



# **HANDBOOK FOR ELECTRIC SERVICE**

Issued April 2019

Revised January 2022

**Temporary Service**  
**Residential Service**  
**Non-Residential Service**  
**Upgrade of Service**

# HANDBOOK FOR ELECTRIC SERVICE

---

<b>Contact Information.....</b>	<b>3</b>
<b>New Service Checklist.....</b>	<b>4</b>
<b>Section 1.....</b>	<b>6</b>
General Information	
<b>Section 2.....</b>	<b>11</b>
Safety	
<b>Section 3.....</b>	<b>13</b>
Underground	
General Installation Requirements for Underground Facilities	
<b>Section 4.....</b>	<b>15</b>
Overhead Service Installations, Permanent and Temporary	
Residential and Non-Residential Service	
<b>Section 5.....</b>	<b>17</b>
Metering	
Services Less than 400 Amp	
Services Greater than or Equal To 400 Amp	
<b>Section 6.....</b>	<b>25</b>
Utilization Equipment	
<b>Section 7.....</b>	<b>27</b>
Generating Equipment Owned by Members	
<b>Section 8.....</b>	<b>29</b>
Specifications	
<b>Section 9.....</b>	<b>44</b>
Glossary of Terms	

# CONTACT INFORMATION

---

## **Member Services Department**

**855-332-9090**

Application for electric service and requests for information regarding these requirements should be made by calling our Member Services Department; this department is open Monday thru Friday from 8:00 a.m. to 4:30 p.m.

## **Website**

[www.delaware.coop](http://www.delaware.coop)

Visit our website for all the information provided in this Handbook.

Our tariff, terms and conditions of service, charges and rates, and schedule of fees are also available online as well as referenced in this handbook.

## **Address and Mailing**

**14198 Sussex Highway, Greenwood, DE 19950**

## **Outage Reporting**

**855-332-9090**

There is a fully automated outage reporting system in place, your information can be accessed by phone number or account number. You can view current outage information online by visiting our website at [wwwdelaware.coop](http://www.delaware.coop)

## **Engineering**

**855-332-9090 x-258**

Please call Engineering for all new services, including developments, residential, commercial, agricultural and municipal.

## **Dig Safe**

**1-888-344-7233 or 811**

Always call 72 hours prior to any trenching or excavation work.

## **Service Department (Dispatch)**

**855-332-9090 x-307**

For meter pan change out or trouble-shooting

# NEW SERVICE CHECKLIST

---

Please be advised that in order for Delaware Electric Cooperative (hereinafter referred to as DEC) to connect service, installations must meet DEC specifications. If DEC specifications are not met, applicable charges will apply, per DEC's tariff.

## RESIDENTIAL

- ☐ Have the four corners of the proposed structure been marked, or does a foundation exist?
- ☐ Have you received a copy of your approved septic plot plan showing septic tank and drain field (do not need if property is served by central sewer system)? If so, a copy must be provided.
- ☐ Determine the location of the meter. The location shall be staked with a white cloth or the approved meter socket has been installed by your contractor/electrician. The staked meter location shall be within 5-feet of the permanent location or additional fees will apply.
- ☐ Provide the parcel tax-map information.
- ☐ Has a Load Sheet been submitted? In addition to the Load Sheet, a check or money order for the \$1000 Construction Fee must be submitted for all installations up to 300-ft (Please note: If any bores are required for this project, all costs associated with the bore (per linear foot) will be the responsibility of the member).
- ☐ For all installations beyond 300-ft, a Contribution in Aid of Construction (CIAC) for the full cost will be required. DEC will provide an invoice once the design is complete.
- ☐ Have all private utilities been located?

## NON-RESIDENTIAL

You and your electrician need to determine the location of the meter. A construction fee invoice for the cost of installation to the agreed upon meter location will be sent to you by the engineering department. Your electrician will install an approved meter socket and will need your work order number as a reference. Additionally, any CT metering must be approved by DEC before installation. If approved, your electrician must supply the two-hole NEMA spade connectors. A cut sheet must be supplied by the electrician to the Operations Department.

- ☐ Have the four corners of the proposed structure been marked, or does a foundation exist?
- ☐ Determine the location of the meter. The location shall be staked with a white cloth or the meter socket has been installed by your contractor/electrician.
- ☐ Any three-phase service will require a fully completed and signed load sheet for transformer sizing. Please complete the appropriate Load Sheet for the service being requested. Load data must be as complete as possible. Cost of changes due to inadequate or inaccurate information will be borne by the member or electrician.
- ☐ All extensions of primary and secondary service will require a non-refundable CIAC (Contribution in Aid of Construction) of fifty percent (50%) of the cost prior to installation. Please note the CIAC will differ for interconnected applications (ex. PV Array). Please contact DEC for information.
- ☐ Have all private utilities been located?

# Section 1: General Information

---

This handbook should be used only as an aid to help members and/or others better understand the services available from Delaware Electric Cooperative (hereinafter referred to as DEC); it has been prepared to assist you in planning your service installations. It is impractical to attempt to cover in a booklet of this type all of DEC's approved specifications or all of the conditions and problems which may be encountered in various installations. It is very important that these instructions and standards are adhered to in every detail. This will prevent delays and possible additional costs to you. It is the member's responsibility to ensure that all wiring, materials and installations comply with the most recent issue of the National Electrical Code (hereinafter referred to as NEC) and any other federal, state, or local codes that apply. Where conflict(s) exist the more stringent code will apply. Members are encouraged to refer to the actual text of DEC's bylaws, DEC's terms and conditions, DEC's tariffs, and/or any relevant contract.

- The installation of a new service is a joint effort between the member, the contractor, and DEC. This handbook is provided to help you become aware of our policies and practices. This should ensure a timely and cost-effective installation.
- DEC strives to render dependable electric service in accordance with the tariff which can be found on our website.
- Before proceeding with the wiring of a new building or the rewiring of an existing building, a service entrance location shall be arranged by calling DEC's New Service Department to generate a work order. This work order will be your reference.
- For single-phase service, three conductors (minimum) must be installed from the meter pan to the distribution panel, for new construction, service upgrades, renovations and relocations.
- For three-phase service, four conductors (minimum) must be installed from the meter pan to the distribution panel, for new construction, service upgrades, renovations and relocations.
- Whether or not a signed application for service is made by the member and accepted by DEC, the rendering of the service by DEC and its use by the member shall be deemed a contract between the parties and subject to provisions of the tariff. DEC reserves the right to reject any application for service made by, or for the

benefit of a former member who is indebted to DEC for delivery of electric service previously furnished to them.

- DEC reserves the right to reject any application for service if the amount or nature of the service, or the distance of the premises to be served from an existing suitable line, creates a situation where upon installation and/or maintenance is not feasible.
- The applicant for service will provide, without expense or cost to DEC, the necessary permits, consents, or easements for a satisfactory right of way for the erection, maintenance and operation of a line, including the right to cut and trim trees and bushes wherever necessary along private property.
- Access shall be safe and adequately maintained to DEC owned equipment located on a member's property. DEC reserves the right to enter the premises to install, maintain, repair, and disconnect meters, equipment, facilities and for all other proper purposes. If safe and adequate access to the meter/equipment is not available for DEC employees, we reserve the right to discontinue service upon proper notice.
- All DEC employees are required to carry a means of identification which will be shown upon request.
- Should the use or operation of any equipment by a member include, but not be limited to, electric motors, welders, electronic power supplies or speed controls, adversely affect DEC's ability to render adequate service to others, DEC reserves the right to discontinue service until suitable corrections are made by the member.
- For the cost to relocate a meter, please contact the new service department at 302-349-9090 ext. 258.
- Meter sockets may be temporarily removed (floated) from buildings by DEC personnel at the member's request for siding and cosmetic repairs. This is to be considered temporary in nature and provisions for re-attachment must be made by the member within one month.
- DEC meters, poles, anchors, security lights, vaults and other equipment are to be within 10 feet of a traveled roadway or driveway, considered to be truck accessible year-round.
- Subdivisions/Developments require the applicant to follow the DEC developer requirements and are considered a unique design. Please contact DEC for assistance. The developer requirements are available on the website.
- DEC shall not be liable for damages resulting from the presence of its electric service or equipment on the member's premises, or for the member's use of that

service. DEC also shall not be liable for power interruptions resulting from situations beyond the reasonable control of DEC.

- DEC does not guarantee continuous and uninterrupted electric service and will not be liable for any loss, cost, damage or expense to any member caused by an interruption or phase reversal if the incident is caused by an event beyond the reasonable control of DEC.
- DEC may, from time to time, supplement, alter or otherwise change its requirements, as may be required by changing conditions, for the protection or the interest of the member, DEC or the general public. Any person can obtain this booklet from DEC.
- The standard electric service supplied by DEC is alternating current with a nominal frequency of 60 hertz (cycles per second).
- Temporary installations requiring special service, meter or other work, such as for construction purposes, exhibits of short duration, etc., shall be made at the expense of the member and charged in accordance with the material and work required for installation and removal. A payment in advance, sufficient to cover construction and removal expenses and current use, may be required.
- When it becomes necessary to make repairs or changes to DEC's electric system, DEC may suspend the delivery of service for such periods as may be reasonably necessary without incurring any liability because of such a service interruption. However, DEC will make every reasonable effort to schedule outages to minimize the impact of the outage on its members.
- The Cooperative will normally render electric service from its distribution system to the new facilities of a member only after receipt by the Cooperative of a notice of approval, issued by a duly recognized inspection agency. Whenever a service has been disconnected for a year or more, or the Cooperative suspects that the wiring may have been modified, an inspection will be required before service is reconnected. Inspections shall be considered valid for 90 days.

## **SUPPLY VOLTAGES**

- In this booklet, all references to voltages are nominal voltages. Actual voltages supplied may vary above or below nominal by 5%. Members should call before purchasing equipment if there is any doubt about the service voltage.



- Not all service voltages listed below are available at all locations. Subject to system limitations, the types of secondary electric service are listed below with additional limits for the magnitude of load served in kVA.
- Primary electric service voltages may also be available dependent upon the location and the size of load being served. Such electric service may be made available under suitable contractual arrangements. Nominal phase to ground/phase to phase voltages on DEC's distribution system is 7200/12470V.
- Members needing a voltage which is different from their service voltage may obtain whatever voltage is needed by connecting an appropriate transformer on the load side of the meter to produce a custom voltage from a standard source.
- Available service voltages:

PHASE	WIRES	NOMINAL VOLTAGE	MIN. kVA REQUIRED
Single	3	240/120	N/A
Three	4	208/120	40
Three	4	480/277	40
Single	3	480/240	Consult DEC

Please note: Exceptions to the available nominal voltages will be made on a case-by-case basis.

## ATTENTION ELECTRICIANS!

Electricians: DEC must be contacted **BEFORE** breaking the seal to remove any electric meter that is served by DEC.

This is especially important as DEC transitions to an automated outage reporting system. The new digital electric meters installed by DEC will automatically report an outage when the meter loses power. If we don't know you're removing a meter, we may assume there's an outage at that location or that the meter is being tampered with and dispatch a crew to make repairs. This may result in the member being billed a charge.

According to DEC's Terms & Conditions, only licensed electricians and trained DEC employees are allowed to remove an electric meter from its socket. All electricians must sign and return a waiver to DEC before pulling the meter.

Before removing a DEC electric meter, please call 855-332-9090 x-307 to reach our Dispatch Center, which is staffed 24/7/365.

Page 9

### GENERAL INFORMATION

- People have suffered serious injuries or death as a result of carelessness around electrical wires. Many of these people believed that the wires were insulated and fairly harmless. While it is true that various types of wire may have a covering, it is NOT insulation that is designed for personal protection.
- Recognizing these facts, many local, State and Federal laws or regulations have been passed. The Occupational Safety & Health Administration (OSHA) is the arm of the Federal Government that regulates the proximity to electrical wires of work crews unqualified to work on electric lines. Additionally, the National Electrical Safety Code governs the erection of structures near electric lines.
- Whenever any work activity is to be performed near overhead lines or when an excavation is involved, the Cooperative must be notified in advance of the start of such work. Most situations are different and must be handled individually. Sometimes covering the wires will suffice while other times the wires might have to be removed, relocated or de-energized. Depending on the scope of the work there may be costs associated.
- The Cooperative's poles, towers and other structures are provided for the sole purpose of supplying electric service. The unauthorized attachment of antennas, signs, banners, basketball hoops, or any other item deemed foreign by the Cooperative to Cooperative facilities is strictly prohibited. The Cooperative reserves the right to remove such attachments without notice.
- Antennas on any high support are particularly vulnerable to high winds and lightning. Accidents may be prevented if installations are made by experienced installers who use prime materials, conform to manufacturers' recommendations and conform to all building and electrical codes.
- Pools and their associated structures should never be constructed under electrical wires. Contact the Cooperative during the planning stages of such projects so various options for relocating facilities can be evaluated.
- The available fault current at a site must be known before circuit breakers and other service equipment, which must interrupt and withstand such fault current magnitudes, can be specified. To safeguard your property, you are warned against sizing fuses or circuit breakers larger than National Electrical Code guidelines. You

are also warned against using any technique to modify the operation of any protective device.

- Fallen wires are particularly dangerous because they are often assumed to be de-energized. Do not hesitate to call '911' to report downed wires. Do not make any attempt to touch or move a downed wire. Prevent others from getting near the wire until a Cooperative representative checks the situation. A downed wire is our highest response priority and shall always be considered energized and should never be approached.
- In Delaware, electricians will not erect any structure, like an underground cable riser or ladder, on Cooperative poles. No work on Cooperative poles is permitted. Contact the Cooperative's office to coordinate any work involving Cooperative poles.

