ELECTRIC SERVICE AND

LCEC
PEOPLE. POWER. POSSIBILITIES.

METER REQUIREMENTS

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CHANGES TO THE 2023 REVISION

Page	Change
92	Figure 9A replaced with 9B - added 3 phase OH service specs for 120/240V or 120/208
93	Figure 9C specs added with VT & CT in separate cabinets for 3ph OH 480V.
102	Revised specs Figure 17A for 3ph UG service for 120/240 or 120/208V
104	Added specs for 3ph UG service for 480V

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JUST A REMINDER!
FLORIDA STATUTE 812.14 STATES “IT IS UNLAWFUL TO WILLFULLY ALTER, TAMPER WITH, INJURE, OR KNOWINGLY SUFFER TO BE INJURED ANY METER, METER SEAL, PIPE CONDUIT, WIRE, LINE, CABLE, TRANSFORMER…OR TO ALTER THE INDEX OR BREAK THE SEAL OF ANY METER.”

PLEASE KEEP SAFETY FIRST — CALL LEE COUNTY ELECTRIC COOPERATIVE, INC. (LCEC) FOR AN APPOINTMENT TO DISCONNECT THE SERVICE AND REMOVE THE SEAL AND METER. REFER TO SECTION III-I OF THESE ELECTRIC SERVICE AND METER REQUIREMENTS REGARDING EXCEPTIONS ALLOWED BY LCEC.

FOREWORD

The primary goal at Lee County Electric Cooperative, Inc., (LCEC) is to provide you with efficient, reliable electric service in a reasonable length of time at a reasonable price. To help accomplish this goal we have prepared this handbook to acquaint you with the requirements for installing, replacing and maintaining electric service and metering equipment.

This handbook covers LCEC’s requirements for residential, commercial, and industrial self-contained and instrument transformer-rated metered services. It provides limited service and metering requirements for primary metered services since these types of installations require a unique design tailored for each individual application. For these types of installations, the LCEC Design & Engineering Department should be contacted for service and meter installation requirements prior to the start of construction.

Please keep in mind that all member-furnished and -installed facilities on the load side of the metering point or delivery point must comply with the current edition of the National Electrical Code (NEC). All LCEC- or member-installed facilities on the line side of the metering point or delivery point must comply with the current edition of the National Electrical Safety Code (NESC).

This document is not intended to be all-inclusive but it is an attempt to address the most common situations and scenarios. It is not a substitute for direct communication with LCEC which is essential to assure mutual understanding of service needs and requirements.

The personal pronouns he, him, his, etc., when used in the text are generic and not intended to specify gender. The ESMR Handbook is revised periodically due to ongoing changes in engineering, design and construction practices. Consequently, some of the provisions contained herein may have been revised after publication of a given revision.

Changes and additions from previous editions of the ESMR are identified on the page immediately following the Table of Contents.

Editorial changes are not identified.

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In order to ensure that you have the latest issue of the LCEC ESMR, in addition to any new or other pertinent information that may not yet be published or incorporated into a revised ESMR handbook, it is essential for you to contact an LCEC representative.

An electronic copy of this handbook is available at the URL listed below: https://lcec.net/pdf/ESMR-Handbook.pdf.

We welcome your comments and suggestions about this handbook and the information it provides. Please address your comments and suggestions in writing to:

Manager, Design & Engineering
Lee County Electric Cooperative, Inc.
Post Office Box 3455
North Fort Myers, FL 33918-3455

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Call Before You Dig!
1-800-432-4770

Palms and Trees

Vegetation in the easement is permitted only as described in the easement documentation.

Buried Electric Cables and Wires

10 feet of clearance is the recommended distance from buried electric cables and wires.

Shrubs and Flowers

8 feet of clearance between the base of the plant and energized equipment must be maintained on the **operating side** of electric facilities.

3 feet of clearance between the base of the plant and energized equipment must be maintained on the non-operating side of electric facilities.

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Tree, Palm, Flower and Shrub Planting Requirements Around Underground Equipment, Cables and Wires

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I. DEFINITIONS

ACCESSIBLE – Allowing adequate physical clearance for ingress and egress of equipment.

ACTIVE POWER – The power consumed by resistive loads. For a single-phase ac circuit, it is the product of the RMS voltage, the RMS current, and the power factor. Active power is often referred to as real power and is expressed in watts (W).

ALTERNATING CURRENT (AC) – An electric current that reverses its direction at regularly recurring intervals.

AMPACITY – The current rating or thermal current rating is the RMS electric current which a device can carry continuously under the conditions of use without exceeding its temperature rating.

AMPERE – The common unit of electric current flow.

AMPERE INTERRUPTING CAPACITY (AIC) RATING – Mechanical ratings that specify a device's ability to maintain integrity under fault conditions downstream of the protection device. For example, a 10,000 AIC-rated circuit breaker can safely interrupt 10,000 amperes of fault current without blowing apart or internally short-circuiting.

APPARENT POWER – A function of the RMS voltage and RMS current. For a single-phase AC circuit it is the product of the RMS voltage and the RMS current. Apparent power is expressed in volt-amperes (VA).

AUTHORITY HAVING JURISDICTION (AHJ) – The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

AVAILABLE FAULT CURRENT – The maximum current available from the utility source that may occur in a fault condition.

BILLING DEMAND – The demand on LCEC's electrical system for which a member is billed according to his rate or contract.

BUS – An electrical conductor or electrically conducting bar that serves as a common connection for two or more electrical circuits.

BREAK-BEFORE-MAKE – The property of a switch that will disconnect or break from one source before connecting or making to another source.

CABLE – An electrical conductor composed of insulated wires banded or twisted together.

CIRCUIT – A conductor or a system of conductors through which an electric current flows or is intended to flow.

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CIRCUIT BREAKER – An overcurrent device used to protect a circuit from excessive current flow.

CLASS OF SERVICE – The type of service available to a particular type of member (residential, commercial, etc.)

COGENERATION – The sequential generation of electrical and/or mechanical shaft power plus a second form of useful energy from the same fuel or energy source. The simultaneous production in one facility of electricity and other useful forms of energy such as steam or heat

COMMERCIAL SERVICE – Service to members engaged in selling, warehousing or distributing a commodity, in some business activity or in a profession, or in some form of economic or social activity, such as offices, stores, clubs, hotels, schools, etc.

COMMISSION – The Florida Public Service Commission (FPSC).

COMPANY – Lee County Electric Cooperative, Inc. (LCEC)

CONDUCTOR – A wire that carries electric energy.

CONDULET – A conduit fitting such as the LL, LR, LB, etc.

CONJUNCTIVE BILLING – Additive billing, plural meter billing, conjunctional metering and all like or similar billing practices which seek to combine, for billing purposes, the separate consumption and registered demands of two or more points of delivery serving a single member. A single point of delivery of electric service to a user of such service is defined as the single geographical point where a single class of electric service, as defined in a published rate Tariff, is delivered from the facilities of the utility to the facilities of the member.

CONNECTED LOAD – Connected load is the algebraic sum of the nameplate ratings of the electrically-powered equipment connected to an electrical system.

CONTRIBUTION IN AID OF CONSTRUCTION (CIAC) – A nonrefundable charge for electric service when (a) the extension is not justified by projected revenues or (b) the cost of providing underground facilities exceeds the cost of equivalent overhead facilities (differential cost), or (c) nonstandard service, as determined by the company, is being requested for the load served.

CURRENT – The volume of electrical energy flowing through a conductor, expressed in amperes.

CURRENT TRANSFORMER – A device that accurately transforms high currents to levels usable by transformer-rated watt-hour meters or protective relays.

DELTA CONNECTION – A three-phase electrical connection where the equipment (transformers, load, etc.) is connected in a triangular configuration.

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DEMAND – The magnitude of electrical load on an installation during a specified time interval. Demand may be expressed in kilowatts (kW), kilovolt-amperes (kVA) or other suitable units.

DEMAND CHARGE – The specified charge to be billed on the basis of the demand under an applicable rate schedule.

DISTRIBUTION SYSTEM – Electrical service facilities consisting of primary and secondary conductors, service-laterals, transformers and other necessary accessories and appurtenances for the furnishing of electric power at utilization voltage.

DOUBLE-THROW SWITCH – A switch designed for the transfer of loads from one source to another source.

DUCT – A single enclosed raceway for conductors or cable.

EASEMENT – A parcel of land that is granted by the owner or by a plat for a particular use or purpose.

ELECTRICAL CONTRACTOR – A person or entity responsible for the construction or maintenance of the member's electrical facilities.

ESTIMATED ANNUAL REVENUE (EAR) –. For use in these Standards, the non-fuel energy (kWh) and demand charge (kW), if any, resulting from the member's electric use under the applicable rate schedule. Estimated Anual Revenue excludes, without limitation, member charges, taxes, franchise fees, fuel, conservation, capacity payment, environmental charges, and any other charges or credits (such as TR rider, transformer rental, or load management or curtailment credits).

ESTIMATED NET SALVAGE VALUE – An estimate of the salvage value of a specific set of existing electric facilities less the costs associated with removing and disposing of the facilities.

ESMR – The acronym referring to this handbook.

FINISHED GRADE – The final grading level of the earth around a building or structure.

FLICKER – More correctly known as Voltage Dip or Sag, flicker is the momentary variation of voltage level caused by switching a load or circuit ON and OFF.

FLORIDA ADMINISTRATIVE CODE (FAC) – The official compilation of the administrative rules for the state of Florida. Often used as a guide for establishing LCEC policies and procedures. Very few of the rules and regulations contained in Chapter 25-6, "Electric Service by Electric Public Utilities" are directly applicable to LCEC.

FREQUENCY – The number of AC cycles in one second. AC power systems in the United States operate at a frequency of 60-hertz (Hz).

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GROUND (EARTH) – A conducting connection between an electrical circuit or piece of equipment and the earth, or to a conducting body that serves in place of the earth.

HIGH LEG – The conductor in a three-phase delta secondary connection that has a higher voltage-to-ground potential than the other conductors.

HORSEPOWER – The nameplate rating of motors and other apparatuses. For conversion purposes, one horsepower shall be considered as equivalent to one kilowatt.

KILOVAR (kVAR) – 1000 Voltage-Ampere Reactive. That portion of the apparent power that is not available to do work. Reactive power is required to furnish charging current to magnetic or electrostatic equipment connected to a system.

KILOVOLT-AMPERE (kVA) – 1000 Voltage-Amperes. The product of the RMS voltage and RMS current.

KILOWATT (kW) – 1,000 Watts. A watt is the electrical units of power or rate of work. It is equal to one ampere flowing under the pressure of one volt at unity power factor.

KILOWATT-HOUR (kWh) – The product of kilowatts and time in hours.

LEE COUNTY ELECTRIC (LCEC) – Lee County Electric Cooperative or an employee properly qualified to represent Lee County Electric Cooperative.

LINE EXTENSION – That extension of the circuit to be added to the existing utility circuit.

LOAD – 1) The member's equipment requiring electric power. 2) The quantity of electric power required by the member's equipment, usually expressed in kilowatts or horsepower.

LOAD FACTOR – The ratio of the average load (in kilowatts) supplied during a designated period to the peak load occurring in that same period (in kilowatts). Load factor is the actual amount of kilowatt-hours delivered on a system in a designated period of time compared to the total possible kilowatt-hours that could be delivered on a system in that same period. Using a month as the designated period, the load factor is calculated by dividing the kilowatt-hours delivered during the month by the peak load for the month times the total number or hours in a month, typically 730 hours.

LOOPED SYSTEM – An underground distribution system that serves a group of members from two primary sources fed from one or more distribution circuits, maintaining the phase relationships throughout the loop. Normally, a portion of the members are served from each source with a normally open point near the middle. In the event of a failure, the failed components can be manually isolated and the remaining members temporarily served from the other source.

LUMEN – A unit of light measurement. The intensity of light delivered by one standard candle at a distance of one foot is approximately one lumen.

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LUMINAIRE – A lighting fixture for street and security lights.

MANUFACTURED HOME (INCLUDES MOBILE HOME AND TRAILER) – A factory assembled structure equipped with the necessary service connections and made so as to be readily movable as a unit and without permanent foundation.

MAIN SWITCH (DISCONNECT) – A member-owned device used to disconnect the member's total load from the LCEC system.

MATURE HEIGHT – The maximum height of a plant species when it reaches maturity.

MEMBER – The individual, company or corporation requesting service from LCEC. This term is used collectively throughout this handbook and can apply to the individual, company, organization, electrician, builder, contractor, or developer responsible for applying for both temporary and permanent service and for completing those electrical connections necessary to allow LCEC to provide service.

METER ROOM – A room in a member's facility existing solely for the metering equipment.

METER SOCKET – A device that provides support and means of electrical connection to a watt-hour meter. It has a wiring chamber, with provisions for conduit entrances and exits, and a means of sealing the meter in place. The word "socket" in this handbook refers to meter socket.

MULTIPLE-OCCUPANCY BUILDING – A structure erected and formed of component structural parts and designed to contain five or more individual dwelling units.

NATIONAL ELECTRICAL CODE (NEC) – The *National Electrical Code* is the minimum standard for member wiring as enacted by the National Fire Protection Association and enforced by local government.

OVERHEAD SERVICE – The wiring and associated facilities normally installed by LCEC on wood poles to serve members.

OWNERSHIP LINE – The same as the point of delivery.

PAD-MOUNTED TRANSFORMER – A distribution transformer located at ground level, normally on a concrete or fiberglass pad.

PEDESTAL – An electrical enclosure used by LCEC for connecting secondary and service conductors; also called SECONDARY PEDESTAL.

PERMANENT RESIDENCE – An immovable structure requiring a certificate of occupancy or similar approval.

POINT OF DELIVERY – The location where LCEC-owned conductors are connected to member-owner conductors. Typical points of delivery include weatherheads, meter sockets, secondary pedestals, pole-type transformers or pad-mounted transformers. In

most instances, the delivery point will also be the metering point, unless the member is responsible for installing secondary or service conductors associated with transformer-rated metering installations. LCEC will determine the point of delivery.

POWER FACTOR (pf) – Power factor is the ratio of active power to apparent power. It represents the cosine of the phase angle between the voltage and the current. A dimensionless quantity, the power factor will always have a value between zero and one (unity).

PREMISES – The physical location of the property or equipment.

PRIMARY SERVICE VOLTAGE – The voltage level in an area that is available after LCEC has made one transformation from the transmission system. For service taken at primary voltage all additional transformations shall be member-owned.

POTENTIAL TRANSFORMER (PT) – See Voltage Transformer (VT).

PUBLIC UTILITY EASEMENT (P.U.E.) – A portion of property legally designated for the use by public utilities. In most incorporated areas in the LCEC territory, the P.U.E. is designated around the perimeter of the property.

RADIAL SYSTEM – An underground distribution system feeding a member or group of members from a single source supplying the entire load to the system.

RATE SCHEDULE – The rate schedule is the approved standard used for the calculation of bills.

RECREATIONAL VEHICLE PARK OR CAMPGROUND – An accommodation for recreational vehicles or other camping outfits where an individual site is rented, and the intent of the park or campground is not to establish permanent residencies.

RENEWABLE ENERGY – Electrical energy produced from a method that uses one or more of the following fuels or energy sources: hydrogen produced from sources other than fossil fuels, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, and hydroelectric power.[1]

RESIDENTIAL SERVICE – Electric service supplied exclusively for domestic purposes in individually metered dwelling units, when permanent residency is established, including the separately metered non-commercial-use facilities of a residential member, such as garages, water pumps, etc.

RIGHT-OF-WAY – A tract of land under the jurisdiction of a government or public utility entity.

ROOT-MEAN-SQUARE (RMS) – The effective value of an AC voltage or current wave is the square root of the mean (or average) of the squares of the individual values taken

[1] Florida Statute 366.91(d), “Renewable Energy”

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over one cycle. For a perfectly sinusoidal voltage waveform, the RMS value can be determined by dividing the peak value by the square root of two.

RULES AND REGULATIONS – The approved standards and methods for service to LCEC's members.

SECONDARY – Conductors operating below 600 volts between the phase and neutral conductors and used to connect the transformation equipment to intermediate equipment connections such as underground pedestals or poles. It does not include the service conductors between the member's delivery point and LCEC equipment.

SECONDARY PEDESTAL – An electrical enclosure used by LCEC for connecting secondary and service conductors; also called a PEDESTAL.

SELF-CONTAINED METERING – Metering installations where the service conductors can be run directly from LCEC facilities to the member's meter socket. Self-contained metering installations do not require instrument transformers (current transformers or voltage transformers).

SERVICE – The conductors and equipment that deliver energy from the LCEC system to the system of the premise being served. Service also means the maintenance of voltage and frequency, within acceptable tolerances, by LCEC at the point of delivery.

SERVICE AREA – The service area is the established geographical boundaries of the company.

SERVICE-DROP – The overhead service conductors connecting LCEC's last pole or other aerial support to the member's service-entrance conductors at the delivery point.

SERVICE-ENTRANCE – The physical point of connection where electrical service is delivered from LCEC to the member. The service-entrance can also be the meter socket for self-contained metering installations, or other connection equipment in the member's building served from transformer-rated metering installations.

SERVICE-LATERAL – The underground service conductors connecting the LCEC secondary or transformation equipment to the delivery point.

SINGLE-PHASE – One phase of a three-phase system. (See three-phase.)

STANDARD SERVICE – The minimum level of service, as determined by LCEC, for the load for which the member is requesting electric service. Typically, this service is overhead with wood poles at the standard voltages specified in this handbook, to the LCEC designated point of delivery. Generally, any service requested that exceeds the LCEC minimum level of service is paid for by CIAC.

SUBDIVISION – A tract of land that is divided into five or more building lots or upon which five or more separate dwelling units are to be located, or land upon which new multiple-occupancy buildings are constructed.

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TARIFF – Schedule of LCEC rates, charges, and General Rules and Regulations for providing electric service. LCEC's Electric Tariff is available for inspection at any LCEC business office, and is on file with Florida's Public Service Commission (FPSC). The word "Tariff" in this handbook refers to LCEC's Electric Tariff.

TEMPORARY SERVICE – Temporary service is limited term electric service such as for exhibitions, construction projects, fairs, camps, holiday lighting, dredging jobs, etc.

THREE-PHASE – A term applied to circuits or machines utilizing three alternating current voltages, equal in magnitude and separated by 120 electrical degrees.

THROWOVER SERVICE – Service supplied to a member from more than one distinct source capable of automatic switching upon loss of the preferred source. A distinct source is a distribution source originating from a unique distribution substation transformer. CIAC charges may apply.

TIER 1 – Member-owned electrical generation from a renewable energy source with a gross power rating that is 10 kW or less. Gross power rating shall be cumulative kW rating of all renewable energy sources behind a common metering point.

TIER 2 – Member-owned electrical generation from a renewable energy source with a gross power rating greater than 10 kW and less than or equal to 100 kW. Gross power rating shall be cumulative kW rating of all renewable energy sources behind a common metering point.

TIER 3 – Member-owned electrical generation from a renewable energy source with a gross power rating greater than 100 kW and less than or equal to 1 MW. Gross power rating shall be cumulative kW rating of all renewable energy sources behind a common metering point.

TIME PULSE – A metering pulse indicating the time a revenue meter checks demand.

TRANSFORMER – The device that changes voltage levels.

TRANSFORMER-RATED METERING – Metering installations that require the use of instrument transformers (current transformers and voltage transformers) to meter the electrical energy delivered to the member.

UNDERGROUND DISTRIBUTION – A distribution system where the conductors are buried with or without enclosing ducts or conduit. Transformers, switches and other equipment associated with underground distribution are normally pad-mounted above ground or enclosed in vaults or other enclosures.

UNDERGROUND RESIDENTIAL DISTRIBUTION (URD) – An underground distribution system, primarily supplying single-phase, three-wire service-laterals to residential dwelling units. Transformers and primary switches are contained in above ground pad-mounted enclosures.

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UNDERGROUND SERVICE – The wiring system and associated equipment that is placed on or in the earth, as opposed to overhead service.

VAULT – An isolated enclosure, above or below ground, with fire-resistant walls, ceilings and floor, in which transformers and related equipment are installed and not continuously attended during operation.

VOLTAGE – The electrical pressure of a circuit expressed in volts, generally, the nominal rating based on the maximum normal effective difference of potential between the conductors of a circuit.

VOLTAGE SAG (DIP) – A momentary reduction of voltage level.

VOLTAGE TRANSFORMER – A device that accurately transforms high voltages to levels usable by transformer-rated watt-hour meters or protective relays. See Potential Transformer.

WATT – The basic unit of electrical power (see kilowatt).

WEATHERHEAD – A device used at the service-entrance to prevent water from entering the service mast or riser.

WYE CONNECTION – A three-phase electrical connection where the equipment (transformer, load, etc.) is connected in a “Y” configuration; also called a Star connection.

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II. GENERAL

A. EARLY NOTIFICATION AND COORDINATION

LEE COUNTY ELECTRIC COOPERATIVE – As used in this handbook, the acronym LCEC represents Lee County Electric Cooperative or any employee properly qualified to represent Lee County Electric Cooperative.

MEMBER – For the purpose of this handbook, the word member represents any present or prospective user of LCEC service, or any person or entity representing him, such as the architect, engineer, electrical contractor, land developer, builder, etc.

Contacting LCEC – Early contact with LCEC is essential. See **Section II-O** for further details. Coordination is necessary throughout the planning and construction stages by LCEC, the member's representatives and the member. Particular attention must be given to the scheduling of the construction of paved areas and the various sub-grade installations of the several utilities.

LCEC strives to meet its members' needs for electrical service as efficiently, reliably and economically as possible. Although this handbook provides many of the guidelines concerning LCEC service requirements, it is not possible to document all the detailed information the member may need to supply or need to know. This handbook is not intended to replace direct communication with LCEC. Contact with LCEC during the early stages of the member's design is strongly encouraged to avoid misunderstanding, delays, and unnecessary expense.

B. APPLICATION FOR ELECTRIC SERVICE

Application for electric service must be made well in advance of the date service is required. All issues regarding the use of electric service should be discussed with LCEC at the time of application. Advance notice is required to obtain the necessary materials and for making any alterations or modifications to existing service.

Application may be made by telephone, in writing or in person. Under some circumstances, a standard written agreement between the member and LCEC may be required. Deposits are sometimes required with the application.

LCEC requires the member or his representative to provide all information pertinent to providing electrical service to a site, including but not limited to:

1. An accurate billing address
2. An accurate legal description of the job site
3. A blanket easement for service prepared by LCEC and executed by the member. The blanket easement is held unrecorded and may be replaced by a specific description of the easement upon completion of the electrical work. The specific easement will then be recorded and the blanket easement returned to the member.
4. An application for temporary or construction power

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5. An application for permanent power
6. Signature of the LCEC-provided letter assuring site preparation for underground electrical facilities (if applicable)
7. A complete set of plans, including but not limited to the transformer riser diagram and the complete main panel information, including size, load information and AIC rating

Every reasonable effort will be made by LCEC to reach a prompt and mutually satisfactory arrangement with the member regarding the characteristics of the service to be furnished and the designated point of delivery.

Notwithstanding any differing provisions contained in any other agreement between the member and LCEC, the following shall apply:

1. All property of LCEC installed in or upon the member's premises used and useful in supplying service is placed there under the member's protection. The member shall exercise all reasonable care to prevent loss or damage to such property. Ordinary wear and tear is expected.

2. The member or his representatives will be held responsible for breaking the seal, tampering or interfering with the company's meter or meters or other LCEC equipment installed on the member's premises, see Florida Statutes 812.14. Only LCEC employees will be allowed to make repairs or adjustments to any meter or other equipment or facilities belonging to LCEC.

C. AVAILABILITY OF SERVICE

Contact with LCEC early in the member's planning stage is strongly recommended to determine the availability of service at any location, LCEC's standard service for the load to be served and the designated point of delivery. If the standard service does not meet the member's requirements, LCEC will consider supplying the requested service, subject to availability, providing the manner of use does not jeopardize the quality of service to other members. It may be necessary for the member to pay a CIAC to compensate LCEC for providing such service. Adequate time must be allowed for LCEC to obtain the necessary electrical equipment needed to provide service.

Written information concerning availability and character of service for any desired location will be supplied by LCEC. LCEC will not be responsible for mistakes resulting from information given orally.

Contact with LCEC early in the member's design phase is essential to allow engineering, material procurement and job scheduling in a manner conducive to providing timely service to the member. Plan changes that are likely to affect the service must be communicated to LCEC at once. Failure to do so may result in unnecessary delays or expense.

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D. CONTRIBUTIONS BY MEMBERS

Throughout this handbook, references are made to contributions in aid of construction (CIAC), whereby the member pays for a portion of the requested service. In all cases, ownership of the requested facility remains with LCEC, and payments are required well in advance of LCEC's construction, allowing for proper scheduling and procurement of material. Contact your LCEC representative concerning the timing of the payment. Withholding payment until the latter stages of a project's development may cause unnecessary delays and added expense to the member.

The member may dig the trench and install member-provided conduit when mutually agreed upon by the member and LCEC. The member will receive a credit, as determined by LCEC, for such work. The credit will not exceed the applicable CIAC charges.

When LCEC is requested to provide an underground electric distribution system through a subdivision where service will not be connected for at least two years, LCEC may require a reasonable performance deposit from the applicant prior to construction to guarantee performance. This is to protect the general body of members from subsidizing such developments.

Potential new members desiring new service on Upper Captiva shall be charged the underground differential cost known as "Participation Fee". It is recommended that you contact LCEC for current amount of this fee.

E. RIGHTS-OF-WAY AND EASEMENTS

The member shall grant adequate and satisfactory rights-of-way and easements, providing legal descriptions of such easements and all survey work associated with producing the legal descriptions, as may be required by and at no cost to LCEC **BEFORE** construction commences. Only the unaltered LCEC-provided standard form will be accepted for easements. These rights-of-way and easements shall be cleared by the member of trees, tree stumps, and other obstructions that conflict with construction. The property must be staked to show property corners and survey control points, the ground graded to within 6 inches of final grade, with soil stabilized. The member shall provide stakes showing final grade along the easement. Such clearing and grading shall be maintained by the member during construction by LCEC.

Where plats are concerned, LCEC requests the plat be presented to LCEC before recording so provisions for easements can be included on the plat. This will minimize, if not eliminate, future costs associated with producing, securing, and recording easements. Prior to final plat approval for multi-building developments, easement locations and widths should be planned and coordinated with LCEC's Engineering Design or System Planning personnel.

When building additions to existing structures, care shall be taken not to encroach upon LCEC's easements. Violation of LCEC's granted easements may result in legal consequences to the building owner or his representative. LCEC should be contacted

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early in the design and planning stage in order to determine if modifications to LCEC's existing easement are possible.

It is LCEC policy to install electric service facilities within easements whenever possible. Normal distribution easements will be 16 feet wide, but will vary in dimension depending on the type of facility necessary. In most cities within the LCEC service territory, there is a designated P.U.E. around the perimeter of the property. Easements are required when it is necessary for LCEC to locate its facilities on property not designated as a public right-of-way. The width of a P.U.E. may vary depending on the facility being served. Failure of the member to provide adequate easements may cause delays in providing service.

Easements on property other than the member's may be required. LCEC will pursue these easements, and delays may be experienced.

In the event the LCEC's facilities are located within an easement on a member's property and it becomes desirable to relocate these facilities due to expansion of the building or other facilities, or for other reasons intended by the member, LCEC will, where feasible, relocate its facilities. LCEC may require that the member making the request pay all costs associated with the requested relocation, including but not limited to any additional easements.

F. TREE TRIMMING PROVISIONS

1. General

All trees will be trimmed according to ANSI Standard A300 Utility Pruning, utilizing directional trimming techniques. Palm trees making contact with the primary require removal.

LCEC will maintain the area around secondary lines, service lines and streetlights only if damage is imminent to LCEC facilities. Telephone or cable television lines will be trimmed only for safety or if damage to LCEC facilities may result if the condition is not corrected. It is the responsibility of the member or affected utility to trim around these facilities.

In the case of new construction work requests, any tree within the easement that may grow to a height that will interfere with the primary or energized equipment requires removal.

2. Plant Smart

Access to LCEC pad-mounted equipment located on the member's property is critical. There should be 8 feet of clearance from the door side and 3 feet of clearance from other sides. This includes structures such as fences, shrubs and other obstructions. LCEC will help plan the member's installations of these structures near LCEC facilities so they will not obstruct access or cause damage

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to LCEC's facilities. Providing adequate access to LCEC facilities allows for faster service restoration in the event of a power outage.

Never attempt to prune or trim near electrical wires or remove branches that are touching power lines. If you touch a tree that is in contact with a power line, you could be seriously injured or killed.

Tree-caused outages can be minimized with the cooperation and understanding of our members. LCEC tree trimming can reduce outages, ensure safety and help to maintain stable base rates.

Exercise care when planting trees or shrubs near power lines. Plant taller trees away from overhead lines.

3. Certified Tree Trimmers

Contact the local Chamber of Commerce for a complete list of certified tree trimmers.

Chamber of Commerce	Telephone Number
Cape Coral	239.549.6900
Immokalee	239.657.3237
Lehigh Acres	239.369.3322
Marco Island	239.394.7549
North Fort Myers	239.997.9111
Pine Island	239.283.0888
Sanibel Island	239.472.1080

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G. MEASURING (METERING) ELECTRIC CONSUMPTION

Energy usage (kVA) and electrical demand (kW) will be measured by either self-contained electric meters or transformer-rated electric meters used in conjunction with current and voltage transformers, owned and maintained by LCEC. Where it is impractical to meter loads such as street lighting, temporary or special installations, the consumption may be calculated or billed on demand or connected load rates or as provided in LCEC's Rate Tariff.

Meters shall be properly marked or tagged to indicate the service being metered.

H. CONJUNCTIVE BILLING OR TOTALIZED METERING

LCEC does not permit conjunctive or totalized billing.

Conjunctive billing means totalizing metering, additive billing, plural meter billing, conjunctional metering, and all like or similar billing practices which seek to combine, for billing purposes, the separate consumptions and registered demands of two or more points of delivery serving a single member.

I. ELECTRICAL INSPECTIONS AND CONNECTION OF SERVICE

The authority having jurisdiction (AHJ) must inspect a member's electrical facilities prior to their being energized to ensure compliance with the *National Electrical Code (NEC)* and such local rules that may apply. LCEC will not energize a new service installation until notification that an inspection has been completed. Where the requirements for an inspection have been waived by the AHJ, the applicant will request the AHJ to notify LCEC in writing of the waiver for the specifically identified location and connection point. Arrangements to connect the new service can proceed once the written notification of inspection waiver has been received by LCEC.

LCEC will inspect the electrical system from the point of attachment to the load side terminals of the main switch, including the service-entrance grounding system. The purpose of such an inspection is to insure safe working conditions for LCEC personnel and to protect LCEC-owned equipment and facilities from mechanical or electrical hazards. Such inspection in no way relieves the member of responsibility for providing a safe electrical system. Service will not be connected to new or existing installations that are known to be unsafe.

J. ACCESS TO LCEC FACILITIES

Access to the member's premise shall be provided for the purpose of reading meters, installing, maintaining, inspecting or removing LCEC's property, and other purposes incident to performance under or termination of LCEC's agreement with the member, and in such performance, LCEC or its representatives shall not be liable for trespass.

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K. LOAD BALANCE

To prevent overloading the service conductors and transformer coils, the member's electrical load shall be properly balanced on the service-entrance conductors and service equipment.

On 120/240 volt, four-wire delta services, the conductor identified as high voltage to ground, commonly known as the HIGH LEG or POWER LEG, must be durably and permanently marked by an outer finish that is orange in color outside of the weatherhead, within the meter enclosure and within the main switch enclosure. The high leg or power leg will be connected to the right-hand terminals of the meter socket and to the center terminal of the main switch. This marking will ensure connection to the proper LCEC conductor when the service is connected. The high leg is used only to serve a three-phase load circuit and not as a phase-to-ground load circuit. The high leg shall not serve single-phase load circuits.

L. MEMBER-OWNED GENERATORS

1. Standby Generator

Some members may wish to provide an emergency 60-Hz generator to supply a portion or all of their electric service in the event of a failure of LCEC service. In such cases a member-provided and -maintained UL1008 listed double-throw switch, either manually or automatically operated, must be provided in the service-entrance equipment of the member. The switch shall also be labeled as "suitable for use as transfer equipment in accordance with article 702 of the NEC" or similar wording to indicate that it can be used as transfer equipment. A double-throw switch is one designed to transfer a load from one source to another source.

This switch shall provide break-before-make operation to prevent dangerous back feed energy into the LCEC system that might create a hazard to equipment and personnel and could seriously damage the member's wiring and generator.

Standby generators and their associated equipment shall not be connected to the LCEC system without prior approval.

Failure to provide the transfer switch described above constitutes a possible safety hazard and shall be grounds for disconnection of electrical service.

Emergency or auxiliary generation equipment will not be installed in switchgear rooms or transformer vaults. Emergency or auxiliary generation equipment must be at least 15 feet clear of any openings to switchgear rooms or transformer vaults and are subject to inspection by the AHJ.

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2. Parallel Generation and Cogeneration

LCEC approval is required where the member is considering the use of cogeneration (the simultaneous production in one facility of electricity and other useful forms of energy such as steam or heat) or small power producer generation (i.e., those using renewable resource fuel sources) if it is to connect to LCEC's system. Consult with LCEC for further details.

Members considering the installation of generating equipment intended to supply a portion or all of their electric service, shall consult with LCEC regarding the design, installation and operation of this generating equipment. Generation other than cogeneration and small power producers shall not operate in parallel with LCEC's systems without proper protective equipment for the interconnection as outlined by LCEC. The member's system design shall be submitted for review and approval by LCEC before any connection is made. The member is responsible for the full cost of any modifications to LCEC's facilities necessary to accommodate the member's system.

Application documents for each Tier can be found at https://www.lcec.net/energy-efficiency/net-metering-program.

Caution: LCEC shall be consulted before any type of generating or communications equipment is installed and connected to any circuit that is or could be fed from LCEC's distribution system.

Please see Section XV Distributed Energy Resources for further information concerning net metering and energy storage.

M. UNAUTHORIZED ATTACHMENTS

LCEC prohibits any attachments to its poles or other equipment unless specifically authorized by written agreement. Such attachments include, but are not limited to fences, banners, signs, clotheslines, basketball backboards, antennas, placards, political posters or any advertising matter. LCEC will remove unauthorized attachments without notice.

Meter socket enclosures and member's electric service risers are not to be attached to LCEC poles. Attachments to LCEC meters are not permitted. Members are not authorized to make any connections to or disconnections from LCEC equipment. LCEC personnel must perform all connection and disconnection work.

