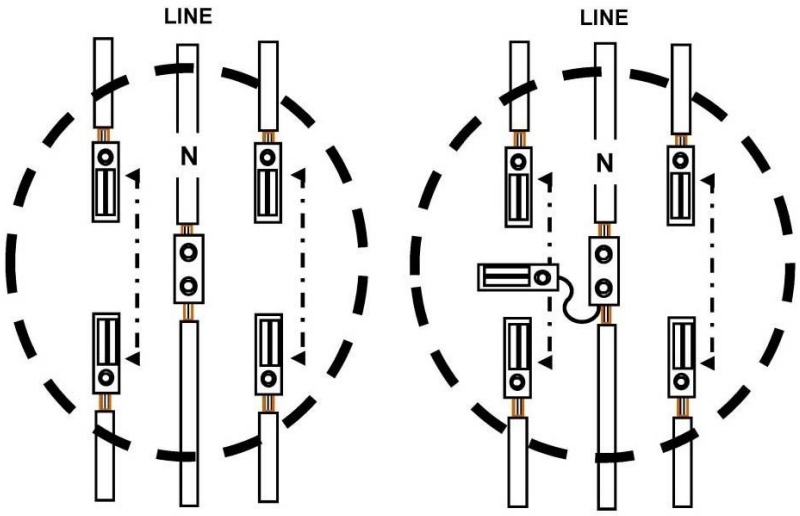


FIGURE 17

Single-Phase: Self-Contained Metering Connections (Typical)



Load
120/240V
Single-phase, 3-wire
4 terminal meter socket
400 amp or less

Load
120/208V
Single-phase, 3-wire
5 terminal meter socket
400 amp or less

Notes:

A. An approved lever operated manual bypass is required on sockets for all commercial/industrial and residential services, 100 amp may be supplied with non-locking jaws, greater than 100 amp must be supplied with locking jaw.

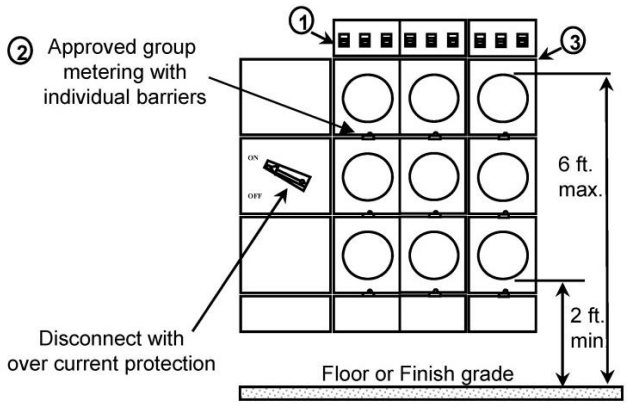
B. When the fifth terminal kit is used, install a No. 12 copper conductor, with white insulation, between the fifth jaw in the 9 o'clock position and the neutral lug/bar.

C. **For the Underground manhole areas of Hartford:** Any new or upgraded service (200 amps or less) in this city, must have a 5 terminal meter socket installed even if 120/240V service.

D. A five terminal meter socket is acceptable for a 120/240 volt service.

FIGURE 18

Modular Meter Panels for Group Metering Single-Phase 120/240v or 120/208v Three-Phase 208Y/120v Network Three-Phase 480Y/277v



1. Service load disconnects may be located above, below or beside meter.
2. Individual meter sockets with **individual barriers between meter positions** as well as provisions for seals and barrel locks.
3. Single-phase 120/208 volt Network, Three-phase 208Y/120 volt Network and Three-phase 480Y/277 volt services shall be cold sequenced.

Notes:

A. For 480Y/277v group metering installations consult your local Eversource office.

B. Sketch of meter panel arrangements must be submitted to Eversource for approval prior to layout and installation of equipment.

C. Each store, office. apartment or area serviced must be permanently marked on the door with its unique, permanent identification. This unique identification must be permanently marked on the associated meter socket, on meter socket cover and inside load center before the meter will be installed.

D. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket.

E. Maximum height at top of meter is 6 ft.

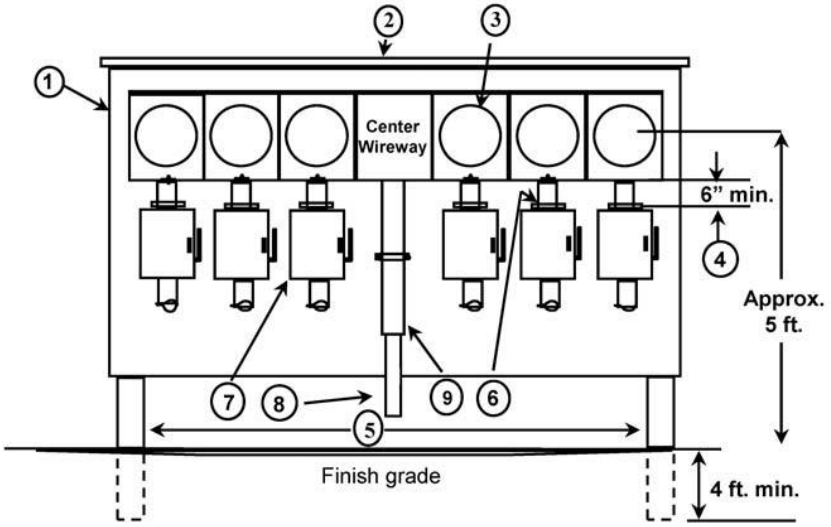
F. Minimum height at bottom of meter is 2 ft. above floor or finish grade.

G. An approved lever operated manual bypass is required on sockets for all services.

H. Meter panels must be protected by barriers if there is a potential for damage by vehicles.

FIGURE 19

Single-Phase: Self-Contained Metering to Multiple Mobile Homes up to six meters



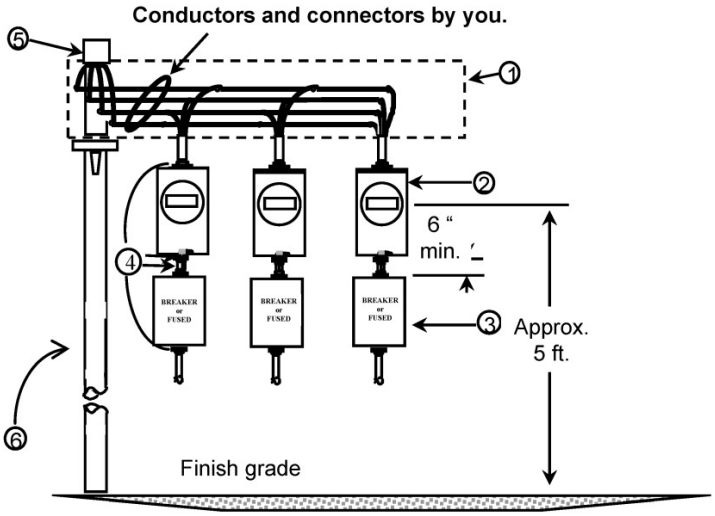
1. Painted 3/4" exterior plywood meter board.
2. Upper edge trimmed to prevent seepage into laminations.
3. Pre-bussed, gang meter sockets marked inside and on cover of socket with mobile home identification. All new mobile homes intended as a dwelling unit will be supplied with 120/240 volts. (Per NEC Section 550.30).
4. Minimum 6 " space between meter socket and service equipment.
5. Suitable support to be galvanized steel in concrete.
6. Weatherproof joint.
7. Service equipment 200 amp or less for each mobile home marked with mobile home identification.
8. Electrical grade Schedule 40 PVC, or galvanized steel conduit. Refer to us for size. Service may be overhead or underground in conduit. Total installed service entrance capacity shall not exceed 400 amp if fed from an overhead service.
9. UL listed slip joint **with one clamp**.

Notes:

Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket. Grounding in the center wire way is permissible.

FIGURE 20

Self-Contained Outdoor Meter Socket Installation- Multi-Position Up To Six Meters



1. Wiring trough with suitable connectors for us to terminate our conductors. Sealing provisions are required.
2. Combination meter socket and disconnect is acceptable.
3. Service equipment, 400 amp or less.
4. Weatherproof joints.
5. Line, if supply is overhead and total ampacity is 400 amps or less.
6. Line, if supply is conduit system.

Notes:

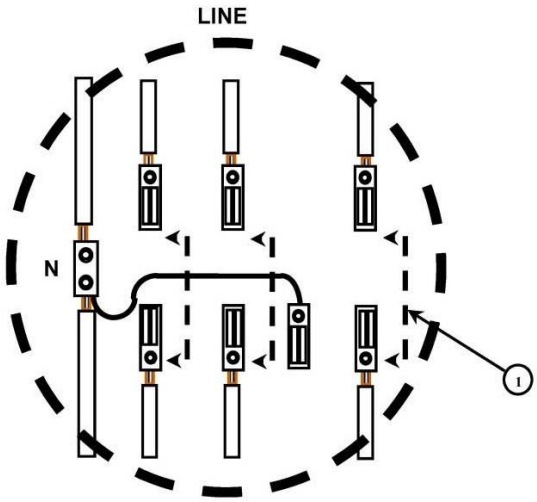
A. Each store, office, apartment or area serviced must be permanently marked on the door with its unique, permanent identification. This unique identification must be permanently marked on the associated meter socket, on meter socket cover and inside load center before the meter will be installed.

B. An approved lever operated manual bypass with jaw release and flash shield is required for meter sockets greater than 100 amp. An approved lever operated bypass, non jaw release, with flash shield may be used on a 100 amp meter socket.