### GENERAL INSTALLATION REQUIREMENTS FOR UNDERGROUND FACILITIES

- Underground electric service will be established by DEC upon a site visit. The member will provide a stake or point mark indicating the location of the meter.
- In some instances, the type, nature, and/or size of the service requested by a member may not be available at a desired location.
- When **temporary underground service** is required, the installation shall be in accordance with Construction Standard UTS 1, located in Section 8.
- For conductor requirements:
  - Single-phase service less than 400 amps, DEC provides conductors to the line side of the meter socket.
  - Single-phase service less than 400 amps for multi-gang meter socket requires parallel runs, DEC provides conductors to the line side of the meter socket.
  - Single-phase service and three-phase service 400 amps and above require a CT meter, member provides all underground service conductors and conduit on secondary side of the transformer, or where the CT metering cabinet is installed.
- In the case of underground facilities, a member shall not erect or maintain any building, structure, or any part of the septic system over such facilities, and shall not plant any trees or shrubs over such facilities, and shall not substantially change the grade over or adjacent to such facilities.
- Minimum Clearances from equipment see Specification SP-2, located in Section 8. The member must contact DEC to determine appropriate clearances. These clearances shall not supersede any local ordinance or code which requires greater clearance. If additional fire protection is necessary for insurance and/or other purposes, it is the responsibility of the building/property owner and/or member to provide additional protection.
- Regarding CT metering, the member shall furnish, at their expense, and adhere to DEC specifications all trenching, backfilling, manholes, conduits, ground wire and vaults necessary for the installation of underground electric distribution facilities on the secondary side.

- Secondary underground facilities shall be a minimum of Schedule 40 PVC and maintain a minimum depth as required by the NEC.
- Any conduits crossing water, gas, septic or sewer lines, must maintain approximately 12-in clearance.
- The ends of the conduit shall be plugged during construction to prevent the entrance of foreign matter. The conduit shall be terminated as follows:
- Conduit sweep shall be terminated inside the conduit window of all pads. Conduits shall terminate not more than 3" inside a vault.
- All ends, joints and internal finish of the conduit shall be free of sharp edges or burrs which could damage the cable.
- Member shall be responsible to cover all open holes or trenches to mitigate any hazardous conditions at the job site prior to DEC starting their work.

## **SECONDARY**

- Sweeps: Electrical grade Schedule 40 PVC 90° sweep(s) with a minimum radius of 36 inches shall be suitable for turn-up into electrical equipment (transformer, meter pans, risers, etc.).
- Conduits installed in pedestals must be straight up and in close proximity in order to make proper connections.

## Section 4: Overhead Service Installation

---

### OVERHEAD SERVICE

- All entrance wiring must be completed before DEC extends service drop conductors to the building.
- Only one service of the same characteristic will be run to a single building except as otherwise permitted by the NEC, or local authority having jurisdiction.
- The point of attachment of a service to a member's building shall not be less than 12 feet, and no more than 20 feet above permanent ground level. The ground shall be reasonably level to permit the use of a ladder by DEC employees to attach the service. Service attachments shall be so installed as to permit the service connections to be directly reached from a ladder placed securely on the ground, and as to permit the maintenance of the following minimum clearances as per the National Electrical Code. Refer to Specification SP-3, located in Section 8.
  - Point of attachment must be located 3-feet (minimum) from a window.
  - Twelve feet above finished grade, sidewalks, residential driveways, and commercial areas not subject to truck traffic.
  - 16-feet above roads, streets, alleys, residential driveways, cultivated fields, and areas subject to truck traffic.
  - State Roads require an 18-foot clearance.
- The maximum length of service drop which DEC will install is determined by the characteristics of the load to be served and the terrain over which the service drop passes. If necessary to maintain minimum clearances, additional pole(s) will be installed by DEC on the members property.
- Where a building is too low to provide minimum clearance, the member shall install a service mast of suitable height and strength, guyed if deemed necessary. When such a service mast is installed, the member shall assume full responsibility for the installation, including roof leaks and shall have adequate strength to support the required service drop. Per NEC requirements, only power service drop conductors may be attached to such mast. Refer to Specification SE-4, located in Section 8.

- When **temporary overhead service** is required, the installation shall be in accordance with Construction Standard TS-1, located in Section 8 (alternative supporting structures may be used as approved by DEC).
- For all overhead service entrances, DEC will furnish and install the service drop to the point of attachment located on the building or other location, and connectors to connect the service drop to the member's service entrance conductors. The member shall furnish and install all necessary service entrance equipment beyond the service drop attachment.
- Where it is considered necessary by DEC for the proper installation of large capacity overhead services conductors, the member shall supply a suitable attachment in the building's exterior wall to support the service drop(s).
- For services to semi-permanent mobile homes, the member shall install the meter socket with an individually enclosed main breaker on a suitable service entrance structure separated from the mobile home. Refer to Construction Standards SE-2 and SE-3 located in Section 8.



## Section 5: Metering

---

### GENERAL

DEC may refuse to connect a service or install a meter on any metering installation that does not conform to DEC's Handbook for Electric Service.

Meter sockets will be provided by member and will be selected from the approved meter socket list. The approved meter socket list can be found on DEC's website.

Meters will be furnished, owned, and maintained by DEC and shall be installed, removed, and changed only by authorized DEC employees.

DEC does not allow sub-metering, except in specific cases with additional requirements. (See DEC Terms & Conditions.)

### REMOVING AND INSTALLING METERS

Only qualified personnel authorized by DEC (meter and/or operations department), are permitted to cut seals, and remove or install meters. Under emergency conditions, DEC will grant a licensed electrician a release to cut seals. When requested, the party accepts all liability for damage or alteration to equipment, injury to persons or property, and loss of revenue to DEC from the time the seal is removed until 5 days after DEC has been notified that the equipment is ready to be re-sealed. The member or electrical contractor must promptly notify DEC when repairs or modifications have been completed. Extreme caution must be used when meters are removed or installed. Dependent upon the type of service or meter base, removal of the meter may not de-energize the service.

### METER LOCATION

The member must install the meter socket where it will be accessible to DEC personnel, between 4 and 5 ½ feet from the ground to the center of the meter. Meter socket locations require prior approval by a representative of DEC. The member must provide a location to install metering equipment. The meter location must be free from obstruction, corrosive atmosphere, abnormal temperature, vibration, and be convenient to DEC

distribution system. All meters, meter equipment, and enclosures must always be readily accessible by DEC's personnel for meter reading, maintenance, testing, installation, or removal.

**The acceptable locations for meter sockets are:**

- Located outside on the exterior of the building being served.
- Located in an area that is not subject to being fenced.
- Located on a structure that is owned by the member and is near the building being served.

**The unacceptable locations for meter socket are:**

- Above the first story level or below the first basement level of a building. Any exceptions to this rule must have the approval of DEC's meter department before electrical installation begins.
- On poles not owned by DEC.
- On any DEC primary voltage line pole.
- On any line pole occupied solely by the telephone company, except to serve telephone company equipment.
- In commercial occupancies that the meter does not serve.
- Inside a building.
- Any place where safety may be compromised.
- On pad mount transformers (except for CT meters).

**The reasons for these requirements are:**

- If there is a fire or other disaster, DEC can disconnect service.
- So, DEC can read the meters in a safe, cost effective manner.
- So, DEC can efficiently maintain the meter.
- So, DEC employees do not have to carry keys for locked fences.

## **METER SOCKET REQUIREMENTS**

- Require DEC approval (see approved listing at [www.delaware.coop](http://www.delaware.coop))
- Any Commercial or three-phase installations, equal to 320 Amps, require a meter socket with an integral lever by-pass.
- Be rated for exterior use, and be rain tight according to NEMA-3R.
- Be UL (Underwriters Laboratory) approved for application.
- Have all unused openings tightly sealed from the inside of the socket.
- Be plumb and securely fastened to the supporting structure.

- The meter socket must be a ringless type, unless prior approval from DEC.
- Meter sockets shall not be altered or bypassed to provide power, except by DEC personnel.
- Any meter socket containing energized equipment must be covered and sealed with a transparent cover plate when a meter is not installed.
- Terminals must be clearly marked with a manufacturer listing and labeling for the intended use.

## **METER SOCKET LABELING**

Multiple meter sockets shall be permanently labeled to indicate the section or unit they serve. The member's name is not acceptable. The labels must be engraved phenolic identifying plates, fade resistant and at least one inch high. Felt-tip pens and label maker tape are not considered permanent markings. Service will not be established until marking is complete and verified for accuracy. For multi-metered unit locations each meter socket shall be marked with the appropriate unit number and verified by the installation electrician. Any areas labelled incorrectly will result in the liability of the homeowner.

## **FACTORY BUILT MULTIPLE METER PANEL**

Prior to shipment from the factory, the manufacturer must submit commercial multiple meter panel drawings to the DEC engineering department for approval.

## **SERVICE CONDUCTORS**

Metered circuits must not enter raceways or enclosures containing unmetered circuits, except for meter loops on poles, or in specific situations approved by DEC meter department. Enclosures and raceways that contain unmetered conductors must have provisions for sealing or locking by DEC.

## MEMBER LOAD MONITORING

The member's load monitoring equipment must be installed only on the load side of the meter. No member equipment is allowed inside a meter or current transformer enclosure.

## CLEARANCE REQUIREMENTS

- The Member must provide and maintain the following clearances around all meter installations.
- The center of the meter must be between 4 and 5 1/2 feet above finished grade.
- A working space of 3 feet wide by 3 feet deep is required around the meter. This working space is to be kept clear of any obstructions, including landscaping.
- Metering equipment must remain accessible, always.
- For propane device or equipment clearances, please see SP-4 in Section 8.
- Must meet the National Electrical Code (NEC) clearance requirements.

## ELECTRICAL ROOMS

At no time shall a DEC electric meter be installed inside an electrical room. Member shall make accommodations to install meter on exterior of building.

## GROUNDING

All meter sockets, enclosures, and conduit must be bonded and grounded in accordance with the latest edition of the NEC. A suitable means must be provided by the member for attachment of other utilities to the member's grounding electrode system.

# SERVICES LESS THAN 400 AMP

---

## SERVICE CONDUCTORS FOR SELF-CONTAINED METERING

Line-side conductors must always be connected to the top terminals of the meter socket. Service conductors must be arranged in the socket to avoid interfering with the meter installation or operation of the bypass. The member is responsible for ensuring that the connection of service entrance conductors in the meter socket are inspected and tightened before the service is energized. Meters will not be installed if conductors place undue strain on the terminal facilities. Terminals must be rated for the size of the conductor to be used. Strands must not be removed to make conductors fit under-sized terminals.

## SEQUENCE OF EQUIPMENT

The self-contained meter equipment must be installed ahead of the service entrance rated device (typically the main breaker).

Regarding 480V service, single-phase or three-phase, a line-side, non-fused disconnect switch must be installed ahead of the meter to serve as a safety device for DEC personnel to pull the meter under an isolated condition.

## BASIC SINGLE-PHASE SERVICE

The 120/240-Volt, 200 ampere service is the most common service, and is typically installed on homes and some small businesses. However, it is the member's responsibility to determine electrical requirements and to notify DEC of the service size needed.

## SINGLE –PHASE 120/208 VOLT SERVICES

A five-terminal meter socket is required on all single-phase networked 120/208-Volt service. The fifth terminal must be in the nine o'clock position, connected to the socket neutral bus conductor.

## **THREE-PHASE**

Three-phase service requires a seven-terminal meter socket, the neutral (grounded) conductor must be connected to the third terminal from the left on the lower terminals.

# SERVICES GREATER THAN OR EQUAL TO 400 AMP

---

Provisions for current transformers (CT) must be made when the current-carrying capacity of the service entrance conductors are greater than or equal to 400 amps single-phase or three-phase, as determined by NEC.

## **The member is responsible for the following:**

- Member must supply load sheet to the engineering department for proper sizing of utility transformer and CT's.
- When possible, DEC will install all CT components inside the transformer enclosure. However, when this is not possible, the following apply:
  - All CT enclosures require a minimum front clearance of 36 inches.
  - The top of the CT enclosure is a maximum of 8-feet above finished grade; the bottom is a minimum of 2 feet above the finished grade.
  - All CT enclosures shall be located on the exterior of the building.
  - All CT mounting equipment shall be listed and labeled and shall be installed and used in accordance with any instructions included with that equipment.
  - CT cabinet shall be mounted to a solid exterior surface within 10-feet of the transformer.

## **SERVICE EQUIPMENT**

The member is responsible for furnishing, installing, and maintaining all required service entrance equipment, including the service conductors to the point of delivery designated by DEC. DEC supplies the CTs, meter wiring, and when applicable, meter wiring conduit.

## **EQUIPMENT**

Current transformer (CT) enclosures, switch gear, gutters that contain unmetered conductors, and metering equipment must have provisions for sealing. Contact DEC's meter department to obtain access for inspection.

**DEC will furnish, install, and maintain the following equipment:**

Revenue meters, current transformers, CT meter wiring, and the CT cabinet

**The member is responsible for furnishing, installing, and maintaining the following equipment beyond the point of delivery:**

Conduit and all necessary wiring, connectors, and lugs (except CT meter wiring)

**The Member will be required to furnish, install and maintain the following equipment when transformers are greater than 300kVA:**

Transformer pad – See DT-1 in Section 8.



## Section 6: Utilization Equipment

---

### GENERAL

When member-owned equipment could, or does, interfere with the operation of any components of DEC's electric system or the electric supply to others, DEC reserves the right to refuse service or to disconnect their supply upon proper notice. Such instances include, but are not limited to, harmonic distortion, voltage fluctuations, and unacceptable transformer and capacitor installations.

Members must consult with DEC in advance of making any commitments for large motors, welders, X-ray machines, or other equipment which may have a high instantaneous electric demand. DEC will determine the effect such installations have on DEC's system. Should DEC determine that the installation is likely to cause interference with the electric system or the electric supply to others, DEC may refuse to connect service, discontinue service, or require the member to make modifications to their system. It is the member's responsibility to determine and correct the problems such equipment may have on their own system.

### MOTOR INSTALLATIONS

The member should ascertain from DEC the character of service for the proposed location and application before purchasing motors and motor driven equipment. In general, motors of 5 hp. or less will be supplied from single-phase services, and motors larger than 5 hp. will be supplied from three-phase services, where three-phase is available.