Member-owned secondary capacitors or surge arresters may not be installed inside or outside the meter socket or connected to LCEC's conductors. It is suggested these devices be installed in, or adjacent to, the member's disconnect panel(s) on the load side of the main line switch.

LCEC forbids any work on or access to any of its facilities without authorization.

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N. CONTINUITY OF SERVICE

LCEC strives to furnish reliable, dependable service at a reasonable cost. It cannot guarantee service continuity. However, LCEC provides service in accordance with standards set forth in its Electric Tariff. Some members may have equipment that cannot tolerate an occasional interruption. In this case, the member may wish to invest in a standby system that will supply uninterrupted power upon failure of LCEC's service, or when transient interruptions occur.

Some computer-based systems are sensitive to short voltage spikes or dips on the normal 60-Hz voltage wave. Very short interruptions caused by a fast opening and closing of an LCEC circuit breaker may also affect these systems. These transients are unavoidable on a distribution system serving many and varied member' loads and subject to the natural elements. The member should consider these conditions as part of his electric service environment and choose equipment that can operate satisfactorily in this environment or purchase suitable power conditioning equipment such as an uninterruptible power supply.

Planned service interruptions are necessary to build and maintain a reliable electrical system. When service is intentionally interrupted, affected members will be given reasonable notice whenever possible.

O. CONTACTING LEE COUNTY ELECTRIC COOPERATIVE

It is essential for an application for service to be made in a timely manner in order to allow LCEC to complete the engineering and construction work necessary to provide the service requested.

Application for temporary service does not automatically result in installation of permanent service. Permanent overhead and underground service must be applied for separately.

1. Residential, Multi-Family and Small Commercial

Application for service should be made when construction begins or when the temporary/construction pole has been set and inspected for individual residences, multi-family residential units of up to six units and small commercial services within one mile of existing LCEC facilities.

2. Large Multi-Family Residential, Commercial and Industrial

The LCEC Engineering Department should be contacted for preliminary information regarding the availability of service, location and type of easements for primary and secondary facilities, construction scheduling and possible CIAC before making application for service.

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The member must provide the following information:

- An accurate billing address
- An accurate legal description of the job site
- A blanket easement that may be replaced with a specific easement upon completion of the electrical work
- An application for temporary or construction power
- An application for permanent power
- Signature of the LCEC provided letter assuring site preparation for underground electrical facilities

Commercial Only

- Specific electric load information, such as HVAC load information, water heater, cooking and other major loads, service voltage and phases, street lighting, traffic lights, etc.

- A complete set of plans, including but not limited to the transformer riser diagram and the complete main panel information, including size, load information and AIC rating.

Application for service should be made either by fax or online.

FAX: 239.656.2239

Web site: www.lcec.net

III. SERVICE PROVISION

A. STANDARD SERVICE

The LCEC primary distribution system is predominantly a three-phase, four-wire, multi-grounded neutral, 24.94Y/14.4 kV system.

LCEC's standard service is that supplied by overhead lines, with wood poles, to LCEC's designated point of delivery, at the standard voltages specified below. All service is 60-Hz AC. All voltages and frequencies mentioned are nominal values. To the extent possible, the wood poles will be placed within an existing easement, with a 2-foot by 2-foot offset from the property corner.

The nominal service voltages listed below have been adopted by LCEC for voltages less than 600 volts:

- Single-phase, 120 volt, two-wire
- Single-phase, 120/240 volt, three-wire
- Three-phase, 240/120 volt, four-wire (Open Delta)

In some locations, LCEC's system is able to provide service at the following voltages:

- Two-phase, 120/208 volt, three-wire, Network (from a three-phase four-wire system)
- Three-phase, 208Y/120 volt, four-wire
- Three-phase, 240/120 volt, four-wire (Delta)
- Three-phase 480Y/277 volt, four-wire

NOTE: Three-phase 240/120 volt, four-wire delta service is available from aerial transformers only.

LCEC strives to ensure that the voltage at the point of delivery for service rendered to members whose principal consumption is for lighting or residential purposes, does not exceed 5% above or below the standard voltage adopted. Further, for service rendered principally for industrial or power purposes, excluding residential purposes, the voltage at the point of delivery not exceed 7 1/2% above or below the standard voltage adopted.

LCEC strives to limit the magnitude and frequency of voltage sags exceeding 5% of the standard voltage and occurring more frequently than two times per hour, or changes of 2 1/2% that occur more frequently than once per minute. These targets may be modified for cases in which the member specifically agrees to accept service not meeting the specified limits.

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If LCEC's facilities are reasonably adequate and of sufficient capacity to carry the actual loads normally imposed, LCEC may require that the member's equipment be such that the starting and operating characteristics will not cause an instantaneous voltage drop of more than 4% of the standard voltage, measured at the point of delivery, or cause objectionable flicker to other members' service.

Variations in voltage exceeding the limits stated above caused by service interruptions, action of the elements, temporary separation of parts of the system, infrequent and unavoidable fluctuations not exceeding five minutes duration, operation of the members' equipment at low power factor, unbalanced loading, or other causes beyond the control of LCEC is not a violation of these requirements.

Single-phase three-wire 120/240-volt service is furnished for ordinary lighting loads, household equipment, small appliances and motors. This voltage is standard throughout the LCEC service area for residences and for commercial and industrial applications when, in the opinion of LCEC, three-phase service is not required or available. Three-phase service will be provided when available, or when in the opinion of LCEC, the use of single-phase is impractical. This, as is all service, is subject to the line extension provisions of **Section III-C**. Devices to convert single-phase to three-phase can be obtained for a wide range of three-phase motors, therefore availability of three-phase service for smaller motors should be discussed in advance with LCEC.

Three-phase 240/120 volt, four-wire open delta is determined by LCEC to be the standard three-phase voltage for loads in which individual motor sizes are 7.5 HP or greater but less than 20 HP (except for submersible pumps which are limited to 15 HP), or, the three-phase demand does not exceed 75 kVA, or, the total demand does not exceed 100 kVA, and the use of single-phase, in the opinion of LCEC, is impractical. When the member desires three-phase service, 208Y/120 volt or 480Y/277 volt services will be considered the standard voltage only where, in the opinion of LCEC, three-phase service is required, **and** 240/120 volt delta service is not, in the opinion of LCEC, the standard voltage for the load being served, unless otherwise mutually advantageous to both LCEC and the member.

Voltages Over 600V - Service requirements for installations requiring distribution service voltages over 600 volts are subject to special negotiation between the member and LCEC. Members accepting service at this voltage will provide all distribution facilities required beyond the point of delivery (see definitions) and all facilities required for reducing or increasing the LCEC-supplied voltage to any other voltage that might be required.

Typically, where the member requests service considered by LCEC to be non-standard for the load being served, the member will bear all additional expenses as a CIAC.

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B. POINT OF DELIVERY

The point of delivery is defined as that location where LCEC's electric facilities connect to those of the member. LCEC will give considerable weight to the member's preference, but shall reserve the right to designate this location. Should the member request a location other than that designated by LCEC, and LCEC approves, the member shall be responsible for all additional costs to extend beyond LCEC's designated point of delivery.

C. EXTENSION OF LCEC ELECTRIC FACILITIES

1. General

Members requiring an extension or upgrade of distribution facilities may be required to provide a Contribution in Aid of Construction (CIAC) in order for LCEC to provide the requested service.

2. Contributions-in-aid-of-construction for new or upgraded overhead facilities (CIACOH) shall be calculated as follows:

   CIACOH = Total estimated work order job cost of installing the facilities - Four years expected incremental base energy revenue - Four years expected incremental base demand revenue, if applicable.

   (a) The cost of the service drop and meter shall be excluded from the total estimated work order job cost for new overhead facilities.
   (b) The net book value and cost of removal, net of the salvage value, for existing facilities shall be included in the total estimated work order job cost for upgrades to those existing facilities.
   (c) The expected annual base energy and demand charge revenues shall be estimated for a period ending not more than 5 years after the new or upgraded facilities are placed in service.
   (d) In no instance shall the CIACOH be less than zero.

3. Contributions-in-aid-of-construction for new or upgraded underground facilities
   (CIACUG) shall be calculated as follows:

   CIACUG= CIACOH + Estimated difference between cost of providing the service underground and overhead.

4. LCEC shall apply the CIAC formula uniformly to residential, commercial and industrial customers requesting new or upgraded facilities at any voltage level.

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5. All CIAC calculations under this rule shall be based on estimated work order job costs. In addition, LCEC shall use its best judgment in estimating the total amount of annual revenues which the new or upgraded facilities are expected to produce.

(a) CIAC True-Up: An Applicant may request a one-time review of a paid CIAC amount within 12 months following the in-service date of the new or upgraded facilities. Upon receiving a request, which must be in writing, LCEC shall true-up the CIAC to reflect the actual construction costs and a revised estimate of base revenues. The revised estimate of base revenues shall be developed from the actual base revenues received at the time the request is made. If the true-up calculation result is different from the paid CIAC amount, LCEC will either issue a refund or an invoice for this difference. This CIAC review is available only to an initial Applicant who paid the original full CIAC amount, not to any other Applicants who may be required to pay a pro-rata share.

(b) Proration of CIAC: CIAC is proratable if more Applicants than the Initial Applicant are expected to be served by the new or upgraded facilities ("New Facilities") within the three-year period following the in-service date. LCEC shall collect the full CIAC amount from the Initial Applicant. Thereafter, LCEC shall collect (if necessary), and pay to the Initial Applicant, a pro-rata share of the CIAC from each additional Applicant to be served from these New Facilities until the three-year period has expired, or until the number of Applicants served by the New Facilities equals the number originally expected to be served during the three-year period, whichever comes first. Any CIAC or pro-rata share amount due from an Applicant shall be paid prior to construction. For purposes of this tariff, the New Facilities' in-service date is defined as the date on which the New Facilities are installed and service is available to the Initial Applicant, as determined by LCEC.

2. Overhead Extensions

LCEC extends or upgrades its overhead facilities at no charge if both of the following two conditions are met:

a. The facilities being built are for standard service for the load being served

b. The estimated annual non-fuel revenue (EAR) over a four year period exceeds LCEC's cost to install required facilities. See **Definitions**.

Other factors that may affect the approval of the extension include:

a. The potential of other members to be fed from the same extension or addition within a four year period

b. The permanency of the installation served

c. The expected completion date

d. The need to make additional improvements at or near the area to be served such that the extension can be installed

e. Issuance of a permit by the AHJ

f. Examination of architectural plans

A nonrefundable CIAC will be required for any overhead extension where the estimated job cost for new poles, conductors, and fixtures (excluding transformers, service-drops and meters) required to provide standard service, as determined by LCEC, exceeds four times the estimated annual revenue (EAR). This CIAC amount is equal to the difference between that estimated job-cost (poles, conductors, and fixtures) and four times the EAR. If the member requests facilities that are not typically required, in the opinion of LCEC, to serve the load, a CIAC in addition to the above difference will also be required. This additional amount is equal to the difference (including transformers, service, and meter) between LCEC's estimated cost to provide the standard service and the estimated cost of the non-standard service requested by the member.

3. Underground Extensions

When, in LCEC's opinion, overhead distribution facilities are appropriate to serve the load for which service is requested, but underground is requested by the member or by requirement of a governmental agency, a CIAC is required which is equal to the difference between the estimated cost to provide the overhead standard service and the estimated cost of the underground. This differential cost includes all transformers and services.

Furthermore, if the cost of the overhead system for standard service could not have been supported by estimated annual non-fuel revenues, the member would pay an additional CIAC amount equal to the difference between that estimated job cost (poles, conductors, and fixtures for standard service) and four times the EAR.

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D. RESIDENTIAL SERVICE (UNDER 600V)

A single-phase, 120/240-volt, three-wire overhead service-drop per lot is the standard service offered by LCEC to residential members. This service is offered at no charge to LCEC's designated point of delivery excluding any line extension charges that might apply (**Section III-C-2**). Three-phase service may be available but only under special circumstances and CIAC charges might apply.

LCEC will provide residential underground electric service upon request when the member or developer pays the difference between the estimated cost of underground and the estimated cost of overhead facilities, as defined in LCEC's Tariff. The charges quoted in the Tariff are based on conditions that permit employment of rapid construction techniques. The Tariff applies to all residential members, including those where underground is required by local ordinance.

Underground residential service is offered under the provisions of the Residential Tariff for:

- New subdivisions, known as URD (Underground Residential Distribution) Subdivisions
- New underground service-laterals from overhead systems
- Replacement of existing overhead and underground service-laterals
- New multiple occupancy residential buildings

1. Underground Service for New Residential Subdivisions (Less than 5 Units per Building)

When requested, LCEC will provide underground distribution facilities in accordance with its standard practices, in (a) recognized new residential subdivisions of five or more building lots, (b) tracts of land upon which five or more separate dwelling units are to be located.

Developers of new URD subdivisions must contact LCEC before the platting process so easements can be included in the plat. Survey work associated with producing legal descriptions of such easements for LCEC facilities is to be completed by the developer's surveyor where needed. Early notice also enables LCEC to design an efficient URD system and consider preferences the developer may have concerning the location of LCEC facilities.

LCEC will normally provide the trench and backfill for all its underground distribution facilities up to the point of delivery. The member will provide and install the service-entrance conduit, the meter socket, and the wiring from the meter socket to the service-entrance equipment. A credit will be applied towards the contribution amount if the member wants to trench, backfill, and install member-provided conduit, and LCEC agrees. See **Figure 15**.

The charges for underground service are based upon arrangements that will permit serving the subdivision's underground distribution system from overhead feeder mains. If underground feeder mains are deemed necessary by LCEC to provide or maintain adequate service and are required to be installed underground by the applicant or a governmental agency, the applicant shall pay LCEC the difference between the cost of such underground feeder mains and the cost of equivalent overhead feeder mains.

Tariff charges for underground service to new residential subdivisions are based on timely and reasonably full use of the land being developed. When LCEC is required to construct underground facilities through a section or sections of the development where full use of facilities, as determined by LCEC, may not be realized for at least two years, LCEC may require a deposit before construction commences. This deposit, to guarantee performance, will be based on the estimated total cost of such facilities. The amount of the deposit, without interest, in excess of any differential charges for underground service will be returned to the applicant on a pro rata basis at quarterly intervals on the basis of utilization. Any portion not refunded after five years from the date LCEC is first ready to render service from the extension will be retained by LCEC.

2. New Underground Service-Laterals from Overhead Systems

When requested by the member, LCEC will install underground service-laterals from overhead systems to new residential buildings containing less than five units per building according to the terms and provisions of the Tariff.

When requested by the member, LCEC will install underground service-laterals from an existing overhead line to replace an existing overhead service to an existing building containing less than five separate dwelling units per building according to the terms and provisions of the Tariff. The member must provide and install the service-entrance riser, provide, replace the meter socket if necessary, and perform all rework necessary to accommodate the new service-lateral. See **Figure 16**.

If the member prefers to install, own, and maintain the underground service-lateral, LCEC will install a secondary pedestal at the base of the pole, at the charge specified in the tariff. Attachments of member-owned risers are not permitted to LCEC or telephone company poles.

3. Replacement of Existing Overhead and Underground Residential Service-Laterals

In the event that a residential member wishes to replace an existing LCEC overhead service-drop with an underground service-lateral, or relocate an existing LCEC underground service-lateral, LCEC will provide the underground service-lateral according to the terms, provisions, and charges specified in the Tariff.

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The member has the option of installing the conduit and trench as described in the next paragraph or of requesting LCEC to install the conduit, trench and service conductor and paying a CIAC equal to the total job cost of relocating the service-lateral.

The member shall install member-provided conduit and trench, including backfill, and provide all restoration. The trench shall be sufficiently deep to provide 24 inches of cover (36 inches maximum) over LCEC's service-lateral. The member shall also provide and install the conduit from the meter socket, replace the meter socket if necessary, and perform all rework necessary to accommodate the new service-lateral. It will be necessary for the member to pay a CIAC to compensate LCEC for providing this service. (**Figures 14, 15, 27** and **28)**

4. Manufactured Home and Recreational Vehicle (RV) Park Service

Individual electric metering is required for each separate occupancy unit where the intent is to establish permanent residency, in trailer, mobile home and recreational vehicle (RV) parks for which construction was commenced after January 1, 1981.

LCEC will supply service to these individual units provided the service-entrances are properly wired and grounded in accordance with the *NEC* and the wiring is approved by the AHJ.

Overhead service typically requires no CIAC provided the estimated revenue supports the estimated cost of any extension that might be required (**Section III-C**). Underground service requires CIAC in accordance with LCEC's Tariff.

LCEC's overhead service-drop or buried service-lateral may not terminate directly on a mobile home or recreational vehicle, but shall run to a pole or pedestal-mounted service-entrance provided by the member. (**Figures 5** and **14**) The member's service equipment is to be mounted on the load side of the meter socket. The wiring from the pole or pedestal to the Mobile Home or RV is also provided and installed by the member.

For overhead service, a treated pole or equivalent shall be furnished to provide adequate support and elevation for LCEC's service-drop. Overhead service-drops shall have 16 feet of clearance crossing over areas subject to mobile home or recreational vehicle movement. Other clearances are specified in **Section IV-B**.

If service is underground, an approved pedestal shall be furnished to support and protect LCEC's cable and meter. If the member wishes to furnish and use a pedestal that combines the service equipment and the meter socket, he may do so only if he uses equipment on LCEC's approved list. It shall be the member's responsibility to obtain authorization from LCEC before any commitments are made to use this equipment at a particular location. There will be no charge to LCEC.

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When individual electric metering is required, it is often advantageous for the member to group multiple meter sockets and service equipment on a single pole or pedestal. When overhead service is provided, this is aesthetically advantageous since the number of aerial service-drops is minimized. Where underground service is provided, this reduces the CIAC amount required by LCEC.

In those parks or areas of parks designated for overnight occupancy, where the intended use is not for purposes of permanent residency, individual electric metering is neither required nor provided by LCEC. In these cases, electric consumption is considered commercial use, and LCEC will provide a single point of service with each point individually metered. Multiple points of service will be provided if deemed necessary or appropriate by LCEC. Electric wiring from these points to the individual units is the responsibility of the member.

5. Multiple Occupancy Buildings (5 Units or More per Building)

The member may request underground service for new residential multiple occupancy buildings containing five or more dwelling units. LCEC will provide underground facilities at or near the building at no cost to the member provided LCEC is allowed to build its distribution facilities in the most economic and efficient manner. If LCEC determines a pad-mounted transformer is necessary, the secondary terminals of the transformer will be the point of delivery, to which point the member will install and LCEC will connect their cables. The member will furnish a location for the transformer pad according to LCEC pad specifications. (**Section V-A**) The location will typically lie between LCEC's source of power and the portion of the building closest to the available source.

Should the member request a point of delivery not agreed to by LCEC, a CIAC would be required to cover any additional cost that might be incurred.

The member shall extend the buildings' service to LCEC's designated point of delivery regardless of the distance from the member's switchgear.

When feeder mains on tracts of land upon which multiple occupancy buildings will be constructed are deemed necessary by LCEC to provide or maintain adequate service, and underground installation is requested by the member or required by a governmental agency, the member shall contribute the difference between the cost of underground and the cost of overhead feeder mains. Typically there will be no contribution required from the member with respect to construction of underground distribution facilities to multiple occupancy dwellings other than feeder mains as long as LCEC is free to construct such extensions in the most economic manner, and reasonable full use is made of the tract of land upon which the multiple-occupancy residential buildings will be constructed. Other conditions may require special considerations or arrangements.

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6. High-Rise Residential Buildings

General - Standard service to high-rise residential buildings is from a single pad-mounted transformer.

E. COMMERCIAL SERVICE

1. General Policy (Under 600V)

Commercial service is electrical service to a commercial or industrial site and may also include multi-family residences such as apartments or condominiums.

Commercial services are typically less than 600 volts, delivered from the secondary side of LCEC's distribution transformers.

Single- or three-phase service may be available depending upon the proximity to existing facilities.

The three-phase voltages that may be available are 240/120 volt four-wire open delta, 240/480 volt four-wire delta, 208Y/120 volt four-wire wye and 480Y/277 volt four-wire wye.

Where the required load can be served through aerial distribution transformers, delivery is typically accomplished through overhead service conductors.

Where the required load must be served through pad-mounted distribution transformers, the member is typically required to install, own, and maintain the underground service from their facility to LCEC's designated point of delivery.

The point of delivery for underground services is typically at the secondary side of LCEC's distribution transformer or at an LCEC secondary enclosure (pedestal or handhole).

The point of delivery for an underground service will typically be located in (preferred) an easement granted to LCEC or in (alternative) Public Utility Easement (P.U.E.). The point of delivery shall not be located in road right-of-way (R/W).

Where the above conditions exist, generally there will not be a Contribution In Aid of Construction (CIAC) required.

2. Exceptions to General Policy

The following are examples of exceptions to LCEC's general policy. If LCEC agrees to the exceptions, CIAC may be required. The list below is to illustrate common scenarios only and is non-inclusive.

- Non-standard service voltage
- Three-phase service when single-phase service is adequate
- Underground facilities where overhead service could be provided
- Point of delivery request other than that specified

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3. Service at Primary Voltage (Over 600V)

LCEC can provide primary voltage service (over 600 volts) to members directly at the high voltage or primary distribution system standard for the location at which service is requested. Primary service is available provided the service will not, in LCEC's opinion, adversely affect service to other members or LCEC's distribution system, and will be distributed by the member in a safe and reliable manner.

Members receiving service at primary voltage may own poles, conductors, cables, transformers and protective devices. This equipment is subject to approval by LCEC. To assure timely restoration of service in case of failure, this member-owned equipment should be of the same type or specifications as equipment used by LCEC.

Primary voltage service is metered using current transformers, voltage transformers and instrument transformer-rated meters.

Trenches for primary systems must have a minimum of 36 inches cover, from the top of the conduit or conductor to the finished grade (**Figure 31**).

Any member considering primary voltage service must consult with LCEC before construction begins, to determine mutually satisfactory solutions for the location of the point of delivery, the primary metering equipment, any disconnect devices to separate LCEC and member distribution systems, ferroresonance, system protection, and grounding.

NOTE: There may be situations where LCEC requires a member to receive service at primary voltage. Examples of this will be provided later in this handbook.

F. UNDERGROUND SERVICE CONNECTIONS FOR THE COMMUNITY REDEVELOPMENT AGENCY (CRA) OF THE CITY OF CAPE CORAL

City of Cape Coral ordinances require any new buildings or changes to any qualifying existing buildings within the boundaries of the Downtown Community Redevelopment Area to locate or relocate all electric service or wires of all kinds underground from the building to the point of the primary electric distribution system. Since underground service does not meet the requirements of **Section III-A. Standard Service**, the member will bear all additional expenses as a CIAC.

Service may be available from new or existing LCEC equipment, or from a vault, depending on the magnitude of the load involved.

For service from new or existing LCEC equipment, the applicable requirements of **Section III-C. Extension of LCEC Electrical Facilities** shall be followed.

LCEC may, where it is mutually advantageous, elect to extend primary circuits into the member's property and serve the immediate and adjoining premises from a pad-

mounted transformer located on the member's property. See **Section V. Requirements for Transformers Situated on Member Property**.

G. TEMPORARY SERVICE

Temporary service is usually a limited term service to installations such as fairs, exhibitions, construction projects, displays and similar projects. Contact LCEC regarding availability and applicable installation and removal fees before installing the temporary facility. These nonrefundable fees are paid in advance of LCEC's construction.

Where the member's service-entrance cable does not exceed 200 ampere capacity, a nonrefundable flat fee is specified in LCEC's Tariff. Larger services may require additional fees. For overhead service, the fee covers installation and removal of an overhead service and meter at an existing secondary source.

For an underground service, the fee covers connecting and disconnecting the member's service cable to LCEC's existing underground facilities, including installation and removal of the meter. Contact LCEC to determine current fees and availability of temporary service.

Service may be single- or three-phase, 60-Hz, at the available standard secondary distribution voltages. This service is available only when LCEC has existing capacity in lines, transformers and other equipment at the requested point of delivery.

For overhead temporary service, the member shall provide a sturdy and adequate service-drop support, complete with service-entrance, to accommodate LCEC's service-drop and meter. The temporary metered service pole shall be located no more than 50 feet from the designated LCEC service facilities (**Figures 5** and **6)**.

In an underground area, a pedestal with meter socket shall be provided to accommodate the meter, and the member's service cable shall be installed to LCEC's facilities. The underground service riser or pedestal shall be located no more than 10 feet from the nearest LCEC facilities. An adequate amount of service cable shall be left available for LCEC crews to pull into the pedestal or transformer for connection. Note: In underground residential distribution (URD) areas, pedestals will not be installed by LCEC for the sole purpose of providing temporary service.

If specific electrical service other than that stated above is required, LCEC will, at the member's request, determine its feasibility and may provide such service based on the estimated cost of installing and removing such additional electrical equipment. This estimated cost is payable in advance to LCEC and will be subject to adjustment or refund based on the actual costs. The additional service may be overhead or underground, depending on circumstances at the particular location, as determined by LCEC.

All temporary services shall be subject to all of the applicable Rules, Regulations and Tariff charges of LCEC, including service charges. The energy used by the temporary

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service will be billed monthly under the appropriate rate schedule applicable to commercial and industrial type installations.

The member's installation shall satisfy all the requirements of the *National Electrical Code* and the AHJ.

H. UNAUTHORIZED CONNECTIONS AND DISCONNECTIONS

All connections of the member's wiring to LCEC wiring, all disconnects of service-entrance conductors, all meter removals and installations and all breaking of LCEC meter equipment seals shall be made only by LCEC, except as allowed in **Section III-I** of this handbook. Any other connection or disconnection of LCEC's service by the member or his agent is prohibited. If done with the intent to injure or defraud, it is punishable by law. Violators will be prosecuted.

I. CHANGE IN SERVICE REQUIREMENTS (SERVICE CHANGES)

The member normally owns all the service facilities on his side of the point of delivery, except for the metering equipment that is owned by LCEC. The member shall notify LCEC prior to considering a change in service (service change) to assure that service and metering facilities remain adequate.

When a service change requires LCEC's services to be disconnected, the member shall request a disconnect/reconnect from LCEC. The member shall establish an advance appointment to ensure proper coordination between his electrical contractor and the LCEC crews who will disconnect the service and later reconnect after an inspection (when required by the AHJ) is received.

J. SERVICE TO SPECIAL EQUIPMENT

The operation of electric furnaces, electric dredges and draglines, large motors and other heavy utilization equipment, if served from LCEC's distribution system, might interfere with service to other members. Contact LCEC concerning the requirements for furnishing this type of service. Refer to **Section IX**.

K. SERVICE TO BOAT FACILITIES

LCEC electric service to marinas and private docks will be to a designated point of delivery on shore. The member shall bring his service conductors to the point of delivery, such as a pedestal, junction box, or pad-mounted transformer. LCEC will not extend its conductors onto marinas or docks.

The member should install his LCEC-approved meter sockets so they will not be a hazard to people on the dock and still be accessible for maintenance and monthly readings. The meter socket shall be mounted so the meter will face the dock and not the open water and not represent a protrusion hazard.

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IV. SERVICE AND METER CONNECTIONS

A. SERVICE EQUIPMENT

1. General

The member should consult LCEC at an early stage to verify availability of service (**Section II-C**) and to determine the LCEC designated point of delivery (**Section III-B**). Contact with LCEC should be made before the purchase of equipment and its installation. This LCEC approval is not a substitute for the inspection and approval by the AHJ. LCEC assumes no responsibility for the member's wiring installation. Upon written request, LCEC will inform the member of maximum available short circuit current at the transformer.

The member shall provide, install, own, and maintain all service-entrance conductors and service equipment. (**Section VI**). The service equipment usually consists of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of the supply conductors to the buildings or otherwise defined area. It is intended to be the main control and means of electrical cutoff.

No more than two parallel conductors per phase may be used for services less than 600 amperes. No more than four parallel conductors per phase may be used for services larger than 600 amperes and less than 800 amperes, unless authorized in writing by LCEC Engineering personnel. Services larger than 800 amperes require coordination with LCEC Engineering. The largest conductor permitted is 750 kcmil.

The maximum number of conductors per phase for single-phase transformers is eight conductors sized from 2 AWG to 500 kcmil (**Figure 24**). The maximum number of conductors per phase for three-phase transformers is based on the kVA size and is given in Table 1 on **Figure 25**.

LCEC will provide, install, own and maintain adequate meters to measure the electrical quantities required to apply its rate schedules and contracts.

The member may choose the type of service equipment he prefers, consistent with the AHJ and applicable codes (*NEC*). The equipment must be able to successfully interrupt the maximum fault current available at its location. Where load growth is possible, LCEC recommends that the capacity of service-entrance conductors and service equipment be greater than the minimum requirements of the *NEC* or other local codes. LCEC encourages residential members to install a service-entrance with a capacity of at least 200 amperes for average homes and more in the case of larger homes.

Service-entrance equipment should be in a location that is accessible and not likely to become obstructed. In cases where a locked gate, or similar, is used to prevent unauthorized access, LCEC will provide a lock box. However, prior to the installation, an LCEC Representative will determine the suitable location to ensure

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that it is easily accessible for all employees. The member is responsible for the installation and following ESMR guidelines. As a general convenience, every electrical contractor should provide a stencil or tag with his name and address on the service switch of the member's wiring system.

Service equipment must be able to safely interrupt the maximum fault current available at its location. Upon written request only, LCEC will supply the member with the maximum available short circuit current at the transformer for existing transformers or for transformers included in existing work requests. LCEC will not provide available short circuit current values orally or for transformers not included in an existing work request.

LCEC emphasizes that changes in the member's load and other loads in the area may require changes in the LCEC system which may increase or decrease the available fault current and for which the member must make allowances.

No fuses should be installed at any point in the grounded neutral conductor of the service-entrance.

No resistor or reactor or other similar fault current limiting device shall be installed in the neutral or the phase conductors of the service-entrance without the approval of LCEC.

A main disconnecting switch may be ahead of the meters when more than six meters are grouped. This is because the *NEC* requires a main disconnect switch when it would otherwise be necessary to operate more than six switches to completely disconnect the building service.

When installed ahead of the meters, the door of the main switch must be sealable in both the ON and OFF positions, and must be capable of accepting an Utilco Enclosure Lock PEL-1A or equivalent.

Service-lateral or service-entrance conductors on exterior parts of the building shall be in conduit. Conduit fittings (condulets), such as LB, LL, LR, and junction boxes shall not be used. Exposed service-entrance conduit must be securely fastened to the building wall.

For each four-wire delta service-entrance the conductor designated to have the highest voltage measured to ground (the high leg) shall be identified by orange color outside of the weatherhead, within the meter enclosure and within the main switch enclosure, and will be connected to the right-hand terminals of the meter socket and the center terminal of the main switch.

All meter cabinets, troughs and raceways containing non-metered conductors shall be of a type and so arranged to permit effective sealing by LCEC. Such seals shall not be broken or tampered with except in cases of emergency or with the permission of LCEC. If the metering equipment is or may be subject to vandalism

or tampering, LCEC may require additional protective measures. The member shall replace all meter sockets and enclosures that deteriorate.

The use of a metallic tape to pull service conductors into LCEC-owned equipment is not allowed.

2. Ampere Rating

a. General

The load on the member's service served from three-phase transformer installations shall be balanced and no individual service-entrance equipment shall exceed 4,000 amperes at standard supply voltages of 750 volts or less.

b. Residential

The rating of the service-entrance equipment shall satisfy the general requirements stated above, the *NEC* and the AHJ. As stated previously, LCEC recommends that the service-entrance have more capacity than the minimum required by the *NEC*. The AHJ shall be consulted, since some locations may have requirements that exceed the minimums.

c. Commercial

The rating of the service equipment for commercial or industrial occupancies will depend on the connected load, and in most cases, will be specified by the member's engineer.

It is important that the requirements be reviewed with LCEC at an early date so that a satisfactory solution regarding service voltage and service-entrance location can be determined. At this time, details about the nature and size load to be served may be given to LCEC.

The service equipment should be chosen to satisfy all the requirements of the member for the control of his load and should be consistent with the *NEC* and the AHJ. One requirement is that the service equipment shall be able to safely interrupt the maximum fault current available at its location. Upon written request, LCEC will supply information that will permit the maximum available fault current to be determined.

LCEC emphasizes that changes in the member's load and other loads in the area may require changes in the LCEC system. These changes may change the available fault current. Allowance should be made for this possible change.

d. Service Equipment Rated Below 600 Volts

Self-contained meter sockets are allowed for services up to 320 amperes continuous. Service-entrance conductor size must be designed and sized to the meter socket specifications.

Self-contained meter sockets are limited by two design factors:

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1. Self-contained meter sockets are limited to 320 amperes continuous
2. Self-contained meter sockets are limited to 480 volts phase-to-phase or less

Instrument transformers will be required for metering regardless of the kW demand if the phase-to-phase voltage of any service-entrance is equal to or greater than 480 volts.

In cases where the member's demand at these voltages exceeds 320 amperes, or the member's service-entrance wire size exceeds one 750 kcmil or two 500 kcmil conductors per phase, LCEC will normally require an LCEC-furnished instrument transformer cabinet and transformer-rated meter socket, installed ahead of the service equipment. The member will also furnish and install a minimum 1 inch conduit from the cabinet to the meter socket (refer to the specifications found in **Section VI**. LCEC will provide the instrument transformers, install the secondary wiring from the instrument transformers to the meter socket, and install the meter.

For service disconnecting means rated 1,000 amperes or more used on a solidly grounded 480Y/277 volt service, ground-fault protection shall be provided. This may be omitted if approved by the AHJ or if the service equipment controls a continuous industrial process where a non-orderly shutdown would otherwise introduce additional or increased hazards.

A main disconnecting switch is required in multi-metered service installations or for any service of 480-volt phase-to-phase. The switch will be installed on the line side of the meters. The door of this switch box shall accept an Utilco Enclosure Lock PEL-1A or equivalent. No socket or instrument transformer cabinet will be required ahead of this switch.

e. Service Equipment Rated Over 600 volts

When the member takes service at primary voltage, he shall provide service equipment rated for the voltage supplied. The service equipment will normally be on the load side of LCEC's instrument transformer metering installation.

The service equipment shall satisfy all the requirements of the *NEC*, the building code, and the AHJ.

LCEC shall be consulted so that the member's primary service equipment may be coordinated with LCEC’s feeder protection circuit breakers and fuses.