C. Maintain clearances as specified in Section 8.C.2.

FIGURE 21

Three -Phase: Self-Contained Metering Connections



Load
208Y/120v
or
480Y/277v
Three-phase, 4-wire
7 terminal meter socket
400 amp or less

1. An approved lever operated manual bypass with jaw release and flash shield.

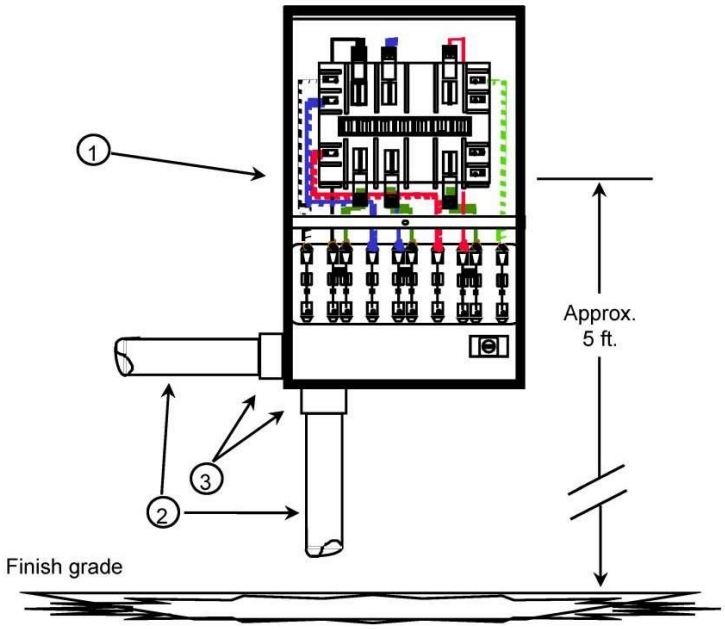
Notes:

A. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at an accessible location in the service equipment and not in the meter socket. The grounding electrode conductor shall not be run through the meter socket.

B. All three-phase network and 480Y/277 volt services will require a main disconnect with over current protection ahead of the meter (Cold Sequence).

FIGURE 22

Outdoor Instrument Transformer Meter Socket with Test Switch



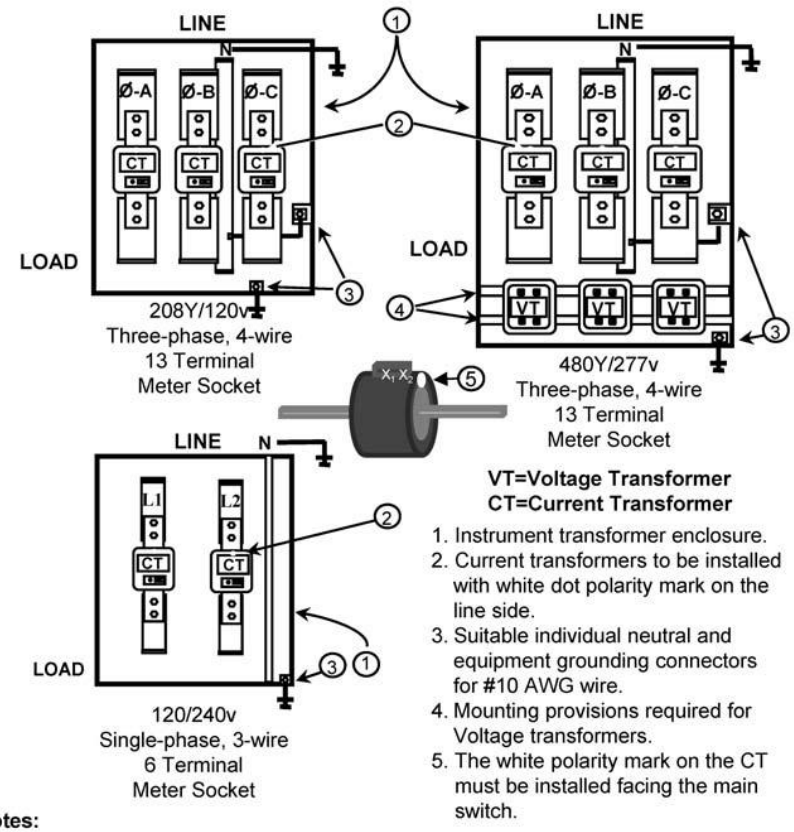
1. Approved pre-wired meter socket with test switch.
2. Electrical grade Schedule 40 PVC, galvanized steel conduit to be minimum of 1-1/2" diameter, minimum length 6", maximum length 50 ft. If PVC, provide and install an equipment grounding conductor (No. 10 wire or larger). Conduit is to be installed in the bottom or side of meter socket only - no top feed is allowed.
3. Weatherproof joint.

Notes:

A. Consult Eversource before starting design of any job where an instrument transformer installation is required.

B. See Figure 25 for meter and service equipment sequence.

FIGURE 23
Instrument Transformer Connections



VT=Voltage Transformer
CT=Current Transformer

1. Instrument transformer enclosure.
2. Current transformers to be installed with white dot polarity mark on the line side.
3. Suitable individual neutral and equipment grounding connectors for #10 AWG wire.
4. Mounting provisions required for Voltage transformers.
5. The white polarity mark on the CT must be installed facing the main switch.

Notes:

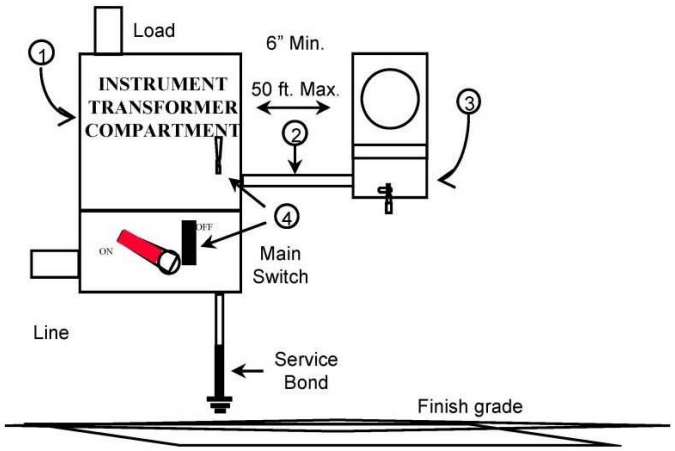
A. Instrument transformers are required for the following:
- All single-phase 120/240 volt over 400 amp service entrance capacity.
- All three-phase 4 wire over 400 ampere capacity

B. Where multiple conductors or a single conductor over 500 kcmil is used, refer to list of approved instrument transformer mounting equipment in Section 11.

C. Install a grounding connector and neutral connector in the Instrument Transformer enclosure.

D. Service line and load side must be marked or labeled in the instrument transformer compartment.

FIGURE 24
Combination Main Switch and Instrument Transformer Enclosure
(Cold Sequence – Refer to section 6.B)



1. If located outdoors, enclosure shall be of weatherproof design.
2. Electrical grade Schedule 40 PVC or galvanized steel conduit 1-1/2" min. diameter, 6 " min. length and 50 ft. max. length. If PVC, provide and install an equipment grounding conductor (No. 10 wire or larger).
3. Approved pre-wired meter socket with test switch.
4. Must have a locking provision for the main breaker and instrument transformer enclosure.

Notes:

A. Consult Eversource before starting design on any job where an instrument transformer installation is required.

B. You will provide the combination main disconnect and instrument transformer enclosure, separated by barriers, conduit for meter wiring, primary connectors for instrument transformers and approved pre-wired combination meter socket with test switch.

C. Instrument transformers provided by us and installed by you.

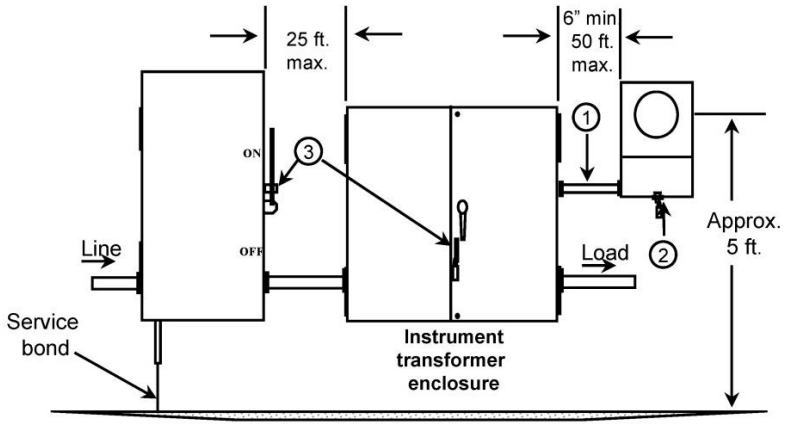
D. If 480/277 volt equipment is installed, provisions must be supplied for mounting voltage transformers in the same compartment as the current transformers.

E. Service line and load side must be marked or labeled in the instrument transformer compartment.

F. Conduit must be continuous from the instrument transformer compartment to the test switch compartment.

G. If PVC, provide and install an equipment grounding conductor (No.10 wire or larger).

FIGURE 25
Instrument Transformer Installation
(Cold Sequence – Refer to section 6.B)



Instrument Transformer Enclosure Requirements:

A. Provisions must be made to accommodate Eversource's conductors. A sealable pull box may be required. Consult with Eversource prior to installation

SERVICE NOMINAL VOLTAGE	SIZE WIDTH	SIZE HEIGHT	SIZE DEPTH	CURRENT TRANSFORMER	VOLTAGE TRANSFORMER
Minimum size enclosure with current transformers only (Max. 800 amp):					
120/240	**36"**	**36"**	10"	2 ea	--
208Y/120	**36"**	**36"**	10"	3 ea	--
Minimum size enclosure with current and voltage transformers; mounting provisions are required for voltage transformers (Max. 1200 amp):					
480Y/277	48"	48"	10"	3 ea	3 ea

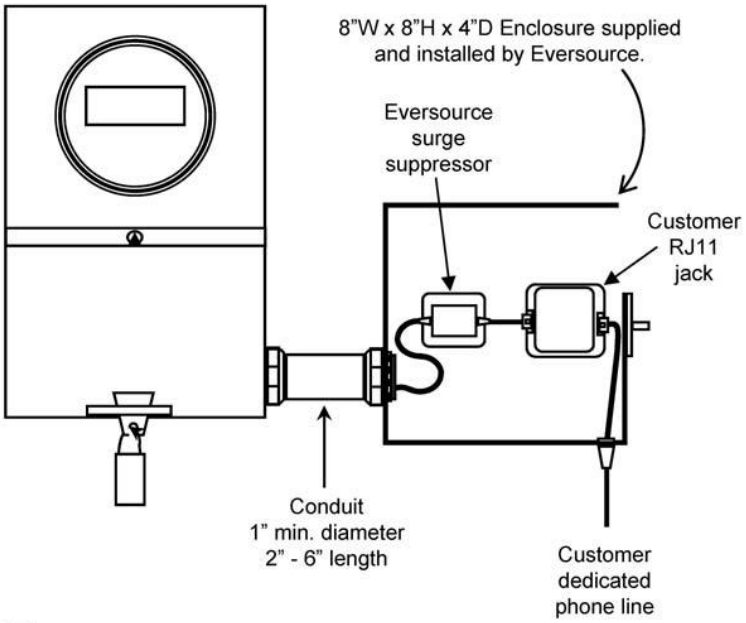
FIGURE 25 Notes
Instrument Transformer Installation
(Cold Sequence – Refer to section 6.B)

1. Electrical grade Schedule 40 PVC or galvanized steel conduit 1-1/2" min. diameter, 6 " min. length and 50 ft. max. length. If PVC, provide and install an equipment grounding conductor (No. 10 wire or larger).
2. Approved pre-wired meter socket with test switch located outdoors.
3. Must have barrel lock sealing devices for main disconnect and instrument transformer enclosure.