All motors equal to or greater than 30 hp should be provided with a reduced voltage starter. All motors equal to or greater than 30 hp shall also be provided with line and load filters to reduce harmonics.

The electrical limitations of the supply circuits may, in some cases, make it necessary to limit the size of the largest motor to be operated on any given part of DEC's system. Written information as to such limitations is available upon inquiry to DEC.

## **NOTICE OF CHANGE IN LOAD**

If you are adding significant equipment or load, you must notify DEC to ensure this additional load will not adversely affect DEC's system or other members. Significant equipment on a small single-phase service would include, but is not limited to, such equipment as a welder or 10 hp motor. Significant equipment on the larger services would be anything that increases load by 10%, and must have Engineering pre-approval. Failure to notify DEC of any load increases may result in failure of equipment. Increased loads that affect the operation of DEC equipment will result in the replacement of equipment at the member's expense.

- Under certain conditions where the quality of service to others is not impaired, DEC may authorize the use of single-phase motors larger than 10 hp. A request for approval to install larger motors must be in writing.
- All motors should be equipped with suitable protective devices, to protect from the following conditions:
  - Overloads
  - Voltage and frequency variations
  - Single-phase operation of polyphase motors
  - Reversal of rotation in polyphase motors
- DEC will not be held responsible for any damages caused by the member replacing or substituting motors without written consent of DEC.
- DEC will not be responsible for damage caused to member-owned equipment where such damage is caused by the absence, failure, or misapplication of any member-owned protective device.
- DEC will not be held responsible for damage caused by lightning or other acts of nature.

## **VOLTAGE SENSITIVE EQUIPMENT**

Members owning or planning to purchase computer, reproduction, X-ray equipment or other voltage sensitive equipment, should consult the manufacturer of that equipment, and install suitable devices on their system to protect against power system transients and/or loss of voltage.

## Section 7: Generating Equipment Owned by Members

---

### GENERAL

The installation, connection, and operation of member-owned generating equipment by a member who takes service from DEC may be restricted under the provisions of rates in DEC's tariff and DEC technical requirements. The member shall contact DEC to obtain this information as part of the member's planning to make an installation of generating equipment. Prior to operation of member-owned generating equipment, DEC shall have the right to inspect any member-owned controlling and safety equipment associated with the generating equipment, together with the way the generator is electrically connected to the member's load and/or DEC's electrical system to assure that the operation of this equipment will not create an undue risk of damage or injury to DEC or its other members.

### STANDBY GENERATING EQUIPMENT

Members may install generating equipment to serve as a standby source of electricity to supply all or a part of the member's load in the event of an interruption in the supply of electricity from DEC. The member's interconnection shall be arranged so that no electrical connection can occur between DEC's service and the member's standby source of supply. The standby source shall be controlled through the use of a double throw switch, (Refer to Construction Standard DPS-1 located in Section 8) installed in a manner acceptable to DEC and designed to prevent the possibility of any electrical connection between DEC's normal electrical supply and the member's standby source.

At DEC's discretion, the member's standby source may be allowed to connect with DEC's supply provided certain conditions set forth by DEC are addressed by the member.

## **MEMBER GENERATED ALTERNATIVE ENERGY INTERCONNECTION**

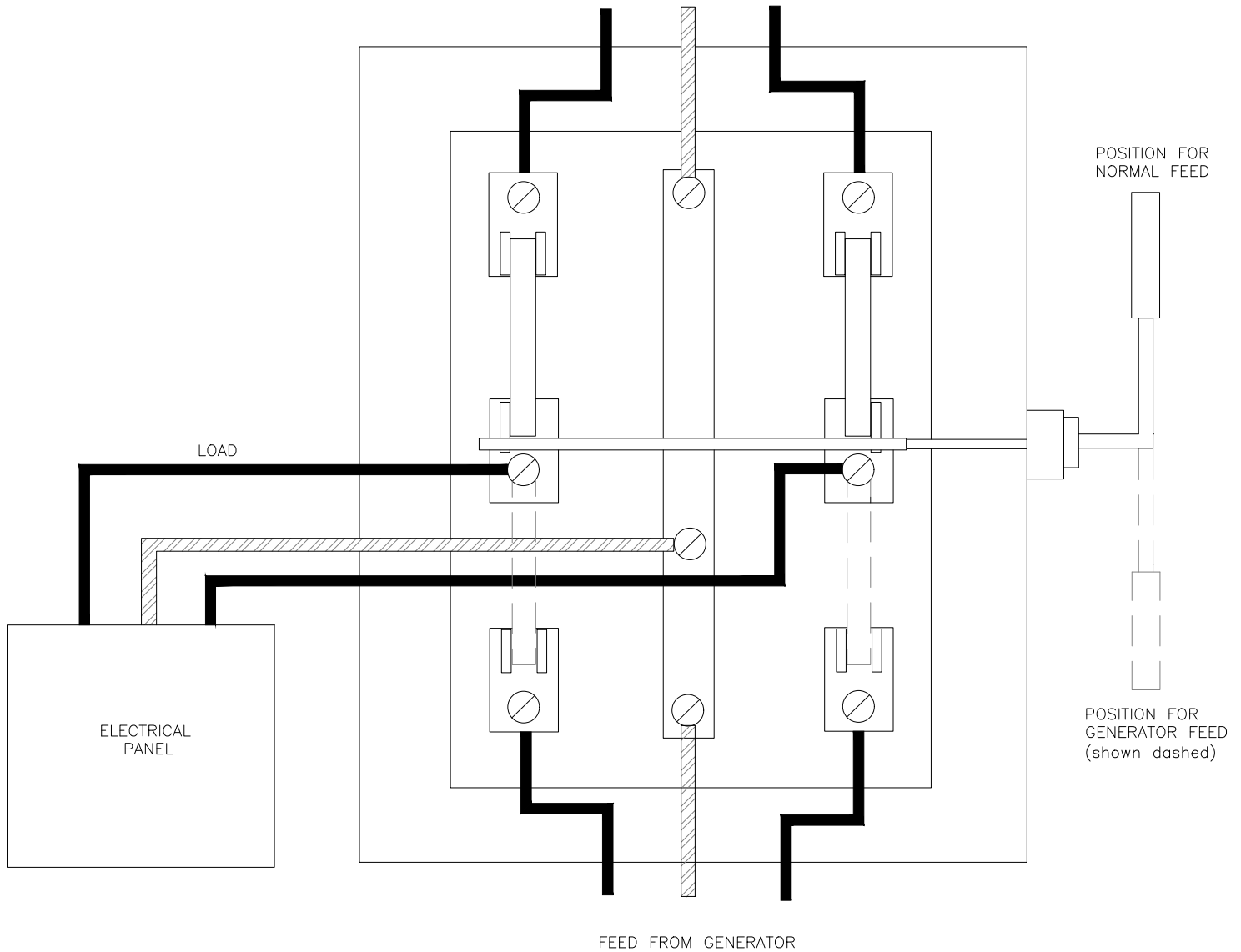
The member, at their discretion, may apply for a Member Generated Alternative Energy Interconnection (solar, wind, other). The member representative should complete an application to submit to DEC for review. Upon preliminary approval from DEC, the member should begin construction of the system. Please contact the DEC engineering department (302-349-9090 ext. 258) for additional information. Requirements are also available on the website.

## Section 8: Specifications

---

This page intentionally left blank

FEED FROM METER OR MAIN SWITCH



GENERAL NOTES:

- 1) TYPICAL DOUBLE POLE-DOUBLE THROW SWITCH INSTALLATION FOR USE WITH A BACK-UP GENERATOR.
- 2) DEC RECOMMENDS THAT ONLY THOSE CIRCUITS NEEDED IN AN EMERGENCY (i.e. AIR CONDITIONING UNIT, ONE LIGHTING CIRCUIT, ETC) BE ISOLATED IN A SEPARATE ELECTRICAL PANEL, AS MOST GENERATORS ARE NOT LARGE ENOUGH FOR THE LOAD DEMANDED BY ALL HOUSEHOLD APPLIANCES. AS ILLUSTRATED, THIS ELECTRIC PANEL CAN BE FED FROM EITHER THE MAIN SWITCH OR THE GENERATOR.
- 3) IF THE GENERATOR IS LARGE ENOUGH TO CARRY THE ENTIRE LOAD, THE MAIN SWITCH MAY BE CONNECTED TO THE LOAD SIDE OF THE DOUBLE POLE-DOUBLE THROW SWITCH. THE FEED TO THIS SWITCH WOULD THEN BE FROM THE GENERATOR OR DIRECTLY FROM THE METER.
- 4) DEC URGES THE MEMBER TO CONTACT A QUALIFIED ELECTRICIAN OR THE SUPPLIER OF THE GENERATOR TO DETERMINE THE OPERATING LIMITS OF THE UNIT PURCHASED.

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

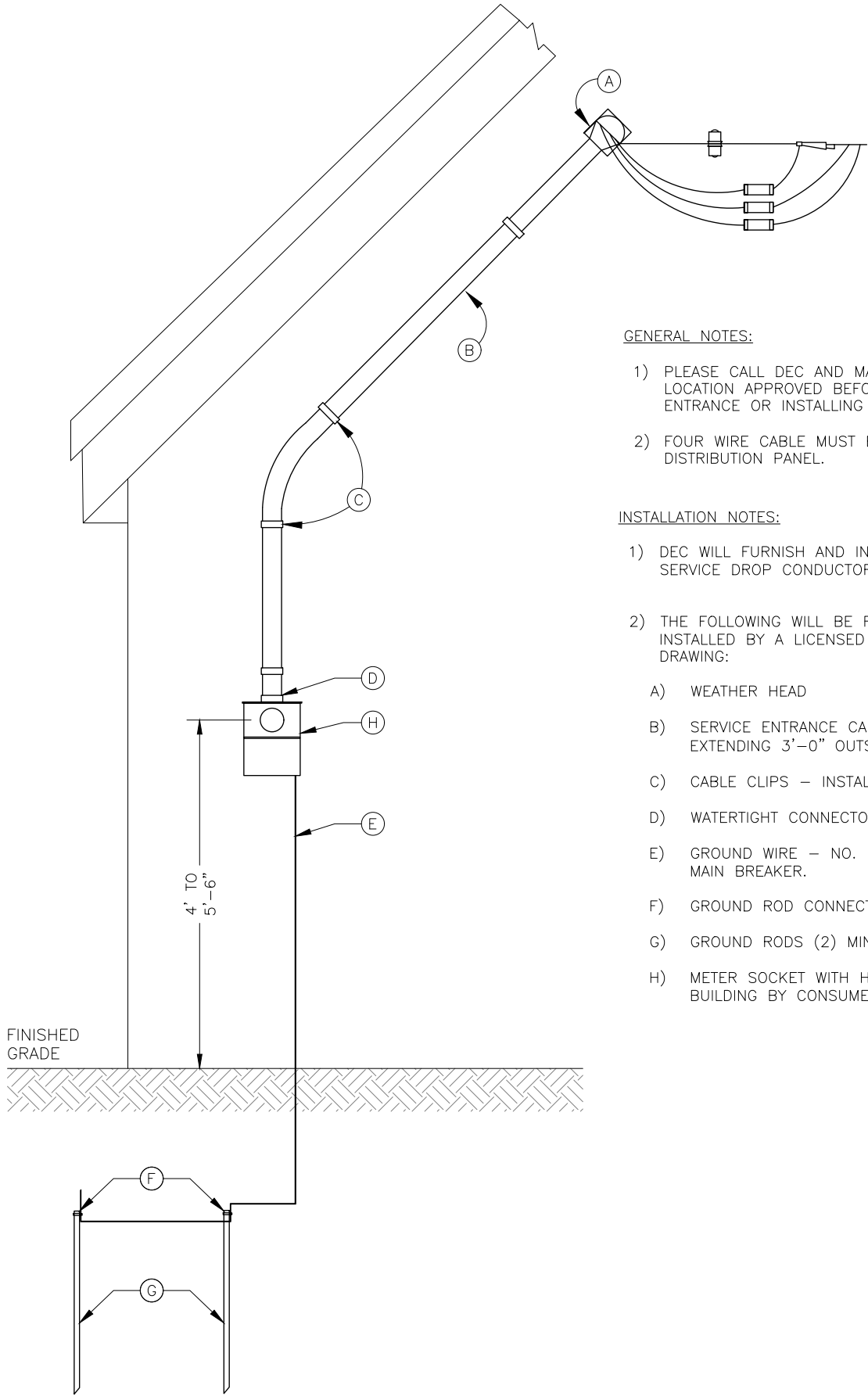
SKETCH NUMBER:

**DPS-1**



TITLE

## INSTALLATION REQUIREMENTS FOR BACKUP GENERATOR



GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) FOUR WIRE CABLE MUST BE INSTALLED FROM METER SOCKET TO DISTRIBUTION PANEL.