B. OVERHEAD SERVICE

For residential overhead service, the attachment will normally be within 10 feet of the corner, on the side of the building nearest LCEC's secondary facilities. If the member requests an alternate location, and LCEC approves, the member shall be responsible for all additional costs. The member's service-entrance should be installed in such fashion that service-drop wires will not cross over buildings, swimming pools, or adjacent property not owned by the member (**Figure 3)**.

1. Vertical Clearance to Ground

The point of attachment for service-drops not exceeding 150 volts from any conductor to ground must allow 10 feet of ground clearance to lowest point of sag in the service-drop.

The lowest point of sag shall be 10½ feet for any service-drop conductor supplying voltage greater than 150 volts but less than 300 volts to ground.

When the service-drop must pass over immediately adjacent driveways or parking areas subject to truck traffic or is within 25 feet of a swimming pool or the voltage to ground is greater than 300 volts, additional clearance shall be provided. In these cases a greater attachment height shall be provided (**Figure 3)**.

2. Clearance from Building Openings

Overhead service entrance conductors installed as open conductors or multi-conductor cable shall be positioned to meet the requirements of the *National Electrical Safety Code (NESC)* and shall have a clearance of not less than 3 feet from windows, doors, porches, fire escapes or similar openings. Service-drop conductors shall have a clearance of not less than 11 feet from any point of roofs over which they pass, except when the voltage between conductors does not exceed 750 volts and the roof is not readily accessible to pedestrians, then the clearance may not be less than 3½ feet. Through-the-roof raceways shall be positioned within 4 feet of the roof's edge. Service-drop conductors of 300 volts or less, which do not pass over more than a maximum of 6 linear feet of the roof for the purpose of terminating at a (through-the-roof) service raceway or approved support, may be maintained at a minimum of 18 inches from a portion of the roof over which they pass.

3. Clearance Over or Near Swimming Pools

The clearances below apply to overhead supply cables of 0 to 750 volts when these facilities are 10 feet or less horizontally from the edge of the pool, diving platform, diving tower, water slide or other fixed pool-related structure. Consult the AHJ for other local requirements. All clearances apply under the closest approach conditions for all supply cables (**Figures 3** and **4)**.

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a. Overhead Supply Cables

1. Unscreened Pools

LCEC requires a minimum clearance of 23.0 feet in any direction from the edge of an unscreened pool.

LCEC also requires a minimum clearance of 15.0 feet in any direction from a point of a diving platform or other fixed pool related structure of an unscreened pool.

EXCEPTION: Clearances above do not apply for supply cables (0 to 750V) that are located more than 10 feet from the edge of the pool.

2. Screened Pools

LCEC requires the minimum clearances from any point of a screened pool to be 10½ feet vertically and 5½ feet horizontally.

b. Underground Supply Cables

LCEC requires that underground supply cables shall not be installed within 5 feet horizontally of in-ground or above ground swimming pools or their auxiliary equipment. Burial depths shall be no less than 2 feet.

The member is required to contact LCEC before construction of any pool facilities to ensure that the required NESC clearances are met and to minimize costly relocation conflicts between swimming pool or pool enclosure installations and LCEC's facilities.

4. Anchorage for Overhead Service-drop Cable or Wires

The member shall provide a safe and adequate anchorage for LCEC's overhead service-drop conductors at the agreed upon location and height. The member will furnish and install a suitable attachment for the service-drop. The attachment device furnished will vary, to be compatible with the type of building construction. LCEC WILL NOT BE RESPONSIBLE FOR DAMAGE TO THE MEMBER'S BUILDING OR WIRING RESULTING FROM FAILURE OF THIS ANCHORAGE.

When the construction of the building does not provide proper service clearances for a wall-type attachment or the height of the building does not allow adequate clearance from the service-drop to ground, the member must furnish and install a service mast, a rigid galvanized steel conduit extension or other approved extension to elevate the point of attachment. This conduit extension or other point of attachment must be strong enough to support a sustained load of 200 pounds minimum at the designated height of the point of attachment. In no case is this extension to be used to support any other attachment such as radio or TV antenna, telephone drop, lights, etc.

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The member will furnish and install fasteners for points of attachment on frame wooden locations through the roof and wall mounted locations. Exception: LCEC will furnish and install service brackets for points of attachment on 2 inch and 2½ inch conduit for through the roof installations. It is the member's responsibility to furnish, install and maintain any other type of point of attachment.

5. Installation of Service-Entrance

The service-entrance conductors shall be provided and installed by the member in accordance with local building codes and the current *NEC*. The conductors will extend a minimum of 24 inches beyond the service weatherhead to permit connection to LCEC's service-drop wires. LCEC limits the number of weatherheads per service to three with no more than four conductors in each.

The service-entrance weatherhead shall be above the service-drop attachment. If this is impractical, the weatherhead shall not be farther than 24 inches from the point of attachment. Service-drop conductors and service-entrance conductors will be arranged in a manner that will prevent water from getting into the service-entrance raceway or cable sheath.

The member shall identify the neutral conductor of the service-entrance as indicated by the *NEC*.

The meter socket shall be as shown in the appropriate sketch of **Figure 1**.

The member will install the service-entrance conduit from the service weatherhead to the meter socket or the service-entrance equipment, when this precedes the meter. It may be either exposed on the exterior building wall, or concealed within the structure itself in a permanently inaccessible location. Condulets such as LB, LL, LR and junction boxes shall not be used. Exposed service-entrance conduit shall be securely fastened to the building wall.

In the case of the service-entrance conductors for a three-phase, four-wire delta service, one of the ungrounded conductors will have a higher voltage to ground than the other two conductors. This conductor, commonly known as the high leg or power leg, must be durably and permanently marked by an outer finish that is orange in color outside the weatherhead, within the meter enclosure and within the main switch enclosure. The high leg or power leg will be connected to the right-hand terminal of the meter socket and to the center terminal of the main switch. This marking will ensure connection to the proper LCEC service conductor. The high leg is used only to serve a three-phase load circuit and not as a phase-to-ground load circuit. The high leg shall not serve single-phase load circuits.

C. ILLUSTRATIONS

The following illustrations contain pertinent information regarding the installation and connection of overhead and underground services.

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V. REQUIREMENTS FOR TRANSFORMERS SITUATED ON MEMBER PROPERTY

A. PAD-MOUNTED TRANSFORMER REQUIREMENTS

Complete requirements are contained in LCEC specifications given to members for individual projects. Typical pad-mounted transformer requirements include, but are not limited to the following:

The Member Will:

- Provide a transformer pad location according to LCEC specifications.
- Bring the pad location to within 6 inches of final grade.
- Bring the service-entrance conductors out to the transformer, installed in accordance with *NEC* requirements, leaving adequate cable, as determined by LCEC, for LCEC to make connections at the point of delivery.
- Maintain access to LCEC pad-mounted equipment located on the member's property. There should be 8 feet of clearance from the door side and 3 feet of clearance from other sides from items such as fences, shrubs and other obstructions. LCEC will help plan the member's installations of fences, shrubs, etc. near LCEC facilities such that they will not obstruct access or cause damage to LCEC's facilities. When adequate access to LCEC facilities is maintained, service restoration is quicker in the event of a power interruption.
- Provide suitable barriers, if specified by LCEC, to protect the pad-mounted transformer and associated metering equipment from vehicular traffic.
- Provide LCEC with a suitable easement for the transformer pad and distribution cables, including the right to install additional cables to serve other members, as required.
- Provide staking to indicate final grade as specified in **Section II-E**.
- Provide for the removal and restoration of all obstructions to furnish a clear trench route, and bear the additional costs of alternate construction techniques caused by any obstruction techniques caused by any obstructions not removed.
- Conform to the requirements of applicable codes. Approval from the AHJ must be provided to LCEC before LCEC will connect the service.
- Limit the number of conductors per phase for pad-mounted transformers to the maximum number indicated on **Figure 24** for single-phase installations or **Figure 25** for three-phase installations. Contact LCEC Design & Engineering when the number of secondary cables exceeds the number in Table 1 of **Figure 25**.

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LCEC Will:

- Provide the member with LCEC's plans to provide electrical service to the proposed building project.
- Provide and install the transformer, and for 500 kVA transformers and smaller, the concrete pad, primary cable and conduit.
- Provide and install secondary connectors necessary to connect the member's secondary conductors to the transformer provided that such conductors meet the LCEC size requirements as specified in this handbook.
- Make all physical connections to the transformer.

Current Transformers Inside Pad-Mounted Transformers:

If only one, single-meter member is served, and no future additional meters will be connected, current transformers may be placed in the pad-mounted transformer before the member's service is connected to its secondary. This would avoid the need for a current transformer cabinet. However, the member shall still install the meter socket and connecting conduit. The meter socket will not be mounted on the pad-mounted transformer. The location of the meter socket will be specified by LCEC.

Current transformers inside single-phase pad-mounted transformers are not permitted.

1-Phase & 3-Phase Multi-Services:

All single-phase services and three-phase services where there are multiple services served from the same pad-mounted transformer will require the customer to install an LCEC approved instrument cabinet that will house either the current transformers, the potential transformers, or both, depending on customer needs. LCEC requires that the meter socket, instrument cabinet, and the connecting conduit be installed by the customer and be no further than 20 ft from each other. (See Figure 9A, 9B, 16A, 16B)

B. VAULT REQUIREMENTS

New vault installations containing LCEC-owned equipment are not permitted.

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VI. METERING EQUIPMENT

Unless special circumstances warrant and approval has been received by LCEC, there will be only one service voltage available and only one metering point or point of delivery for each building.

Meter sockets and enclosures shall be securely mounted in a plumb and level position on a solid wall or other suitable structure. When mounting on masonry walls, meter sockets and equipment cabinets shall be secured with toggle bolts, screws set in lead shields, or expansion anchors.

The center of the meter shall be 5 feet ± 6 inches above finished grade and shall be located in a place where it will be protected from damage. A minimum clear work zone shall be maintained in accordance with requirements of the NEC Article 110 except that the minimum depth of the work zone shall be 4 feet. There shall be no above ground obstructions such as cooling towers, shrubs, plants, fences, etc. within the clear work zone.

All metering equipment shall be located outdoors, unless otherwise agreed upon by LCEC and the member. Every effort shall be made to avoid locating metering equipment in areas that are susceptible to subsequent enclosure by walls or screens. If a meter is enclosed or otherwise made inaccessible after installation, the member will bear the cost for having the metering facilities moved to an accessible, outdoor location.

Where metering equipment must be installed indoors, it must be located on the ground floor in a clean, dry, well-lighted, ventilated, safe, and easily accessible room reserved specifically for metering and related electrical equipment. The room shall also comply with all applicable provisions of the current edition of the *NEC*. LCEC shall have access to its metering equipment at all times. If doors must remain locked, LCEC will furnish a key storage lock box where an equipment room access key can be kept. Prior to the installation, an LCEC Representative will determine the suitable location to ensure that it is easily accessible for all employees.

The meter room must not be used for storage.

Self-contained meter sockets are allowed for services of 400 amperes peak or 320 amperes continuous. Service-entrance conductor size must be designed and sized to the meter socket specifications.

Self-contained meter sockets are limited by two design factors:

1. Self-contained meter sockets are limited to a 400 ampere main breaker (320 amperes continuous)
2. Self-contained meter sockets are limited to 480 volts phase-to-phase or less

Instrument transformers will be required for metering on services with main breakers rated at greater than 400 amperes.

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All LCEC-furnished instrument transformers are for the exclusive use of LCEC. Unless specifically waived in writing by LCEC, all metering current transformers shall be installed ahead of all switches, giving a service-meter-switch sequence.

No more than one conductor may be installed on the load side terminals of a meter socket designed to accommodate only one conductor. Individual conductor strands may not be cut to allow the conductor to fit into the meter socket terminals.

Load side conductors should exit the meter socket as close to the load side terminals as possible to allow for the entry and connection of LCEC line side conductors.

A. EQUIPMENT FURNISHED AND INSTALLED BY LCEC

LCEC provides and installs, at its expense, adequate metering instruments to measure the electricity consumption of the member. Usually, only one watt-hour meter per member is needed. However, LCEC will furnish whatever metering, in its opinion, is required. All instrument transformer-rated metering equipment enclosures are provided by LCEC.

Instrument transformers are provided by LCEC and normally installed by the member when the voltage or current exceeds the rating of LCEC's standard self-contained meter.

With the exception of DOT lighting meters, voltage or potential transformers will be used when the voltage is greater than 240 volts line-to-line, regardless of the ampere demand.

LCEC will install and connect the meter and the instrument transformer secondary conductors in the conduit between the instrument transformers and meter on all installations. No other conductors will be allowed in the metering conduit.

Close coordination between the member and LCEC is required to ensure these instrument transformers are installed at the appropriate time.

B. EQUIPMENT FURNISHED, INSTALLED AND OWNED BY THE MEMBER

All member-provided metering equipment must comply with current applicable standards and the requirements of the AHJ. All self-contained meter sockets are to be provided, maintained and installed by the member. **LCEC will only accept UL approved ringless meter sockets for all installations.**

All meter conduit installations provided by the member shall be either rigid, galvanized steel or schedule 80 electrical grade PVC, including the riser sweep. The conduit from the riser sweep to LCEC equipment may be schedule 40 electrical grade PVC. Conduits containing service conductors shall be sized according to the *NEC* and all conduits used for current and voltage transformer interconnections to the meter shall be 1 inch. The maximum distance allowed between instrument transformers and the meter shall be 20 feet.

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Meter sockets with manual by-pass capability are required by LCEC to eliminate service interruptions on meter changes for residential self-contained metering exceeding 200 amperes or for commercial, self-contained metering. **K-base meters are not used by LCEC**.

In some cases, the member might prefer prefabricated, combination socket and disconnect assemblies for multiple occupancy buildings (e.g. apartment or condominium buildings, shopping centers, etc.), or pedestal-mounted equipment for mobile home parks. Such equipment for all three-phase and nonresidential installations shall be provided with manual by-pass capability. It shall be the member's responsibility to obtain authorization from LCEC to use this equipment for a particular installation before committing to its use.

Member-provided disconnecting switches are required for any self-contained meter installation for voltages of 480v phase-to-phase. The switch shall be non-fused located on the line side of and immediately adjacent to the meter socket and it must be able to successfully interrupt the maximum fault current available at its location. The switch shall be easily accessible by LCEC personnel and shall accept an Utilco Enclosure Lock PEL-1A or equivalent.

No member or member company shall make attachments to a meter enclosure that impedes LCEC personnel in opening or closing the meter enclosure. Anyone making an attachment to the meter enclosure should be aware of the energized components contained within the meter enclosure and should proceed in a manner to ensure their safety.

C. METERING CONFIGURATIONS AND APPROVED EQUIPMENT

LCEC specifies the metering configuration for each service to be metered. LCEC also requires that previously approved enclosures be used for each installation. The member is responsible for ensuring he is using the correct and approved enclosures. Failure to do so may result in delay of service and additional expense. Underwriters Laboratory Inc. (UL) approved aluminum ringless self-contained meter sockets are approved for use on the LCEC system.

D. LOCATION OF METERING EQUIPMENT

LCEC will designate the location of the metering equipment. The member will provide the meter location free of cost to LCEC.

1. Sequence in Service-Entrance

Where permitted by the *NEC* and the AHJ, the metering equipment will precede all service equipment.

2. Located Outdoors

Except where meter rooms are used, all metering installations shall be outdoors, on a vertical wall or other substantial support where the view from the ground is unobstructed. They should be readily accessible to LCEC at all times so they may be read, inspected, removed or tested with a minimum of annoyance to the member. The center of the meter shall be located 5 feet ± 6 inches above ground, except for meter pedestals for mobile homes which may have a minimum height to the center of the meter of 36 inches above ground.

The meter location (**Figure 2**) should not be affected by a kitchen discharge fan or other vents, the drain from a roof gutter or air conditioner and should be free from vibration. Meters shall not be located:

- Within 5 feet of fuel tanks
- Within 5 feet of gas meters
- Over sinks or lavatories
- Within 2 feet of water, steam or sewer vent pipes
- Where subject to heat from furnaces, stoves or heaters
- Beneath pipes or containers from which moisture may drop or meters or service switches
- Within 5 feet of wall-mounted rotating equipment

Sockets shall be securely attached to the building wall, pedestal, metal rack or other permanent structure and aligned so that the meter is both level and plumb. Attachment to temporary structures (except for temporary service) or structures subject to early deterioration is prohibited. When the equipment is exposed to vehicular traffic, LCEC may require that the metering equipment be protected.

3. Located Indoors

When meters are located in a meter room, the room should contain only meters and associated equipment. The room should remain unlocked so meters are readily accessible. In unusual cases where an unlocked meter room would impose a severe hardship on the member, arrangements can be made to furnish keys to LCEC so the meters will always be accessible to LCEC representatives. If a lock box is required, prior to the installation of it, an LCEC Representative will determine the suitable location to ensure that it is easily accessible for all employees. The meter room may then be locked, provided this does not violate any AHJ or code requirements. The meter room must not be used for storage. The center of the meters should be 5 feet ± 6 inches above the floor.

The center of grouped meters may be a maximum of 72 inches and a minimum of 22 inches above the floor (see **Figures 22** and **23**). If doors must remain locked, LCEC will furnish a key storage lock box where an equipment room access key can be kept.

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4. Flood Elevation Standards

The member is responsible for providing and maintaining a means of ready access to the meter for maintenance and reading by LCEC personnel regardless of the reason. The member shall pay additional costs incurred by LCEC for providing special service to meet the member's flood insurance requirements **(Figure 30)**.

E. IDENTIFICATION OF METERS

If a building requires more than one meter such as apartments or mobile home parks, or if the meter is not directly within the boundaries of the premise served, LCEC cannot render service until the meter socket or cabinet has been clearly and properly marked. The markings shall be plain and permanent, giving the street number to the door of the premise served or the symbol appearing on the entrance door when this door does not carry a street number. The member name shall not be used for identification. It is important that the address posted on the entrance door of the premise served does not change after the meter has been installed. Contact LCEC Member Service to ensure the member billing records are correct if the address must be changed.

Each meter socket shall require a permanent and durable identification tag for the premise served. Both the meter socket and main breaker must be marked for multiple meter installations similar to those in **Figures 20** and **21**. The main breaker does not require an individual label for meter centers similar to those in **Figures 22** and **23** where it is obvious which meter and main breaker serve individual members.

The following method meets the requirement for a permanent and durable tag:

Non-ferrous metal or poly-plastic plates approximately 3/4 inches high and 1/8 inch thick, attached to the meter base by rivets and having engraved or stamped lettering approximately 1/2 inches high. The use of paint or marking pens to label the meter sockets or main breakers is not acceptable.

Before service is rendered, the inside of each meter socket (not the meter cover) shall be clearly marked with a single location – previous markings shall be painted over or obliterated. A permanent-type marking pen is acceptable for this identification. Marking meter sockets in this manner does not eliminate the requirement of a permanent and durable tag as stated above.

F. RELOCATION OR UPGRADE OF METERING EQUIPMENT

When it is necessary to relocate or upgrade an existing metering installation, the member shall make the new installation in accordance with these standards. The member shall arrange a definite schedule for the switchover to the new meter in advance so LCEC can accommodate the request upon completion of the member's electrical work. The new service-entrance shall be inspected and approved by the AHJ before service can be restored. No energized service-entrance shall be left un-metered, and all meters shall be re-identified as to what units they serve. Refer also to **Section III-I**.

G. PROVISIONS FOR ENERGY PULSE DATA

LCEC will provide energy pulses transmitted from LCEC's metering equipment to provide data to energy management systems. Time pulses will not be furnished. All access to LCEC metering equipment shall be for LCEC personnel only. The pulses will normally be provided from a separate junction box that will be for member access only.

When the installation requires LCEC to provide output from more than one pulse source, it shall be the member's responsibility to provide any required manipulation of pulse data.

Any replacement of material or equipment solely used to supply pulses to the member shall be made by LCEC at the member's expense.

All demand or energy billing will be based on LCEC's meter readings or LCEC pulse data. LCEC does not guarantee a certain pulse rate and the member will be responsible for installing equipment necessary to utilize the data.

Data pulses will be provided through dry contacts only and will be limited to a member-imposed maximum of 100 milliamperes at 120 V_{ac} or 200 V_{dc} fused energy source.

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VII. APPROVED METERING EQUIPMENT

Underwriters Laboratory Inc. (UL) approved aluminum ringless self-contained meter sockets are approved for use on the LCEC system. LCEC makes no claims regarding nameplate ratings or load side attachments beyond the sealed portion of the meter socket. LCEC recommends that all sockets and enclosures be used as intended by the manufacturer. All additional data is supplied for informational purposes only.

NOTES:

A. *All commercial applications require a bypass device*
B. *All three-phase applications require a bypass device*
C. *Aluminum enclosures are recommended in salt spray areas*
D. *No more than one conductor is to be connected to a lug unless the lug is designed for multiple conductors.*
E. *Lugs and connectors on the line and load sides are considered to be part of the meter enclosure. The member or his representative is responsible for furnishing these items. Contact LCEC to determine the properly sized lugs and connectors.*

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VIII. GROUNDING

A. GENERAL

The member's service-entrance installation shall satisfy all grounding requirements of the *NEC* and any applicable building codes, and is subject to acceptance of the AHJ.

The LCEC service-drop or service-lateral includes a grounded conductor. This conductor is grounded at the source transformer location and generally interconnected with other grounded conductors. This grounded conductor will normally be attached to a grounding connector in the meter socket and also to one in the service equipment and to the neutral or ground bus in the service equipment. When meter sockets with member-owned isolated neutrals are required by the AHJ, a separate member-owned grounding conductor shall be run by the member from the service equipment to the grounding connection of the meter socket. LCEC requires a visible ground connection within the meter socket (**Figure 1**).

The *NEC* allows several methods of supplying a grounding electrode. A ground rod is not the only means of supplying the grounding electrode. A brief discussion of the *NEC* requirements is provided in the following notes and is not intended to be all-inclusive. The *NEC* and AHJ should be consulted for additional details and for those that may have changed since the time of this printing. LCEC accepts any method that satisfies the *NEC* and the AHJ.

Local inspecting AHJ may have more stringent requirements than the *NEC*. For example, some AHJs require the use of a concrete-encased electrode as described in Section 250 of the *NEC*. This electrode would consist of at least 20 feet of one or more bare or zinc galvanized or other electrically conductive coated steel reinforcing bars or rods of not less than 1/2 inch in diameter or of at least 20 feet of bare copper conductor not smaller than 4 AWG. The electrode would be encased in at least 2 inches of concrete and located within or near the bottom of a concrete foundation or footing that is in direct contact with the earth.

B. NOTES ON GROUNDING MEMBER'S SERVICE-ENTRANCE

1. LCEC’s point of delivery includes a grounded conductor.

2. The member shall connect the LCEC grounded conductor to the service equipment by extending a member-owned grounded conductor along with the other conductors of the member's service-entrance that attach to LCEC at the point of delivery. This grounded conductor must be extended even though it may not be required as a circuit conductor by the *NEC* and shall be sized according to *NEC,* Article 250.

3. The member's service-entrance wiring must be grounded as required by the *NEC*, Article 250, and the AHJ.

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4. The grounded wiring system to each premise shall have a grounding electrode conductor connected to a grounding electrode meeting the requirements of the *NEC*. This grounded conductor shall be connected to the grounded service conductor at any accessible point on the load side of the service-drop or lateral to and including the service equipment terminals provided to connect the grounded service conductor.

5. The equipment grounding conductor and the service equipment enclosure shall be connected to the grounded conductor of the system within the service equipment or within the service conductor enclosure.

6. The grounding electrode system is discussed in section 250 of the *NEC*. Article 250 states that, if available on the premises, each of the following along with any "made" electrodes shall be bonded together to form the grounding electrode system, (a) metal underground water pipe, (b) metal frame of building, (c) concrete encased electrode, and (d) ground ring. An additional electrode of type specified in Section 250 of the *NEC* shall supplement the metallic water pipe. The "made" electrode of Section 250 may be a local metal underground system or structure other than gas piping systems, a rod or pipe electrode, or a plate electrode. The rod or pipe electrode may be a listed 1/2 inch x 8 foot stainless steel or nonferrous rod, a 5/8 inch x 8 foot steel or iron rod, or a 3/4 inch x 8 foot galvanized pipe, all driven 8 feet into the earth. A plate electrode shall expose not less than 2 square feet of surface to exterior soil. Iron or steel plates shall be at least 1/4 inch thick and nonferrous plates shall be at least 0.06 inch thick. Aluminum "made" electrodes ARE NOT PERMITTED. A metal underground gas piping system SHALL NOT BE USED AS A GROUNDING ELECTRODE.

7. If none of the electrodes mentioned in Article 250 is available, a “made” electrode may be used for the basic grounding electrode. If its resistance to ground is more than 25 ohms, it shall be supplemented by and bonded to an additional “made” electrode, installed not less than 6 feet away.

8. The grounding electrode conductor shall be sized and installed as required by the *NEC*, Article 250 and is subject to approval by the local AHJ.

9. The connection of the conductor to the grounding electrode shall be accessible and shall be made in a manner that will assure a permanent and effective ground.

10. For additional grounding information see the *NEC*, Article 250, and contact the AHJ. If the requirements of the AHJ exceed those of the *NEC*, the AHJ shall prevail.

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IX. MEMBER UTILIZATION EQUIPMENT

A. GENERAL

Before ordering or installing any large polyphase or single-phase motors, LCEC should be consulted to determine the character and adequacy of the available service and the available starting current at the premises to be served. This information should be passed on to the suppliers of the proposed motorized equipment. This will assist suppliers in providing equipment and protective devices to obtain satisfactory operation at minimum cost, considering both initial installation and future maintenance.

Availability of three-phase service should be discussed in advance with LCEC. In general, motors of 5 horsepower or less can be served with single-phase service, unless three-phase service is already being supplied. Devices are obtainable to convert single-phase service to three-phase for a wide range of three-phase motors.

Single-phase motors larger than 2 horsepower fed from 120/240-volt circuits should be connected for 240-volt operation. Smaller motors may be connected for 240 volts, where practicable, at the member's option.

The current required to start a motor is much greater than that required to operate it at full load after it has reached rated speed. If not controlled, this starting current may cause severe voltage sags or flicker, not only to the system of the member using the motor, but also on other members' systems. The more frequently the motor is started, the more objectionable these voltage sags become.

Article 430 of the *NEC,* provides a table that classifies motors by their locked-rotor current requirements. A code letter is assigned to each requirement bracket. The brackets are given in kilovolt-amperes per horsepower that can be converted to amperes for a given motor. The locked-rotor current increases as the code letter increases. The appropriate letter is stamped on the motor nameplate.

Using this information, LCEC has prepared Table IX-1 for single-phase air conditioners based on the unit's rated output and assuming no more than four starts per hour.

LCEC retains the right to require disconnection of any item of member equipment that causes voltage sag of four percent or more of nominal, or any objectionable voltage flicker, or which causes radio or TV or other high frequency interference. It shall also have the right to require disconnection of any member’s system that constitutes a fire hazard or endangers life in any way.

The member must connect his equipment in such a manner that a reasonable degree of load balance is maintained among each phase of LCEC’s supply system as determined by LCEC. LCEC retains the right to require the member to install power factor correction equipment necessary to maintain his load at a power factor of 85 percent minimum but not to exceed 100 percent or unity power factor.

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Table IX-1: Acceptable Air Conditioning Equipment, Single-Phase, 230 volts

SIZE (TONS)	SIZE (BTU/HOUR)	MAXIMUM ALLOWABLE STARTING CURRENT AT 230 VOLTS
1	12,000	30
1½	18,000	45
2	24,000	60
2½	30,000	75
3	36,000	90
4	48,000	120
5	60,000	150

Note 1: The table is based on air conditioners being sized and maintained so there will be a maximum of four starts per hour.

Note 2: Better performance may be obtained by using two smaller air conditioners in lieu of a 4 or 5 ton air conditioner.

It is the responsibility of the member creating the objectionable flicker to resolve any problem resulting from starting currents exceeding the values shown. Installation of a starting aid at the expense of the member creating the objectionable flicker is one possible solution. While the starting aid will not reduce the magnitude of the sag, it will reduce the duration of the sag and the resulting flicker may be less perceptible.

B. LCEC APPROVAL OF STARTING MEANS FOR LARGE MOTORS

The resolution of any member-caused problems with voltage drop or voltage sag associated with starting large motors is the sole responsibility of the member, regardless of any previous agreement between LCEC and the member.

The member may be required to provide reduced-voltage motor starting equipment for large three-phase motors. Reducing the line voltage to the motor can greatly reduce the motor's starting current requirements which will reduce the objectionable voltage sag at the point of delivery.

While large motors can be started at full voltage in most locations on the LCEC system, as the distance from the substation increases the more likely problem voltage sags will occur when starting large HP motors. It is therefore necessary for the member to consult with LCEC to determine the specific requirements for starting any motor larger than 25 HP at full voltage.

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C. MOTOR PROTECTION AND POWER FACTOR

LCEC is not responsible for damage to motors from power abnormalities.

It is the member's responsibility to ensure that all motor circuits include protection that, at a minimum, meets the requirements of the *NEC* and the AHJ. This protection is not designed to protect the motor from damage but to protect personnel from electrical and fire hazard. For this reason, LCEC recommends that the member add the following to motor circuits to reduce the risk of equipment damage.

The use of automatic time delay circuit breakers or time delay fuses is strongly recommended when protecting motors against damage from excessive currents. The time delay feature will eliminate unnecessary operation of the breakers or blowing of fuses during motor starting or temporary overloads.

Under Voltage Protection - A low-voltage release is designed to disconnect the motor automatically and return the starting device to the off position upon partial or total failure of the supply voltage. It is used, where applicable, for motors that cannot safely be subjected to full voltage at starting or where low voltage would result in injury or damage to equipment. This release should be of the time delay type, capable of adjustment to a maximum of at least two seconds and set at the lowest value suitable for proper protection. At the request of the member, LCEC will advise the proper interval for coordination with LCEC's circuit breakers. This will prevent unnecessary disconnection of the motor on momentary voltage fluctuations or loss of voltage.

Phase Loss Protection - Members should consider the possibility of the loss of one phase, either in his own installation or in LCEC's supply lines. Referred to as single-phasing, this may happen regardless of the precautions taken to avoid it and LCEC therefore strongly recommends that devices be installed to protect the equipment against the damage that may result. LCEC is not liable for any damage resulting from the single-phasing of equipment.

Phase Reversal Protection – Three-phase motors for applications to elevators, cranes, hoists, well pumps or other installations where rotation reversal might cause damage to equipment or constitute a hazard to personnel should have phase rotation protection.

Phase Imbalance Protection - Imbalanced three-phase voltages will cause unequal phase currents. These imbalanced phases will shorten the life of the motor. Therefore, the imbalance protection should be installed in the motor circuit with a setting of 3% voltage or 30% current.

An electronic phase loss protector in the motor control circuit will protect against undervoltage, single-phasing, phase reversal and phase imbalance. Such protective devices are supplied and installed by the member. LCEC is not responsible for damage to motors from power abnormalities.

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Surge protection should also be considered for installation at the motor breaker panel. Surge protection can help reduce damage to a motor's windings from external spikes, as well as reduce damage to member equipment from power spikes generated by large motors starting and stopping.

Power factor is a calculation indicating how efficiently power is being used. It represents the relationship of real power (kW), which performs useful work in rotating the motor, to apparent power (kVAR), which magnetizes the motor and transformer coils. Motor loads frequently have an adverse effect on the power factor of a circuit, usually if the motor is oversized or lightly loaded. Certain other types of loads can reduce power factor. A low power factor also reduces the capacity of circuit conductors to deliver real power and can increase wiring costs as well as electric demand on the utility system. LCEC reserves the right to adjust meter reading kW for billing where power factor is less than 90 percent.

Capacitors are sometimes connected on the load side of a motor controller to improve the power factor of the circuit. When this is done, the total kVAR connected should not exceed the value required to raise the power factor of the motor to unity when it is running unloaded.

D. OTHER EQUIPMENT

On Demand Water Heaters

On demand water heaters, also known as tankless water heaters can cause excessive voltage drop or voltage sag. Members considering installing an on demand water heater should contact LCEC prior to its installation to determine its impact on their service voltage as well as other member's service voltage.

As stated in **A. General** on this section, LCEC retains the right to require disconnection of any item of member equipment that causes voltage sag of four percent or more of nominal, or any other objectionable voltage condition.

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X. ELECTRICAL DISTURBANCES

Electric welders; furnaces; electric draglines; electric dredges; large, frequently started, motorized equipment; variable speed drives; and SCR converters are examples of equipment that have operating characteristics which may require rapidly fluctuating amounts of current. If the device is large, significant voltage distortion may result even on a system that is adequate for normal service. This voltage distortion may affect the operation and life of other equipment in the member's facility as well as the equipment of other members in the vicinity.

Section IX covers LCEC's requirements when frequent starting of large motors is involved. The member must consult with LCEC when service is required for any of the devices mentioned or similar devices. It may be found that the device cannot be served at the specific location unless special facilities and control equipment are provided both by LCEC and the member.

Other devices, such as silicon-controlled rectifier (SCR) devices or any device that suddenly interrupts current at other than a natural zero point may cause high frequency voltage oscillations or transients in the circuit. This may be detrimental to the member's service or that of an adjacent member. It may be necessary for the member to install filters or other corrective devices if he wishes to continue the use of such equipment.

LCEC limits harmonic distortion in accordance with Table 11-1 of IEEE Std. 519-1992, *IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems*. For bus voltages of 69 kV and below at the point of common coupling, this standard limits individual voltage harmonic distortion to 3.0 percent and total voltage harmonic distortion (THD) to 5.0 percent.

LCEC is dedicated to quality electrical service and follows the nationally recognized standards specified in IEEE Std. 519. Nonlinear loads create harmonics that can affect sensitive electronic equipment, one indication of which is high neutral current. The neutral current may be as high as 1.73 times the phase current. Neutral current problems are usually found in older commercial buildings that have a large amount of single-phase nonlinear load, such as personal computers and fluorescent lighting.

If the member superimposes a carrier signal voltage on his wiring, he shall provide filters or other equipment, as required, to prevent it from appearing on LCEC's distribution system or interfering with any equipment LCEC utilizes. Power line control systems or power line computer networking equipment are examples of such systems.

If the installation of high demand electrical apparatus is contemplated, LCEC should be consulted prior to its purchase or construction. Devices whose electrical demand exceeds 25 kW should normally be connected three-phase with phase currents equally balanced.

Failure to comply with the above may subject the member to disconnection until the issue is resolved.

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XI. RADIO, TELEVISION AND MISCELLANEOUS ANTENNAS

Radio and television antennas, their lead-in cables, guy wires and metallic supports shall be kept well clear of electric power lines. They should be installed in accordance with the *NEC,* Article 810 or the AHJ.