Notes:

A. **CONSULT EVERSOURCE BEFORE STARTING DESIGN ON ANY JOB WHERE ANY INSTRUMENT TRANSFORMER INSTALLATION IS REQUIRED.**
B. You will provide the instrument transformer enclosure, conduit for meter wiring, primary connectors for instrument transformers, and approved combination meter socket with test switch.
C. Bond at service equipment in accordance with NEC Article 250. The grounding electrode conductor connection shall be made at a accessible location in the service equipment and not in the meter socket. The grounding electrode conductors shall not be run through the meter socket.
D. Service line and load side must be marked or labeled in the instrument transformer compartment.
E. Install a grounding connector and neutral connector in the instrument transformer enclosure.
F. Maintain clearances as specified in Section 8.C.2.
G. Instrument transformers provided by Eversource and installed by you.
H. Enclosure to have hinged doors, provisions for seal and padlock and mounting brackets for transformers. If located outdoors, enclosure shall be of weatherproof design.
I. If 480/277 volt equipment is installed, provisions must be supplied for mounting voltage transformers in the same compartment as the current transformers

Figure 26
Telephone AMR Equipment Diagram

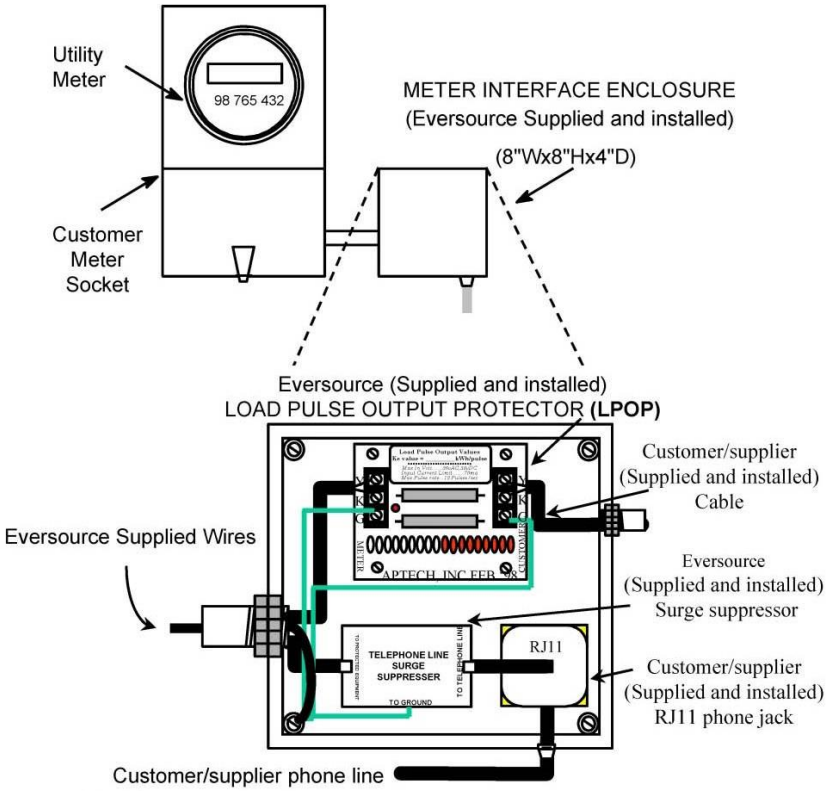


NOTE:

A. For some special meter types (normally involving co-generators, distributed generators etc.), an RJ-31X jack, DSL modem or Ethernet connection may be required for proper meter communication.

Figure 27
Meter Interface Enclosure

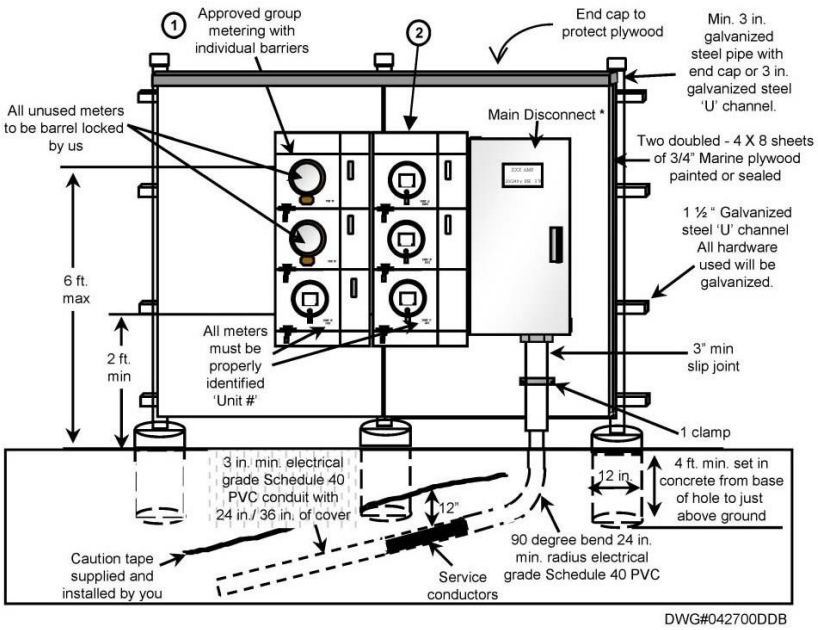
(For Phone AMR and/or Load Pulse output options)



NOTE:

A. For PULSES ONLY and NO Phone AMR, there will ONLY be an LPOP.
B. Maximum carrier voltage is 30 Volts AC
C. For Phone AMR ONLY and NO pulses supplied, there will ONLY be a Surge Suppresser & RJ11 jack.
D. For some special meter types (normally involving co-generators, distributed generators etc.), an RJ-31X jack, DSL modem or Ethernet connection may be required for proper meter communications.

Figure 28
Cell Site Metering Pedestal

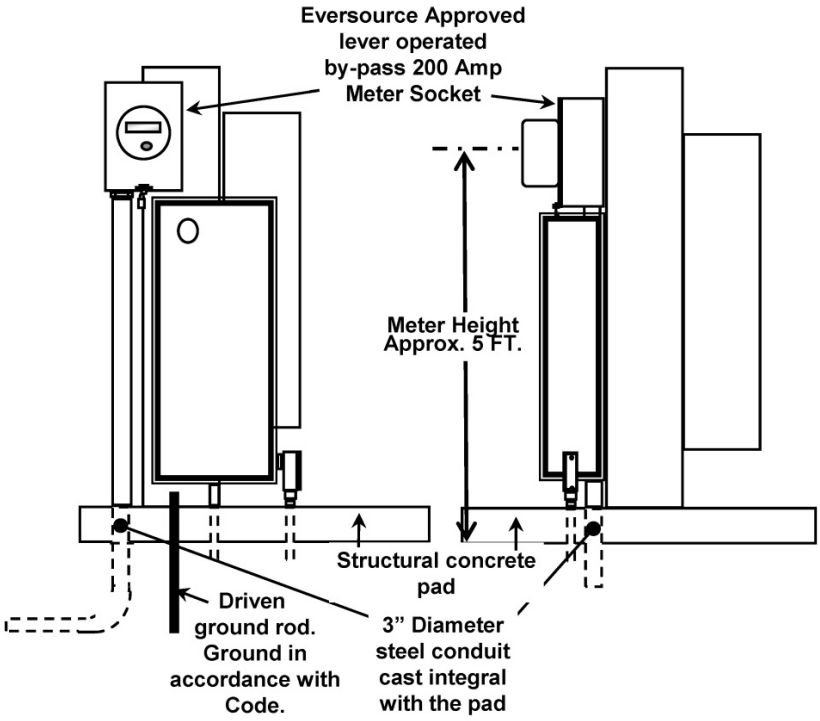


1. Individual meter sockets with individual barriers as well as provisions for seals and barrel locks.
2. Single-phase 120/208 volt Network, Three-phase 208Y/120 volt Network and Three-phase 480Y/277 volt services shall be cold sequenced.

Note:

A. Utilizing a main disconnect is the preferred installation to allow for additional meters beyond six.
B. Metering pedestal must be protected by barriers if there is a potential for damage by vehicles..