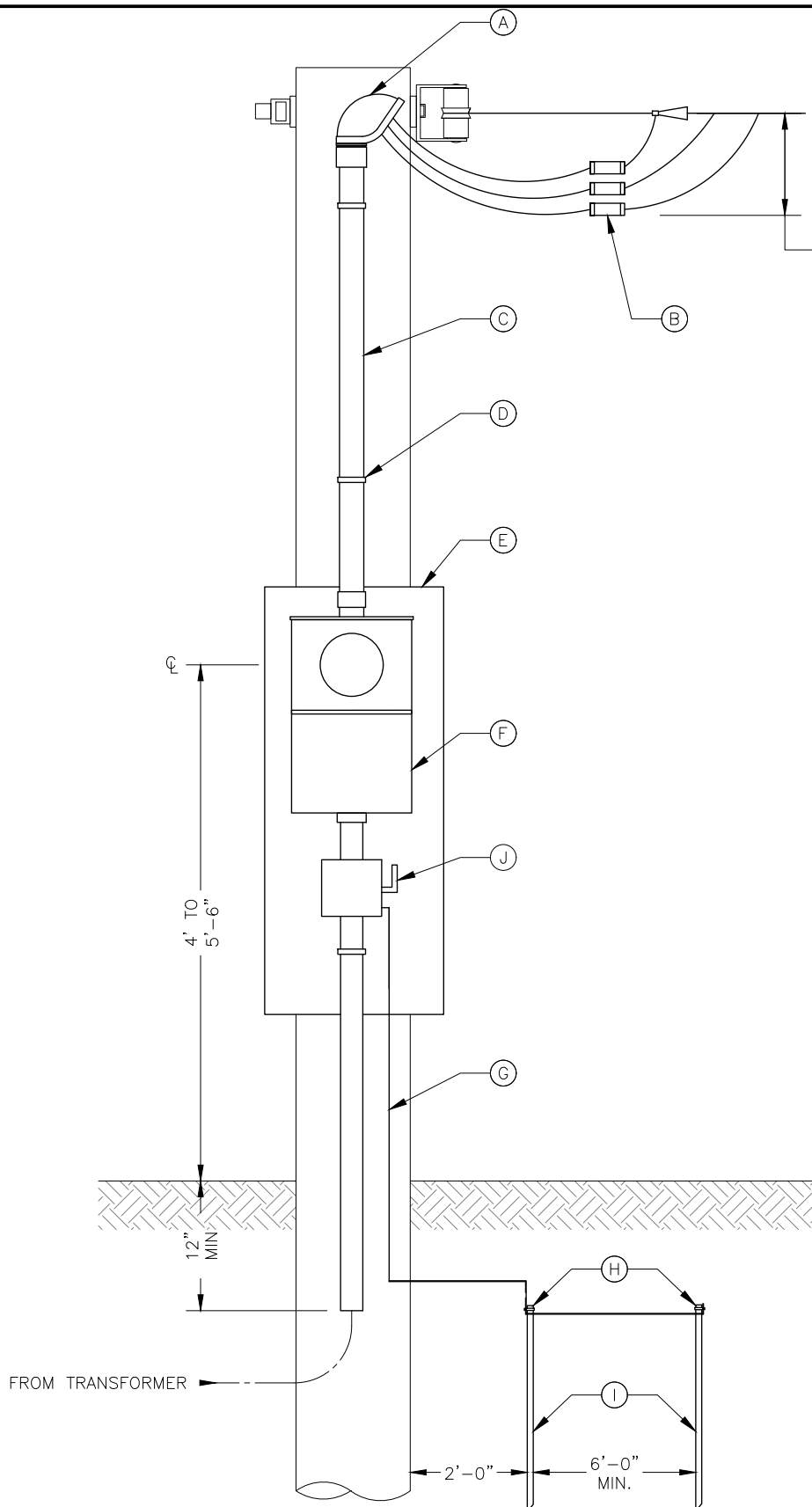
INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER AS WELL AS THE SERVICE DROP CONDUCTORS, WIRE HOLDER AND CONNECTORS.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) WEATHER HEAD
  - B) SERVICE ENTRANCE CABLE – TO BE INSTALLED WITH ENDS EXTENDING 3’-0” OUTSIDE OF WEATHER HEAD FOR DRIP LOOP
  - C) CABLE CLIPS – INSTALLED EVERY 36”
  - D) WATERTIGHT CONNECTOR
  - E) GROUND WIRE – NO. 6 COPPER (MIN. SIZE) EXTENDED FROM MAIN BREAKER.
  - F) GROUND ROD CONNECTORS
  - G) GROUND RODS (2) MIN. 8’-0” X 5/8” DIAMETER, COPPER CLAD
  - H) METER SOCKET WITH HUB – TO BE SECURELY ATTACHED TO BUILDING BY CONSUMER

DATE:	APRIL 2019
REVISION:	0
SCALE:	AS NOTED
SKETCH NUMBER:	SE-1



TITLE
ENTRANCE INSTALLATION SINGLE RESIDENCE



#### GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) MOBILE HOME METER LOCATION SHALL BE READILY ACCESSIBLE, IN SIGHT, AND NOT MORE THAN 30 FEET FROM EXTERIOR WALL OF MOBILE HOME IT SERVES. IF DISTANCE EXCEEDS 30FT, A SECOND DISCONNECT SWITCH IS REQUIRED.
- 3) CONDUIT AND WEATHER HEAD MUST EXTEND TO THE TOP OF THE POLE AS SHOWN TO PROVIDE CLEARANCE FOR TELEPHONE & CATV ATTACHMENTS. RISER MATERIAL ABOVE METER TO BE FURNISHED AND INSTALLED BY MEMBER.
- 4) FOUR WIRE CABLE MUST BE INSTALLED FROM METER SOCKET TO DISTRIBUTION PANEL.

#### INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER AS WELL AS THE SERVICE DROP CONDUCTORS, WIRE HOLDER AND CONNECTORS.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) WEATHER HEAD – LOCATED AT TOP OF POLE
  - B) SERVICE ENTRANCE CONDUCTORS – TO BE INSTALLED IN CONDUIT WITH ENDS EXTENDING 3'-0" OUTSIDE OF WEATHER HEAD FOR DRIP LOOP
  - C) CONDUIT – CONDUIT MAY BE EITHER SCHEDULE 40 PVC OR GALVANIZED STEEL
  - D) PIPE STRAPS
  - E) MOUNTING BOARD – MINIMUM 3/4" PRESSURE TREATED MATERIAL OR METAL BRACKETS FOR MOUNTING METER SOCKET DIRECTLY TO THE POLE
  - F) METER SOCKET WITH HUB – TO BE SECURELY ATTACHED TO STRUCTURE BY CONSUMER
  - G) GROUND WIRE – NO. 6 COPPER (MIN. SIZE) BONDED TO GALVANIZED STEEL CONDUIT BY MEMBER AS REQUIRED
  - H) GROUND ROD CONNECTOR
  - I) GROUND RODS (2) MIN. 8'-0" X 5/8" DIAMETER, COPPER CLAD
  - J) DISCONNECT SWITCH – INSTALL PER NEC AND LOCAL CODES.

DATE: APRIL 2019  
 REVISION: 0  
 SCALE: AS NOTED  
 SKETCH NUMBER:

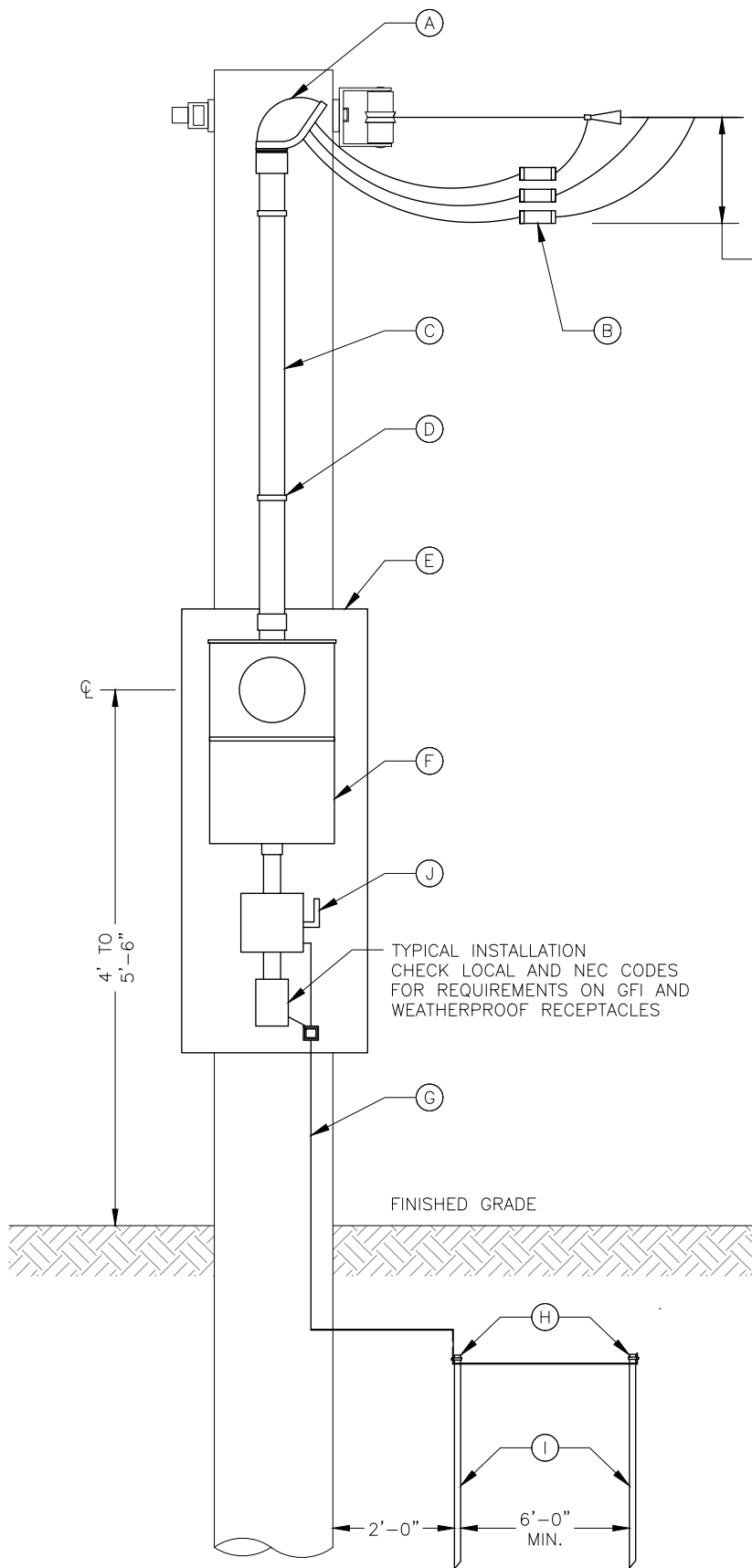
SE-2



TITLE

OVERHEAD SERVICE INSTALLATION  
 REMOTE METER ON POLE  
 SINGLE RESIDENCE





#### GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) MOBILE HOME METER LOCATION SHALL BE READILY ACCESSIBLE, IN SIGHT, AND NOT MORE THAN 30 FEET FROM EXTERIOR WALL OF MOBILE HOME IT SERVES. IF DISTANCE EXCEEDS 30FT, A SECOND DISCONNECT SWITCH IS REQUIRED.
- 3) CONDUIT AND WEATHER HEAD MUST EXTEND TO THE TOP OF THE POLE AS SHOWN TO PROVIDE CLEARANCE FOR TEL & CATV ATTACHMENTS. RISER MATERIAL ABOVE METER TO BE FURNISHED AND INSTALLED BY MEMBER.

#### INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER AS WELL AS THE SERVICE DROP CONDUCTORS, WIRE HOLDER AND CONNECTORS.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) WEATHER HEAD – LOCATED AT TOP OF POLE
  - B) SERVICE ENTRANCE CONDUCTORS – TO BE INSTALLED IN CONDUIT WITH ENDS EXTENDING 3'-0" OUTSIDE OF WEATHER HEAD FOR DRIP LOOP
  - C) CONDUIT – CONDUIT MAY BE EITHER SCHEDULE 40 PVC OR GALVANIZED STEEL
  - D) PIPE STRAPS
  - E) MOUNTING BOARD – MINIMUM 3/4" PRESSURE TREATED MATERIAL OR METAL BRACKETS FOR MOUNTING METER SOCKET DIRECTLY TO THE POLE
  - F) METER SOCKET WITH HUB – TO BE SECURELY ATTACHED TO STRUCTURE BY CONSUMER
  - G) GROUND WIRE – NO. 6 COPPER (MIN. SIZE) BONDED TO GALVANIZED STEEL CONDUIT BY MEMBER AS REQUIRED
  - H) GROUND ROD CONNECTORS
  - I) GROUND RODS (2) MIN. 8'-0" X 5/8" DIAMETER, COPPER CLAD
  - J) DISCONNECT SWITCH – INSTALL PER NEC AND LOCAL CODES.

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

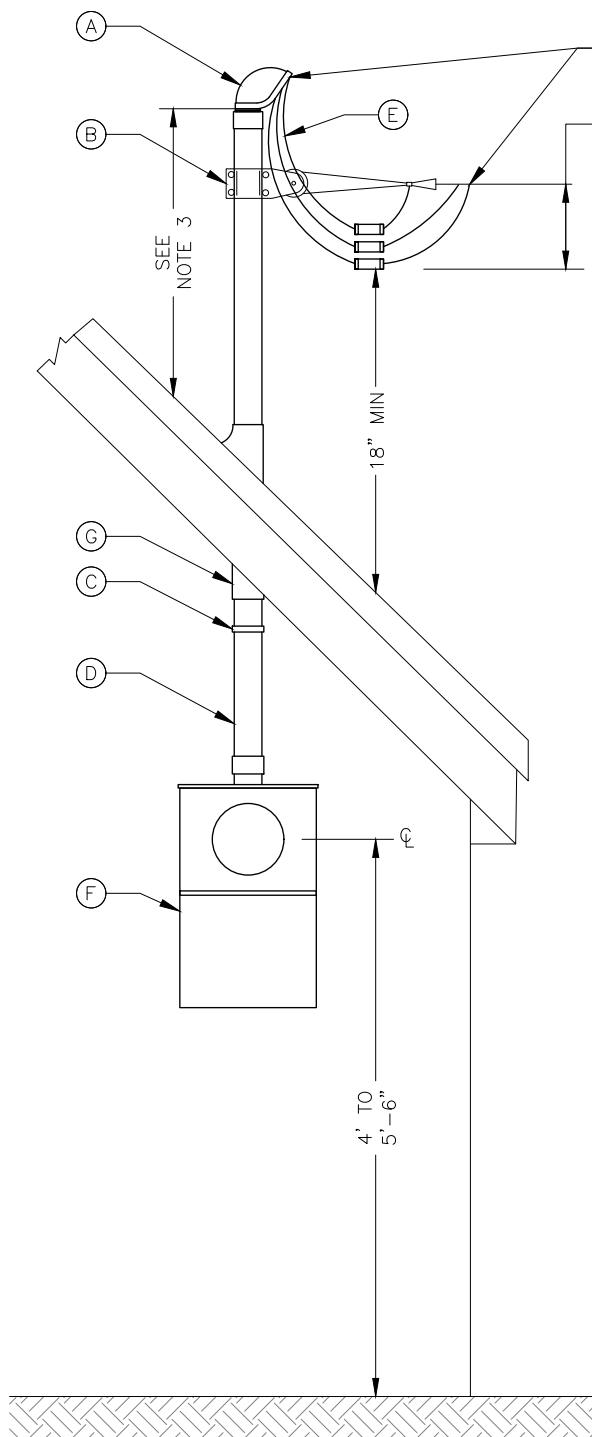
SKETCH NUMBER:

**SE-3**



TITLE

**OVERHEAD SERVICE INSTALLATION  
REMOTE METER ON POLE, TRAVEL  
TRAILERS, MOTOR HOMES, ETC.**



MAXIMUM 6-FT OF CONDUCTORS  
OVER ROOF, NEC 230.24 (A) EX3

12" MIN  
BOTTOM OF  
DRIP LOOP

SEE  
NOTE 3

18" MIN

4' TO  
5'-6"

#### GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) THE POINT OF ATTACHMENT ON THE BUILDING TO BE DETERMINED BY THE REQUIRED MINIMUM GROUND CLEARANCES OF SERVICE DROP CONDUCTORS. ATTACHMENT HEIGHTS IN EXCESS OF 20FT ARE SUBJECT TO DEC APPROVAL.
- 3) THE MEMBER ASSUMES THE RESPONSIBILITY THAT THE SERVICE MAST IS OF ADEQUATE STRENGTH. IF SERVICE MAST IS GREATER THAN 3FT, THEN ADDITIONAL SUPPORTS, BRACES, OR GUYS WILL BE REQUIRED.
- 4) ONLY ELECTRIC SERVICE DROP CONDUCTORS SHALL BE PERMITTED TO BE ATTACHES TO A SERVICE MAST. NEC 230.28.
- 5) NO MORE THAN 6' OF CONDUCTORS PASS OVER NO MORE THAN 4' OF ROOF. NEC 230.24(A) EX 3. CONDUCTOR LENGTH IS TOTALED BY ELECTRIC SERVICE DROP (TPLX) AND SERVICE ENTRANCE CONDUCTORS OUTSIDE OF THE SERVICE MAST.
- 6) SYSTEM SHALL BE GROUNDED AT THE MAIN BREAKER PER NEC.

#### INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER AS WELL AS THE SERVICE DROP CONDUCTORS, WIRE HOLDER AND CONNECTORS.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) WEATHER HEAD
  - B) INSULATED CONDUIT CLEVIS
  - C) CONDUIT HANGERS
  - D) CONDUIT - GALVANIZED STEEL
  - E) SERVICE ENTRANCE CONDUCTORS - TO BE INSTALLED IN CONDUIT WITH ENDS EXTENDING 3'-0" OUTSIDE OF WEATHER HEAD FOR DRIP LOOP
  - F) METER SOCKET WITH HUB - TO BE SECURELY ATTACHED TO BUILDING BY CONSUMER
  - G) COUPLING - ALL CONDUIT COUPLINGS SHALL BE LOCATED BELOW ROOF EVE

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

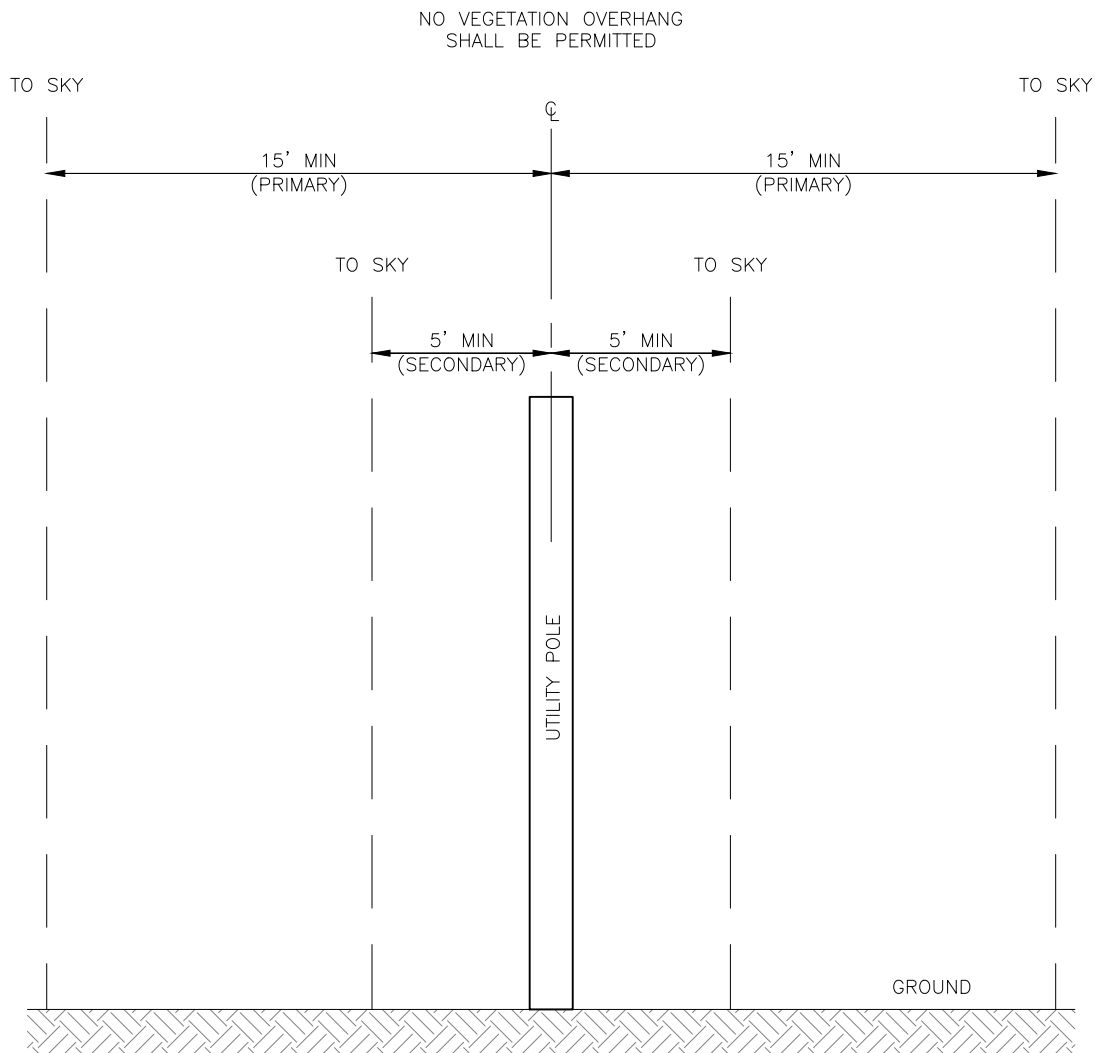
SKETCH NUMBER:

SE-4



TITLE

OVERHEAD SERVICE INSTALLATION  
SERVICE MAST  
SINGLE RESIDENCE.



GENERAL NOTES:

- 1) DEC RESERVES THE RIGHT TO CLEAR GROUND VEGETATION, TREES, TREE LIMBS AND BRUSH AS NECESSARY –  
  
 FOR SECONDARY SERVICE: 5' EITHER SIDE OF UTILITY POLE OR CONDUCTORS (WHICHEVER PROTRUDES FURTHER).  
  
 FOR PRIMARY SERVICE: 15' EITHER SIDE OF UTILITY POLE OR CONDUCTORS (WHICHEVER PROTRUDES FURTHER).
- 2) CLEAR DANGER TREES (DEAD, DECAYED, UPROOTED, ETC) AS NEEDED.
- 3) APPLY HERBICIDE TO CONTROL THE GROWTH OF VEGETATION.

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

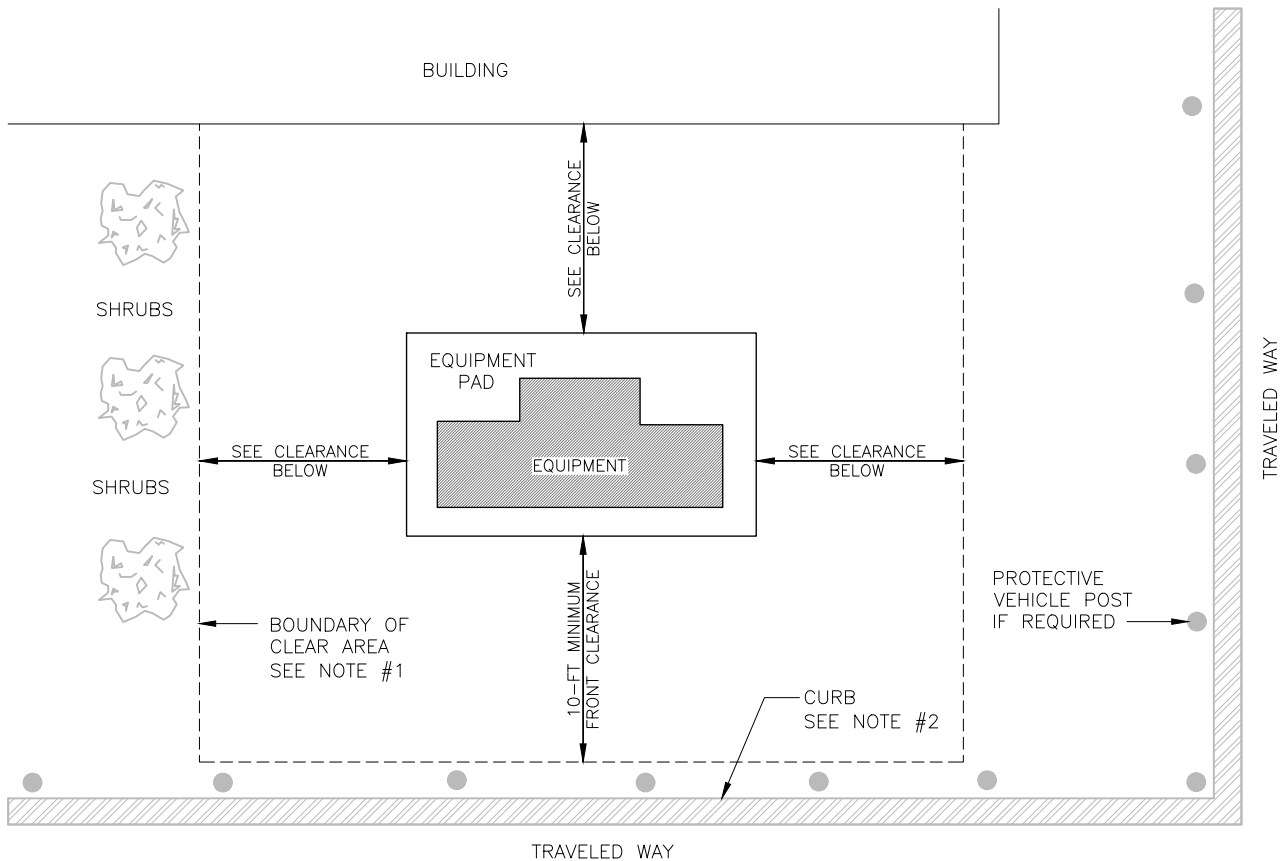
SKETCH NUMBER:

**SP-1**



TITLE

**NEW CONSTRUCTION VEGETATION  
CLEARING FOR NEW SERVICES  
ONLY**



#### GENERAL NOTES:

- 1) TO INSPECT, PROVIDE ACCESS, OPERATE AND VENTILATE THE EQUIPMENT, THE BELOW SPECIFIED CLEAR AREA DISTANCES TO BUILDINGS OR SHRUBS SHALL BE MAINTAINED. ALL DISTANCES SHALL BE MEASURED FROM THE NEAREST SURFACE OF THE EQUIPMENT. PROPERTY LINES SHALL BE CONSIDERED AN OBSTRUCTION, SINCE FENCE, SHRUBS, ETC. MAY BE INSTALLED AT A FUTURE DATE BY ADJACENT PROPERTY OWNERS.
- 2) IF NO CURB EXISTS, OR TRANSFORMER IS LOCATED CLOSER THAN 10' TO THE TRAVELED WAY, PROTECTIVE VEHICLE POSTS SHALL BE INSTALLED.
- 3) TRANSFORMER SHALL NOT BE LOCATED ON STEEP GRADES OR SWALES WHERE ACCESS IS MADE DIFFICULT.
- 4) TRANSFORMER IS NOT TO BE LOCATED WITH ITS DOORS FACING THE BUILDING.