The shortest distance between the power conductor and the antenna mast should exceed the height of the antenna mast from the ground.

The antenna or lead in conductors should not cross over electric light or power circuits. These items should be kept well away from such circuits, but where this is impossible, they shall have a clearance of at least 2 feet to circuits of less than 250 volts between conductors. Where practicable, these items should not cross under electric light or power circuits or be closer than 10 feet to power circuits of more than 250 volts between conductors.

Most contacts between antennas and power lines occur either during antenna installation or subsequent maintenance. The homeowner installing an antenna should be sure it is well away from any exposed electric wires. He should be certain that it will be impossible for the antenna and mast, the lead-in, or guy wires to make contact with the power wires if the installer loses control of any component of the assembly.

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XII. STREET AND OUTDOOR SECURITY LIGHTING

A. PUBLIC STREET AND HIGHWAY LIGHTING

LCEC does not design lighting systems but will install LCEC standard lights and poles according to the member's design as provided for in the LCEC Tariff.

Application - The application of LCEC's Public Street and Highway Lighting Rate schedule (SL-2), as defined in LCEC Tariff Sheet 17.0 is for the lighting of streets and roadways, under the qualification of Street Light Districts and governmental agencies for automatically controlled dusk-to-dawn outdoor lighting where existing overhead secondary circuits are located.

Lighting for other applications such as: municipally and privately owned parking lots; parks and recreational areas; or any other area not expressly defined above, is not permitted under this schedule. The placement of member-owned streetlights on LCEC poles is prohibited.

The term of service under this schedule is not less than ten years. If LCEC is required to remove or replace street lighting facilities provided under this schedule, forcing premature retirement, the member shall be required to pay LCEC an amount equal to the original installed cost, less depreciation and salvage value, plus the cost of the removal.

LCEC will furnish, install, operate and maintain the lighting equipment, including the lamp, luminaire, bracket attachment, and control device on an LCEC-owned pole, at a location mutually agreeable between LCEC and the member. The light will be connected such that the electrical consumption will not be metered. The member will reimburse LCEC for extraneous costs incurred during the installation of the light, including but not limited to surveying, tree trimming and rock removal.

LCEC will maintain the lighting equipment, including lamp replacement, at no additional cost to the member, within five scheduled workdays after the member notifies LCEC that maintenance is required.

The lighting equipment will remain the property of LCEC. The member shall protect the lighting equipment from deliberate damage and shall reimburse LCEC for the cost of any maintenance due to vandalism.

The member shall allow authorized representatives of LCEC to enter upon the member's premises and to trim trees and shrubs as necessary for maintenance of the lighting equipment and for removal upon termination of service under this schedule.

LCEC, while exercising diligence at all times in furnishing service under this schedule, does not guarantee continuous lighting and will not be liable for damages from any interruption, deficiency or failure of service and reserves the right to interrupt service at any time for necessary repairs to lines or equipment or for system protection.

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LCEC will not be required to install equipment at any location where the service may be objectionable to others. If it is found that the light is objectionable after installation, LCEC may, at its option, terminate this service.

In the event the member is in default on the current bill and it is not paid after due notice, to the extent permitted by law, the member is subject to a late-payment charge and disconnection. In the event it is necessary for LCEC to send a collector to collect the bill, to the extent permitted by law, a collection charge shall be made.

If these terms and conditions are unacceptable to the member, or if the poles and fixtures offered by LCEC are not those desired by the member, the member may wish to consider installing his own street lighting facilities.

B. PRIVATE AREA LIGHTING

Application - The application of LCEC's Private Area Lighting Rate schedule, as defined in LCEC Tariff Sheet 18.0, is for automatically controlled dusk-to-dawn outdoor lighting, facing away from the roadway, where existing overhead secondary circuits are located. This rate schedule is not available for Street Lighting applications.

The term of service under this schedule is not less than ten years. If LCEC is required to remove or replace private area lighting facilities provided under this schedule, forcing premature retirement, the member shall be required to pay LCEC an amount equal to the original installed cost, less depreciation and salvage value, plus the cost of the removal.

LCEC will furnish, install, operate and maintain the lighting equipment, including the lamp, luminaire, bracket attachment, and control device on an LCEC-owned pole, at a location mutually agreeable between LCEC and the member. The light will face away from the roadway and will be connected such that the electrical consumption will not be metered. The member will reimburse LCEC for extraneous costs incurred during the installation of the light, including but not limited to surveying, tree trimming and rock removal.

LCEC will maintain the lighting equipment, including lamp replacement, at no additional cost to the member, within five scheduled workdays after the member notifies LCEC that maintenance is required.

The lighting equipment will remain the property of LCEC. The member shall protect the lighting equipment from deliberate damage and shall reimburse LCEC for the cost of any maintenance due to vandalism.

The member shall allow authorized representatives of LCEC to enter upon the member’s premises and to trim trees and shrubs as necessary for maintenance of the lighting equipment and for removal upon termination of service under this schedule.

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LCEC, while exercising diligence at all times in furnishing service under this schedule, does not guarantee continuous lighting and will not be liable for damages from any interruption, deficiency or failure of service and reserves the right to interrupt service at any time for necessary repairs to lines or equipment or for system protection.

LCEC will not be required to install equipment at any location where the service may be objectionable to others. If it is found that the light is objectionable after installation, LCEC may, at its option, terminate this service.

In the event the member is in default on the current bill and it is not paid after due notice, to the extent permitted by law, the member is subject to a late-payment charge and disconnection. In the event it is necessary for LCEC to send a collector to collect the bill, to the extent permitted by law, a collection charge shall be made.

If these terms and conditions are unacceptable to the member, or if the poles and fixtures offered by LCEC are not those desired by the member, the member may wish to consider installing his own lighting facilities.

C. DISCONNECT DEVICES FOR MEMBER-OWNED LIGHTING

Member-owned lighting circuits will be metered. When a member-owned lighting circuit (a circuit being one or more lights served from one service point) is to be installed, the member shall install a fused disconnect device for each circuit. Installation of the disconnect device is required whether the circuit is individual or group control. The disconnect device is required to isolate the member's circuit during maintenance, isolate LCEC's system from malfunctioning member equipment, and comply with any applicable building code requirements.

1. Location Of Member's Disconnect Device:

Overhead LCEC Service Point:

The member’s disconnect device can be mounted on the member's light pole provided that the distance to LCEC's overhead service point allows for the provision of an LCEC overhead service and that the attachment height allows for proper clearances.

The member's disconnect device can be installed in member pedestal adjacent to the utility pole. LCEC will terminate its underground cable (from the overhead source) in the member pedestal if this arrangement is acceptable to the member. Otherwise, LCEC will provide its own pedestal at the base of the pole and terminate the member's cable therein. In either case, a CIAC may be required.

The member's disconnect device can be installed on a pedestal adjacent to the pole. LCEC will extend its underground cable (from the overhead source) to its pedestal adjacent to the utility pole and terminate the member's cable therein. CIAC may be required. If the member makes sufficient attachment height available, LCEC may provide an overhead service.

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No member equipment is to be installed on the utility-owned pole. Member-owned secondary risers will be allowed only for those governmental agencies that have executed a Public Body Joint Use Pole Agreement.

Underground LCEC Service Point:

The member-owned disconnect device shall be installed on the member's pedestal or in the member's pedestal adjacent to LCEC's service point. LCEC will terminate the member's cable at the service point.

Both the fusing and the cable from the LCEC service point to member's disconnect device shall be installed by the member in accordance with the AHJ.

Member-owned disconnect devices are not to be installed to control LCEC-owned street lighting facilities.

2. Group Control Photoelectric Relays

Overhead LCEC Service Point:

LCEC typically installs, owns and maintains the photoelectric relay to group-controlled member-owned streetlight circuits fed from overhead transformers.

At the member's option, the member may install, own and maintain the photoelectric relay. For these installations, LCEC will continue to provide transformation, as necessary, and connect the electric service as before. The remainder of the equipment (together with the photoelectric relay) would be installed and maintained by the member but cannot be installed on the utility pole.

This information and wiring diagram should appear on the preliminary streetlight plans for each project to allow LCEC the opportunity to review and provide comments prior to final acceptance for each project.

Should the member-owned photoelectric relay fail for any reason, LCEC asks the member’s cooperation in making timely repairs to avoid the 24 hour burning of streetlights. Should timely repairs not be made, LCEC may exercise its option of billing the maintaining agency for the increased energy consumption until the repairs are made. LCEC reserves the right to install its own photoelectric relay if the member is unable to properly maintain their equipment.

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Underground LCEC Service Point:

The member shall install, own, and maintain the photoelectric relay to group controlled member-owned streetlight circuits fed from pad-mounted transformers.

Should the member-owned photoelectric relay fail for any reason; LCEC asks the member's cooperation in making timely repairs to avoid the 24 hour burning of streetlights. Should timely repairs not be made, LCEC may exercise its option of billing the maintaining agency for the increased energy consumption until the repairs are made.

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XIII. SAFETY

Safe work habits are vital to your well-being. Safety is not just witty or entertaining slogans. Safety protects your eyes, fingers, arms, legs and your life. It's easy to avoid the most common mistakes made around electric power lines. Following are six easy-to-remember rules regarding safety.

Rule 1: Work a Safe Distance

The most important rule is the first: Follow Occupational Safety and Health Administration (OSHA) regulations and work a safe distance from all power lines.

Whenever work is to be performed near overhead lines, OSHA requires that you and any equipment or tools that you're operating or handling must be kept a safe distance from power lines. OSHA also requires that, if you're working near power lines, you either have the power lines de-energized and grounded, or that you take other protective measures BEFORE WORK IS STARTED. OSHA has prescribed certain distances that you and your tools and equipment are required to keep away from power lines. The minimum distance is 10 feet.

If you are an employer, it is your responsibility to make sure that your employees are aware of the location of power lines, the hazards involved, and the protective measures to be taken. You must post warning signs, and make sure that anyone working in the vicinity of overhead power lines stays at least 10 feet away from the power lines.

Rule 2: Stay Calm - Stay Away

If you're operating a piece of equipment that comes into contact with a power line,

- Identify your situation and
- Follow the appropriate steps.

If…	Then…
You are not in danger from • A fire or • From being struck by a power line	• Move the rig away from the power line if you can • Warn others not to touch you or the rig and have someone contact LCEC immediately at 800.282.1643

If…	Then…
You are • In danger and • Must get off the rig	• Jump as far away from the rig as you can and land with both feet together *Note: No part of your body should touch the rig and the ground at the same time.* • Hop or shuffle away from the rig with your feet together for about 15 feet to avoid becoming a conductor between two areas of the ground that are charged differently and • Once clear, don't return to the rig until an LCEC representative tells you it is safe

If a fellow worker is in danger

If you are nearby when a fellow worker contacts a power line, follow the steps in the table below.

Step	Action
1	Stay away
2	Warn your fellow workers to stay away
3	Ensure someone calls the police, fire rescue and LCEC. Call LCEC at 800.282.1643

Remember, if you touch someone who is part of the path of electrical current, you'll become a part of that path, too - with potentially deadly results.

Rule 3: Ladders and Power Lines Don't Mix

Background

Aluminum ladders may be lightweight, easy to handle and strong, but always remember—metal conducts electricity.

How you can be injured

If you are standing on or holding a metal ladder (or any other extended object) that contacts an energized power line, you become part of the electricity's path to ground. When that happens, you can be seriously injured or killed.

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General warning

Be careful while carrying or positioning any kind of ladder, tool, equipment or extension. Even nonmetallic items, such as fiberglass ladders, can conduct electricity if they are dirty or wet. Before raising or extending any kind of ladder, metal pole, or other equipment capable of reaching a power line, make sure to check in all directions for power lines—and always remember **Rule 1**.

Rule 4: Call Before You Dig

Before starting excavation work, according to OSHA requirements and Florida law[2], call toll-free Sunshine State One Call of Florida at 811 or 800.432.4770 at least 48 hours in advance. Visit www.CallSunshine.com for more information.

After You Call

When you call, a locating service representing LCEC and other utilities will

- Come to your site to locate underground equipment or
- Call to inform you that no conflict exists with the dig site.

In addition to being required by OSHA and Florida law, calling before you dig is good common "safety" sense.

Rule 5: Look Up and Live

General rule

Always remember to look up and around when you work near overhead power lines.

When there are trees around, remember: tree branches can obstruct your view of power lines, so take an even closer look around you before beginning work.

IF YOU CAN'T AVOID A POWER LINE, DON'T DO THE WORK!

Additional tips

Some additional ways to be safe are:

- Make sure to stay a safe distance from power lines, no matter what type of tool you are using. Even non-metallic tools can conduct electricity if they are dirty or wet. So don't assume you're safe just because you're using tools or equipment made of fiberglass or wood.

[2] Florida Statute 556

- Watch for power lines whenever putting up scaffolding, framing a building, using long extension handles such as for bull-floating concrete, painting a building or pruning trees, or anytime you're using any tool or equipment capable of reaching a power line.

- For nursery operations, look up before moving a tree under a power line. Determine the maximum height that the machinery can lift the tree, and keep the OSHA-required safe distance away from the power lines.

- When working on top of buildings, always watch for power lines and stay a safe distance away.

- Before transporting large boats or relocating a house, call LCEC to help you develop your proposed route to make your move safely.

Rule 6: Downed Lines Can Be Deadly

Background

If you see a line down, stay away. Do not touch it or attempt to move it! Call 800.282.1643 immediately. The sooner LCEC learns about the problem, the sooner we can fix it.

Use caution

If a fellow worker touches a downed line, or is handling equipment that contacts a power line, remember that any rescue attempt also places you in danger of receiving an electrical shock or injury. The farther away you stay from the equipment, the line and the person, the better your chances of not being injured yourself. Instead of attempting a rescue, call your local police and fire rescue for help.

NOTIFICATION OF LCEC FACILITIES

LCEC calls your attention to the fact that there may be energized, high voltage electric lines located in the area of this project. It is imperative that you visually survey the area prior to commencing construction and determine whether the construction of any proposed structures will bring any person, tool, machinery, equipment or object closer to LCEC's power lines than the OSHA-prescribed limits. If it will, you must either re-design your project to allow it to be built safely given the pre-existing power lines, or make arrangements with LCEC to de-energize and ground our facilities, or relocate them at your expense.

You must do this before allowing any construction near the power lines. It is impossible for LCEC to know or predict whether or not the contractors or subcontractors, and their employees, will operate or use cranes or other mobile equipment, or handle materials or tools, in dangerous proximity to such power lines during the course of construction, and, if so, when and where. Therefore, if it becomes necessary for any contractor or subcontractor, or their employees, to operate or handle cranes,

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draglines, mobile equipment, or any other equipment, tools or materials in such a manner that they might come closer to overhead power lines than is permitted by local, state or federal regulations, you and any such contractor or subcontractor must notify LCEC in writing of such planned operation prior to the commencement thereof and make all necessary arrangements with LCEC in order to carry out the work in a safe manner. Any work in the vicinity of the electric lines should be suspended until these arrangements are finalized and implemented.

LCEC has certain minimum clearances that it must maintain. If you build your structure so that those clearances cannot be maintained, you will be required to compensate LCEC for the relocation of our facilities to comply with those clearances. As such, you should contact LCEC prior to commencing construction near preexisting overhead power lines to make sure that your proposed structure does not impinge upon LCEC's clearances.

It is your responsibility, as well as the responsibility of each and every contractor and subcontractor on this project, to diligently fulfill the following obligations:

Make absolutely certain that all persons responsible for operating or handling cranes, draglines, mobile equipment or any equipment, tool, or material capable of contacting a power line, have a copy of and are familiar with all applicable state and federal regulations, including but not limited to U.S. Department of Labor OSHA Regulations, before commencing their work

Make sure that all cranes, draglines, mobile equipment, and all other equipment or materials capable of contacting a power line have attached to them any warning signs required by U.S. Department of Labor OSHA Regulations

Post and maintain proper warning signs and advise all employees, new and old alike, of their obligation to stay a minimum of 10 feet away from any overhead power lines, and of the location of the lines, the hazards involved, and the protective measures to be taken.

A copy of this notification should be provided to each contractor and subcontractor on this project, to be shared with his or her supervision and employees prior to commencing work on this project.

Also be advised that LCEC may have underground electrical lines within the limits of this project. Call toll-free Sunshine State One Call of Florida at 800.432.4770 forty-eight hours in advance of construction to ensure facilities are located accurately.

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XIV. ELECTRIC VEHICLE (EV) CHARGING STATIONS

Prior to construction, members are to notify LCEC of any proposed electric vehicle charger installations with a rating greater than or equal to Level 2. LCEC will then evaluate the existing distribution infrastructure to determine if any modifications are necessary. If so, a CIAC may be applicable.

XV. DISTRIBUTED ENERGY RESOURCES

A. Net Metering

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The LCEC Net Metering program allows LCEC customers with a Renewable Generation System (RGS) to offset all or part of their energy use.

Any excess generation will be credited to the customer's energy consumption for the subsequent month's billing cycle in the same calendar year.

The customer shall meet all applicable technical, interconnection, safety and protection requirements of this and other LCEC documents. The customer must also meet the requirements of the NEC, OSHA, and any others applicable to the installation.

The customer shall conform to LCEC, the National Electric Code (NEC) and the Authority Having Jurisdiction (AHJ), for installation requirements. Based on the output of the customer's PV system, the following tiers would apply.

- Tier 1: less than or equal to 10 KW
- Tier 2: greater than 10KW and less than or equal to 100KW
- Tier 3: greater than 100KW and less than or equal to 1MW

For any inquiries regarding Net Metering please reach out to LCECNetMetering@lcec.net.

1. Inverter – The customer must utilize a certified UL 1741 SA and IEEE 1547 grid interactive inverter. Inverters that have not been certified to UL Standard will be denied interconnection. LCEC may require advanced inverter settings or other controls to minimize impact to LCEC customers and the grid.

2. Transformer – Any RGS with an output greater than 50 KW AC will require a dedicated three phase 120/208V or 277/480 Wye grounded transformer. LCEC will specify any winding connections, grounding or other requirements based on the specific customer site location and generating system. Open delta transformers will only be connected as a single phase and only supply power to the lighting transformer.

3. Metering – Metering will be specified by LCEC and may be self-contained or CT-metered depending on the size and configuration of the customer's RGS.

4. Disconnect Switch – All tier systems require an LCEC approved visually open AC disconnect to allow safe restoration of LCEC's system. The manual disconnect switch must be mounted separate from but adjacent to the LCEC meter socket within 5 feet and must remain accessible to LCEC at all times. The disconnect switch shall be connected in the applicable configuration from Figures 29A through 29D. The disconnect switch must be accessible, visible break, and lockable.

5. Interconnection – RGS output is limited to 90 percent of the nameplate rating of the transformer. If the RGS output exceeds ninety percent (90%) of the transformer nameplate rating, the Customer shall be responsible for the labor cost to remove and

install a new transformer to accommodate the RGS capacity and to ensure the ninety percent (90%) threshold established with the upgraded transformer is not breached. Under no circumstance will the customer make interconnections in any LCEC equipment including: metering enclosures, transformers, switching cabinets, vaults, or any other devices not specifically designated by LCEC as the point of interconnection. Additionally, the meter can cannot be used as a raceway. For all installations customers shall provide appropriately sized and number of conductors, including a neutral. No fault current limiting devices may be installed on the neutral or conductors. The customer is responsible for all costs associated with any equipment or facilities that require upgrading or modification. The customer's RGS equipment shall not cause any negative impacts to other LCEC customers or the grid. LCEC may disconnect any customer RGS for any valid reason.

All net metering systems require written permission to operate from LCEC.

6. Labeling – All labels must be permanent and weatherproof/UV resistant placard with engraved letters. The customer is also responsible for all labeling requirements to be compliant with the NEC.

7. System Impact Study – A System Impact Study may be required for some RGS. This study will determine the requirements to interconnect the customer's RGS to LCEC's grid. The customer must provide detailed information on the proposed protective relaying, metering, and control equipment. All relaying and metering shall be provided in a one line diagram. A three-line diagram may be required for some installations. The study may include, but is not limited to: Protection and Coordination Study, Grounding Study, Load Flow Analysis and Arc Flash Analysis.

8. Protection and Control – Depending on the interconnection, customers may be required to install protective devices to safeguard the RGS and the LCEC grid. Customers are responsible for protecting their system from faults, disturbances or interruptions on both the LCEC and customer side. The complexity of the protective system will vary depending on the size, type, and location of the customer's RGS installation. All protective devices and schemes must be approved by LCEC.

B. Energy Storage

The operation of Energy Storage Devices must be certified for all applicable anti islanding, energy storage, and Utility interactive equipment standards from IEEE, Underwriter's Laboratories, NEC, and State and local building codes, particularly the latest versions of IEEE 1547 or UL 1741, NEC 706, and others, applicable to energy storage systems. Alternatively, the energy storage system must be DC coupled behind a device that conforms to these codes and standards. A placard must be permanently affixed to the meter enclosure stating "Battery storage utilized in this facility." This placard must satisfy the net metering labeling requirements in the Net Metering section. The Energy Storage Device must have a readily accessible, visible-break, and lockable disconnect switch that effectively isolates it from the LCEC grid.

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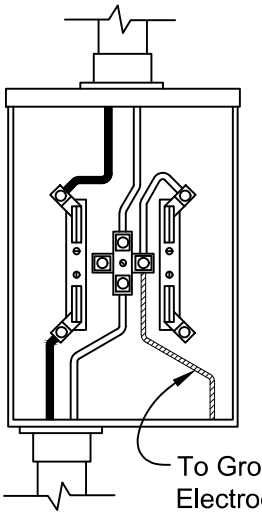
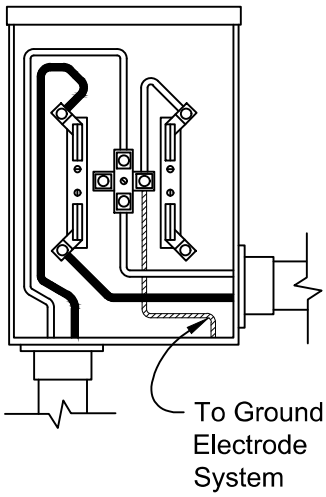
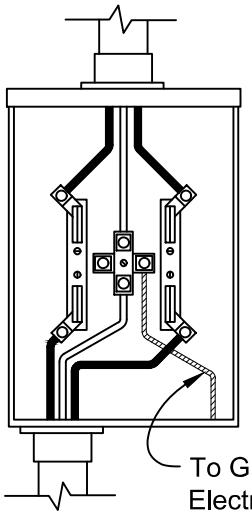


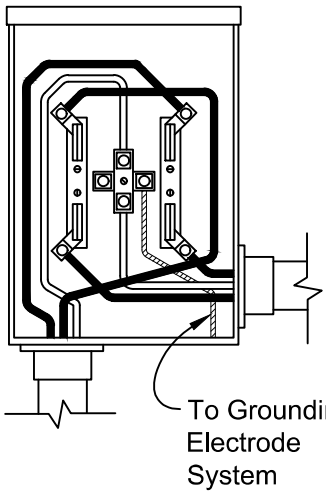
Single-Phase
Overhead Service
120v, 2W



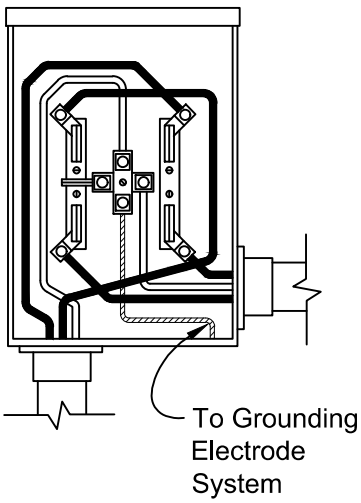
Single-Phase
Underground Service
120v, 2W



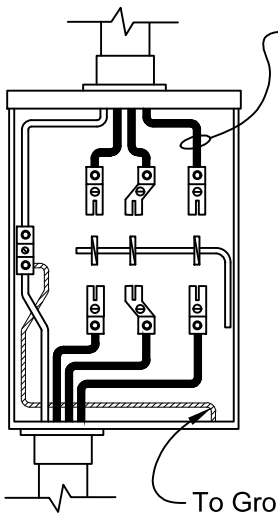
Single-Phase
Overhead Service
120/240v, 3W



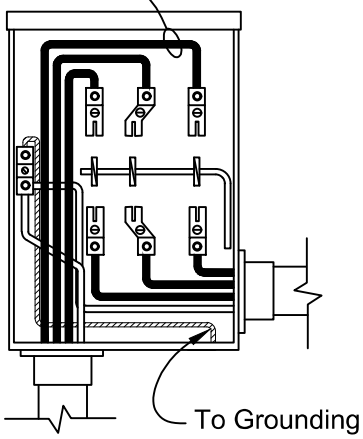
Single-Phase
Underground Service
120/240v, 3W



Network (Two-Phase)
Underground Service
120/208v, 3W
5th Terminal in 6 O'Clock or
9 O'Clock Position



Three-Phase, Wye or Delta
Overhead Service
208Y/120v, 4W
*240/120v, 4W
480Y/277v, 4W



Three-Phase, Wye or Delta
Underground Service
208Y/120v, 4W
*240/120v, 4W
480Y/277v, 4W

*High leg MUST be connected to the right-hand terminal as shown.

NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△3 ADDED NOTE 3.

LCEC

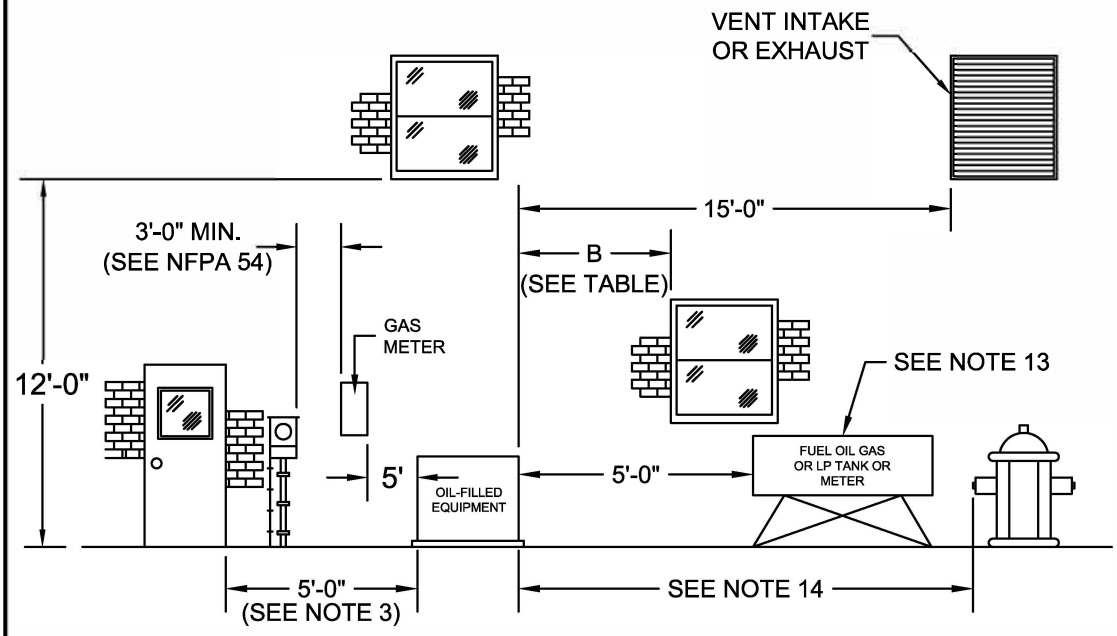
SELF-CONTAINED METER SOCKET DETAILS

FIGURE 1

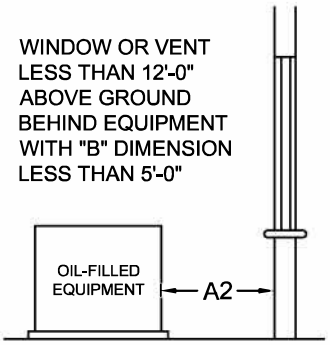
4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

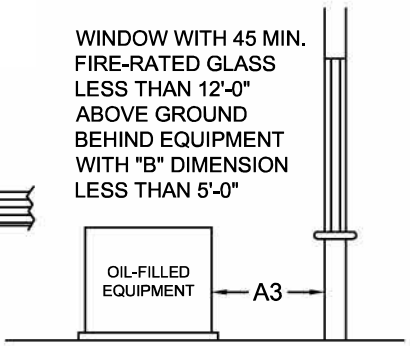
REV. NO. 3 REV. DATE 1/3/2019



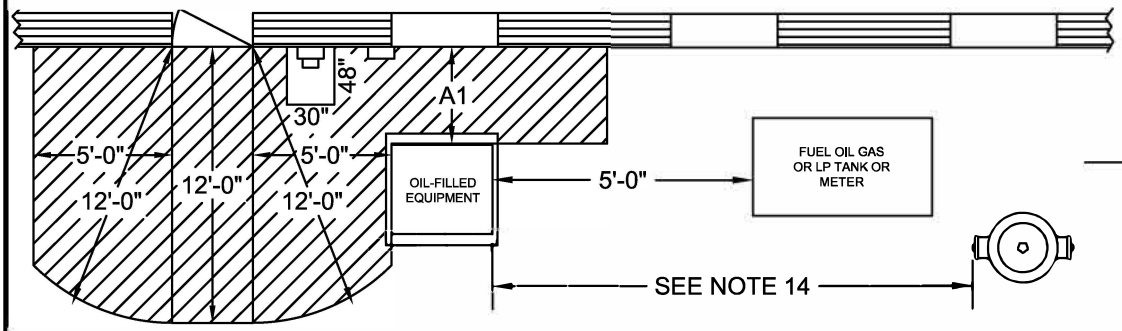
ELEVATION VIEW



SIDE VIEW



SIDE VIEW



OIL-FILLED EQUIPMENT
CANNOT BE IN SHADED
AREA
(SEE NOTE 9)

PLAN VIEW

*STRUCTURES	A1	A2	A3	B	C
STEEL OR MASONRY	5'-0"	12-0"	8'-0"	5'-0"	12'-0"
WOOD	12'-0"	12'-0"	12'-0"	5'-0"	12'-0"

* MASONRY: CONCRETE BLOCK OR FULL BRICK
WOOD: WOOD FRAME OR WOOD FRAME WITH STUCCO

1. ALL DIMENSIONS SHOWN ARE MINIMUM, AN AUTHORITY HAVING JURISDICTION MAY REQUIRE ADDITIONAL CLEARANCE. REDUCTION OF THE ABOVE DIMENSIONS REQUIRE WRITTEN APPROVAL FROM THE STATE FIRE MARSHALL AND LCEC.
2. DRAINAGE OF THE AREA SURROUNDING THE EQUIPMENT SHOULD BE AWAY FROM THE BUILDING.
3. THIS DIMENSION ALSO APPLIES TO OPEN STAIRWAYS, WHEEL CHAIR RAMPS, ETC.
4. THERE SHALL BE NO PIPING OR CONDUIT UNDER THE PAD OTHER THAN THOSE REQUIRED TO CONNECT THE EQUIPMENT.
5. NO PORTION OF THE BUILDING SHALL EXTEND OVER THE EQUIPMENT.
6. ADEQUATE PASSAGEWAYS TO ACCOMMODATE TRUCKS OR OTHER NECESSARY LIFTING AND HAULING EQUIPMENT SHALL BE PROVIDED TO ALLOW FOR EQUIPMENT MAINTENANCE AND REPLACEMENT.
7. THE EQUIPMENT SHALL BE INSTALLED SO THAT THE FRONT OF THE UNIT FACES AWAY FROM THE BUILDING.
8. THERE SHALL BE NO ABOVE GROUND OBSTRUCTIONS SUCH AS COOLING TOWERS, SHRUBS, PLANTS, FENCES ETC. WITHIN 8'-0" OF THE FRONT OF THE OIL-FILLED EQUIPMENT OR WITHIN 3'-0" OF THE SIDES OR BACK.
9. THE MINIMUM CLEARANCE REQUIREMENTS FOR DOORWAYS ALSO APPLIES TO FIRE ESCAPES.
10. THE DIMENSION "A1" IS APPLICABLE WHERE THERE IS NO WINDOW ABOVE THE EQUIPMENT OR THE WINDOW IS GREATER THAN 12'-0" ABOVE THE EQUIPMENT AS SHOWN IN THE ELEVATION ABOVE. SEE "A2", "A3" AND THE TABLE WHEN WINDOW IS NEARER.
11. DIMENSION "C" IS APPLICABLE WHEN OIL FILLED EQUIPMENT IS LOCATED IN FRONT OF DOOR.
12. DIMENSIONS ALSO APPLY TO TRANSCLOSURE CABINET WALLS.
13. LCEC REQUIRES THE EXHAUST OUTLET FOR MEMBER-OWNED GENERATORS TO BE AT LEAST 15'-0" FROM ALL LCEC EQUIPMENT BECAUSE OF HEAT , NOISE AND EXHAUST FUMES.
14. LCEC REQUIRES A MINIMUM SWITCHING CLEARANCE OF 8'-0", FLORIDA FIRE PROTECTION CODE REQUIRES A 7'-6" CLEARANCE FROM THE FRONT AND SIDE OF THE FIRE APPLIANCE AND 4'-0" FROM THE BACK.
15. PRIMARY CABLES WILL NOT BE PERMITTED UNDER BUILDINGS AND STRUCTURES.