Figure 29
Typical Remote Communications Power Site



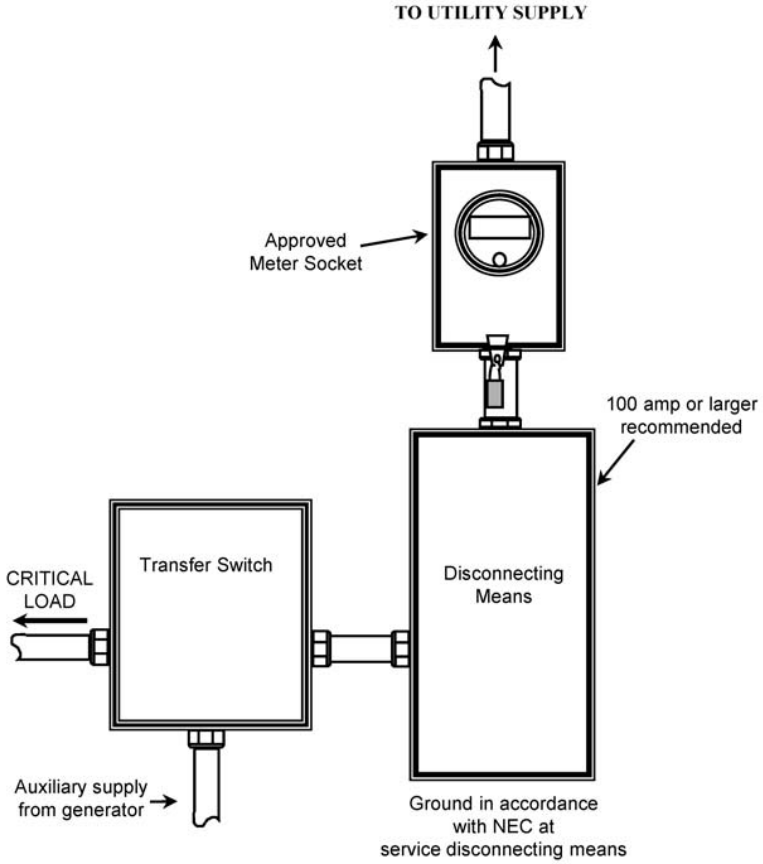
Note:

A. A slip joint is not required provided that the steel conduit is integral with the concrete pad.

B. Blueprints/Design must be submitted to Eversource for approval **prior** to installation.

FIGURE 30
Typical Transfer Switch Installation
In Conjunction With Your Auxiliary Supply

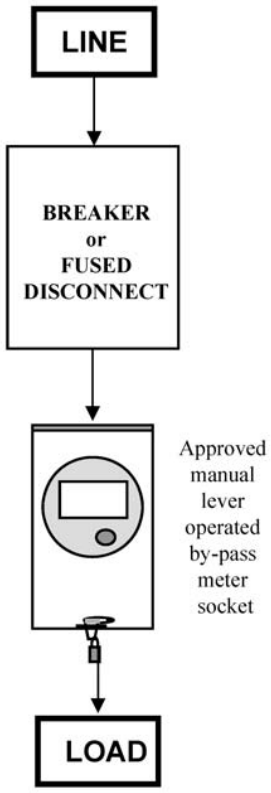
Consult your local authority for proper wiring procedures.



Refer to Section 1 page 2.11

FIGURE 31
Cold Sequence Metering

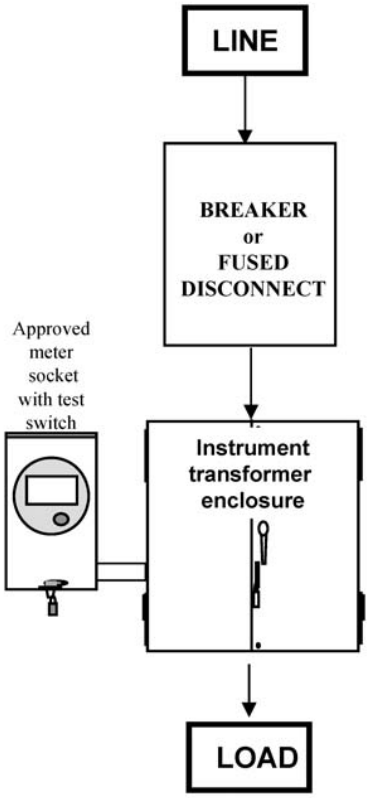
A. Self-Contained



400 Amps or less

- Three phase Network System
- Single phase Network System
- Three phase 480Y/277 v.

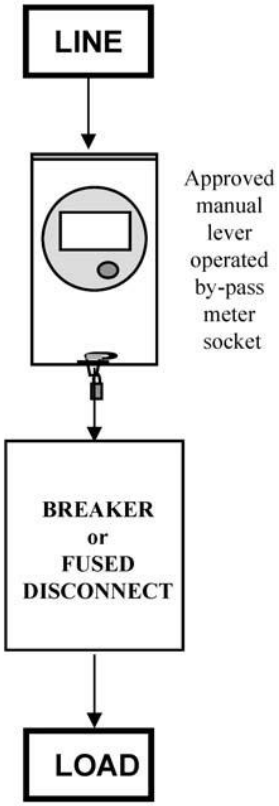
B. Instrument Transformer Rated



Greater than 400 Amps

- Three phase 480Y/277 v
- Three phase 280Y/120 v
- Single phase 120/240 v

FIGURE 32
Hot Sequence Metering

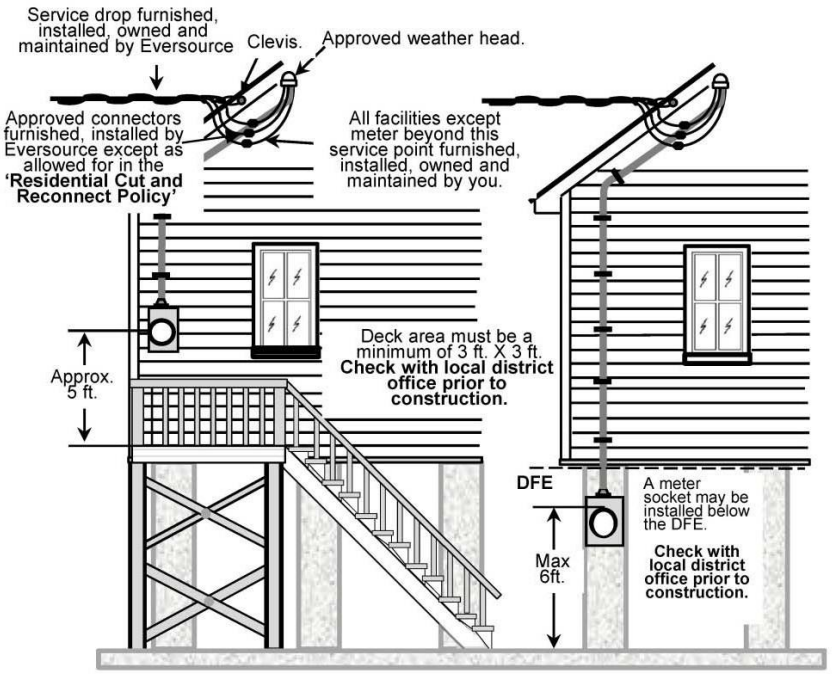


400 Amps or less

- Three phase 208Y/120 v
- Single phase 120/208 v
- Single phase 120/240 v

FIGURE 33

Flood Plain Meter Installation



In some shoreline areas designated as a flood plain, the customer may be required by FEMA regulations to install all electrical equipment above the **DFE** (Design Flood Elevation). This conflicts with the Company's requirement for meter sockets to be installed no higher than 72 inches to the top of the meter. In such cases, the customer will be required to construct a suitable permanent stepped platform, that meets local code and FEMA requirements, or other means to facilitate access for Company employees to perform meter work **prior to** energizing the service. If a suitable platform can not be constructed due to zoning or the physical location of the service an approved meter socket can be installed below the DFE. In this case the customer assumes full responsibility and cost to replace the service entrance equipment in the event of flood damage. Failure to comply with these requirements may result in the company de-energizing the service and the customer and/or contractor will be responsible for bringing the service to Eversource standards. **Check with the local Eversource district office prior to construction.**

EVERSOURCE ENERGY

METER SERVICE | Listen. Respond. Resolve.

ELECTRICIAN'S CHECKLIST FOR CT/PT METERING JOBS

To help get your electric service energized as quickly as possible, be sure to have all of the following requirements completed before our Meter Service Mechanic arrives to wire the metering.

* Approved, sealable metal enclosure for instrument transformers is securely mounted with proper clearances ☐
* If multiple meters at a location, each must be marked or labeled to correspond with each unit / suite / store ☐
* Approved, prewired combination meter socket & test switch is permanently mounted. ☐
* Conduit (minimum 1 ½") installed between meter socket and CT compartment (maximum 50' length) ☐
  - ➡ If transformers are mounted in switchgear compartment, conduit must terminate in CT compartment ☐
  - ➡ If using PVC conduit, a separate bonding wire is installed according to code ☐
  - ➡ Pull rope installed in conduit runs over 10 feet ☐
* Grounding conductor is not allowed in the Meter Socket **(No grounding connection or conductors in socket)** ☐
* CTs are located ahead of (line side) of all circuits. **(No un-metered Circuits)** ☐
* CTs/PTs are correctly rated for the size of the main, properly mounted and if bar-type, CTs are properly torqued. ☐
* Service line side and load side are clearly marked or labeled in the CT compartment (I&R Book Sect 11 Page 84 part D) ☐
* CTs are installed with polarity marks (white dot or H1 designation) toward line side, shunts closed ☐
* CTs are located on the load side of main switch (cold sequence) unless CL&P has granted exception. ☐
* If PT's are used, primary (high side) faces away from the cabinet door ☐
* A #4 Burndy Lug (or equivalent) has been installed
  - for equipment (case) ground inside transformer compartment ☐
  - for neutral connection in transformer cabinet, wired to neutral bus ☐
  - on each bus, line side of CT (window type CTs) ☐
  - on grounded phase of 3Ø 3W service (window type CTs) ☐

When all of the above items have been completed, call ____(Name)_____ at ___(phone #)__ to schedule CT wiring

Please consult the Information and Requirements Booklet (section 7) for information on Instrument Transformer metering requirements. ** Reminder: Also call Eversource at the number above after the Service is energized.

CL&P / WMECO Use only

Job Name			
STORMS WR#			
Delivery Date			
CT Serial #			
VT Serial #			

Thank you for your cooperation, which helps CL&P provide you with the best possible service.