#### CLEARANCES FOR PADMOUNT EQUIPMENT:

NON-COMBUSTIBLE WALLS.....5'	POOLS.....15'
COMBUSTIBLE WALLS, DOORS, WINDOWS, VENTS, OTHER OPENINGS, FIRE ESCAPES.....10'	SPRINKLER VALVE, STANDPIPE OR HYDRANT.....8'
DRIVEWAYS, PARKING LOTS, AND/OR TRAVELED WAYS.....10'	ABOVE GRADE FUEL TANKS/METERS.....10'
SIDEWALKS.....8'	NATURAL GAS OR PROPANE CONNECTIONS/METERS.....15'
PROPERTY LINES (FROM SIDES OF EQUIPMENT).....8'	GASOLINE DISPENSING UNITS.....20'
PROPERTY LINES (FROM DOORS OF EQUIPMENT).....10'	ELECTRICAL PADMOUNT EQUIPMENT.....8'
SHRUBS.....10'	FACILITIES USED TO HOUSE OR STORE HAZARDOUS LIQUIDS OR GASES (i.e. SERVICE STATION GAS PUMPS AND TANKS, PROPANE BULK DISPENSING TANKS AND EMERGENCY GENERATOR FUELING POINTS.....20'

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

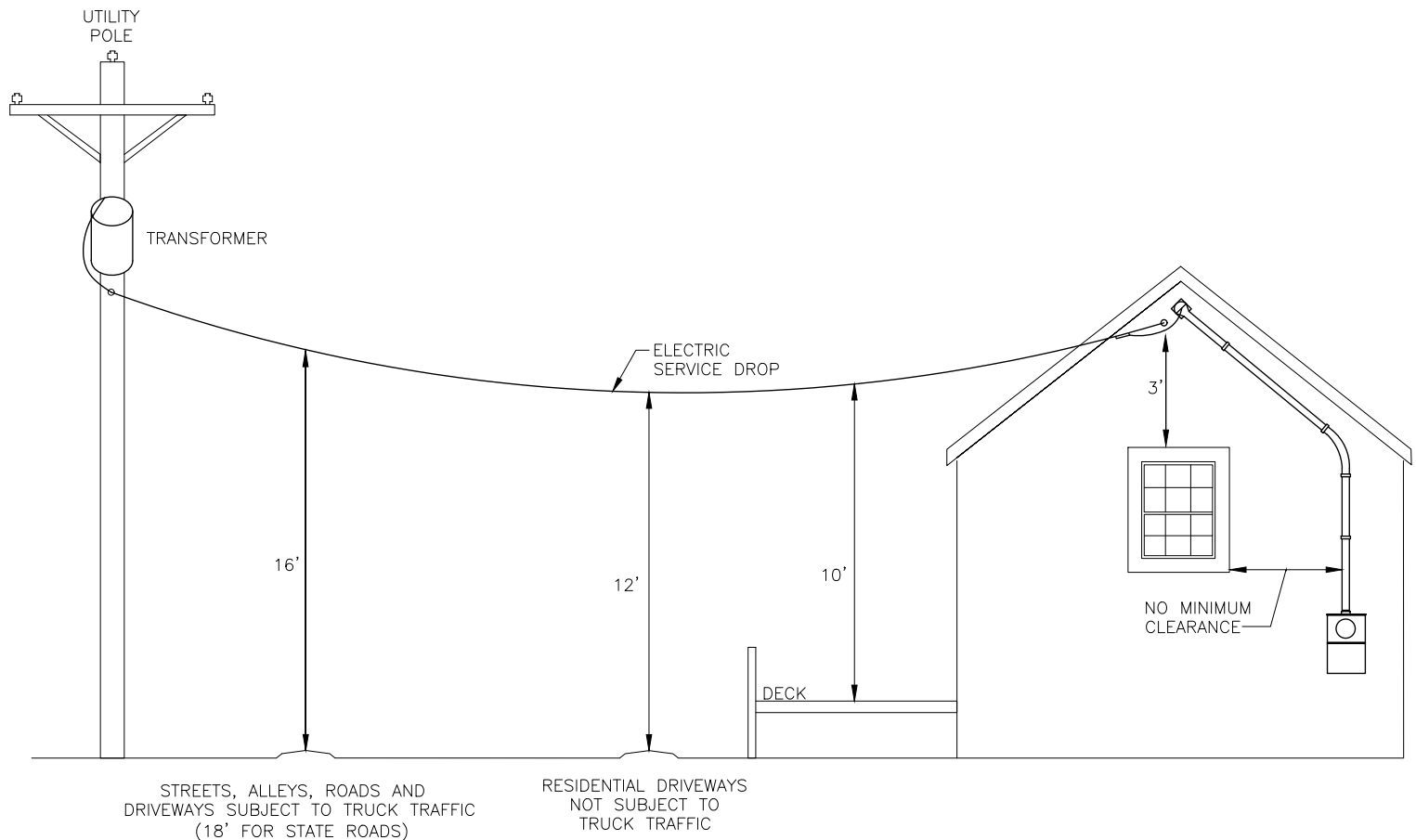
SKETCH NUMBER:

SP-2



TITLE

## CLEARANCES FOR PADMOUNT EQUIPMENT



#### GENERAL NOTES:

- 1) SEPARATION FROM ELECTRIC SERVICE DROP (TPLX) AND COMMUNICATION SERVICE DROP POLE IS 40" NESC 235-5 TABLE 1(a).
- 2) SEPARATION FROM ELECTRIC SERVICE DROP (TPLX) AND COMMUNICATION SERVICE DROP AT ANY POINT IN THE SPAN INCLUDING THE POINT OF ATTACHMENT IS 12" NESC 23(C)1 AND NEC 800.44(A)4.
- 3) SEPARATION FROM ELECTRIC SERVICE DROP (TPLX) AND COMMUNICATION SERVICE DROP RUNNING DOWN THE SIDE OF THE BUILDING IS 4" NEC 800.50(B).
- 4) ELECTRIC SERVICE DROP (TPLX) CONDUCTORS AND CONNECTIONS SHALL HAVE A CLEARANCE OF 3' IN ANY DIRECTION FROM WINDOWS THAT ARE DESIGNED TO BE OPEN, DOORS, PORCHES, BALCONIES, LADDERS, STAIRS, FIRE ESCAPES AND SIMILAR LOCATIONS, EXCEPT WHEN RUN ABOVE THE TOP LEVEL OF THE WINDOW. NESC 234(C)3d2 AND NEC 230.9(A).
- 5) SERVICE WEATHER-HEADS SHALL BE LOCATED ABOVE THE ELECTRIC SERVICE DROP POINT OF ATTACHMENT AND SHALL NOT BE FARTHER THAN 24" NEC 230.54(C).
- 6) FOR ELECTRIC SERVICE DROP VERTICAL CLEARANCES ABOVE GROUND PLEASE REFERENCE NESC 232-1 TABLE INCLUDING FOOTNOTES.
- 7) VERTICAL CLEARANCE, FROM HIGHEST POINT READILY ACCESSIBLE ROOFS, BALCONIES, PORCHES, OR DECKS OVER WHICH THEY PASS IS 10' NESC 234(C)3d AND NEC 230.24(B)1.
  - A) WHEN THE ROOF OR BALCONY IS NOT READILY ACCESSIBLE THE CLEARANCE INCLUDING THE DRIP LOOP SHALL NOT BE LESS THAN 3' WHEN ELECTRIC SERVICE DROP IS OWNED BY THE UTILITY.
  - B) IF ELECTRIC SERVICE DROP IS PRIVATELY OWNED THE VERTICAL CLEARANCE ABOVE ROOFS IS 8' NEC 230.24(A).
  - C) A ROOF, BALCONY, PORCH, OR ATTACHED DECK IS CONSIDERED READILY ACCESSIBLE TO PEDESTRIANS IF IT CAN EASILY BE CASUALLY ACCESSED THROUGH A DOORWAY, WINDOW, RAMP, STAIRWAY, OR PERMANENTLY MOUNTED LADDER BY A PERSON, ON FOOT, WHO NEITHER EXERTS EXTRAORDINARY PHYSICAL EFFORT NOR EMPLOYS TOOLS OR DEVICES TO GAIN ENTRY. A PERMANENTLY MOUNTED LADDER IS NOT CONSIDERED A MEANS OF ACCESS IF ITS BOTTOM RUNG IS 8FT OR MORE FROM THE GROUND OR OTHER PERMANENTLY INSTALLED ACCESSIBLE SURFACE.
- 8) TRUCKS ARE DEFINED AS ANY VEHICLE EXCEEDING 8FT IN HEIGHT.
- 9) SYSTEM SHALL BE GROUNDED AT THE MAIN BREAKER PER NEC.

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

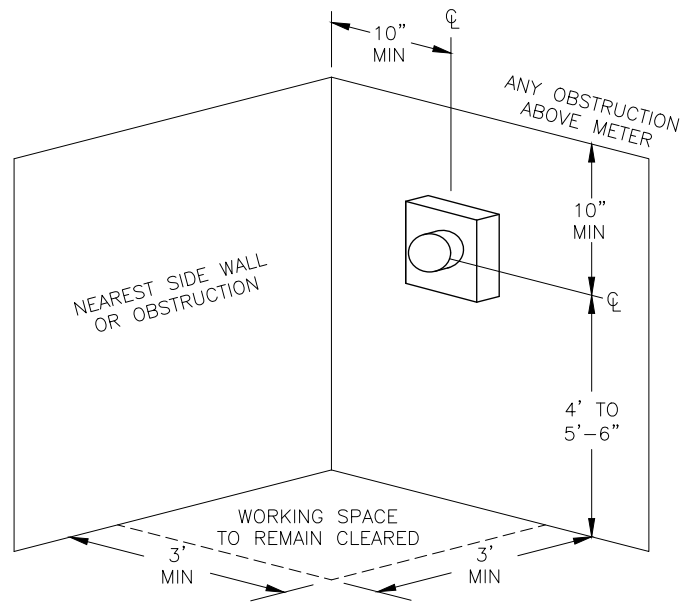
SKETCH NUMBER:

**SP-3**

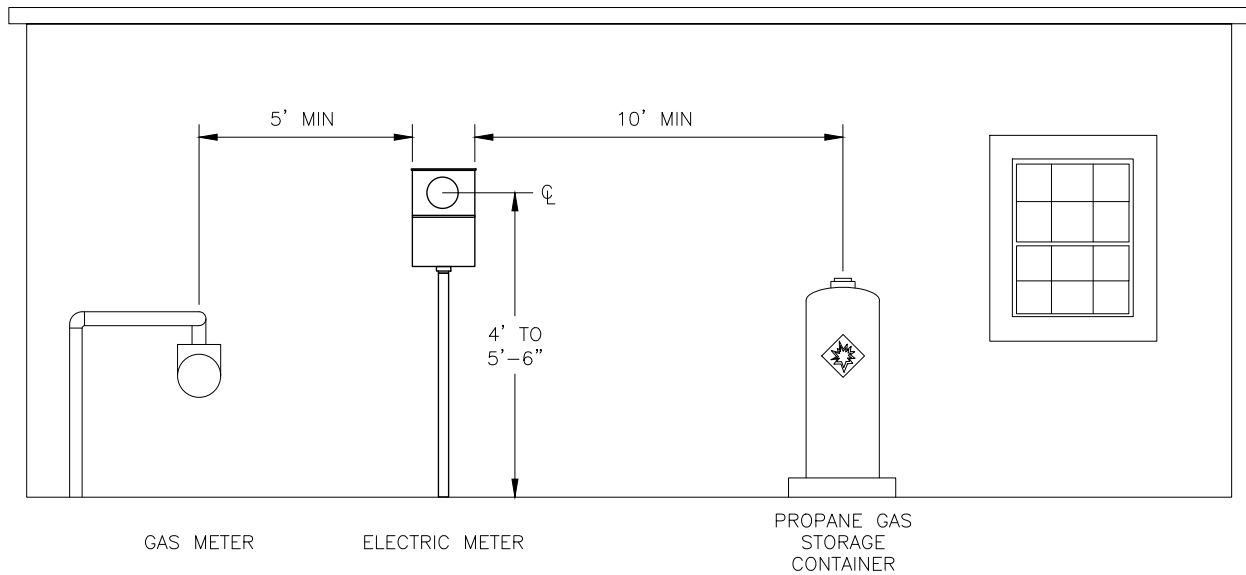


TITLE

**SERVICE CLEARANCES**



PREFERRED INSTALLATION OF  
METER SOCKET ON EXTERIOR WALL



MINIMUM METER SOCKET  
CLEARANCES

DATE: APRIL 2019  
 REVISION: 0  
 SCALE: AS NOTED  
 SKETCH NUMBER:

**SP-4**

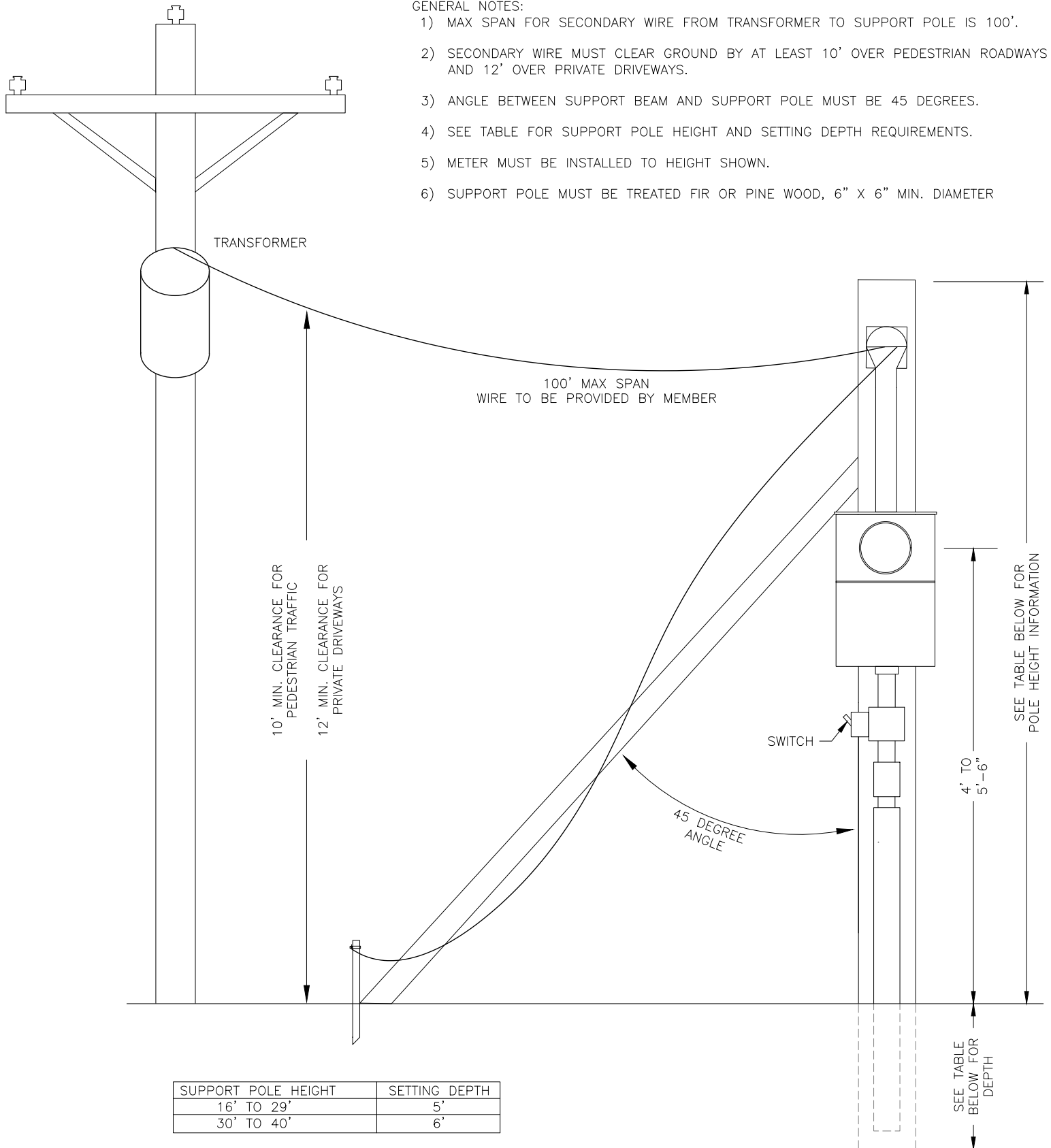


TITLE

**MINIMUM METER AND METER  
SOCKET CLEARANCES**

GENERAL NOTES:

- 1) MAX SPAN FOR SECONDARY WIRE FROM TRANSFORMER TO SUPPORT POLE IS 100'.
- 2) SECONDARY WIRE MUST CLEAR GROUND BY AT LEAST 10' OVER PEDESTRIAN ROADWAYS AND 12' OVER PRIVATE DRIVEWAYS.
- 3) ANGLE BETWEEN SUPPORT BEAM AND SUPPORT POLE MUST BE 45 DEGREES.
- 4) SEE TABLE FOR SUPPORT POLE HEIGHT AND SETTING DEPTH REQUIREMENTS.
- 5) METER MUST BE INSTALLED TO HEIGHT SHOWN.
- 6) SUPPORT POLE MUST BE TREATED FIR OR PINE WOOD, 6" X 6" MIN. DIAMETER



DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

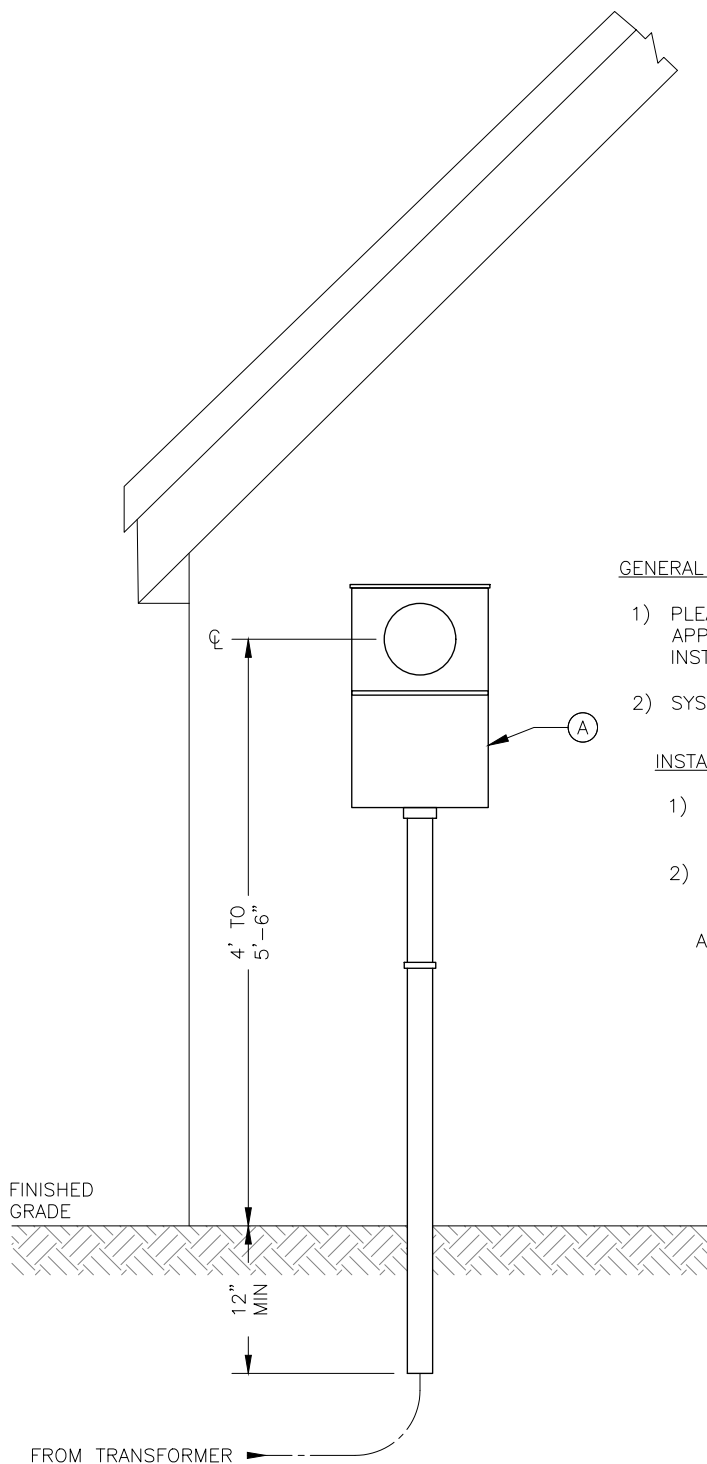
SKETCH NUMBER:

TS-1



TITLE

TEMPORARY ENTRANCE  
INSTALLATION SINGLE  
RESIDENCE



GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) SYSTEM SHALL BE GROUNDED AT THE MAIN BREAKER PER NEC.

INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER, CONDUIT AND WIRE FROM THE TRANSFORMER.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) METER SOCKET – TO BE SECURELY ATTACHED TO BUILDING BY CONSUMER

DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

SKETCH NUMBER:

**USE-1**



TITLE

**ENTRANCE INSTALLATION  
SINGLE RESIDENCE  
DEVELOPMENT**

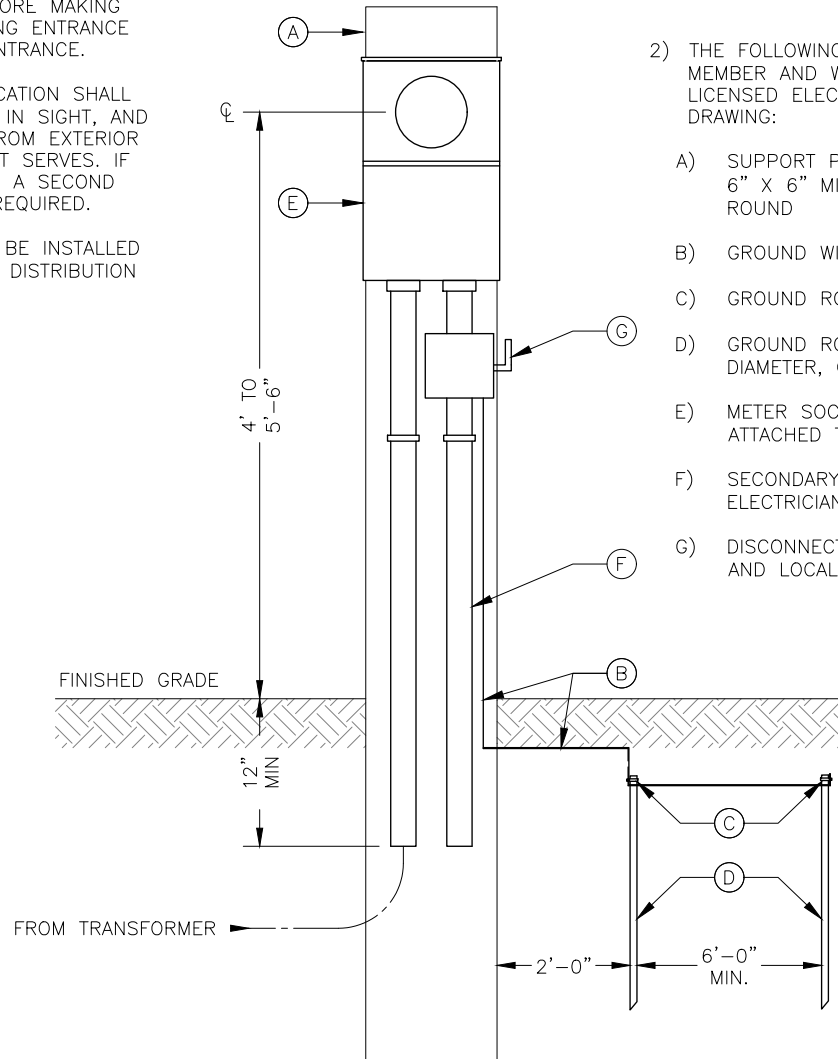


# GENERAL NOTES:

- 1) PLEASE CALL DEC AND MAKE ARRANGEMENTS TO HAVE THE METER LOCATION APPROVED BEFORE MAKING ANY CHANGES TO EXISTING ENTRANCE OR INSTALLING A NEW ENTRANCE.
- 2) MOBILE HOME METER LOCATION SHALL BE READILY ACCESSIBLE, IN SIGHT, AND NOT MORE THAN 30FT FROM EXTERIOR WALL OF MOBILE HOME IT SERVES. IF DISTANCE EXCEEDS 30FT, A SECOND DISCONNECT SWITCH IS REQUIRED.
- 3) FOUR WIRE CABLE MUST BE INSTALLED FROM METER SOCKET TO DISTRIBUTION PANEL.

# INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER, CONDUIT AND WIRE FROM THE TRANSFORMER.
- 2) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) SUPPORT POST (PRESERVATIVE TREATED) – 6" X 6" MIN. SQUARE OR 8" DIAMETER ROUND
  - B) GROUND WIRE – AS REQUIRED BE NEC
  - C) GROUND ROD CONNECTORS
  - D) GROUND RODS (2) MIN. 8'-0" X 5/8" DIAMETER, COPPER CLAD
  - E) METER SOCKET – TO BE SECURELY ATTACHED TO BUILDING BY CONSUMER
  - F) SECONDARY LOAD-SIDE CONDUIT. SIZED BY ELECTRICIAN TO ACCOMODATE CONDUCTORS.
  - G) DISCONNECT SWITCH – INSTALL PER NEC AND LOCAL CODES.



DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

SKETCH NUMBER:

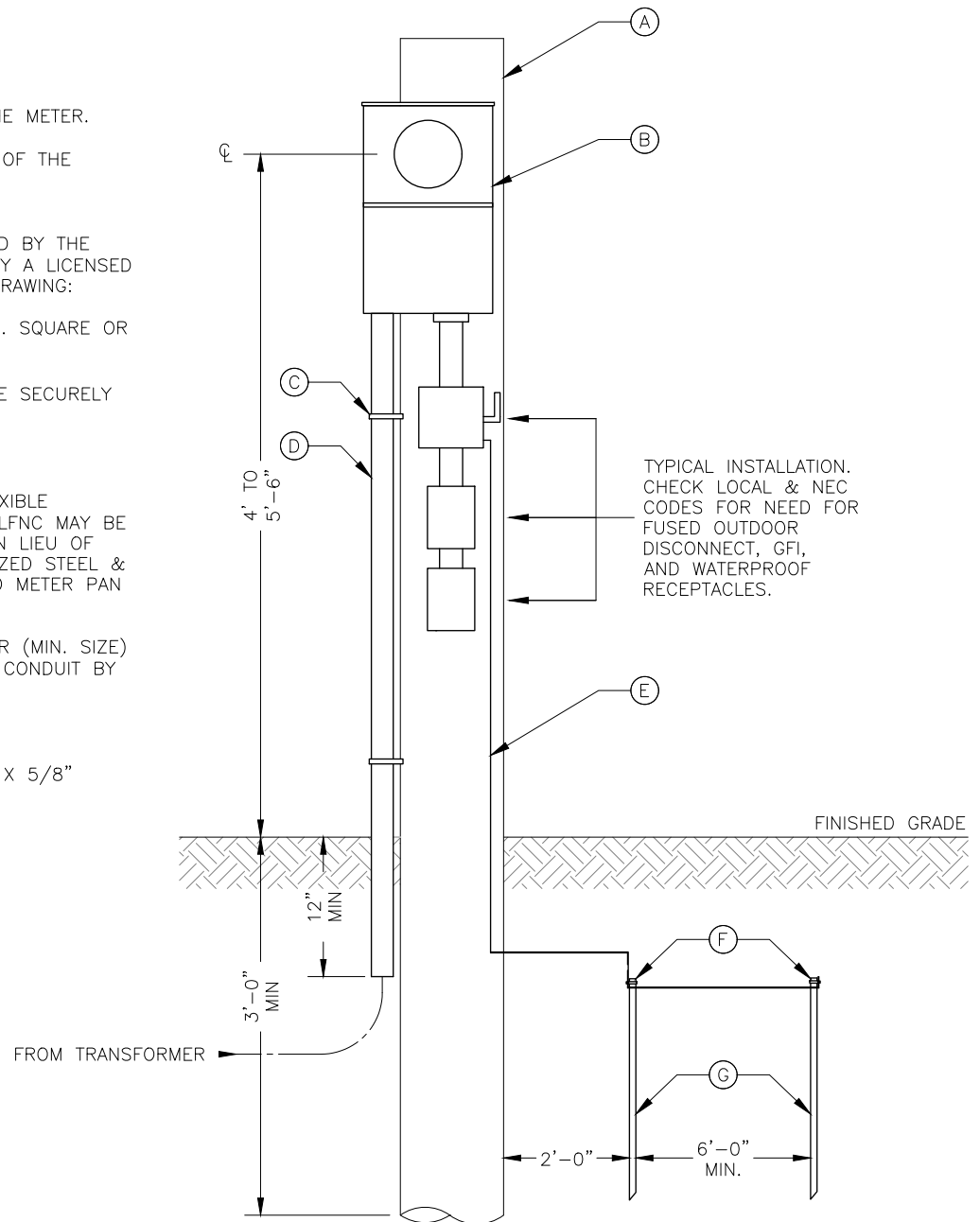
USE-2



TITLE  
 REMOTE METER LOCATION  
 ENTRANCE INSTALLATION  
 SINGLE RESIDENCE  
 DEVELOPMENT

INSTALLATION NOTES:

- 1) DEC WILL FURNISH AND INSTALL THE METER.
- 2) METER MUST BE SET WITHIN 5-FT OF THE TRANSFORMER.
- 3) THE FOLLOWING WILL BE FURNISHED BY THE MEMBER AND WILL BE INSTALLED BY A LICENSED ELECTRICIAN AS MARKED ON THE DRAWING:
  - A) SUPPORT POST – 6" X 6" MIN. SQUARE OR 8" DIAMETER MIN. ROUND
  - B) METER SOCKET – NEEDS TO BE SECURELY ATTACHED TO POST
  - C) PIPE STRAPS
  - D) 2" CONDUIT – LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT; TYPE LFNC MAY BE USED FOR THIS INSTALLATION IN LIEU OF SCHEDULE 80 PVC OR GALVANIZED STEEL & INSULATED BUSHING. ATTACH TO METER PAN VIA KNOCKOUT PANEL
  - E) GROUND WIRE – NO. 6 COPPER (MIN. SIZE) BONDED TO GALVANIZED STEEL CONDUIT BY CONSUMER AS REQUIRED
  - F) GROUND ROD CONNECTORS
  - G) GROUND RODS (2) MIN. 8'-0" X 5/8" DIAMETER, COPPER CLAD



DATE: APRIL 2019

REVISION: 0

SCALE: AS NOTED

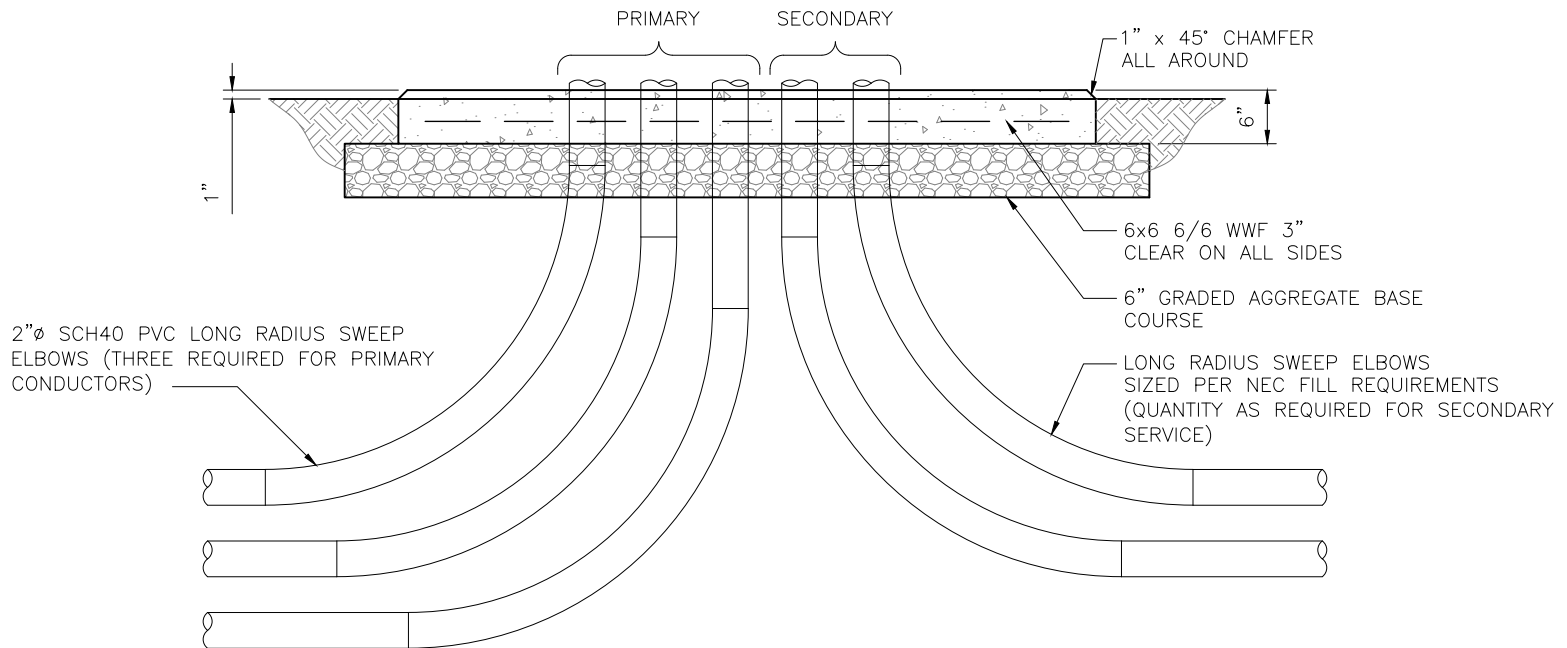
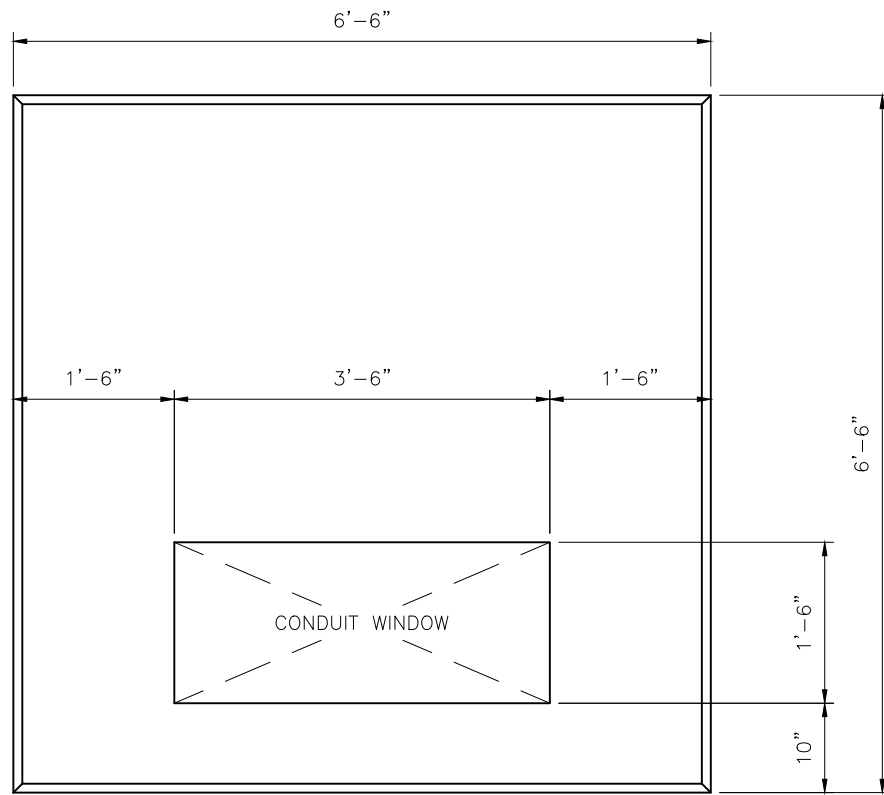
SKETCH NUMBER:

UTS-1



TITLE

TEMPORARY  
ENTRANCE INSTALLATION  
SINGLE RESIDENCE



### DETAIL - TRANSFORMER PAD

NO SCALE

#### NOTE:

1. FOR TRANSFORMERS THAT ARE 300kVA OR LESS, DELAWARE ELECTRIC COOPERATIVE WILL PROVIDE A PAD UNLESS THE CUSTOMER PREFERS TO BUILD A CONCRETE PAD.
2. FOR TRANSFORMERS THAT ARE GREATER THAN 300kVA, THE PAD SHALL BE A POURED CONCRETE PAD AND BE PROVIDED BY THE OWNER. MINIMUM PAD THICKNESS - 6". COMPRESSIVE STRENGTH, 3500PSI @ 28 DAYS.
3. PLEASE CONSULT DEC FOR TRANSFORMERS GREATER THAN 1000kVA.

DATE: MAY 2014

REVISION: 0

SCALE: AS NOTED

SKETCH NUMBER:

DT-1



TITLE

DETAIL - 3Ø  
TRANSFORMER PAD

## Section 9: Glossary

---

### **Applications**

Written agreements between the member and the Cooperative defining what must be done by the member before the Cooperative's work to provide service can be completed.

### **Approved**

Referring to an electrical installation, it is considered as meeting the requirements of an authorized inspector or inspection agency. Referring to electrical materials or equipment, it is considered as meeting the approval of a recognized laboratory after test of by a recognized authority after inspection, trial or general use. Self-contained meter socket equipment, which is purchased and installed by the member, must be approved by DEC.

### **Clearance**

A set distance between two objects.

### **Common Ground Point**

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

### **Conduit**

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

### **Cooperative**

The word refers to Delaware Electric Cooperative.

### **Corrosion Inhibitor**

Electrical joint compound used to retard oxidation of electrical connections.

### **Demand**

The rate at which electric energy is metered per time interval, also referred to as the load.

### **Demand Limiting Control**

A system whereby the member controls (either manually or automatically) the operating schedule of appliances to minimize demand.

**Drip Loop**

A loop formed in overhead secondary conductors at the weatherhead, to prevent the entrance of water into the service entrance conduit and equipment.

**Ground**

Connected to or in contact with earth or connected to some extended conductive body that serves instead of the earth.

**Group Metering**

Those meter installations at multiple occupancy buildings where the individual meters for various members are arranged in a bank or grouping in the same area, and are energized from the same service entrance.

**Guy**

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

**Inspector or Inspection Agency**

The person, agency or organization duly authorized by the appropriate state, county or municipality to conduct the inspection of wires and appliances utilizing electric energy subject to applicable statutes and regulations for such installations.

**Key box**

A permanently installed, locked box with keys enclosed, mounted on the outside of a building, for accessing the customer's premises to read, install, service or remove the utility's meters and/or electrical equipment during reasonable working hours.

**Listed**

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

**Load Management**

A system whereby the Cooperative remotely controls the operating schedule of various household or commercial appliances during peak load periods.

**Manual Circuit-Closing Block**

A provision for paralleling the meter circuit, allowing the meter to be removed without interrupting service to the member.

**Member**

The word designates either the present or prospective users, or their authorized representatives, of the Cooperative's electric service.

**Meter Equipment**

Any equipment associated with measuring electric energy.

**Meter Jaw**

A spring-loaded receptacle inside a meter socket which connects the terminals of a meter to the source or load conductors of the service.

**Meter Socket**

The mounting device for socket type meters, consisting of meter jaws, connectors, an enclosure and in permanent installations an integrated main circuit breaker is required.

**Mobile Home**

A house trailer serving as a permanent home.

**Modular Home**

Also referred to as a manufactured home. A home designed with standardized units or dimensions and manufactured in a factory type facility.

**Municipal, State Inspector**

The qualified representative of a city or the state, authorized to inspect electrical service installations on their behalf.

**NEC**

National Electrical Code. Safety provisions for the installation of electrical equipment and conductors in buildings and other structures, published by the National Fire Protection Association.

**NEMA**

National Electrical Manufacturers Association. A trade association which publishes standards for manufacturers of electrical equipment, including enclosures and racks.

**NESC**

National Electrical Safety Code. Safety provisions for the installation, operation, and maintenance of electric supply and communication lines, published by Institute of Electrical and Electronics Engineers.

**Neutral**

The grounded conductor in a single-phase, three-wire or three-phase, four wire system. The service conductor at zero potential to ground.

**OSHA**

The Occupational Safety and Health Act (or Administration).

**Point of Attachment**

On overhead services, the point at which the utility's service line is attached to the customer's structure.

**Point of Delivery**

The point where the utility's service line and the customer's system are interconnected.

**Seal**

A locking device to secure a meter or service entrance equipment to assure safety and security.

**Select Backfill**

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

**Self-Contained**

In reference to meter sockets, a device designed and rated to continuously carry the entire capacity of the service. The maximum self-contained meter socket current rating typically used is 400 amperes (also called a single-phase Class 320 A Meter).

**Service**

The supply of the Cooperative's product, "electricity", to the Member. The wire

and associated connections between Cooperative lines and the member's wiring. These wires may be high or low voltage, aerial or underground.

**Service Drop**

The portion of the overhead service between the Cooperative's last pole or support to and including splices, if any, and the first point of attachment of the member's facilities.

**Service Entrance**

The member owned installation, generally wires and enclosures, connecting the member's service equipment to the Cooperative's service drop or underground service.

**Service Line**

Conductors from the utility's system to the customer's point of delivery. A service line can be overhead or underground.

**Service Entrance Conductor**

On overhead services, conductors which extend between the customer's meter socket and the point of delivery.

**Service Entrance Equipment**

Service conduit, conductors, weatherhead, meter base, enclosures, service disconnect and service panel.

**Service Mast**

The conduit above the meter used to provide mechanical protection for the service conductors and to support the service drop from the utility.

**Starting Current**

The maximum current drawn when a motor is starting, without some sort of starting aid, the starting current is generally about five times the normal running current.

**Tariff**

The document of agreement between a state's utility regulating body and the utility defining the various rates and the rules and regulations governing specific interactions between the utility and its members.

**Temporary Service**

An electrical service installed by the utility to provide power to a customer on a temporary basis (usually less than one year).

**UL**

Underwriters' Laboratories. A recognized testing laboratory which lists materials it has tested and accepted.

**Underground Facilities**

Any material or equipment that is integral to the underground distribution system.

**Underground Service**

The underground portion of conductors and associated materials, owned by the Cooperative, that run between the Cooperative's overhead or underground system and member's service facilities.

**Weatherhead**

A simple underground-overhead fitting which provides a cap or a roof for the vertical conduit to prevent rain from entering it. Its use is restricted to connecting underground secondary cables to overhead secondary lines or service wires.