4 UPDATED DRAWING AND NOTE 14

LCEC

CLEARANCES FROM OIL-FILLED ELECTRICAL EQUIPMENT

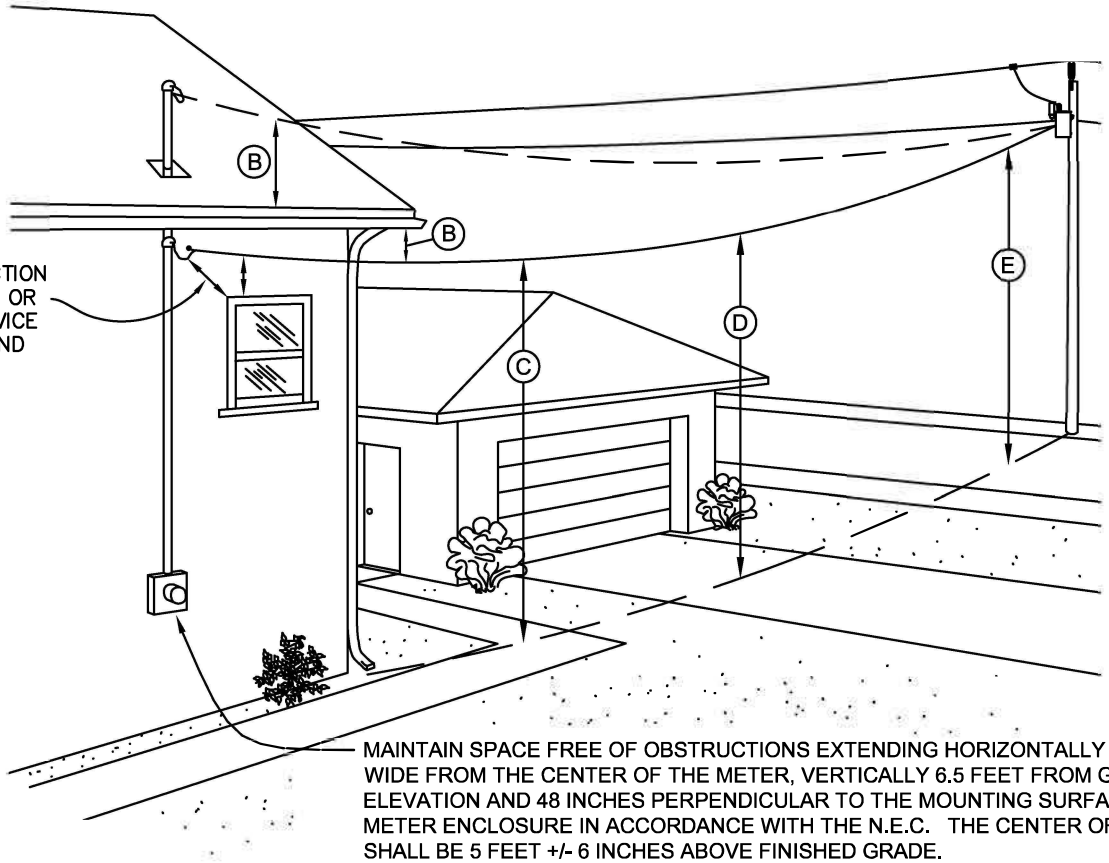
FIGURE 2

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 01/01/2013

DIMHO-01003



NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

6 REVISED NOTES AND TABLE

A. Doors, Porches, Fire Escapes, Windows, and Balconies	**3 Feet**
B. Above Roof Overhang	**3 Feet**
C. Areas with Pedestrian or Restricted Traffic	**12 Feet**
Exception: Where attachment height at building does not permit 12 feet of clearance:	
Voltage limited to 300V to Ground, Service Drop and Drip Loops	**10.5 Feet**
Voltage limited to 150V to Ground, Service Drop and Drip Loops	**10 Feet**
D. Driveways, Parking Lots, and Alleys	**15 Feet**
Exception: Residential Driveways only where attachment height at building does not permit 15 feet of clearance:	
Voltage limited to 300V to Ground - Service Drop	**12.5 Feet**
- Drip Loops	**10.5 Feet**
Voltage limited to 150V to Ground - Service Drops	**12 Feet**
- Drip Loops	**10 Feet**
E. Roads, Streets, and Other Areas with Truck Traffic	**16 Feet**
F. Other Land Traveled by Vehicles (Agricultural, Recreational, etc.)	**16 Feet**

The clearances above are NESC minimum values for worst-case sag conditions. The attachment height at the building or member's service pole must be sufficient to provide these clearances for all situations involved. Good judgment dictates that initial installation be made at higher values to ensure code compliance under worst-case sag conditions. For additional details and clarification regarding these and all clearances, refer to Section 23 of the NESC.

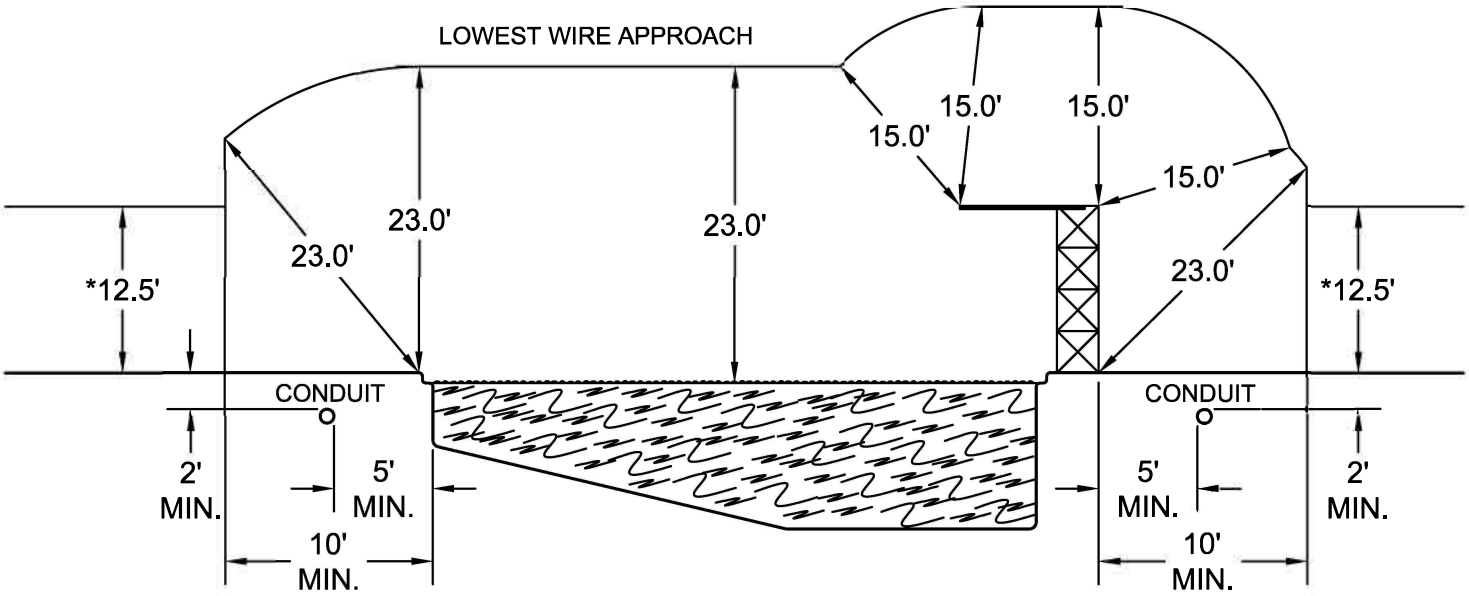
LCEC

OVERHEAD SERVICE-DROP CLEARANCES

FIGURE 3

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 6 REV. DATE 12/01/2014



* MAY BE REDUCED TO 12.0 FEET FOR TRIPLEX SERVICE CONDUCTOR. SEE NESC TABLE 232-1,5

NOTES:

1. WHERE WIRES, CONDUCTORS, CABLE, OR UNGUARDED RIGID LIVE PARTS ARE OVER A POOL FULLY ENCLOSED BY A SOLID OR SCREENED PERMANENT STRUCTURE OR THE SURROUNDING AREA, THE MINIMUM HORIZONTAL CLEARANCE SHALL BE 5.5 FEET AND A MINIMUM VERTICAL CLEARANCE SHALL BE 10.5 FEET. SEE NESC TABLE 234-1, 1a(1), 1a(2), 1a(3), 1b(1).

2. WHERE WIRES, CONDUCTORS, CABLE, OR UNGUARDED RIGID LIVE PARTS ARE OVER A SWIMMING POOL OR THE SURROUNDING AREA, THE CLEARANCES IN ANY DIRECTION SHALL BE NOT LESS THAN THOSE ILLUSTRATED BY THE DRAWING ABOVE. SEE NESC RULE 234E1.

3. DOES NOT APPLY TO COMMUNICATION CONDUCTORS AND CABLES, EFFECTIVELY GROUNDED SURGE-PROTECTION WIRES, NEUTRAL CONDUCTORS MEETING RULE 230E1, GUYS AND MESSENGERS, SUPPLY CABLES MEETING RULE 230C1, AND SUPPLY CABLES OF 0 TO 750V MEETING RULE 230C2 OR 230C3 WHEN THESE FACILITIES ARE 10 FEET OR MORE HORIZONTALLY FROM THE EDGE OF POOL, DIVING PLATFORM DIVING TOWER, WATER SLIDE OR OTHER FIXED, POOL-RELATED STRUCTURES. SEE NESC RULE 234E1, EXCEPTION 2.

4. DIRECT-BURIED UNDERGROUND SUPPLY CABLE IN PVC SHOULD NOT BE INSTALLED WITHIN 5 FEET HORIZONTALLY FROM A SWIMMING POOL OR ITS AUXILIARY EQUIPMENT. IF 5 FEET IS NOT ATTAINABLE, SUPPLEMENTAL MECHANICAL PROTECTION SHALL BE PROVIDED. SEE NESC RULE 351C1.

5. FOR ABOVEGROUND POOLS, SEE NESC RULE 351C2.

1 ADDED NOTES 2 THROUGH 5.

LCEC

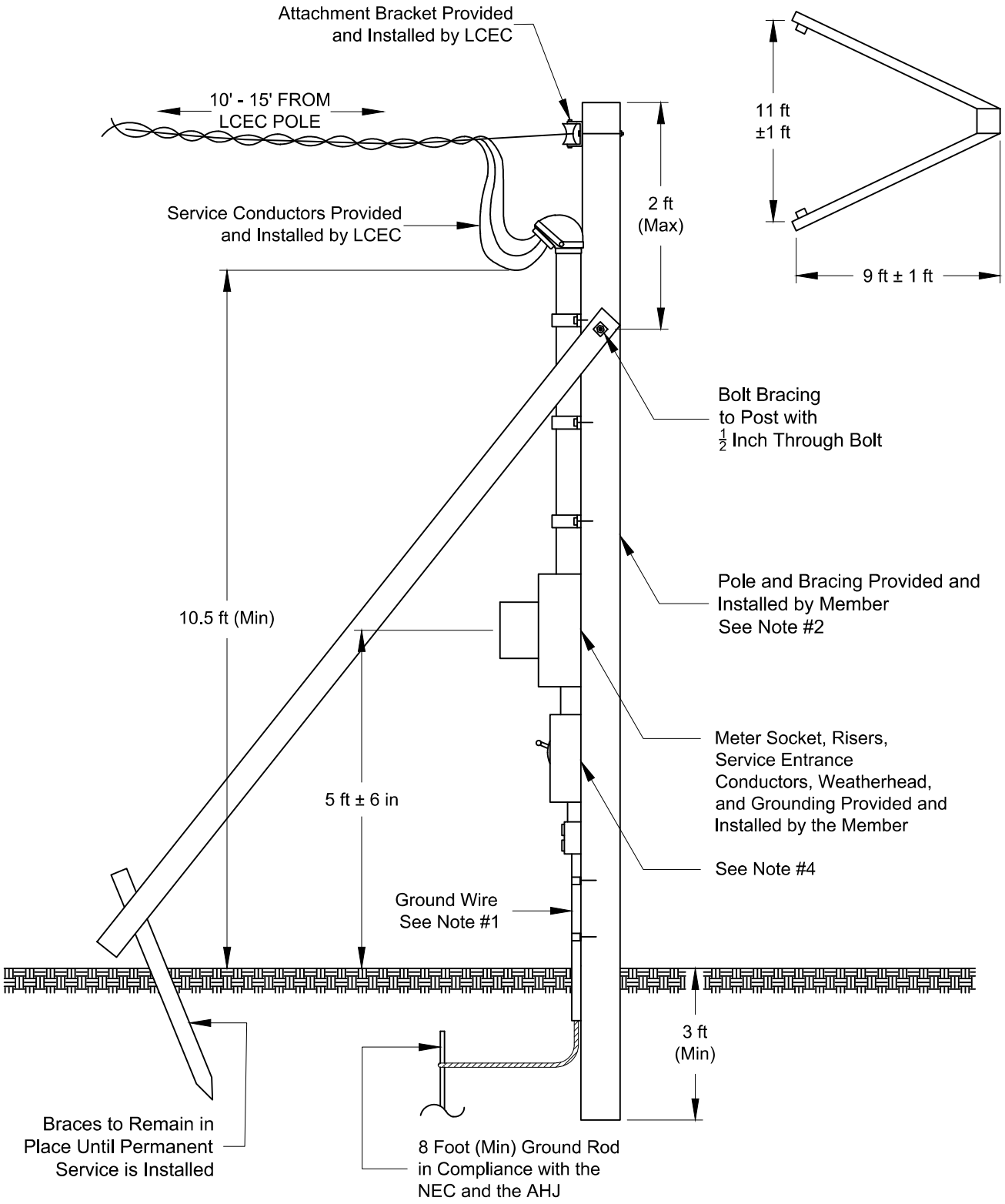
SERVICE DROP CLEARANCES TO SWIMMING POOLS 0 TO 750 VOLTS

FIGURE 4

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 2 REV. DATE 01/01/2012



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. SERVICE SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS:
   A. 4 **X** 4 INCH (POLE)
   B. 2 **X** 4 INCH (BRACING)
3. WOOD POSTS SHALL BE PRESSURE TREATED FOR BELOW GROUND USE
4. MAIN BREAKER / FUSED DISCONNECT AND WEATHERPROOF OUTLETS PROVIDED AND INSTALLED BY MEMBER.
5. THE SERVICE POLE SHALL BE LOCATED NO MORE THAN 50 FEET FROM THE DESIGNATED LCEC SERVICE FACILITIES.
6. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△5 ADDED NOTE 6.

LCEC

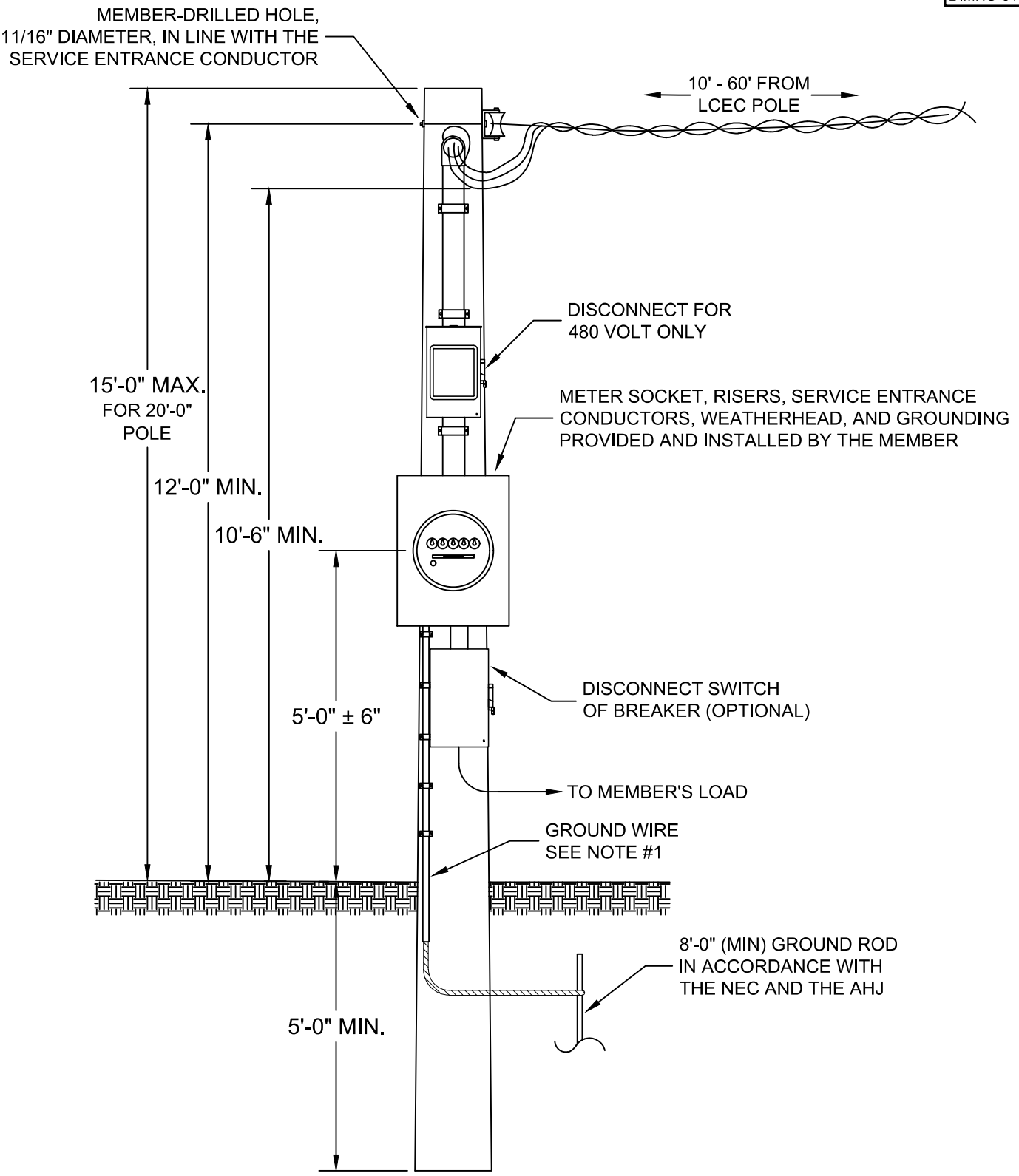
OVERHEAD SERVICE TEMPORARY

FIGURE 5

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 5 REV. DATE 1/3/2019



NOTES:
1. FACILITIES PROVIDED BY THE MEMBER ARE TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. MEMBER-INSTALLED POLE TO BE 20 FOOT (MIN.) CLASS 7, PRESSURE TREATED WOOD OR AS REQUIRED TO MAINTAIN CLEARANCES SHOWN IN FIGURE 3.
3. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

4 ADDED NOTE 3.

LCEC

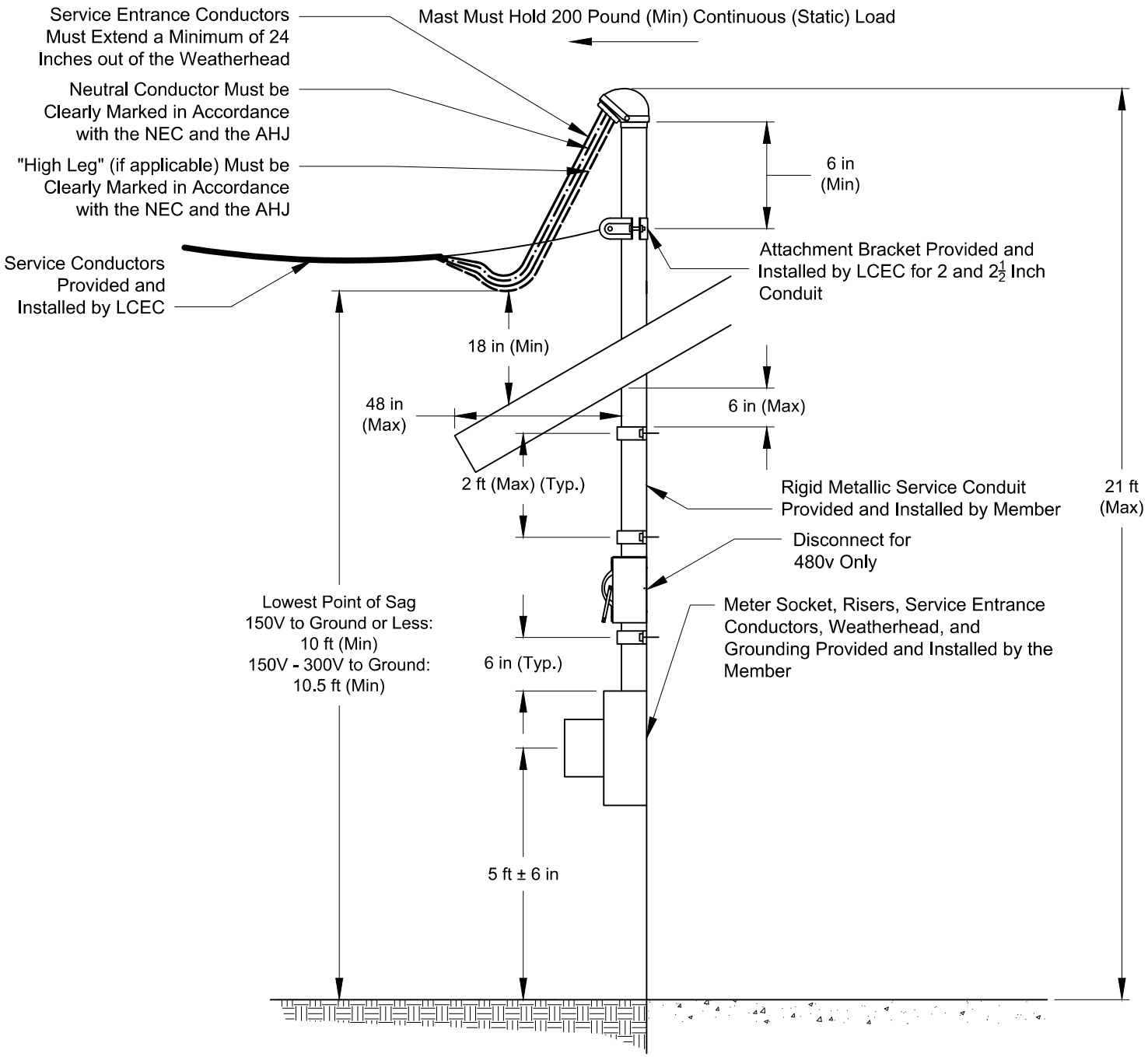
OVERHEAD SERVICE POLE MOUNT

FIGURE 6

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 1/3/2019



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
3. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
4. FOR TRIPLEXED OR QUADRAPLEXED CABLE SERVICES LESS THAN 750V WITH A BARE NEUTRAL, THE 18 INCH MINIMUM CLEARANCE IS ALLOWED ONLY WHERE NO MORE THAN 6 FEET (MEASURED HORIZONTALLY) OF THE SERVICE DROP PASSES OVER A ROOF TO TERMINATE AT A THROUGH-THE-ROOF MAST. THE MAST IS TO BE LOCATED NOT MORE THAN 4 FEET (MEASURED HORIZONTALLY) FROM THE NEAREST EDGE OF THE ROOF. IF THESE CONDITIONS ARE NOT MET, THE MINIMUM CLEARANCE ABOVE THE ROOF (NOT READILY ACCESSIBLE) OF THE BUILDING TO WHICH THE SERVICE IS ATTACHED IS 3 FEET. REFER TO NESC 234C3D.
5. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△4 ADDED NOTE 5.

LCEC

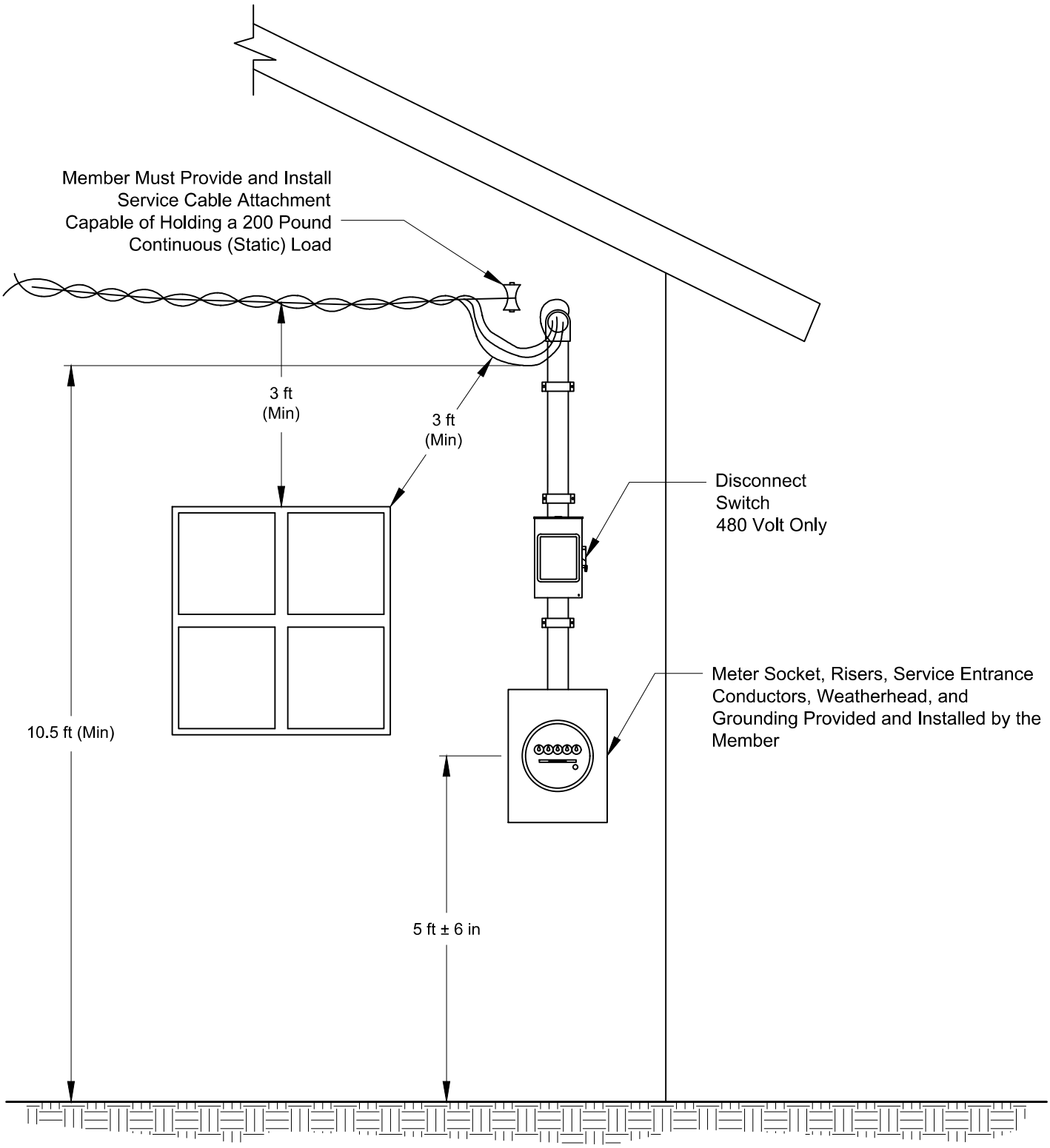
OVERHEAD SERVICE THROUGH-THE-ROOF (PREFERRED METHOD)

FIGURE 7

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 1/3/2019



NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

7 ADDED NOTE 3.

LCEC

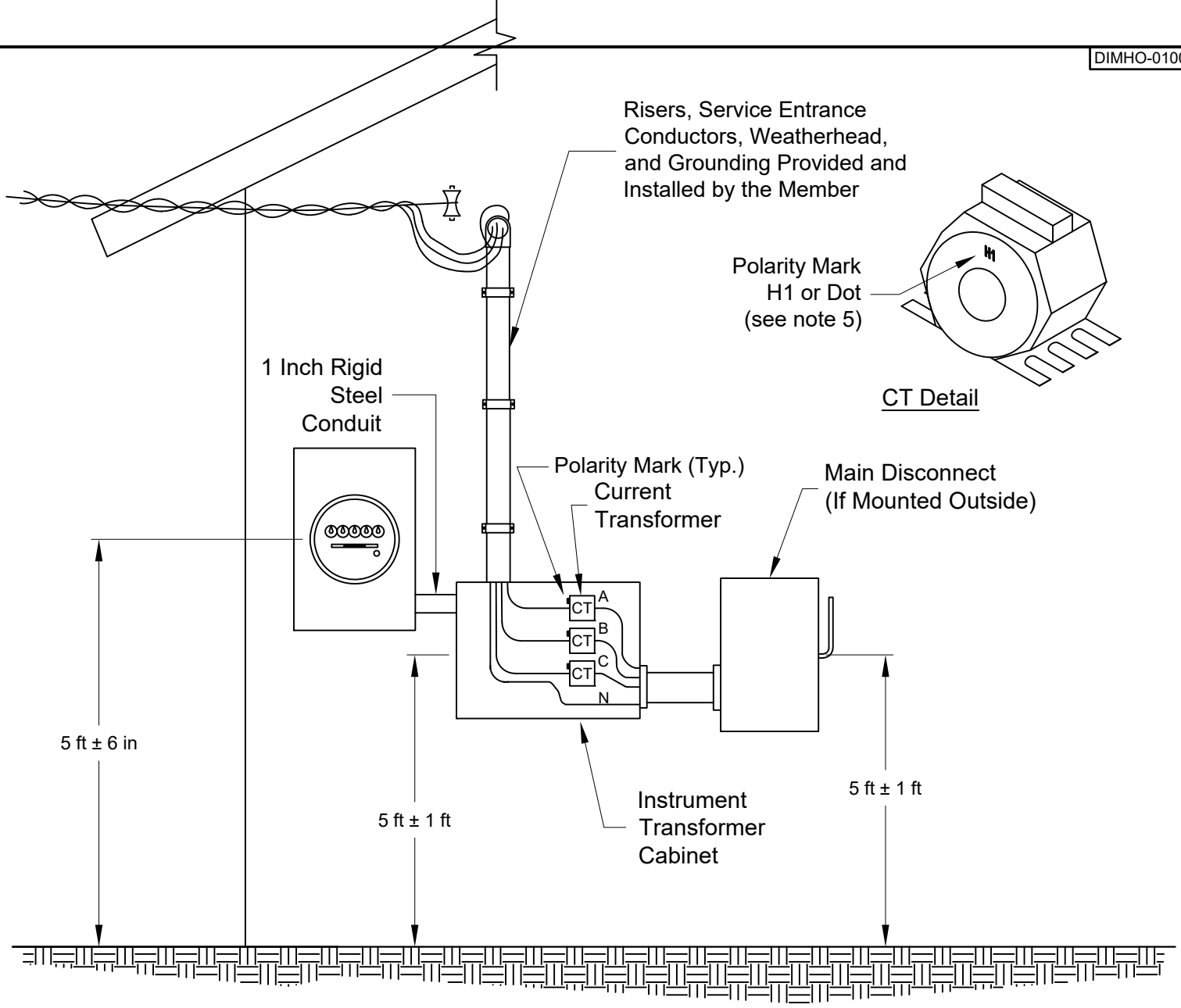
OVERHEAD SERVICE UNDER-EAVE (ALTERNATE METHOD)

FIGURE 8

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 7 REV. DATE 1/3/2019



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF CT BEFORE CONNECTING TO THE MAIN PANEL.
6. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED. ALUMINUM IS NOT PERMITTED.
7. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
8. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
9. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

LCEC

3 PHASE OVERHEAD SERVICE TRANSFORMER-RATED METERING FOR 120/240 OR 120/208

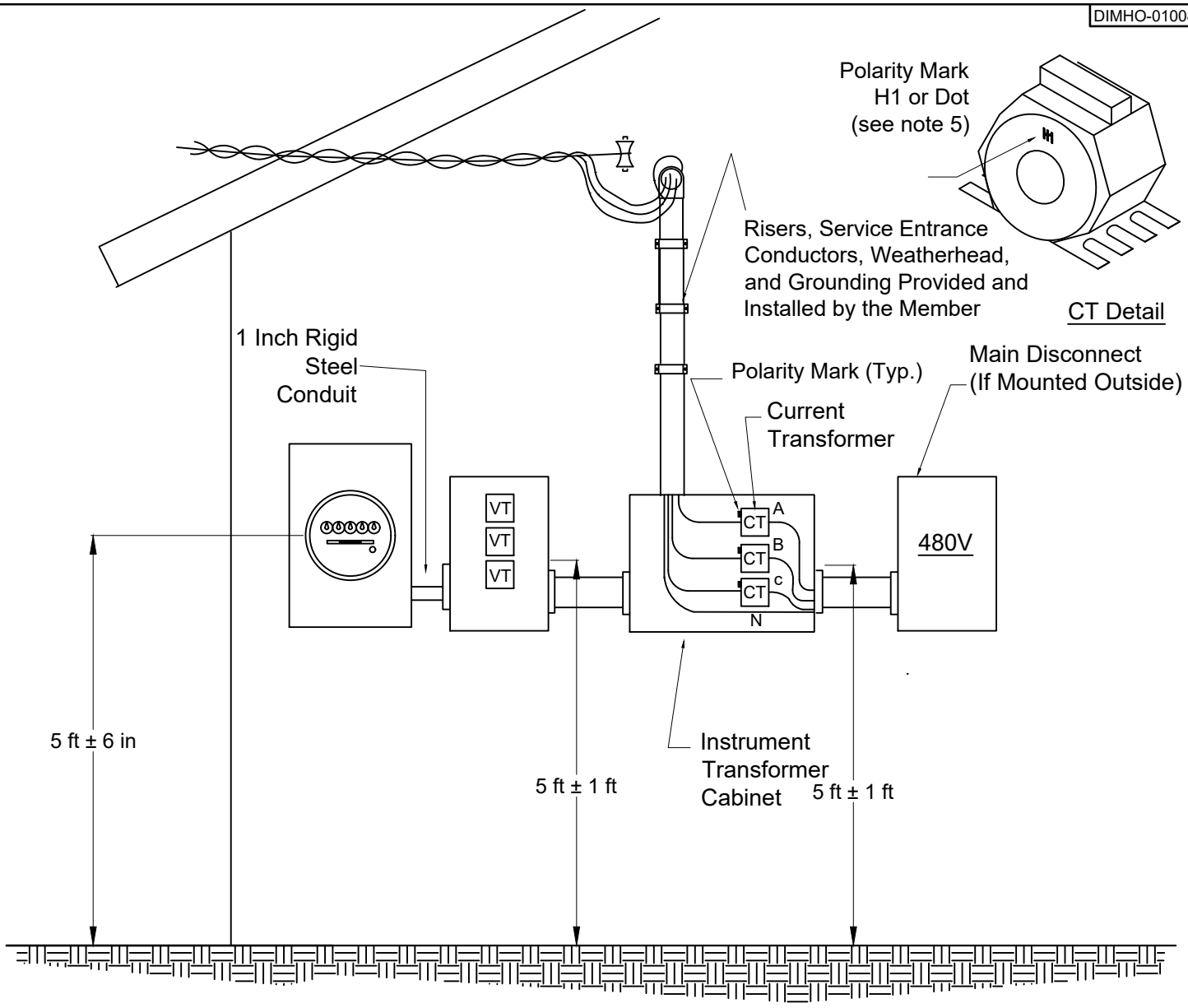
FIGURE 9B

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 12 REV. DATE 9/24/2025

DIMHO-01008



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF CT BEFORE CONNECTING TO THE MAIN PANEL.
6. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED. ALUMINUM IS NOT PERMITTED.
7. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
8. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
9. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