When all the above items have been completed, call local Eversource office to schedule instrument transformer wiring.

Please consult Eversource's Information and Requirements Booklet (Section 8 and Section 11) for information on Instrument Transformer Metering Requirements.

Section 12

Approved Metering Equipment

EVERSOURCE

PREPARED BY THE

2016 METERING EQUIPMENT APPROVAL COMMITTEE

David Benedetto	Meter Engineering New Britain, CT
David Santa Maria	Meter Engineering New Britain, CT
Steven Sager	Meter Engineering New Britain, CT
Peter Barrett	Meter Service Supervisor Cheshire /E. Hampton, CT

SECTION 12: Approved Metering Equipment

A. General

1. Safety will be the number one consideration when approving any metering equipment.

2. All meter sockets must have a UL label. Any modification of a meter socket will void the UL listing and the manufacturer's warranty, making it non-compliant with our approved standards.

3. All self-contained meter sockets must be rated for 600 volts or less.

4. A 400 amp instrument transformer rated service (CT's and/or VT's) is no longer offered. All 400 amp services are required to be self contained and will be metered with a Class 320 meter. Any exception will require the approval of the local meter department.

5. All self-contained meter sockets must have a lever operated manual bypass, with a receiver bracket and a ringless cover with a 7/16" knockout to accept a Brooks S1000 barrel lock or equivalent.

6. The lever operated manual bypass is required to be single-handle operated:
   a. 100 ampere may be supplied with non-jaw release
   b. 200 ampere and 320 ampere must be supplied with jaw release

7. The non-bypassed, in-service position of the operating mechanism must be visible when the meter is installed. Auxiliary straps or jumpers are not acceptable as bypass devices. It must not be possible to override the bypass by replacing the cover when the operating mechanism handle is in the bypassed position.

8. A safety flash shield is required on all self-contained meter positions.

9. Horn-type bypasses are not permitted.

10. Sliding-type bypasses are not permitted.

11. Automatic bypasses are not permitted.

12. Basic catalog numbers may have different or additional prefix or suffix numbers or letters indicating variations in hubs, sealing rings, addition of fifth terminal, left or right wiring extensions.

13. Meter sockets for use on any three-wire 120/208-volt service must have a fifth terminal located in the 9 o'clock position, connected to the neutral.

    The City of Hartford: Any new or upgraded service 200 Amps or less must have a 5 terminal meter socket installed, with the 5th terminal connected to the neutral, even if 120/240 volt service. See Section 11, Figure 17, (page 75).

14. Custom-made meter channels and modular metering panels may be used for groups of meters such as in apartment houses. Prints of these panel arrangements must be submitted to the Company District Meter Service Supervisor, and the Company's approval obtained prior to installation. Line side panels must be sealable.

15. All underground single position sockets must be a minimum 16"W x 22"H x 5"D, 200 amp, ringless with line side lugs capable of accepting 350 MCM conductors with lever operated jaw release bypass. Sockets will also have a minimum 3-inch knockout to accept a 3-inch slip joint. If a service run is greater than 200 feet contact your local Eversource office. The bottom left side knockout is for line conductors only. Line conductors are on the left side so they won't interfere with the bypass handle. The bottom right side knockout is for load conductors.

16. All group metering units must have sealing provisions and meet minimum and maximum height requirements.

    a. Maximum height (top of meter) is 72 inches.

    b. Minimum height above floor 24 inches (bottom of meter) indoor, 24 inches (bottom of meter) from finished grade outdoor.

    c. All meter positions must have individual covers, and barriers between each meter position.

    d. All meter positions must have lever operated manual bypass.

    e. Each meter position must have a receiver bracket and ringless cover with a 7/16" knockout to accept a Brooks S1000 barrel lock or equivalent.

17. All OH/UG 320 amp meter sockets must have 4-inch knockouts, jaw release lever operated manual bypass, with a receiver bracket and a ringless cover with a 7/16" knockout to accept a Brooks S1000 barrel lock or equivalent.

18. Hot sequence metering (6 socket positions or less) is required for single-phase 120/240-volt service. Under some circumstances, a 400 amp main disconnect may be required ahead of multiple sub-main switches whose total rated capacity exceeds 400 amps. (See Section 4, page 20 for service limitations).

19. New equipment from manufacturers not listed in this book will be considered for approval. Samples must be submitted to the Metering Equipment Approval Committee

20. All meter sockets and switchgear must be properly identified with approved catalog numbers listed in this book.

B. Requirements for Commercial Metering

1. Cold sequence metering is required for all self-contained 480 volt services and all three-phase services fed from a Eversource secondary distribution network grid. Line side disconnect must be adjacent to meter socket and accessible to Eversource at all times. See Section 6.B.3.a and b (page 26), Section 11, Figure 12, (page 70) and Section 11, Figure 11, (page 69).

2. Custom-built meter centers must have individual utility approval prior to installation.

3. Three-phase four-wire self-contained commercial group metering must have barriers between meter positions.

4. Self Contained 480/277 volt group metering must have individual disconnects before each meter position. (Cold sequence - main disconnect required before metering.)

5. A 400 amp instrument transformer rated service (CT's and/or VT's) is no longer offered. All 400 amp services are required to be self contained and will be metered with a Class 320 meter. Any exception will require the approval of the local meter department.

6. Custom-built switchgear with instrument transformer enclosures must have individual utility approval prior to installation. A print of the switchgear must be supplied to the appropriate district meter supervisor. Check with Eversource for available fault current before ordering equipment.

7. Custom-built switchgear instrument transformer compartments must have barriers on all four sides of compartment.

8. All 480/277 volt switchgear with instrument transformer enclosures must have:
    - Provisions for mounting current transformers and voltage transformers in the same compartment with hinged sealable doors.
    - 600 amp - 1600 amp Bar Type current transformers
    - 2000 amp-3000 amp Window Type current transformers.
9. All individual instrument transformer enclosures for 480/277 volt three-phase four-wire wye services must be 48" W x 48” H x 10” D. All instrument transformer enclosures require hinged double doors and padlock sealing provisions. Approved enclosures listed in Section 12, page 116. Also, refer Section 11, Figure 25, (page 83) for diagram.
10. Neutral bus and grounding connections must be available in instrument transformer enclosure.
11. Combination circuit breaker and instrument transformer enclosures must have locking provisions for the main breaker and instrument transformer enclosure.
12. All main breakers or disconnects must have provisions to be locked in the **OFF** position.
13. Conduit must be continuous from the instrument transformer compartment to the test switch compartment.

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR

The following require a lever-operated bypass with flash shield 3-Wire 120/240 Volt and 3-Wire 120/208 Volt.
For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

(*) If total amperage of the main breakers (excluding owners breaker) exceeds 400 amps use as UG only.

MFR	No. of Positions	Type of Service	Ringless
100 Ampere:			
Eaton/Cooper B-Line	1	OH	EC12L41GR1N
	2	OH/UG	HEC10432CGR1N (Horz.)
	3	OH/UG	HEC10433CGR1N (Horz.)
	4 *	OH/UG	HEC10434CGR1N (Horz.)
	5 *	OH/UG	HEC10435CGR1N (Horz.)
	6	UG	HEC10436CGR1N (Horz.)
Eaton	1	OH	UBT-H4203B-CH
	1	OH	UBT-H4213B-CH
	1	OH	UBT-C4213B-CH
	1	OH	UBGT-H4203B-CH (5 Terminal)
	1	OH	UBGT-H4213B-CH (5 Terminal)
L & G/ Siemens /Talon	1	OH	48205-01NU
	2	OH	484052-023NU
	3	OH	484053-023NU
	4	OH	484054-223NU
	5	OH	484055-223NU
	6	OH	484056-223NU
	1	OH	48405-02-NU
	1	OH	48405-02-NU
Milbank	2	OH/UG	U2752-X-5T9 (Horz.)
	3	OH/UG	U2753-X-5T9 (Horz.)
	4 *	OH/UG	U2754-X-5T9 (Horz.)
	5 *	OH/UG	U2755-X-5T9 (Horz.)
	6	UG	U2756-X-5T9 (Horz.)
	2	OH	U5112-X-BL/U5113-2-BL (Vert.)
	3	OH	U5112-X-BL/U5113-3-BL (Vert.)
Square D	1	OH	UBT-H4213B-SQD
	1	OH	UBT-C4213B-SQD
	1	OH	UBGT-H4203B-SQD (5 Terminal)
	1	OH	UBGT-H4213B-SQD (5 Terminal)

SINGLE-PHASE • RESIDENTIAL • OUTDOOR • Eversource CT only

Heavy duty block, non-lever bypass, non-locking jaws with flash shield 3-Wire 120/240 Volt and Three-Wire 120/208 Volt.
For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

MFR	No. of Positions	Type of Service	Ringless
200 Ampere:			
Milbank	1	OH	U5858-RRL-QG-BL-NE
	1	UG	U5857-0-BL-NE

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR

The following require a lever-operated bypass with flash shield Three-Wire 120/240 Volt and Three-Wire 120/208 Volt.
For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

(*) If total amperage of the main breakers (excluding owners breaker) exceeds 400 amps use as UG only.