12 9A REPLACED WITH 9C

LCEC

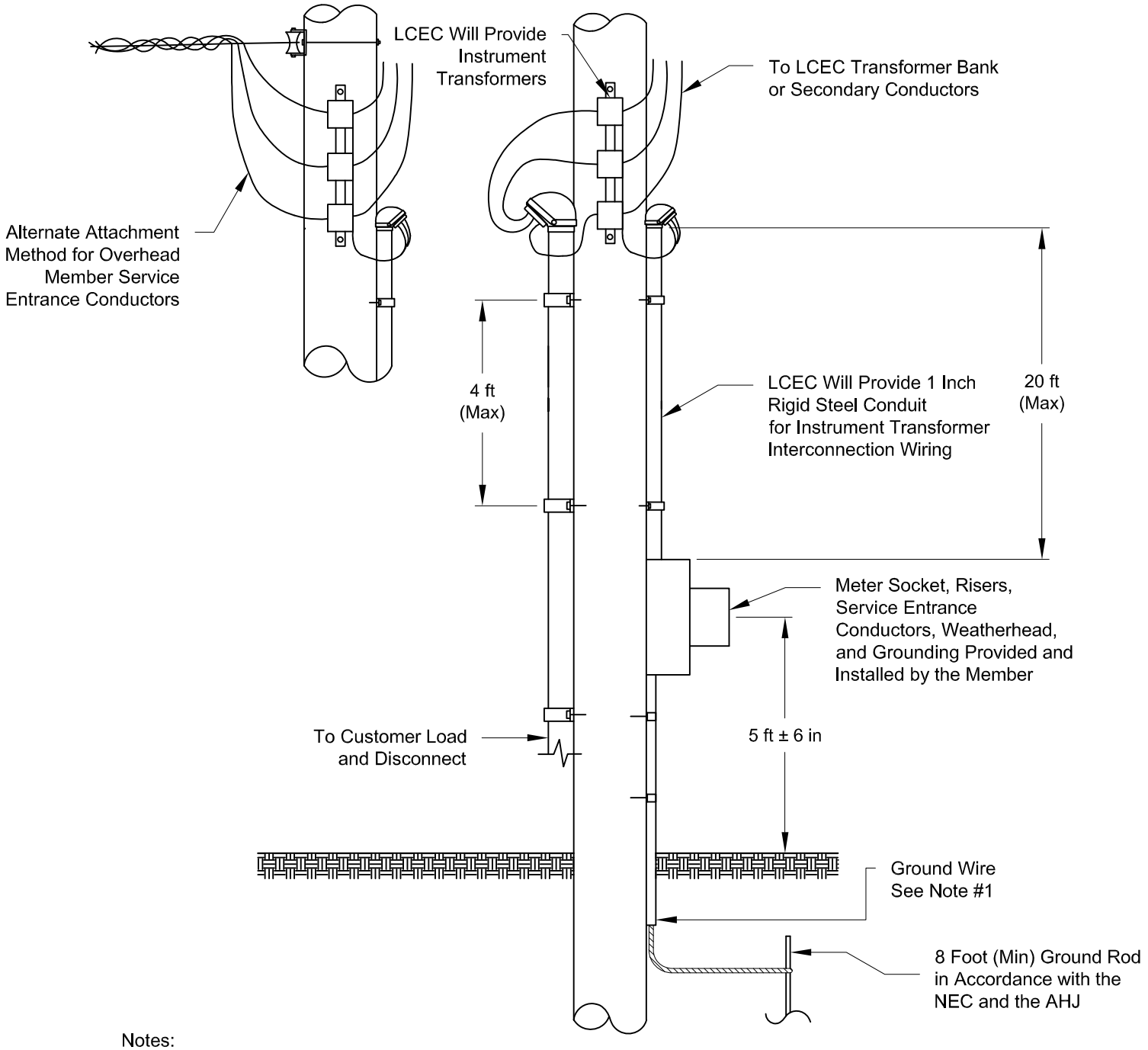
3 PHASE OVERHEAD SERVICE TRANSFORMER-RATED METERING FOR 480V

FIGURE 9C

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 12 REV. DATE 09/24/2025



Notes:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. EQUIPMENT SHALL BE INSTALLED BY THE FOLLOWING PARTIES:

Pole	Member
Instrument Transformers	Member
Service Conductors and Conduit	Member
Metering Conductors	LCEC
Meter Socket and Conduit	Member
Meter Grounding	Member

3. No longer valid for new construction installation.

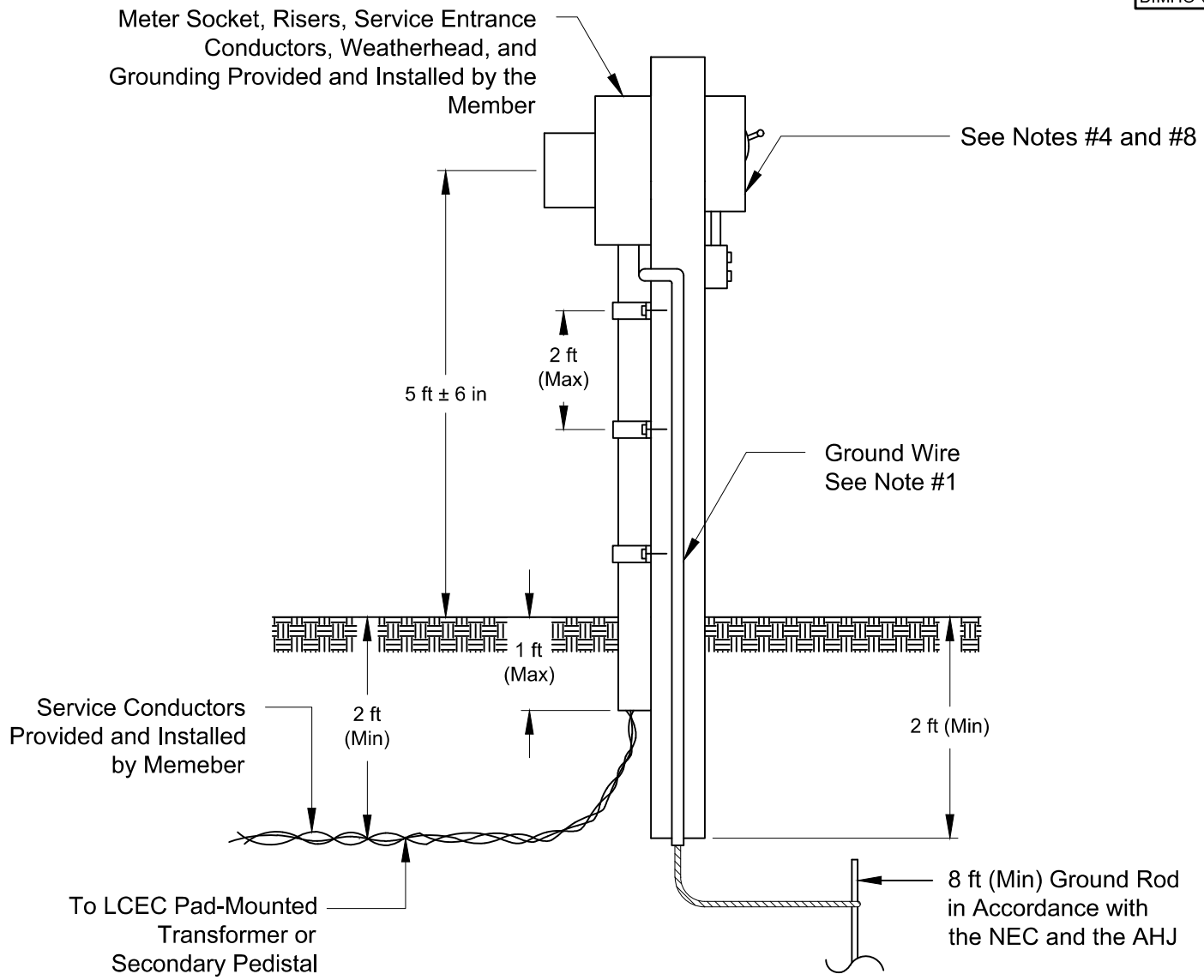
4 ADDED NOTE 3.

MAINTENANCE ONLY OVERHEAD SERVICE TRANSFORMER-RATED METERING POLE-MOUNTED

FIGURE 10

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 4 REV. DATE 7/13/2023



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. POST SHALL BE A MINIMUM OF $8\frac{1}{2}$ FEET LONG WITH THE FOLLOWING MINIMUM DIMENSIONS:
   A. ROUND WOOD - 6 INCH DIAMETER
   B. SQUARE WOOD - 4 **X** 6 INCH (METER ON 6 INCH FACE)
   C. SQUARE CONCRETE - 4 **X** 6 INCH (METER ON 6 INCH FACE)
3. WOOD POSTS SHALL BE PRESSURE TREATED FOR BELOW GROUND USE
4. MEMBER'S DISCONNECT MAY BE LOCATED ON ANY FACE OF THE POST, ABOVE OR BELOW THE METER SOCKET.
5. DISTANCE OF TEMPORARY SERVICE FROM LCEC PAD-MOUNTED TRANSFORMER OR SECONDARY PEDESTAL TO BE WITHIN 5 FEET OF THE TRANSFORMER.
6. ONLY LCEC IS AUTHORIZED TO CONNECT AND DISCONNECT MEMBER CONDUCTORS IN LCEC EQUIPMENT
7. RISER MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
8. MAIN BREAKER / FUSED DISCONNECT AND WEATHERPROOF OUTLETS PROVIDED AND INSTALLED BY MEMBER.
9. THE SERVICE POLE SHALL BE LOCATED NO MORE THAN 10 FEET FROM THE DESIGNATED LCEC SERVICE FACILITIES.
10. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△4 ADDED NOTE 10.

LCEC

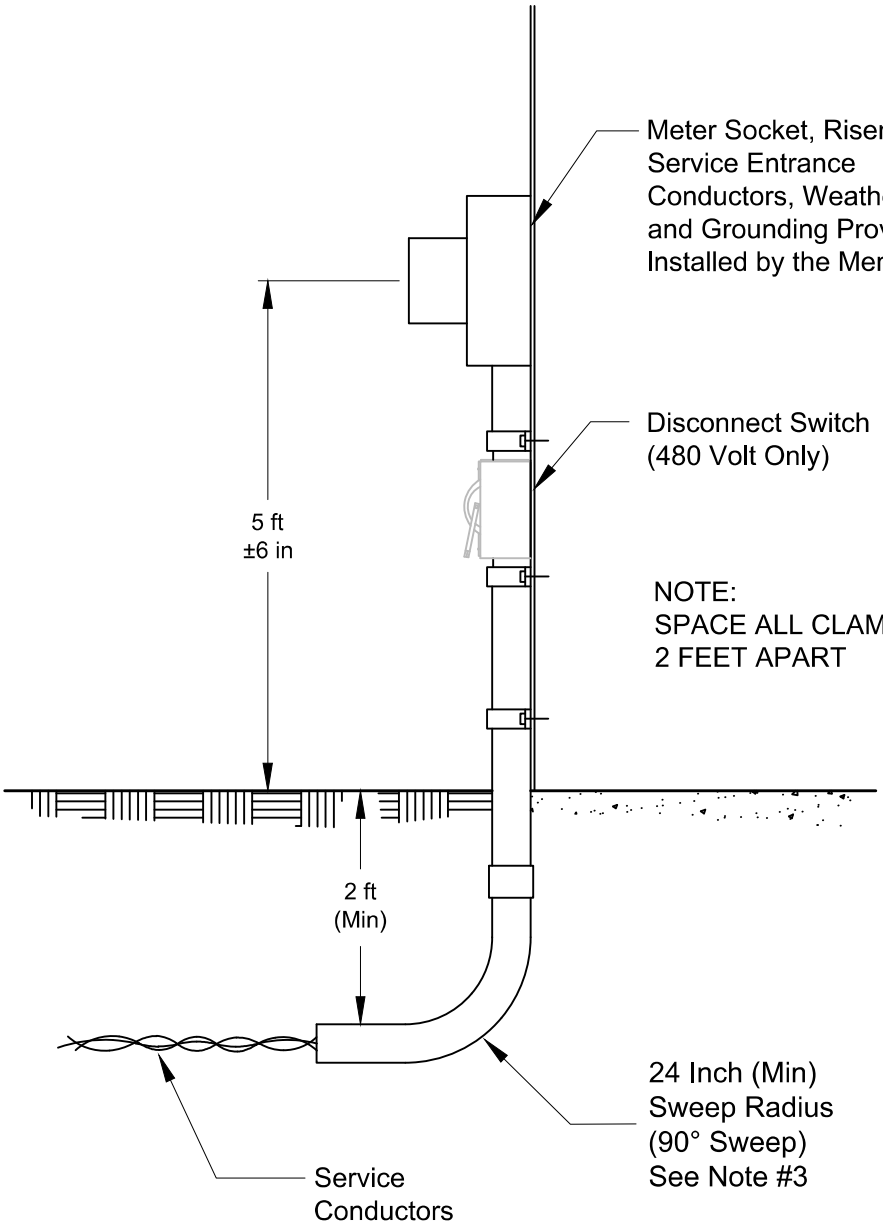
UNDERGROUND SERVICE TEMPORARY

FIGURE 11

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 1/3/2019



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. RISER, CONDUIT, AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
3. USE 2 INCH CONDUIT WHEN SERVICE IS TO BE INSTALLED BY LCEC.
4. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
5. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
6. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△4 ADDED NOTE 6.

LCEC

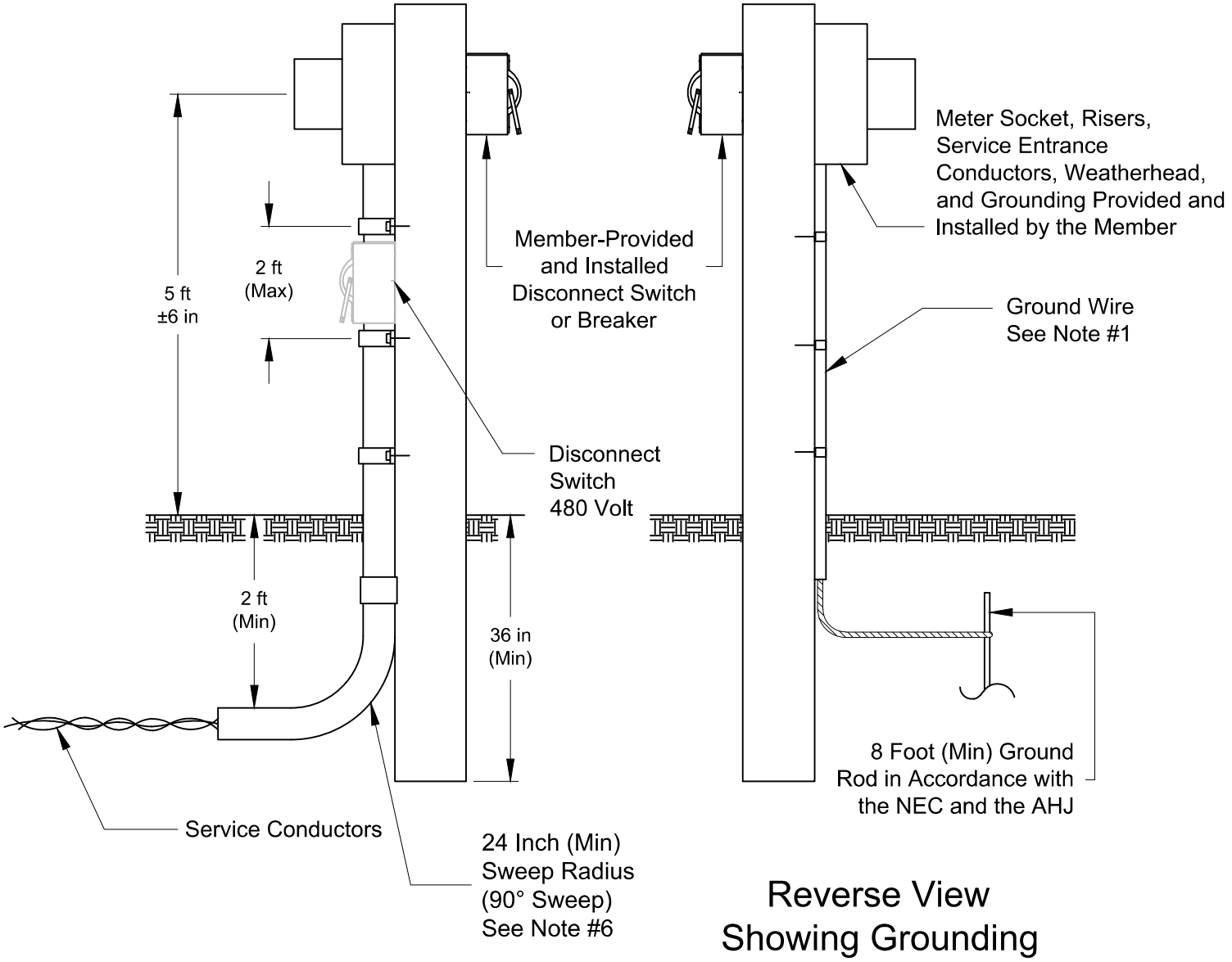
UNDERGROUND SERVICE TO PERMANENT STRUCTURE

FIGURE 12

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 1/3/2019



Reverse View
Showing Grounding

NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. POST SHALL BE A MINIMUM OF $8\frac{1}{2}$ FEET LONG WITH THE FOLLOWING MINIMUM DIMENSIONS:
   A. ROUND WOOD - 6 INCH DIAMETER
   B. SQUARE WOOD - 4 **X** 4 INCH
   C. SQUARE CONCRETE - 4 **X** 6 INCH (METER ON 6 INCH FACE)
3. WOOD POSTS SHALL BE PRESSURE TREATED FOR BELOW GROUND USE
4. MEMBER'S DISCONNECT MAY BE LOCATED ON ANY FACE OF THE POST, ABOVE OR BELOW THE METER SOCKET.
5. RISER, CONDUIT, AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
6. USE 2 INCH CONDUIT WHEN SERVICE IS TO BE INSTALLED BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△4 ADDED NOTE 7.

LCEC

UNDERGROUND SERVICE PEDESTAL-MOUNT

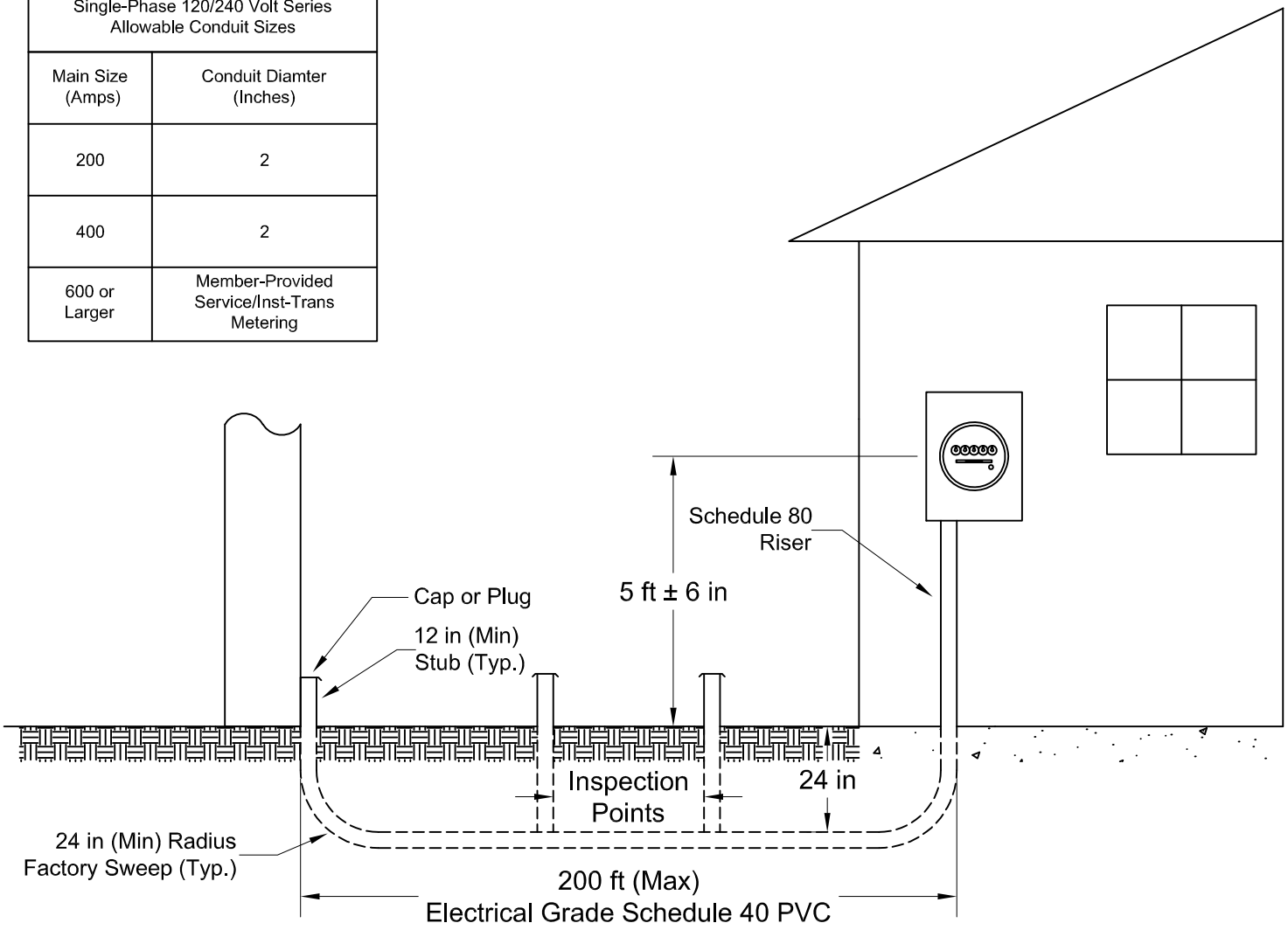
FIGURE 13

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 1/3/2019

Single-Phase 120/240 Volt Series Allowable Conduit Sizes	
Main Size (Amps)	Conduit Diamter (Inches)
200	2
400	2
600 or Larger	Member-Provided Service/Inst-Trans Metering



NOTES:

1. THE MEMBER BEARS FULL RESPONSIBILITY FOR REPAIRING OR REPLACING DAMAGED OR IMPROPERLY INSTALLED CONDUIT PRIOR TO LCEC INSTALLING THE CABLES IN THE CONDUIT.
2. SCHEDULE 40 ELECTRICAL GRADE PVC CONDUIT WITH 24 INCH, 90 DEGREE OR 45 DEGREE, SWEEPS MUST BE USED.
3. THERE MUST BE NO LESS THAN 12 INCHES OF EARTH SEPARATION BETWEEN THE ELECTRICAL CONDUIT AND OTHER UTILITIES IN A JOINT TRENCH.
4. THE SITE MUST BE WITHIN 6 INCHES OF THE FINAL GRADE OR GRADING STAKES MUST BE USED TO DETERMINE TH TRENCH DEPTH.
5. A 200 POUND PULL-STRING MUST BE INSTALLED IN ALL CONDUITS USING A MANDREL TO ASSURE THE CLEANLINESS OF THE CONDUIT.
6. THE END OF ALL CONDUITS MUST BE CAPPED OR PLUGGED TO KEEP THEM CLEAN.
7. A RED MARKING TAPE, WHICH CAN BE PROVIDED BY LCEC, MUST BE INSTALLED 12 INCHES ABOVE THE CONDUIT.
8. THE MAXIMUM NUMBER OF SWEEPS, INCLUDING THE METER RISER SWEEP, IS FOUR.
9. THE METER RISER SHALL BE 2 INCH SCHEDULE 80 RIGID STEEL OR PVC. ALUMINUM IS NOT ALLOWED.
10. THE CUSTOMER MUST INSTALL TWO INSPECTION POINTS AT EACH THIRD OF THE TRENCH LENGTH. THE INSPECTION POINT IS A LENGTH OF 2 INCH PVC CONDUIT RESTING ON THE TOP OF THE BURIED CONDUIT AND EXTENDING A MINIMUM OF 1 FOOT ABOVE GROUND.
11. THE MEMBER ACCEPTS LIABILITY FOR DAMAGE RESULTING FROM EXCAVATION ACTIVITIES AND HOLDS LCEC HARMLESS FOR ANY DAMAGE RESULTING FROM THESE ACTIVITIES.
12. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
13. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
14. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 EDITED TITLE

LCEC

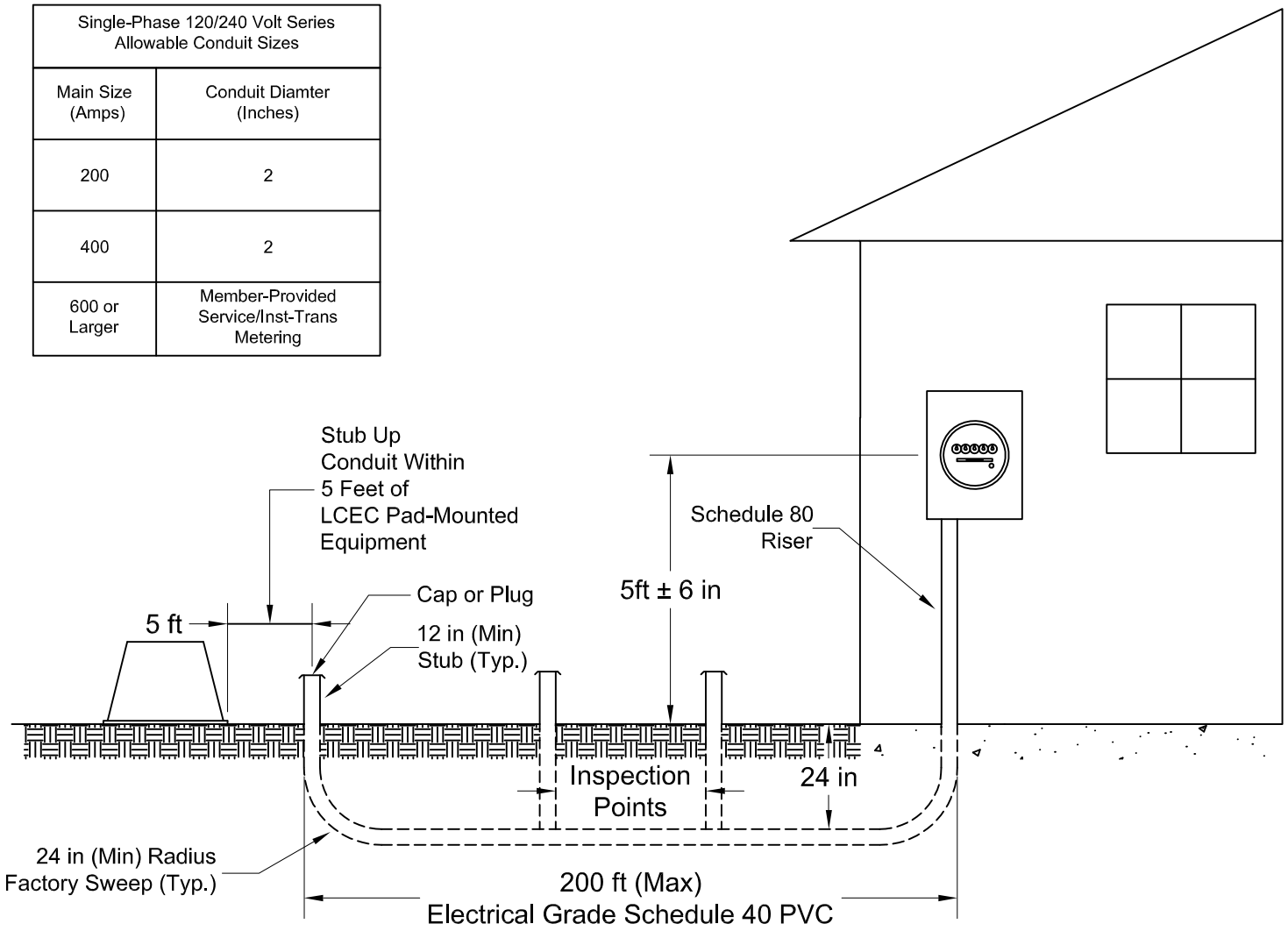
MEMBER-INSTALLED
RESIDENTIAL SERVICE CONDUIT
FROM OVERHEAD SOURCE

FIGURE 14

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 6 REV. DATE 7/13/2023

Single-Phase 120/240 Volt Series Allowable Conduit Sizes	
Main Size (Amps)	Conduit Diamter (Inches)
200	2
400	2
600 or Larger	Member-Provided Service/Inst-Trans Metering



NOTES:

1. THE MEMBER BEARS FULL RESPONSIBILITY FOR REPAIRING OR REPLACING DAMAGED OR IMPROPERLY INSTALLED CONDUIT PRIOR TO LCEC INSTALLING THE CABLES IN THE CONDUIT.
2. SCHEDULE 40 ELECTRICAL GRADE PVC CONDUIT WITH 24 INCH, 90 DEGREE OR 45 DEGREE, SWEEPS MUST BE USED.
3. THERE MUST BE NO LESS THAN 12 INCHES OF EARTH SEPARATION BETWEEN THE ELECTRICAL CONDUIT AND OTHER UTILITIES IN A JOINT TRENCH.
4. THE SITE MUST BE WITHIN 6 INCHES OF THE FINAL GRADE OR GRADING STAKES MUST BE USED TO DETERMINE TH TRENCH DEPTH.
5. A 200 POUND PULL-STRING MUST BE INSTALLED IN ALL CONDUITS USING A MANDREL TO ASSURE THE CLEANLINESS OF THE CONDUIT.
6. THE END OF ALL CONDUITS MUST BE CAPPED OR PLUGGED TO KEEP THEM CLEAN.
7. A RED MARKING TAPE, WHICH CAN BE PROVIDED BY LCEC, MUST BE INSTALLED 12 INCHES ABOVE THE CONDUIT.
8. THE MAXIMUM NUMBER OF SWEEPS, INCLUDING THE METER RISER SWEEP, IS FOUR.
9. THE METER RISER SHALL BE 2 INCH SCHEDULE 80 RIGID STEEL OR PVC. ALUMINUM IS NOT ALLOWED.
10. THE CUSTOMER MUST INSTALL TWO INSPECTION POINTS AT EACH THIRD OF THE TRENCH LENGTH. THE INSPECTION POINT IS A LENGTH OF 2 INCH PVC CONDUIT RESTING ON THE TOP OF THE BURIED CONDUIT AND EXTENDING A MINIMUM OF 1 FOOT ABOVE GROUND.
11. THE MEMBER ACCEPTS LIABILITY FOR DAMAGE RESULTING FROM EXCAVATION ACTIVITIES AND HOLDS LCEC HARMLESS FOR ANY DAMAGE RESULTING FROM THESE ACTIVITIES.
12. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
13. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
14. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 EDITED TITLE

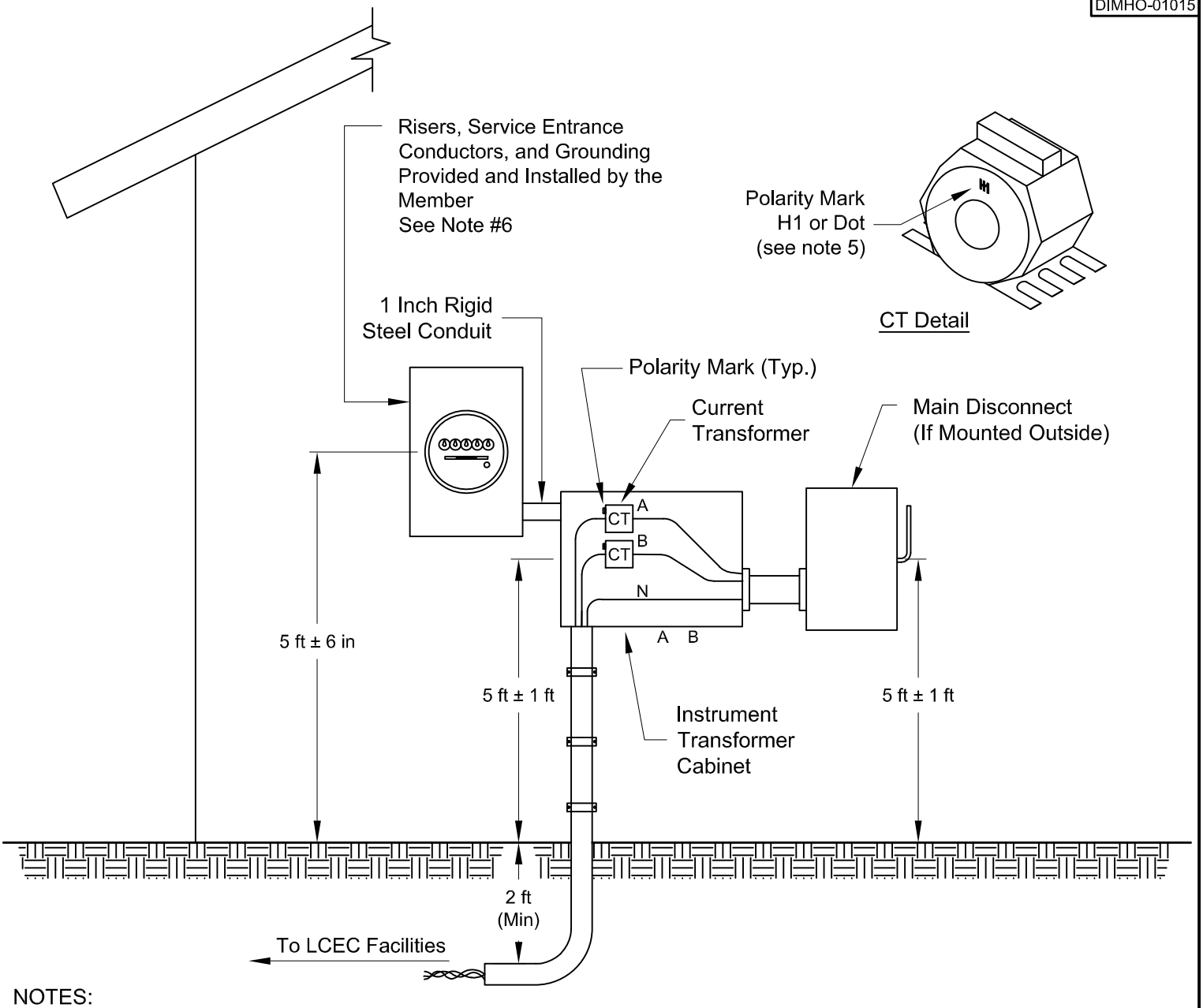
LCEC

MEMBER-INSTALLED
RESIDENTIAL SERVICE CONDUIT
FROM UNDERGROUND SOURCE

FIGURE 15

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 6 REV. DATE 7/13/2023



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF THE CT BEFORE CONNECTING TO THE MAIN PANEL.
6. SERVICE CONDUCTORS MUST ENTER THE END OF THE CURRENT TRANSFORMER WITH THE WHITE POLARITY MARKING.
7. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
8. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
9. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
10. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

△6 EDITED TITLE/REMOVED NOTE 11

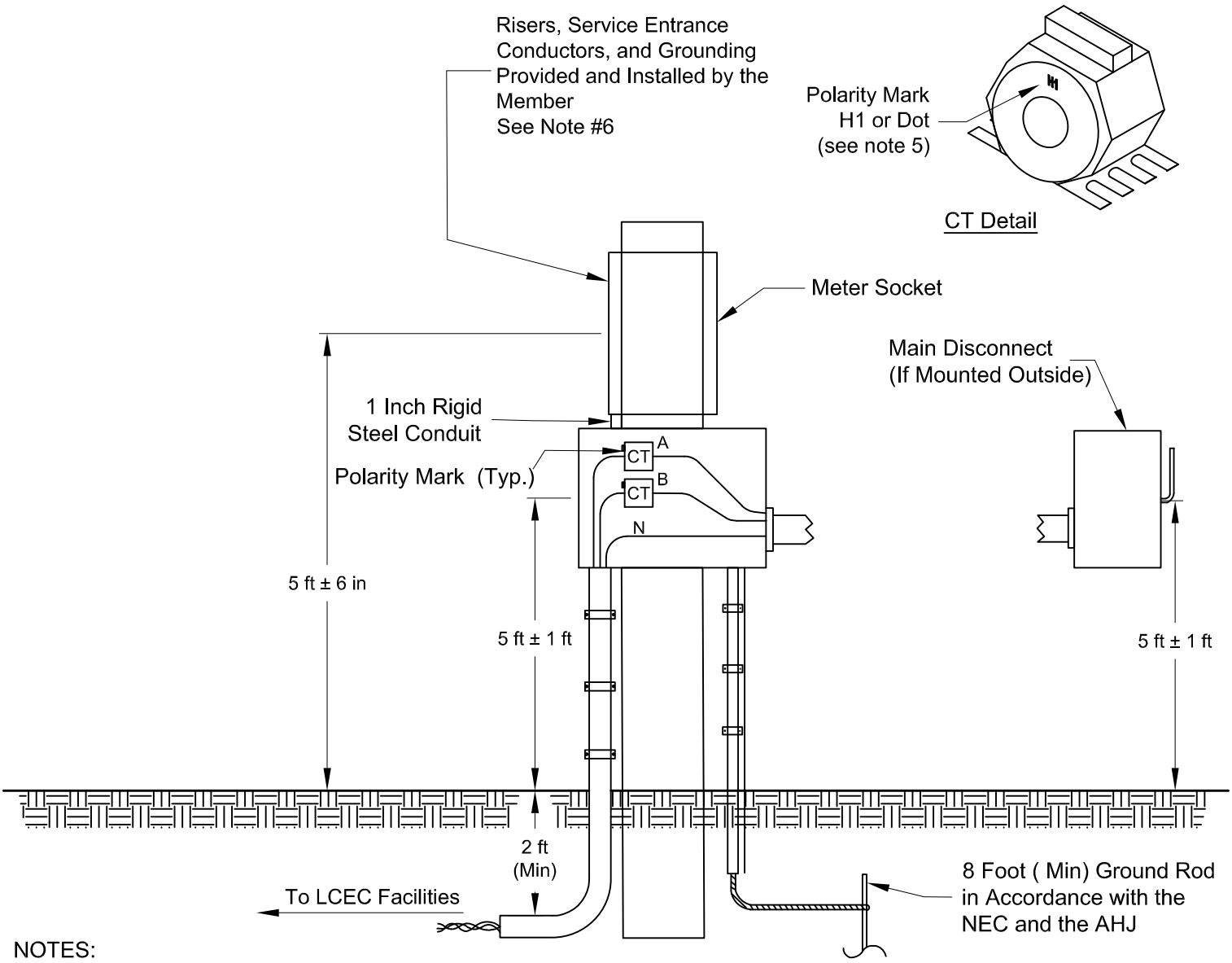
LCEC

1 PHASE UNDERGROUND SERVICE TRANSFORMER-RATED METERING PREFERRED

FIGURE 16A

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 6 REV. DATE 7/13/2023



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF THE CT BEFORE CONNECTING TO THE MAIN PANEL.
6. SERVICE CONDUCTORS MUST ENTER THE END OF THE CURRENT TRANSFORMER WITH THE WHITE POLARITY MARKING.
7. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
8. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
9. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
10. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

△5 EDITED TITLE

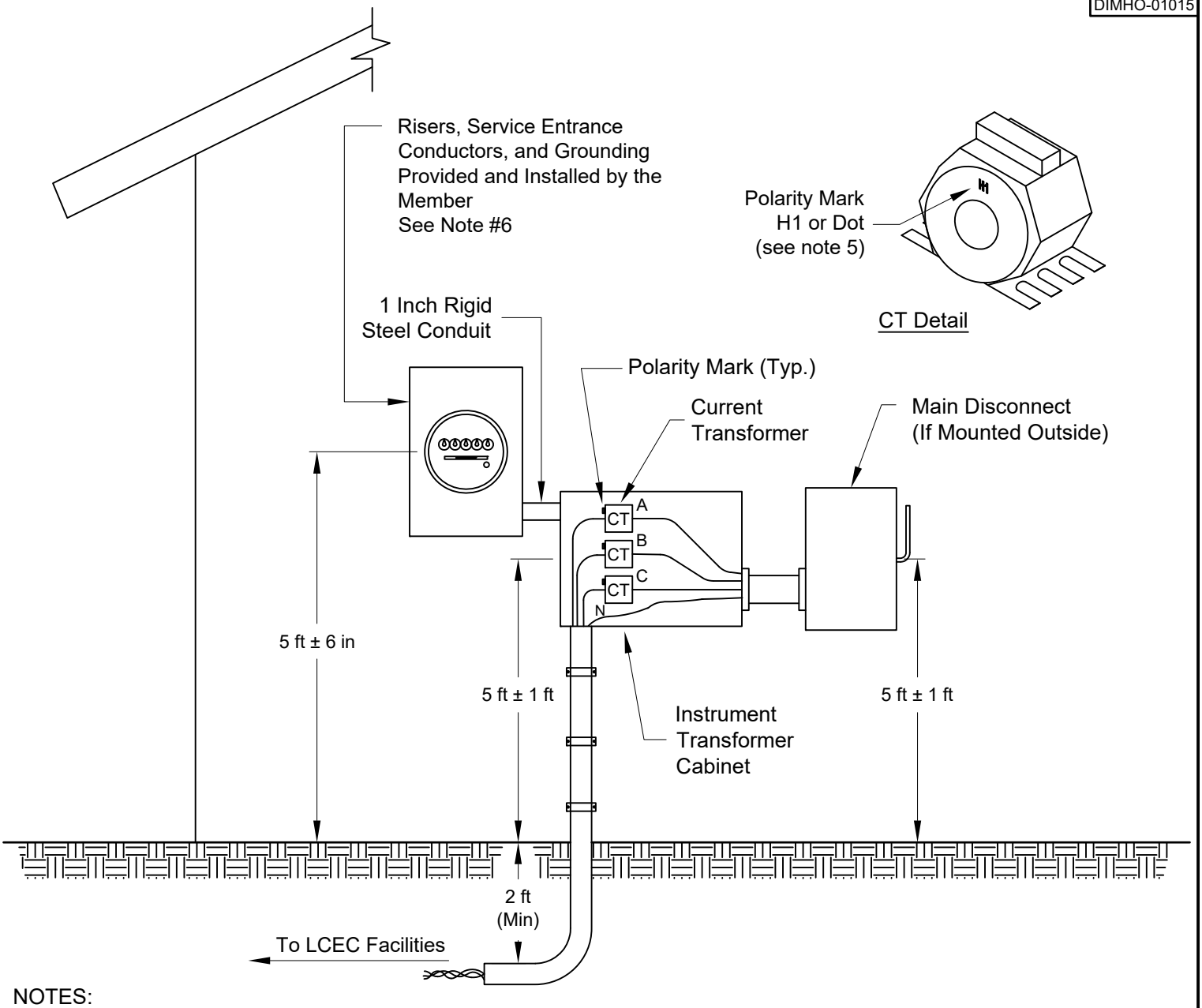
LCEC

1 PHASE UNDERGROUND SERVICE TRANSFORMER-RATED METERING ALTERNATE

FIGURE 16B

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 5 REV. DATE 7/28/2023



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF THE CT BEFORE CONNECTING TO THE MAIN PANEL.
6. SERVICE CONDUCTORS MUST ENTER THE END OF THE CURRENT TRANSFORMER WITH THE WHITE POLARITY MARKING.
7. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
8. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
9. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
10. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
11. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△0

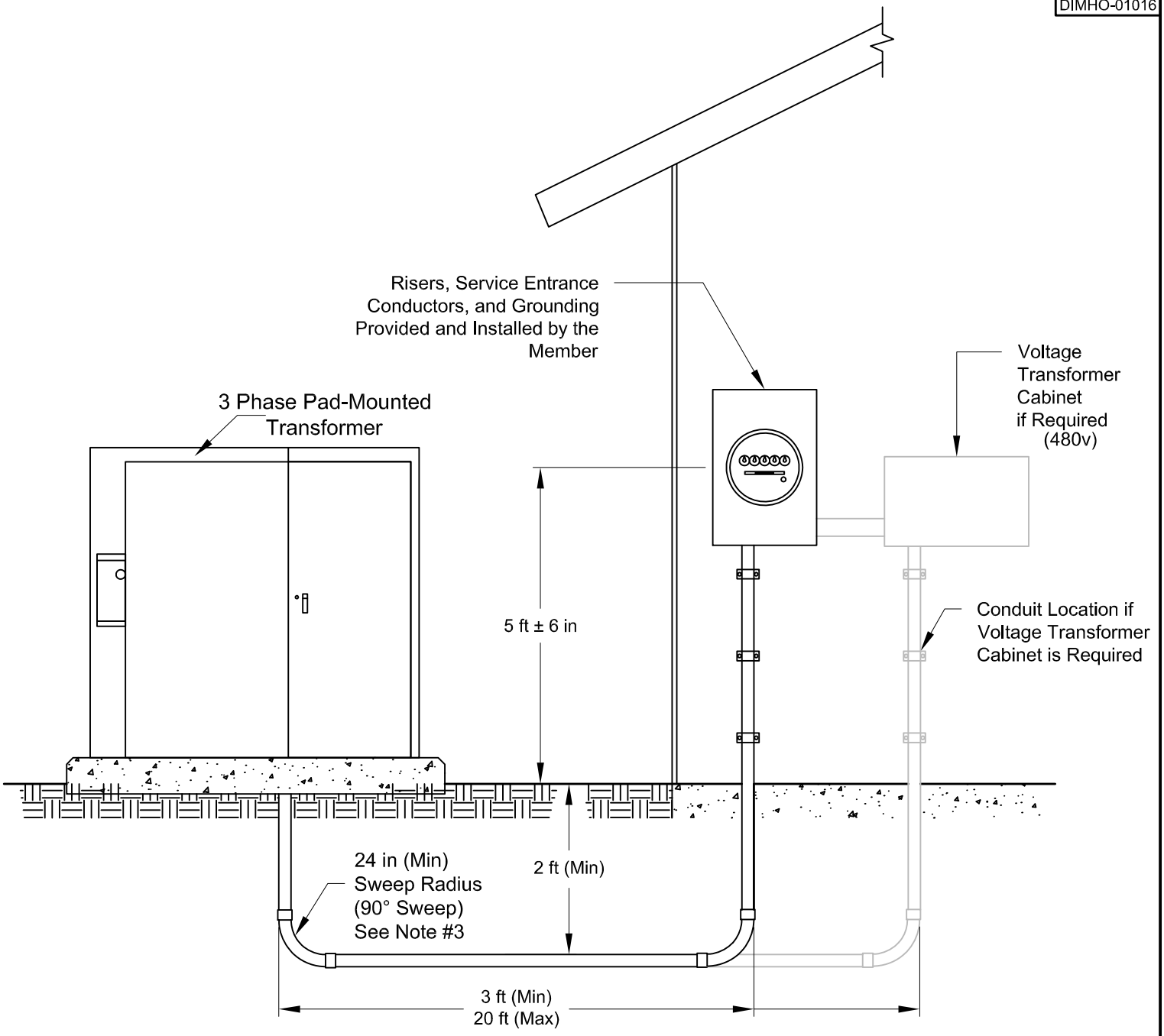
LCEC

3 PHASE UNDERGROUND SERVICE TRANSFORMER-RATED METERING FOR 120/240 OR 120/208

FIGURE 17A

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 0 REV. DATE 9/25/2025



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C AND THE A.H.J.
2. CONDUIT BETWEEN METER SOCKET AND TRANSFORMER TO BE INSTALLED BY MEMBER PRIOR TO PLACEMENT OF TRANSFORMER.
3. RISER, CONDUIT, AND 90 DEGREE SWEEP MUST BE AS FOLLOWS:
   A. 1 INCH SCHEDULE 40 PVC (BELOW GROUND)
   B. 1 INCH SCHEDULE 80 PVC OR GALVANIZED STEEL (ABOVE GROUND). ALUMINUM IS NOT PERMITTED.
4. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
5. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
6. CTs INSIDE SINGLE-PHASE PAD MOUNTED TRANSFORMERS NOT PERMITTED.

△5 EDITED NOTE 6/TITLE/ XFMR INFO

LCEC

3 PHASE UNDERGROUND SERVICE
TRANSFORMER-RATED METERING
PAD-MOUNTED TRANSFORMER (ALTERNATE)

FIGURE 17B

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 5 REV. DATE 7/28/2023

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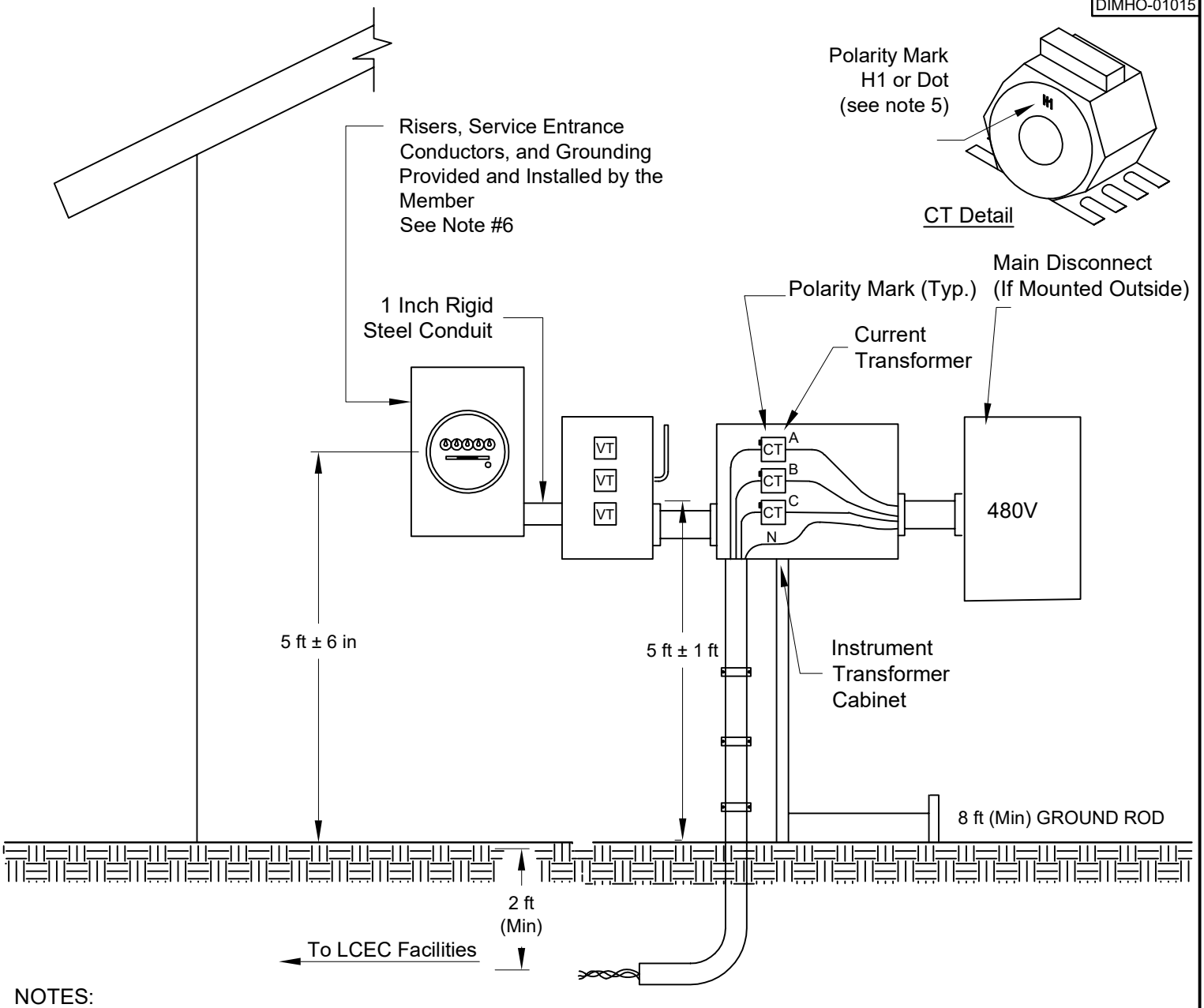


NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C AND THE A.H.J.
2. MEMBER'S NEUTRAL TO BE CONTINUOUS FROM SERVICE RISER THROUGH INSTRUMENT TRANSFORMER CABINET TO MAIN BREAKER.
3. INSTRUMENT TRANSFORMER CABINET, METER SOCKET AND MAIN BREAKER TO BE BONDED TO GROUND WIRE AND GROUND ROD.
4. LCEC WILL PROVIDE AND THE MEMBER SHALL INSTALL THE INSTRUMENT TRANSFORMER CABINET, INSTRUMENT TRANSFORMERS AND METER SOCKET.
5. MOUNT CURRENT TRANSFORMER (CT) SO SERVICE-ENTRANCE CONDUCTOR PASSES THROUGH THE POLARITY SIDE OF THE CT BEFORE CONNECTING TO THE MAIN PANEL.
6. SERVICE CONDUCTORS MUST ENTER THE END OF THE CURRENT TRANSFORMER WITH THE WHITE POLARITY MARKING.
7. RISER, CONDUIT AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
8. ALL SERVICE WIRES ARE TO BE CONTINUOUS RUNS THROUGH THE INSTRUMENT TRANSFORMER CABINET. THE INSTRUMENT TRANSFORMER CABINET SHALL NOT BE USED AS A JUNCTION OR TERMINAL POINT.
9. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
10. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

⚠8 EDITED VT PLACEMENT

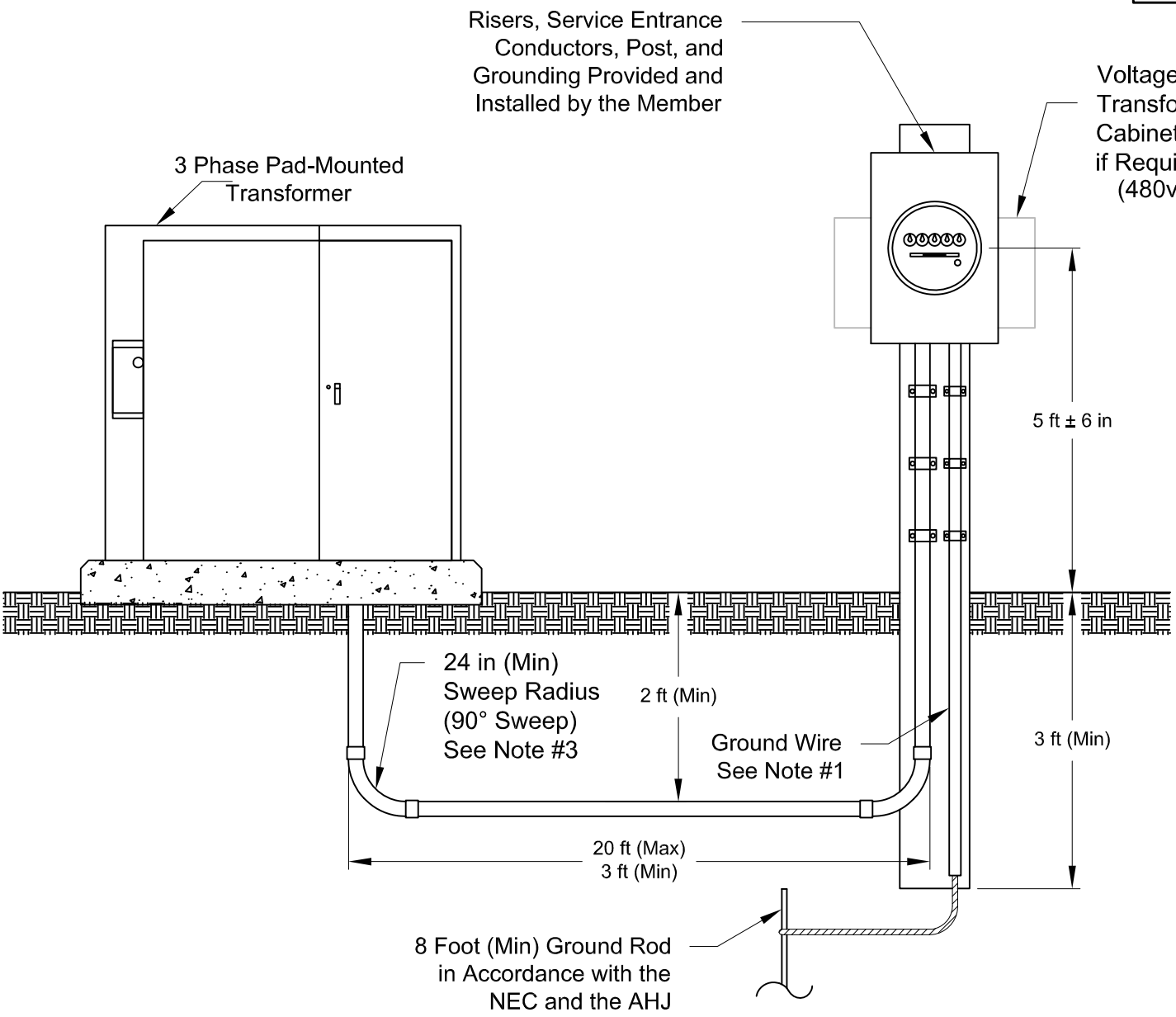
LCEC

3 PHASE UNDERGROUND SERVICE TRANSFORMER-RATED METERING FOR 480V

FIGURE 17C

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 8 REV. DATE 09/25/25



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. CONDUIT BETWEEN METER SOCKET AND TRANSFORMER TO BE INSTALLED BY MEMBER PRIOR TO PLACEMENT OF TRANSFORMER.
3. RISER, CONDUIT, AND 90 DEGREE SWEEP MUST BE AS FOLLOWS:
   A. 1 INCH SCHEDULE 40 PVC (BELOW GROUND)
   B. 1 INCH SCHEDULE 80 PVC OR GALVANIZED STEEL (ABOVE GROUND). ALUMINUM IS NOT PERMITTED.
4. THIS INSTALLATION TO BE USED ONLY WHERE THE METER SOCKET CANNOT BE MOUNTED DIRECTLY ON A BUILDING WALL OR OTHER SUPPORT SURFACE.
5. POST SHALL BE A MINIMUM OF $8\frac{1}{2}$ FT LONG WITH THE FOLLOWING MINIMUM DIMENSIONS:
   A. ROUND WOOD - 6 INCH DIAMETER
   B. SQUARE WOOD - 4 **X** 6 INCH (METER ON 6 INCH FACE)
   C. SQUARE CONCRETE - 4 **X** 6 INCH (METER ON 6 INCH FACE)
6. CTs INSIDE SINGLE-PHASE PAD MOUNTED TRANSFORMERS NOT PERMITTED.

4 EDTED NOTE 6/UPDATE PADMOUNT

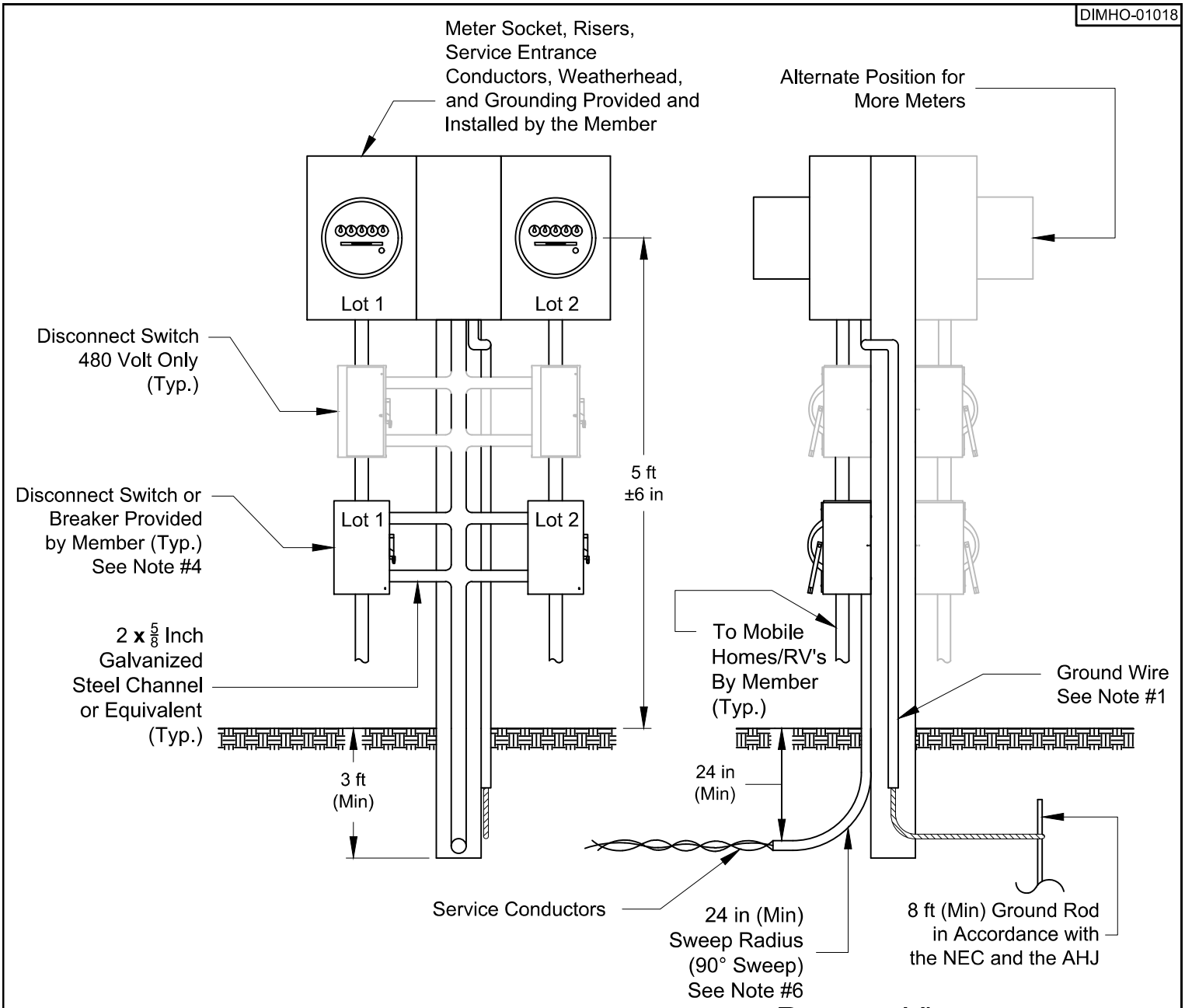
LCEC

3 PHASE UNDERGROUND SERVICE
TRANSFORMER-RATED METERING
PAD-MOUNTED TRANSFORMER (ALTERNATE)

FIGURE 18

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 4 REV. DATE 7/28/2023



Reverse View Showing Grounding

NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE NEC AND THE AHJ.
2. POST SHALL BE A MINIMUM OF $8\frac{1}{2}$ FEET LONG WITH THE FOLLOWING MINIMUM DIMENSIONS:
   A. ROUND WOOD - 6 INCH DIAMETER
   B. SQUARE WOOD - 4 **X** 6 INCH (METER ON 6 INCH FACE)
   C. SQUARE CONCRETE - 4 **X** 6 INCH (METER ON 6 INCH FACE)
3. WOOD POSTS SHALL BE PRESSURE TREATED FOR BELOW GROUND USE
4. MEMBER'S DISCONNECT MAY BE LOCATED ON ANY FACE OF THE POST, ABOVE OR BELOW THE METER SOCKET.
5. RISER, CONDUIT, AND 90 DEGREE SWEEP MUST BE SCHEDULE 80 PVC OR GALVANIZED STEEL. ALUMINUM IS NOT PERMITTED.
6. USE 2 INCH CONDUIT WHEN SERVICE IS TO BE INSTALLED BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△3 ADDED NOTE 7.

LCEC

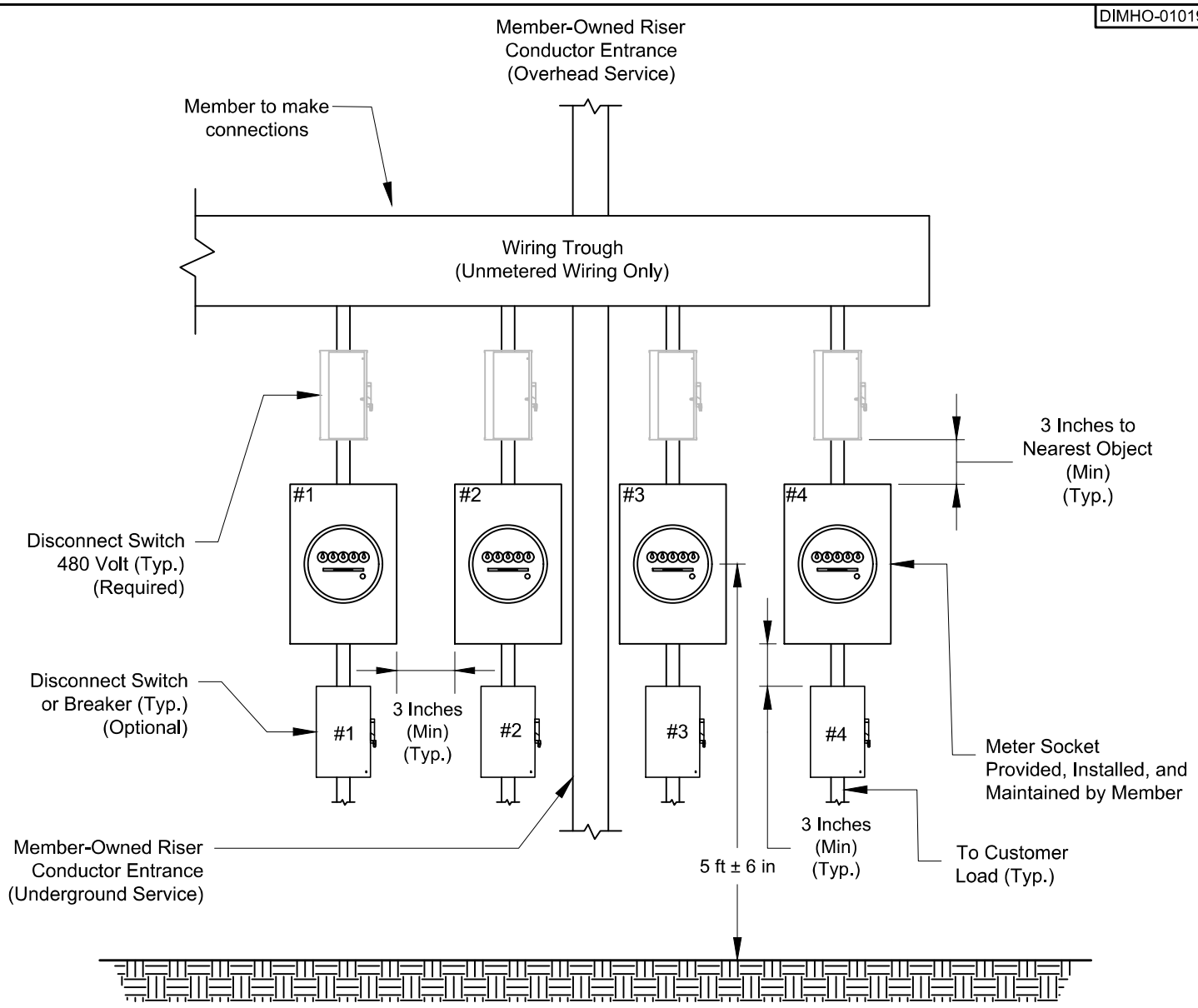
UNDERGROUND SERVICE GROUPED MOBILE HOME OR RV

FIGURE 19

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 3 REV. DATE 1/3/2019



NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. FOR 120/208V SINGLE-PHASE SERVICE FROM 208Y/120V THREE-PHASE ENTRANCE, ALTERNATE PHASES TO BALANCE LOAD. FOR EXAMPLE, CONNECT METER 1 TO A & B PHASES, METER 2 TO B & C PHASES, AND METER 3 TO A & C PHASES, ETC.
4. IF A MAIN DISCONNECT IS NOT USED, LINE CONDUCTORS MUST TERMINATE IN THE WIRING TROUGH WITH ONE CONNECTION PER PHASE AT LINE CONDUCTOR ENTRY POINT.
5. SERVICE WILL NOT BE RENDERED UNTIL EACH INDIVIDUAL METER SOCKET AND DISCONNECT SWITCH IS PROPERLY LABELED. SEE SECTION VI.E.
6. THE SERVICE WIRING TROUGH SHALL BE PROVIDED WITH A LOCKING AND SEALING DEVICE FOR USE BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 ADDED NOTE 7.