MFR	No. of Positions	Type of Service	Ringless
200 Ampere:			
Eaton/ Cooper B-Line	1	OH/UG	EL20L45GR1N
	1	OH	EL20L41GR1N
	2	OH/UG	HEL20432CGR1N (Horz.)
	3 *	OH/UG	HEL20433CGR1N (Horz.)
	4	UG	HEL20434CGR1N (Horz.)
	5	UG	HEL20435CGR1N (Horz.)
	6	UG	HEL20436CGR1N (Horz.)
Eaton	1	OH	UBT-H4203B-CH/UBTE4203BCH
	1	OH	UBT-H4213B-CH/UBTE4213BCH
	1	OH	UBGT-H4203B-CH/UBGTE4203BCH (5 Terminal)
	1	OH	UBGT-H4213B-CH/UBGTE4213BCH (5 Terminal)
	1	UG	1007994A-CH / 1007994AECH
	2	OH/UG	UBGT-2H4253U (5 Terminal)
	3 *	OH/UG	UBGT-3H4253U (5 Terminal)
	4	UG	UBGT-4H4253U (5 Terminal)
	5	UG	UBGT-5H4253U (5 Terminal)
	6	UG	UBGT-6H4253U (5 Terminal)
	1	OH	UBTH5213TCH (5 Terminal)

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR (Continued from previous page.)			
MFR	**No. of Positions**	**Type of Service**	**Ringless**
200 Ampere Continued:			
L & G/ Siemens/ Talon	1	OH	40005-OBNU/40005-01NU
	1	OH/UG	48805-OBNU
	1	OH	S40405-0BNU-S40405-01NU
	1	OH	40405-01NU
	1	OH	40804-01NU
	1	OH/UG	48804-02NU
	1	OH	40405-OBNU
	2	OH/UG	404052-023NU
	3 *	OH/UG	404053-023NU
	4	UG	404054-223NU
	5	UG	404055-223NU
	6	UG	404056-223NU
Milbank	1	OH	U9800-RRL-QG-BL-NE
	1	UG	U4721-O-BL
	2	OH/UG	U2872-XT-5T9
	3 *	OH/UG	U2873-XT-5T9
	4	UG	U2874-XT-5T9
	5	UG	U2875-XT-5T9
	6	UG	U2876-XT-5T9
Murray	1	OH	RH173CRJNU
	1	OH/UG	RH178CRJNU
Square D	1	OH	UBT-H4203B-SQD
	1	OH	UBT-H4213B-SQD
	1	OH	UBGT-H4203B-SQD (5 Terminal)
	1	OH	UBGT-H4213B-SQD (5 Terminal)
	1	UG	1007994A-SQD
	1	UG	1007995A-SQD (5 Terminal)
	2	OH/UG	UBGT-2H42353U-SQD (5Terminal)
	3 *	OH/UG	UBGT-3H42353U-SQD (5Terminal)
	4	UG	UBGT-4H42353U-SQD (5Terminal)
	5	UG	UBGT-5H42353U-SQD (5Terminal)
	6	UG	UBGT-6H42393U-SQD (5Terminal)

METER PEDESTALS			
For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position. Single-Phase • Residential/Commercial • All Outdoor Installations Require Lever-Operated Bypass with Flash Shield.			
MFR	**No. of Positions**	**Type of Service**	**Ringless**
200 Ampere:			
Milbank	1	UG	U4322-O-BL
	2	UG	U4323-O-BL
Siemens	1	UG	MP0406B 1200 RJL
	1	UG	MP0606L 1200 RJL*

*** Meter Load Center Combination**

SINGLE PHASE • COMMERCIAL METER PEDESTAL ENCLOSURES WITH DISTRIBUTION PANELS			
MFR	**No. of Positions**	**Type of Service**	**Ringless**
100 Ampere			
MilBank	1	UG	CP3BXXXXXXXXNEUSPX
200 Ampere			
Milbank	1	UG	CP3BXXXXXXXXNEUSPX
320 Ampere			
Milbank	1	UG	CP3BXXXXXXXXNEUSPX

SOLAR READY • METER COMBINATION			
MFR	**No. Positions**	**Type of Service**	**Ringless**
200 Ampere			
Siemens	1	OH/UG	MC2040S 1200 JLC
Square D	1	OH	RC2M 200 SL
	1	OH/UG	RC816F200SLS*
	1	OH/UG	RC3040M200SLS*
Eaton	1	OH	MBX2040PV200BTS

*** Solar Ready Kit Part Number SR69064A**

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR

The following require a lever-operated bypass with flash shield:
Three-Wire 120/240 Volt and Three-Wire 120/208 Volt

For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

Manufacturer	No. of Positions	Type of Service	Ringless
320 Ampere:			
Eaton/Cooper B-Line	1	OH/UG	EL32T45GR1N w/50366
Eaton	1	OH	UBT-H4300T-CH-UBTE4300TCH
	1	OH	UBT-H4309T-CH-UBTE4309TCH
	1	OH/UG	1008068-CH
	1	OH	UBTE4300TCH + MSL5T
	1	OH	UBTE4309TCH + MSL5T
L & G/ Siemens/Talon	1	OH	S/9804-9144
	1	OH/UG	49604-02NU
	1	OH/UG	S/9804-9146
	1	OH/UG	9804-9146
	1	OH/UG	44704-01NU
	1	OH	47704-01NU
Milbank	1	OH/UG	U4778-X-BL
Murray	1	OH	RK173AHJNU
	1	OH/UG	RK178AHJNU
Square D	1	OH	UBT-H4300T-SQD
	1	OH/UG	1008068-SQD
	1	OH	UBT-H4309T-SQD

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR

The following require a lever-operated bypass with flash shield:

- Three-Wire 120/240 Volt and Three-Wire 120/208 Volt

For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

COMBINATION METER SOCKETS AND DISCONNECT DEVICES

(*) If total amperage of the main breakers (excluding owners breaker) exceeds 400 amps use as UG only.

Manufacturer	No. of Positions	Type of Service	Ringless
100 Ampere:			
Eaton/Cooper B-Line	1	OH	ECCB10L24A3GR1N w/50366
Milbank	1	OH	U3741-XL-100-BL
Siemens/Talon	1	OH	MM0202L1125RLC
	1	OH	MM0202B1100RLC
	1	OH	WCL – Home Power Module

200 Ampere:			
Eaton/Cooper B-Line	1	OH/UG	ELCB20L24A5GR1N w/50366
	2	OH/UG	VELMP20432LGRST5K9 (vertical)
	3 *	OH/UG	VELMP20433LGRST5K9 (vertical)
	4	UG	VELMP20434LGRST5K9 (vertical)
	5	UG	VELMP20435LGRST5K9 (vertical)
	6	UG	VELMP20436LGRST5K9 (vertical)
Eaton	1	OH	CMBXB200BTS
	1	OH	CMBX3242B200BTS
	1	OH	CMBX1212B200BTS *
	1	OH	MBX2040B200BTS *
	1	OH	MBX816B200BTS *
* Meter Load Center Combination			
Milbank	1	OH	U3791N-RXL-200-BL
	1	OH/UG	U5140-200-BL
	2	OH/UG	U4372-XT-5T9
	3 *	OH/UG	U4373-XT-5T9
	4	UG	U4374-XT-5T9
	5	UG	U4375-XT-5T9
	6	UG	U4376-XT-5T9

SINGLE-PHASE • RESIDENTIAL/COMMERCIAL • OUTDOOR

The following require a lever-operated bypass with flash shield:

- Three-Wire 120/240 Volt and Three-Wire 120/208 Volt

For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

COMBINATION METER SOCKETS AND DISCONNECT DEVICES

(Continued from previous page)

200 Ampere Continued:			
Siemens/Talon	1	OH/UG	MM0202L1200RLC
	1	OH/UG	MM0202B1200RLC
	2	OH/UG	SP4212RJL
	3 *	OH/UG	SP4312RJL
	4	UG	SP4412RJL/SP6412JL
	5	UG	SP6512RJL
	6	UG	SP6612RJL/SP8612RJ
	2	OH/UG	WPL4212RJ
	3 *	OH/UG	WPL4312RJ
	4	UG	WPL4412RJ/WPL6412RJ
	5	UG	WPL6512RJ
	6	UG	WPL6612RJ/WPL8612RJ/WPL10612RJ
	1	OH/UG	WCL – Home Power Module
	2	OH/UG	WTGL 4212 RJ
	2	UG	WTGL 4212 RJ
	3	UG	WTGL 4312 RJ
	4	UG	WTGL 4412 RJ
	5	UG	WTGL 4512 RJ
	6	UG	WTGL 4612 RJ

320 Ampere:			
Eaton/Cooper B-Line	1	OH/UG	ELCB32C24A5GR1N w/50366
Milbank	1	OH/UG	U4835-X-2/200-BL
	1	OH/UG	U5891-X-2/200
L & G/Siemens/Talon	1	OH/UG	MC0408B1400RLTM
	1	OH/UG	MC0816B1400RLTM
	1	OH/UG	MC0816B1350RLTM
	1	OH/UG	MM0404L1400RLM
	1	OH/UG	JA0408B1400RLTM
	1	OH/UG	JA0816B1400RLTM
	1	OH/UG	JC0404L1400RLM
	1	OH/UG	MM0404B1400RLM

THREE-PHASE • COMMERCIAL • OUTDOOR

Must Have Jaw Release Lever-Operated Bypass with Flash Shield.

All 480Y/277 volt and three-phase 208Y/120 volt network services require main disconnect before meter (cold sequence). Check with Eversource for available fault current before ordering equipment.

(*) If total amperage of the main breakers (excluding owners breaker) exceeds 400 amps use as UG only.

MFR	No. of Positions	Type of Service	Four-Wire—Three-Phase 7 Terminal
200 Ampere:			
Eaton/Cooper B-Line	1	OH	EL20L71GR1N
	1	OH/UG	EL20L75GR1N
Eaton	1	OH	UBT-H7203BTCH/UBTE7203BCH
	1	OH	UBT-H7213B or T–CH/UBTE7203TCH
	1	UG	1007996A-CH-1007996ECH
	1	OH	UBTE7213BCH-UBTE7213TCH
L & G/ Siemens/Talon	1	OH	S/40007-01NU-S/40407-01NU
	1	OH/UG	S/48807-02NU
	2	OH/UG	404072-023NU
	3 *	OH/UG	404073-023NU
	4	UG	404074-223NU
	5	UG	404075-223NU
	6	UG	404076-223NU
	1	OH/UG	WCL–House Power Module
Milbank	1	OH	U9700-RRL-QG-BL
	1	UG	4910-O-BL
Murray	1	OH	RH173GRJNU
	1	OH/UG	RH178GRJNU
Square D	1	OH	UBT-H7203B or T-SQD
	1	OH	UBT-H7213B or T-SQD
	1	UG	1007996A-SQD

THREE-PHASE • COMMERCIAL • OUTDOOR (Continued from previous page.)			
Manufacturer	**No. of Positions**	**Type of Service**	**Four-Wire—Three-Phase 7 Terminal**
320 Ampere:			
Eaton/Cooper B-Line	1	OH/UG	EL32T75GR1N
Eaton	1	OH	UBT-H7300T-CH-UBTE7300TCH
	1	OH/UG	1008069-CH-1008069ECH
L & G/ Siemens/Talon	1	OH	S/9804-9145
	1	OH/UG	49607-02NU
	1	OH	S/47707-01NU
	1	OH/UG	S/9804-9147
Milbank	1	OH/UG	U4911-X-BL
Murray	1	OH	RK173GHJNU
	1	OH/UG	RK178GHJNU
Square D	1	OH	UBT-H7300T-SQD
	1	OH/UG	1008069-SQD

THREE-PHASE • COMMERCIAL • OUTDOOR COMBINATION METER SOCKETS AND DISCONNECT DEVICES Must Have Jaw Release Lever-Operated Bypass with Flash Shield (**may also be used on 100 Ampere**). All 480Y/277 volt and three-phase 208Y/120 volt network services require main disconnect before meter (cold sequence). Check with Eversource for available fault current before ordering equipment.			
MFR	**No. of Positions**	**Type of Service**	**Four-Wire—Three-Phase 7 Terminal**
200 Ampere:			
Eaton/Cooper B-Line	1	OH/UG	ELCB20L27A5GR1N
Milbank	1	OH/UG	U5750-RXL-200-BL
Siemens	1	OH/UG	MM0303B3200RLC

THREE-PHASE • COMMERCIAL • OUTDOOR COLD SEQUENCE COMBINATION METER SOCKETS (BREAKER BEFORE METER)

Must Have Jaw Release Lever-Operated Bypass with Flash Shield.
All 480Y/277 volt and 208Y/120 volt network services require main disconnect before meter (cold sequence).
Check with Eversource for available fault current before ordering equipment.

MFR	No. of Positions	Type of Service	Four-Wire—Three-Phase 7 Terminal
200 Ampere:			
Milbank	1	OH	U5767-X-200-CB-BL-NE
	1	UG	U5787-0-200-CB-BL-NE
Siemens/Talon	1	OH	LG 0303CS200 R
	1	UG	LG 0303CS200 RD
320 Ampere:			
Milbank	1	OH	U5796-X-400-CB-BL-NE
	1	UG	U5799-0-400-CB-BL-NE
Siemens/Talon	1	OH	LG 0303LS3400 R
	1	UG	LG 0303LS3400 RD

THREE PHASE • COMMERCIAL METER PEDESTAL ENCLOSURES WITH DISTRIBUTION PANELS

For a 480/277 volt service, request a cold sequence enclosure.

MFR	No. of Positions	Type of Service	Ringless
100 Ampere:			
Milbank	1	UG	CP3BXXXXXXXXNEUSPX
200 Ampere:			
Milbank	1	UG	CP3BXXXXXXXXNEUSPX
320 Ampere:			
Milbank	1	UG	CP3BXXXXXXXXNEUSPX

GROUP METERING • SINGLE-PHASE • RESIDENTIAL / COMMERCIAL

Three-Wire 120/240 Volt and Three-Wire 120/208 Volt 100-Amp Lever-Operated Bypass—200-Amp Lever-Operated Jaw Release Bypass with Flash Shield. Refer to General Requirements for Height Restrictions.
For 120/208 Volt – Requires the 5th Terminal in the 9:00 O'clock position.

Manufacturer	Series or Number	Type	Ampere Rating			Indoor	Outdoor
			100	200	320		
Eaton	35MM	Ringless	Yes	Yes	No	Yes	Yes
General Electric	Meter Mod III	Ringless	Yes	Yes	Yes	Yes	Yes
Siemens	WML	Ringless	Yes	Yes	Yes	Yes	Yes
	WPL	Ringless	No	Yes	No	Yes	Yes
Square D	MPL Meter PAK	Ringless	Yes	Yes	Yes	Yes	Yes
	EZM	Ringless	Yes	Yes	Yes	Yes	Yes

GROUP METERING • THREE-PHASE

208Y/120 Volts 100-Amp Lever-Operated Bypass—200-Amp Lever-Operated Jaw Release Bypass with Flash Shield.
Refer to General Requirements for Height Restrictions, Must have Barriers between Meter Positions.

Manufacturer	Series or Number	Type	Ampere Rating			Indoor	Outdoor	Bypass
			100	200	320			
Eaton/Cooper B-Line	HEL20732CGR1N - HEL20736CGR1N	Ringless	Yes	Yes	No	Yes	Yes	Yes
Eaton	37MM	Ringless	Yes	Yes	Yes	Yes	Yes	Yes
	PRL-CCMS	Ringless	Yes	Yes	Yes	Yes	Yes *	Yes
GE	Meter Mod III	Ringless	Yes	Yes	Yes	Yes	Yes	Yes
Milbank	U2732-XT/U2736-XT	Ringless	Yes	Yes	No	Yes	Yes	Yes
Siemens ITE	WML	Ringless	Yes	Yes	Yes	Yes	Yes	Yes
Square D	EZM	Ringless	Yes	Yes	Yes	Yes	Yes	Yes

***NOTE:** NEMA 3R Outdoor Cabinet with Split Door (Top and Bottom Doors) for Meter Access

GROUP METERING • THREE-PHASE

480Y/277 Volts 100-Amp Lever-Operated Bypass—200-Amp Lever-Operated Jaw Release Bypass with Flash Shield.

Refer to General Requirements for Height Restrictions. Meter Positions Must be Cold Sequence, Disconnect Breakers before each Meter Position, Must have Barriers between Meter Positions.

MFR	Series or Number	Type	Ampere Rating			Indoor	Outdoor	Bypass
			100	200	320			
Eaton	PRL-C/CMS	Ringless	Yes	Yes	Yes	Yes	Yes *	Yes
RSE-Sierra	CUSTOM	Ringless	Yes	Yes	Yes	Yes	No	Yes

***NOTE:** NEMA 3R Outdoor Cabinet with Split Door (Top and Bottom Doors) for Meter Access

GROUP METERING • BARRIERS • 208Y/120 Volt • 480Y/277 Volt

Manufacturer	Catalog Number
Eaton	37MMBK
General Electric	TMBR3
Siemens	Contact your local Siemens Representative
Square D	MML200BAR

PRE-WIRED INSTRUMENT TRANSFORMER-RATED SOCKETS WITH PLATED TEST SWITCH	
Manufacturer	**6 Terminal Single Phase**
Eaton/Cooper B-Line	SW02062S1GR1N
Eaton	USTS6-1A299-CH
Milbank	UC7478-O-81-NOE
Siemens	9837-0901
Square D	USTS6-1A299-SQD

Manufacturer	**8 TERMINAL 3-PHASE 3-WIRE**
Eaton	USTS8-1A300-CH
Milbank	UC7444-O-141-NOE
Siemens	9837-0902
Square D	USTS8-1A300-SQD

Manufacturer	**13 TERMINAL 3-PHASE 4-WIRE**
Eaton/Cooper B-Line	SW02132S1GR1N
Eaton	USTS13-1A301-CH
Milbank	UC7445-O-311-NOE
Siemens	9837-0903
Square D	USTS13-1A301-SQD

600 – 1600 AMP COMBINATION CIRCUIT BREAKER AND INSTRUMENT TRANSFORMER ENCLOSURE

120/240 Volt and 208Y/120 Volt Services, with BAR TYPE Current Transformers.
Check with Eversource for available fault current before ordering equipment.

MFR/ Rated Voltage	Interruption Duty Amps Sym @ Rated Voltage	600 Amp	800 Amp	1,000 Amp	1,200 Amp	1,600 Amp
Eaton:						
120/240	65,000	WBM	WBM	WBM	WBM	
208Y/120	65,000	WBM	WBM	WBM	WBM	PRL-C
208Y/120	65,000	PRL-C	PRL-C	PRL-C	PRL-C	PRL-C
East Coast Power Systems:						
120/240	65,000	MBCT6SB1	MBCT8SB1	MBCT10SB1	MBCT12SB1	-
208Y/120	100,000	MBCT6HB1	MBCT8HB1	MBCT10HB1	MBCT12HB1	-
General Electric:						
		Spectra Series				
120/240	65,000	I, II, III, IV	I, II, III, IV	I, II, III, IV	I, II, III, IV	I, II, III, IV
208Y/120	100,000	I, II, III, IV	I, II, III, IV	I, II, III, IV	I, II, III, IV	I, II, III, IV
Murray:						
120/240	65,000	CBCT636LX	CBCT836M6	-	-	-
208Y/120	100,000	CBCT636HL	CBCT836HM	CBCT1036HN	CBCT1236HN	-
RSE-Sierra:						
208Y/120	As Specified	Custom	Custom	Custom	Custom	Custom
208Y/120	As Specified	SB	SB	SB	SB	SB
Siemens ITE:						
120/240	65,000	BCT636LXD6	BCT836LMXD6	-	-	-
208Y/120	100,000	BCT636HLD6	BCT836HMD6	BCT1036HND6	BCT1236HND6	-
Square D:						
120/240	65,000	CTC-366CU	CTC-368CU	-	-	-
208Y/120	65,000	CTC-366CU	CTC-368CU	CTC3610CU	CTC3612CU	-
208Y/120	65,000	QED	QED	QED	QED	QED

600 – 1600 AMP COMBINATION CIRCUIT BREAKER AND INSTRUMENT TRANSFORMER ENCLOSURE

480Y/277 Volt Services • Cold Sequence,
BAR TYPE Current Transformers and Voltage Transformers must be installed in the same compartment.
Check with Eversource for available fault current before ordering equipment.

MFR Rated Voltage	Interruption Duty Amps Sym @ Rated Voltage	600 Amp	800 Amp	1,000 Amp	1,200 Amp	1,600 Amp
Eaton:						
480Y/277	65,000	WBM	WBM	WBM	WBM	PRL-C
480Y/277	65,000	PRL-C	PRL-C	PRL-C	PRL-C	PRL-C
East Coast Power Systems:						
480Y/277	35,000	MBCT6SB1	-	-	-	-
480Y/277	50,000	MBCT6SB1	MBCT8SB1	MBCT10S81	MBCT1081SB1	-
480Y/277	65,000	MBCT6HB1	MBCT8HB1	MBCT10HB1	MBCT1081HB1	-
General Electric:						
		Spectra Series				
480Y/277	100,000	AV I, II, III & V	AV I, II, III & V	AV I, II, III & V	AV I, II, III & V	AV I, II, III & V
Square D:						
480Y/277	65,000	QED II	QED II	QED II	QED II	QED II

2000/3000 AMP COMBINATION CIRCUIT BREAKER AND INSTRUMENT TRANSFORMER ENCLOSURE

480Y/277 Volt Services, • Cold Sequence
WINDOW TYPE CURRENT TRANSFORMERS AND VOLTAGE TRANSFORMERS MUST BE INSTALLED IN THE SAME COMPARTMENT.
Check with Eversource for available fault current before ordering equipment.

Manufacturer/ Rated Voltage	Interruption Duty Amps Sym @ Rated Voltage	2000/3000 Amp
Eaton:		
480Y/277	As Specified	PRL-C
General Electric:		
480Y/277	As Specified	Spectra Series - AV I, II, III & V
Siemens:		
480Y/277	As Specified	SB
Square D:		
480Y/277	As Specified	QED Series

COMBINATION FUSED ENTRANCE SWITCH AND INSTRUMENT TRANSFORMER ENCLOSURE

120/240 Volt and 208Y/120 Volt Services with **BAR TYPE** Current Transformers.
Check with Eversource for available fault current before ordering equipment.

Manufacturer	Rated Voltage	600Amp	800 Amp	1,200 Amp
Eaton	120/240	WSM	WSM	WSM
	208Y/120	WSM	WSM	WSM
East Coast Power Systems	120/240	MSCT6SB1	MSCT8B1	MSCT12B1
	208Y/120	MSCT6SB1	MSCT8B1	MSCT12B1
General Electric	Spectra Series			
	240	AVI, III, V	AVI, III, V	AVI, III, V
Murray	240	FSCT632	FSCT836	-
Siemens	240	SCT632	SCT836	-
Square D	240	QED II	QED II	QED II

In addition to 480 volt services any 600 volt services must have integral mounting provisions in the instrument transformer compartment for current transformer and voltage transformers

COMBINATION FUSED ENTRANCE SWITCH AND INSTRUMENT TRANSFORMER ENCLOSURE

480Y/277 Volt Services • Cold Sequence
BAR TYPE CURRENT TRANSFORMERS AND VOLTAGE TRANSFORMERS MUST BE INSTALLED IN THE SAME COMPARTMENT.
Check with Eversource for available fault current before ordering equipment.

MFR	Rated Voltage	600Amp	800 Amp	1,200 Amp
Eaton	480Y/277	WSM	WSM	WSM
	480Y/277	PRL-C/CMS	PRL-C/CMS	PRL-C/CMS
East Coast Power Systems	480Y/277	MSCT6HB1	MSCT8B1	MSCT12B1
Siemens	480Y/277	SB	SB	SB
Square D	480Y/277	QED II	QED II	QED II

In addition to 480 volt services any 600 volt services must have integral mounting provisions in the instrument transformer compartment for current transformer and voltage transformers.

INSTRUMENT TRANSFORMER MOUNTING EQUIPMENT IN SEALABLE ENCLOSURE WITH HINGED DOORS

For use when Parallel Phase conductors are used or when Phase Conductors are larger than 500 KC MIL.
Bar Type Current Transformers are used in these Enclosures.
CABINETS FOR USE ON 480Y/277 SERVICES MUST HAVE PROVISIONS FOR MOUNTING CT'S AND VT'S

MFR	Rated Voltage	Series or Number	Dimensions	Service Size (Amps)
Eaton/Cooper B-Line	208Y/120	363612DDHRTCT1N	36"W x 36"H X12"D	400 & 800
	480Y/277	484814DDHRTCT1N	48"W X 48"H X 14"D	800
East Coast Power Sys.	208Y/120	CTN-800R	36"W x 36"H X12"D	400 & 800
	480Y/277	CTN-1200R	48:W X 48"H X10"D	800 & 1200
Milbank	208Y/120	U1855-O-NE	36"W x 36"H x 12"D	400 & 800
	480Y/277	U1856-O-NE	48"W x 48"H x 12"D	800 & 1200
Hoffman	208Y/120	A800NECT	36"W x 36"H x 12"D	400 & 800
	480Y/277	A1200NECT	48"W x 48"H x 12"D	800 & 1200
Siemens	208Y/120	LG 123636CTS2	36"W x 36"H x 12"D	400 & 800

Section 13

Checklists – Quick Reference

EVERSOURCE

This checklist is provided as a quick reference to help you successfully complete a project.

For New Services

Have you:

- □ Submitted a **"Service Request"** via phone (1-888-544-4826) or internet (www.eversource.com)
- □ Obtained all local permits
- □ Received approval for custom, combination or instrument transformer metering equipment
- □ Discussed the routing and location of the service with a Eversource Field Engineering Designer
- □ Discussed the need for steel sweeps in the conduit system (if applicable)
- □ Coordinated with other utilities
- □ Received an approved meter location
- □ Paid all applicable charges, if required
- □ Notified Call Before You Dig, if applicable (1-800-922-4455)
- □ Installed service entrance equipment
- □ Installed an approved meter socket with optically clear cover
- □ For a conduit system, installed a slip joint, sweeps, conduit and ¼" pulling line
- □ For a conduit system where steel sweep(s) are required, installed a ground to the sweep at the meter location
- □ Permanently marked each meter socket and load disconnect with its unique identification
- □ Established a safe work space in front of each meter location
- □ Called the local inspecting authority for inspection/approval

For Service Changes

Have you:

- ☐ Confirmed that service locations and meter locations meet requirements of this booklet
- ☐ Submitted a **"Service Request"** via phone (1-888-544-4826) or internet (www.eversource.com)
- ☐ Obtained all local permits
- ☐ Received approval for custom, combination or instrument transformer metering equipment
- ☐ Discussed the need for steel sweeps in the conduit system (if applicable)
- ☐ Received an approved meter location (if applicable)
- ☐ Paid all applicable charges, if required
- ☐ Notified Call Before You Dig, if applicable (1-800-922-4455)
- ☐ Installed service entrance equipment
- ☐ Installed an approved meter socket with optically clear cover
- ☐ For a conduit system, installed a slip joint, sweeps, conduit and ¼" pulling line
- ☐ For a conduit system where steel sweep(s) are required, installed a ground to the sweep at the meter location
- ☐ Permanently marked each meter socket and load disconnect with its unique identification
- ☐ Established a safe work space in front of each meter location
- ☐ Called the local inspecting authority for inspection/approval.

Checklist for Instrument Transformer Rated Installations

Have you:

- ☐ Barrel locked sealing device for main disconnect Installed an approved instrument transformer enclosure
- ☐ Barrel locked sealing device for instrument transformer enclosure
- ☐ Installed equipment grounds
- ☐ Permanently mounted an approved, pre-wired combination meter socket and test switch
- ☐ Installed conduit between meter socket and instrument transformer enclosure
- ☐ Installed a separate bonding wire, according to Code, if using PVC conduit
- ☐ Properly mounted and secured CTs/VTs
- ☐ Properly torqued bar type CT's
- ☐ Located CT's on **load side** of main switch (cold sequence) unless Eversource has granted an exception
- ☐ Installed a #4 Burndy lug (or equivalent):
    - For equipment (case) ground inside transformer compartment
    - For neutral connection in transformer cabinet, wired to neutral bus
    - On each phase bus, line side, of window-type CTs

When all the above items have been completed, call local Eversource office to schedule instrument transformer wiring.

Please consult Eversource's Information and Requirements booklet (Section 8) for information on Instrument Transformer Metering Requirements.

TO CONTACT US

Call our Customer Service Department

1-800-286-2000 or 860-947-2000
24 hours a day 7 days a week

Call our Eversource Electric Service Support Center

For Service Requests or Inquiries 1-
888-544-4826 , Fax: 1-877-285-4448,
Email: eversourcesvc@eversource.com
Monday through Friday 7:00 am to 4:30 pm

To submit a Eversource Service Request

Go to the Eversource web site at www.eversource.com or

Call the Electric Service Support Center at 1-888-544-4826

Eversource Distributed Generation

For regulations and information, go to the Eversource web site

https://www.eversource.com/Content/ct-c/residential/programs-services/customer-generation

Request a copy of guidelines by phone (1-866-324-2437) or Email (distributed_resources@eversource.com).

Call Before You Dig

Toll – Free 1-800-922-4455

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EVERSOURCE

TO CONTACT US

Call our Customer Service Department 1-800-286-2000 ***or*** Hartford 860-947-2000 24 hours a day 7 days a week

Ask for the "Field Engineering Designer" in the appropriate Eversource office

or

Registered contractors can go to the Eversource website **www.eversource.com** to access our Field Engineering Designer Directory

Call our Eversource Electric Service Support Center

1-888-544-4826, Fax:1-877-285-4448
Monday through Friday 7:00 AM to 4:30 PM
Email:
CTNewService@eversource.com

To submit an Eversource Service Request

Go to the Eversource web site at **www.eversource.com** ***or***
Call the Electric Service Support Center at 1-888-544-4826

Eversource Distributed Generation

For regulations and information, go to the Eversource web site
https://www.eversource.com/Content/ct-e/residential/programs-services/interconnections-net-metering
Request a copy of guidelines by phone (1-866-324-2437), ***or***
Email: (**distributed_resources@eversource.com).**

Call Before You Dig

Dial 811 or call toll-free 1-800-922-4455

EVERSOURCE
Connecticut