LCEC

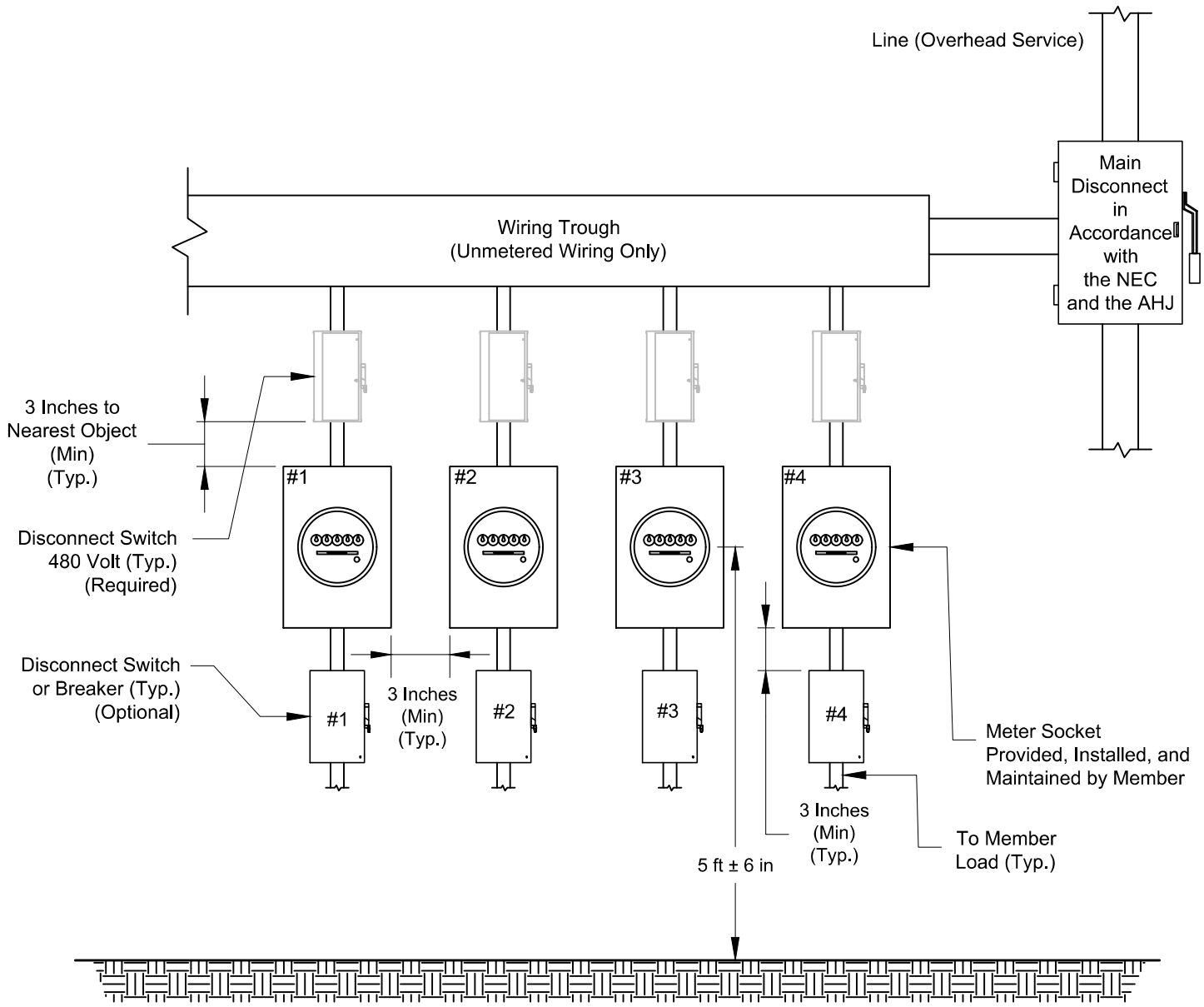
MULTIPLE METER INSTALLATIONS SIX METERS OR LESS (COMMERCIAL)

FIGURE 20

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 6 REV. DATE 1/3/2019



NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. FOR 120/208V SINGLE-PHASE SERVICE FROM 208Y/120V THREE-PHASE ENTRANCE, ALTERNATE PHASES TO BALANCE LOAD. FOR EXAMPLE, CONNECT METER 1 TO A & B PHASES, METER 2 TO B & C PHASES, AND METER 3 TO A & C PHASES, ETC.
4. IF A MAIN DISCONNECT IS NOT USED, LINE CONDUCTORS MUST TERMINATE IN THE WIRING TROUGH WITH ONE CONNECTION PER PHASE AT LINE CONDUCTOR ENTRY POINT.
5. SERVICE WILL NOT BE RENDERED UNTIL EACH INDIVIDUAL METER CAN AND DISCONNECT SWITCH IS PROPERLY LABELED. SEE SECTION VI.E.
6. THE SERVICE WIRING TROUGH SHALL BE PROVIDED WITH A LOCKING AND SEALING DEVICE FOR USE BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 ADDED NOTE 7.

LCEC

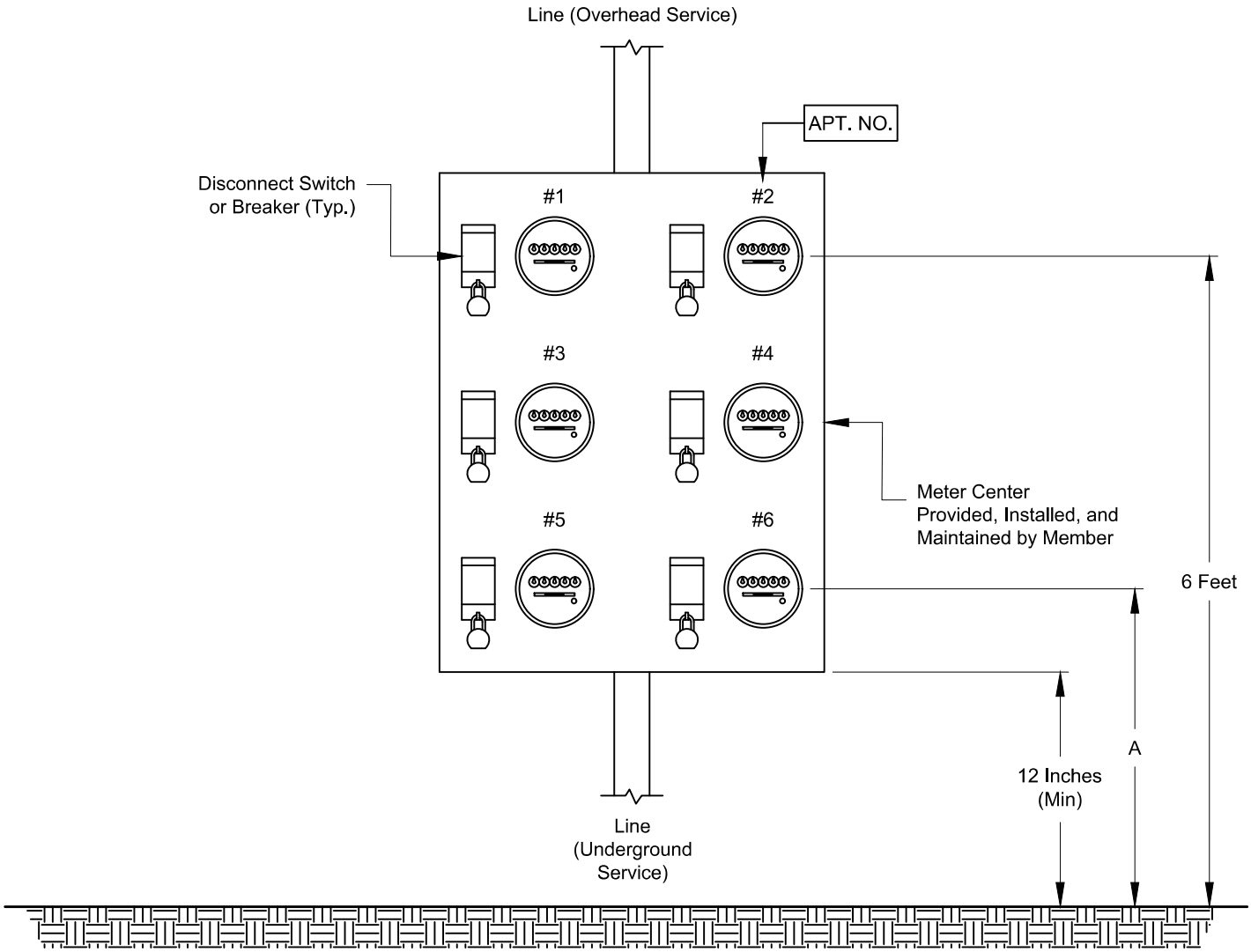
MULTIPLE METER INSTALLATIONS MORE THAN SIX METERS (COMMERCIAL)

FIGURE 21

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 6 REV. DATE 1/3/2019



Dimension A (Center of the Lowest Meter) (Inches)	Clearance from Front of Meter (Inches)
Below 22	Not Allowed
22 to 36	42
Over 36	36

NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. FOR 120/208V SINGLE-PHASE SERVICE FROM 208Y/120V THREE-PHASE ENTRANCE, ALTERNATE PHASES TO BALANCE LOAD. FOR EXAMPLE, CONNECT METER 1 TO A & B PHASES, METER 2 TO B & C PHASES, AND METER 3 TO A & C PHASES, ETC.
4. IF A MAIN DISCONNECT IS NOT USED, LINE CONDUCTORS MUST TERMINATE IN THE WIRING TROUGH WITH ONE CONNECTION PER PHASE AT LINE CONDUCTOR ENTRY POINT.
5. SERVICE WILL NOT BE RENDERED UNTIL EACH INDIVIDUAL METER CAN IS PROPERLY LABELED. SEE SECTION VI.E.
6. THE SERVICE WIRING TROUGH SHALL BE PROVIDED WITH A LOCKING AND SEALING DEVICE FOR USE BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 ADDED NOTE 7.

LCEC

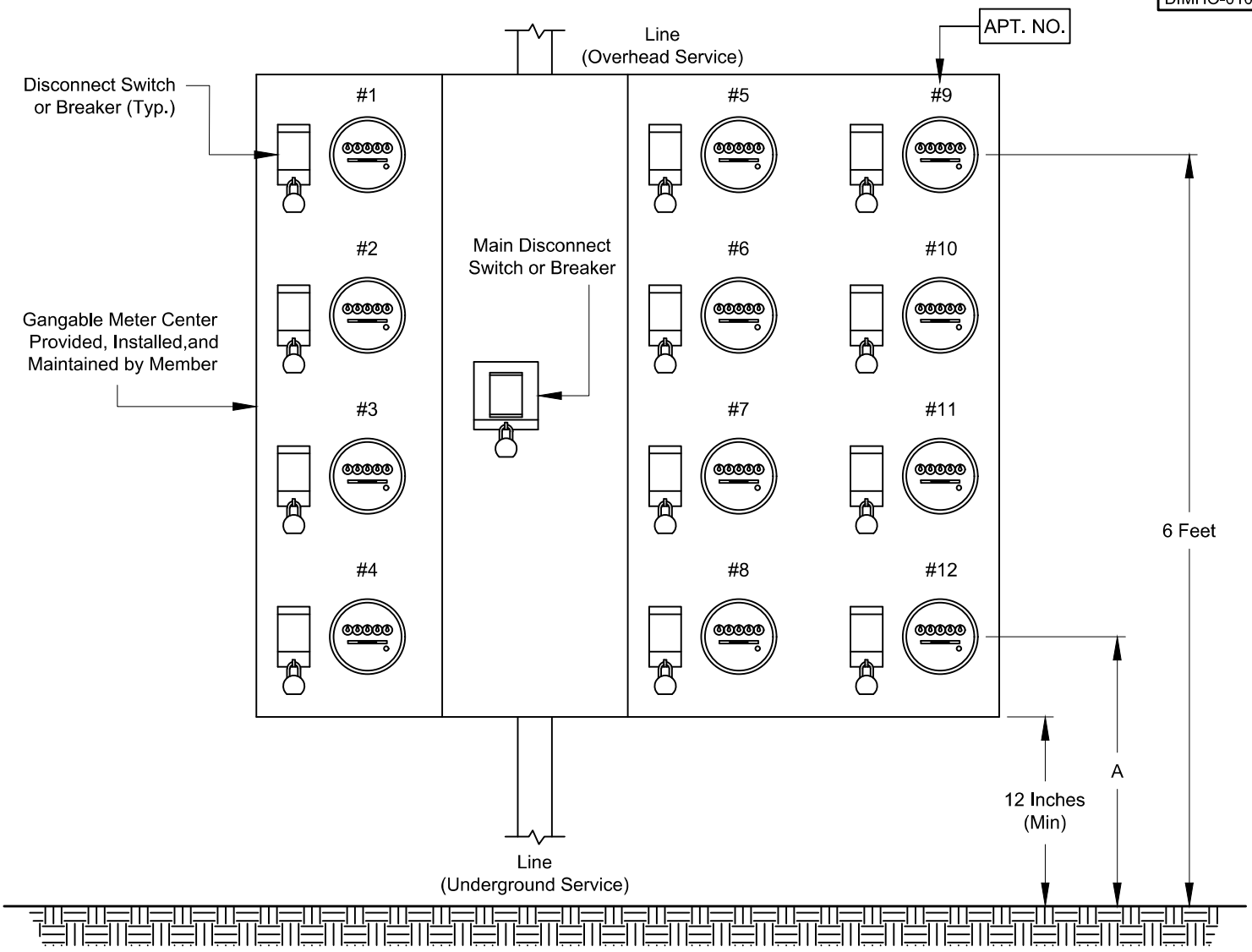
MULTIPLE METER INSTALLATIONS METER CENTER

FIGURE 22

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 6 REV. DATE 1/3/2019



Dimension A (Center of the Lowest Meter) (Inches)	Clearance from Front of Meter (Inches)
Below 22	Not Allowed
22 to 36	42
Over 36	36

NOTES:

1. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
2. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.
3. FOR 120/208V SINGLE-PHASE SERVICE FROM 208Y/120V THREE-PHASE ENTRANCE, ALTERNATE PHASES TO BALANCE LOAD. FOR EXAMPLE, CONNECT METER 1 TO A & B PHASES, METER 2 TO B & C PHASES, AND METER 3 TO A & C PHASES, ETC
4. IF A MAIN DISCONNECT IS NOT USED, LINE CONDUCTORS MUST TERMINATE IN THE WIRING TROUGH WITH ONE CONNECTION PER PHASE AT LINE CONDUCTOR ENTRY POINT.
5. SERVICE WILL NOT BE RENDERED UNTIL EACH INDIVIDUAL METER CAN IS PROPERLY LABELED. SEE SECTION VI.E.
6. THE SERVICE WIRING TROUGH SHALL BE PROVIDED WITH A LOCKING AND SEALING DEVICE FOR USE BY LCEC.
7. LCEC WILL ONLY ACCEPT U.L. APPROVED RINGLESS METER SOCKETS FOR ALL INSTALLATIONS.

△6 ADDED NOTE 7.

LCEC

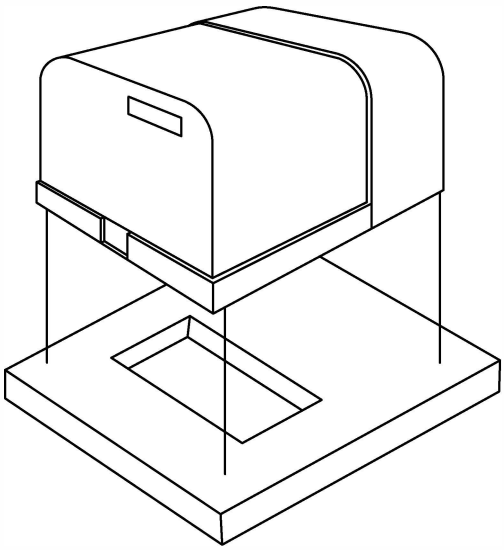
MULTIPLE METER INSTALLATIONS GANGED METER CENTER

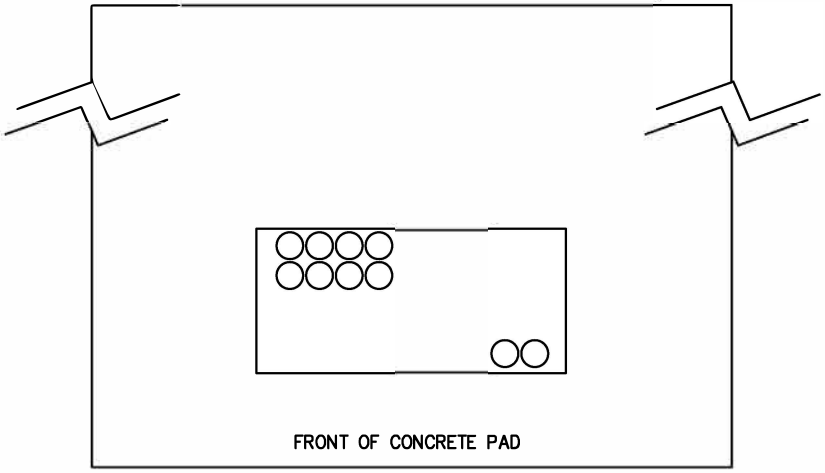
FIGURE 23

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

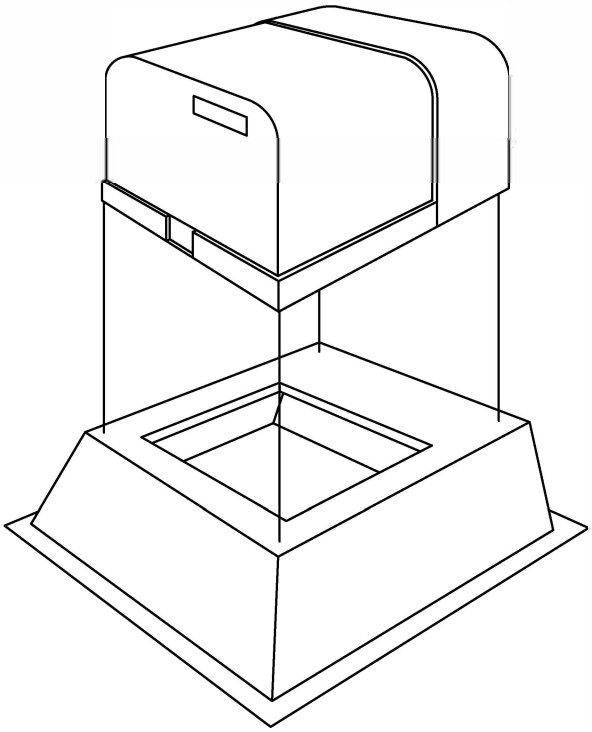
REV. NO. 6 REV. DATE 1/3/2019

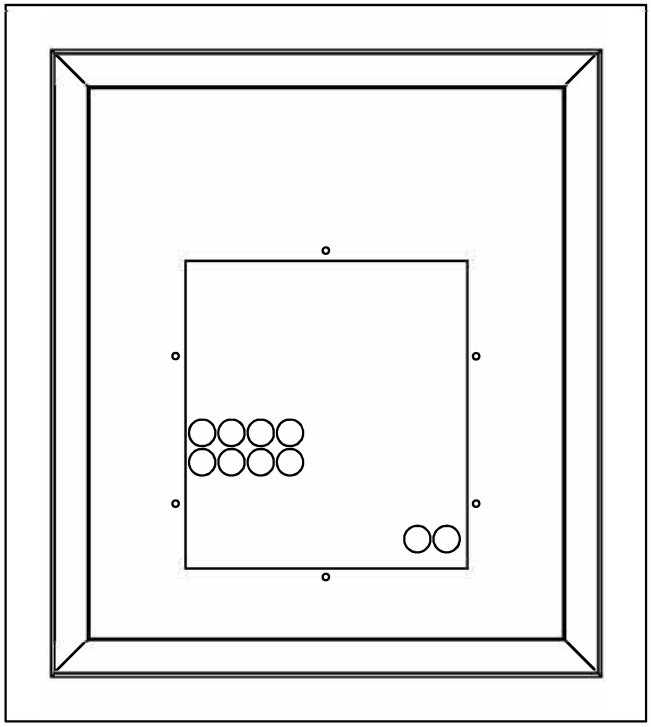




Notes:

1. CONTACT LCEC DESIGN & ENGINEERING FOR DIMENSIONED DRAWINGS.
2. MAXIMUM SECONDARY CONNECTIONS PER TRANSFORMER IS EIGHT CONDUCTORS SIZED FROM 2 AWG TO 500 KCMIL.
3. TRANSFORMER LOCATION SPECIFIED BY LCEC.
4. LCEC WILL MAKE ALL SECONDARY CONNECTIONS.





△3 REMOVED "A" FROM NOTE 1, AND STANDARDIZED TEXT.

LCEC

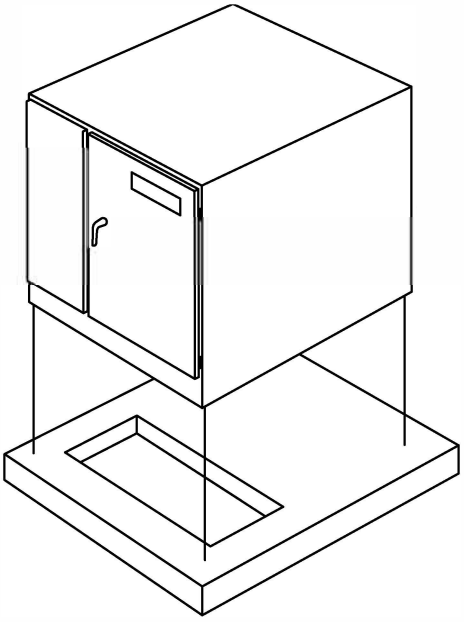
SINGLE-PHASE PAD-MOUNTED TRANSFORMER INSTALLATIONS

FIGURE 24

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 3 REV. DATE 11/01/2011



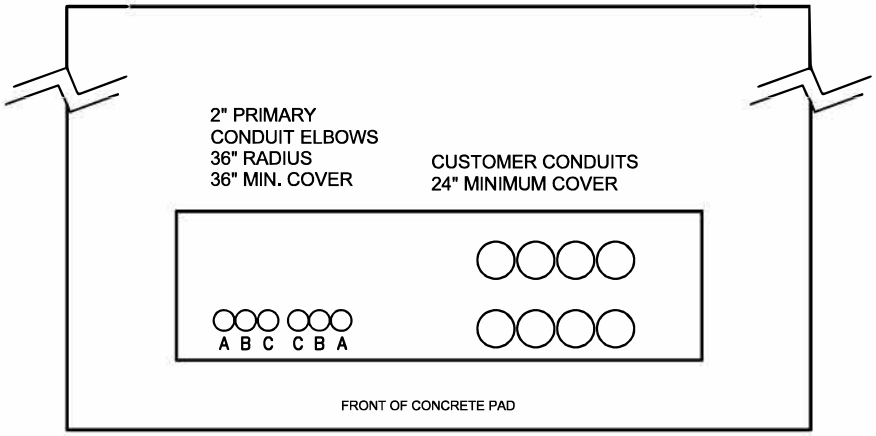


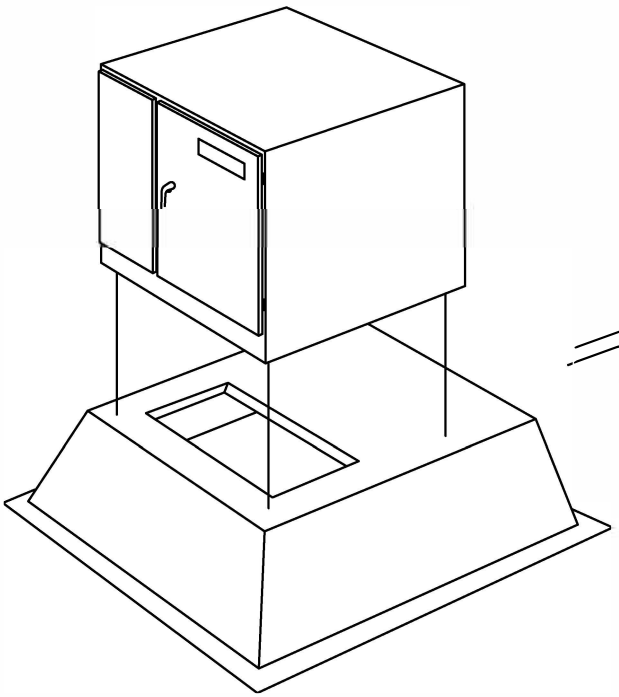
TABLE 1

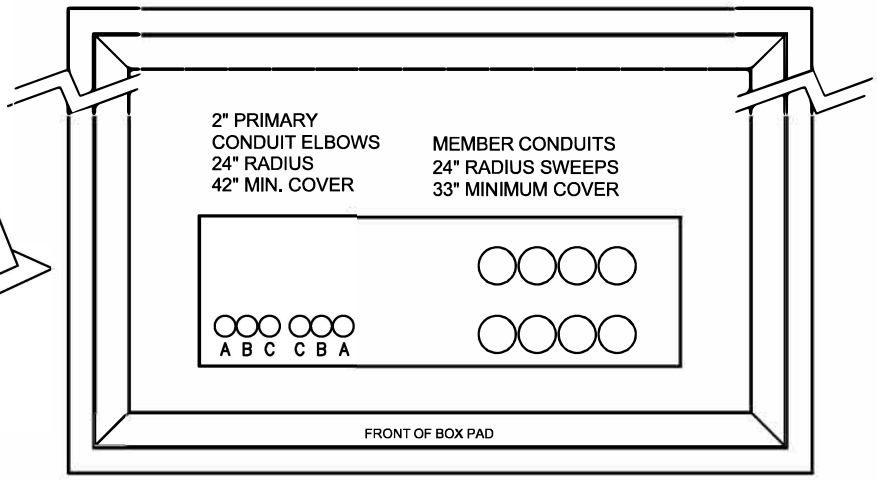
KVA	TYPICAL PAD INSTALLATION	APPROX. WEIGHT	SECONDARY HOLES PER SPADE	
			208Y/120V	480Y/277V
45	UM1-3/UM1-3B	2,740 LBS.	6	6
75	UM1-3/UM1-3B	2,760 LBS	6	6
112 1/2	UM1-3/UM1-3B	2,910 LBS.	6	6
150	UM1-3/UM1-3B	3,320 LBS.	6	6
225	UM1-3/UM1-3B	3,740 LBS.	6	6
300	UM1-3/UM1-3B	4,120 LBS.	6	6
500	UM1-3/UM1-3B	5,400 LBS	8	8
750	UM1-3XL	7,450 LBS.	8	8
1000	UM1-3XL	7,900 LBS.		8
1500	UM1-3XL	10,210 LBS.	8	8
2000	UM1-3XL	13,320 LBS.		8

UM1-3 - 81INCHES W X 61 INCHES D POURED IN PLACE CONCRETE PAD
UM1-3XL - 85 INCHES W X 79 INCHES D POURED IN PLACE CONCRETE PAD
UM1-3B - FIBERGLASS REINFORCED PLASTIC BOX PAD

NOTES:

1. CONTACT LCEC DESIGN & ENGINEERING FOR A DIMENSIONED DRAWINGS.
2. THE NUMBER OF SECONDARY CONNECTIONS PER PHASE IS GIVEN IN TABLE 1.
3. TRANSFORMER LOCATION SPECIFIED BY LCEC.
4. LCEC WILL MAKE ALL SECONDARY CONNECTIONS.





5 REVISED TABLE 1, HOLES PER SPADE

LCEC

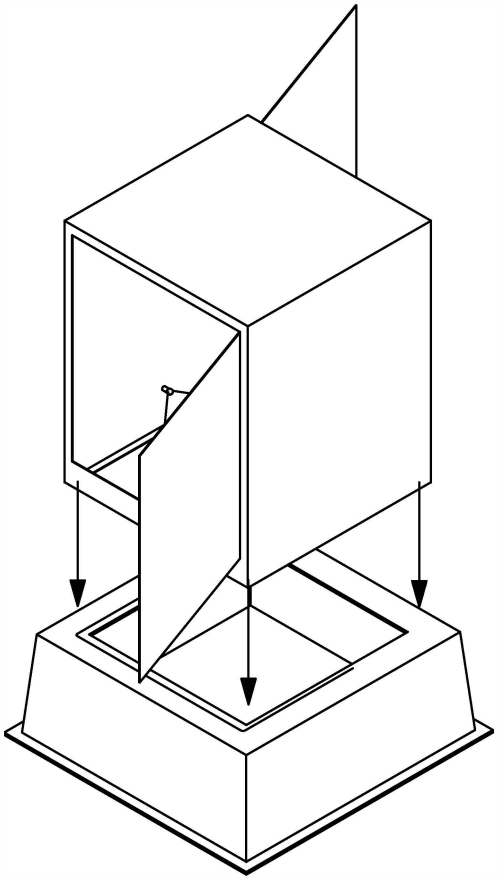
THREE-PHASE PAD-MOUNTED TRANSFORMER INSTALLATIONS

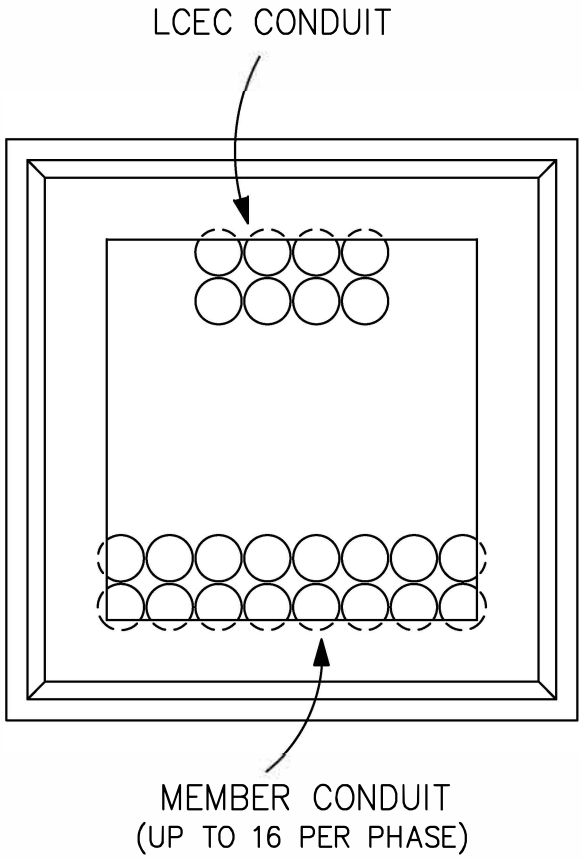
FIGURE 25

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 5 REV. DATE 04/01/2012





NOTES:

1. ENCLOSURE LOCATION SPECIFIED BY LCEC
2. MEMBER WILL MAKE SECONDARY CONNECTIONS

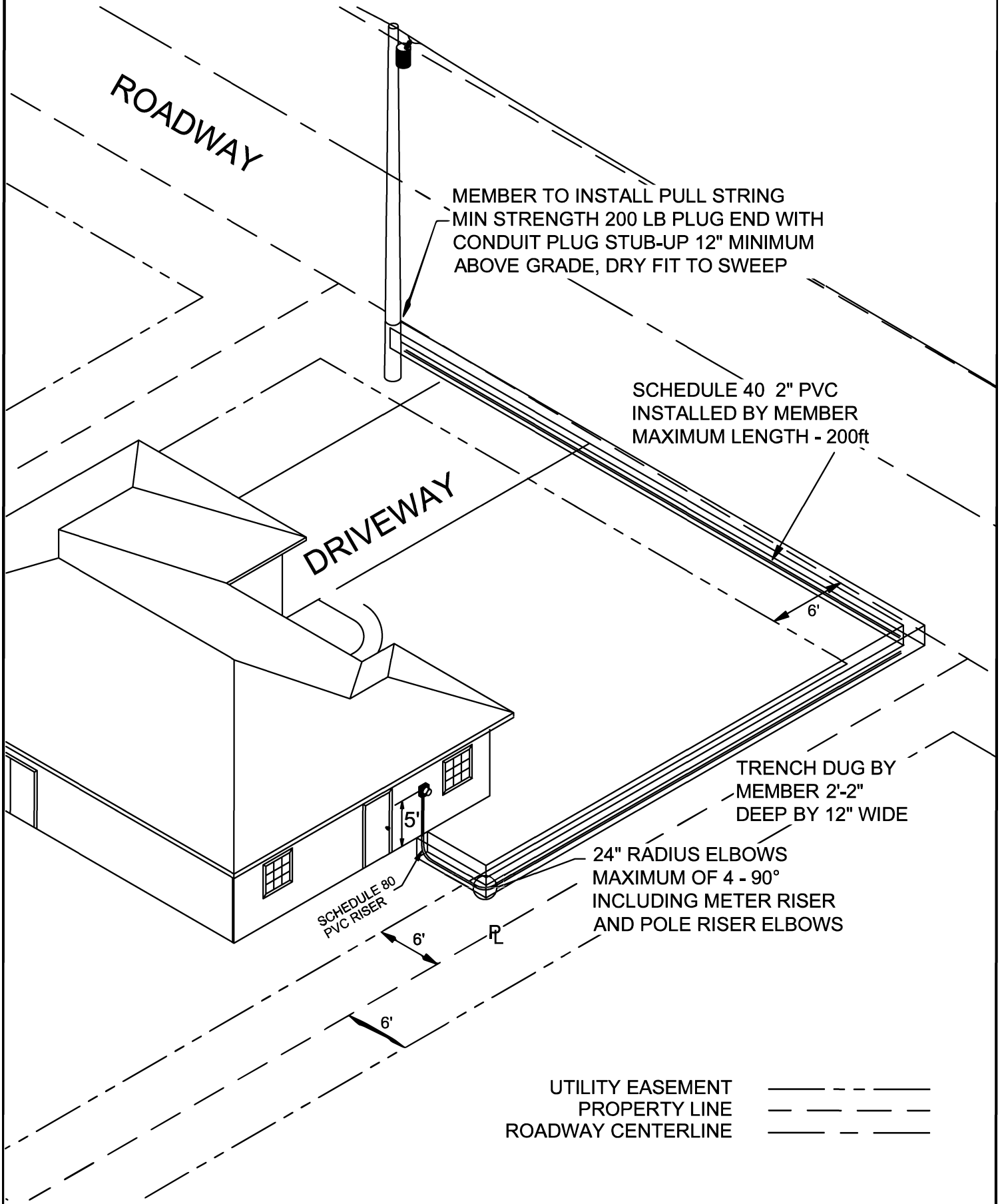
2 CHANGED "CUSTOMER" TO "MEMBER", CHANGED SECONDARY CONNECTIONS RESPONSIBILITY.

LCEC	PAD-MOUNTED SECONDARY ENCLOSURE INSTALLATIONS	FIGURE 26

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 2 REV. DATE 11/01/2011

DIMHO-01026



3 CHANGED "CUSTOMER" TO "MEMBER".

LCEC

MEMBER-INSTALLED SERVICE CONDUIT POLE-FED (TYPICAL)

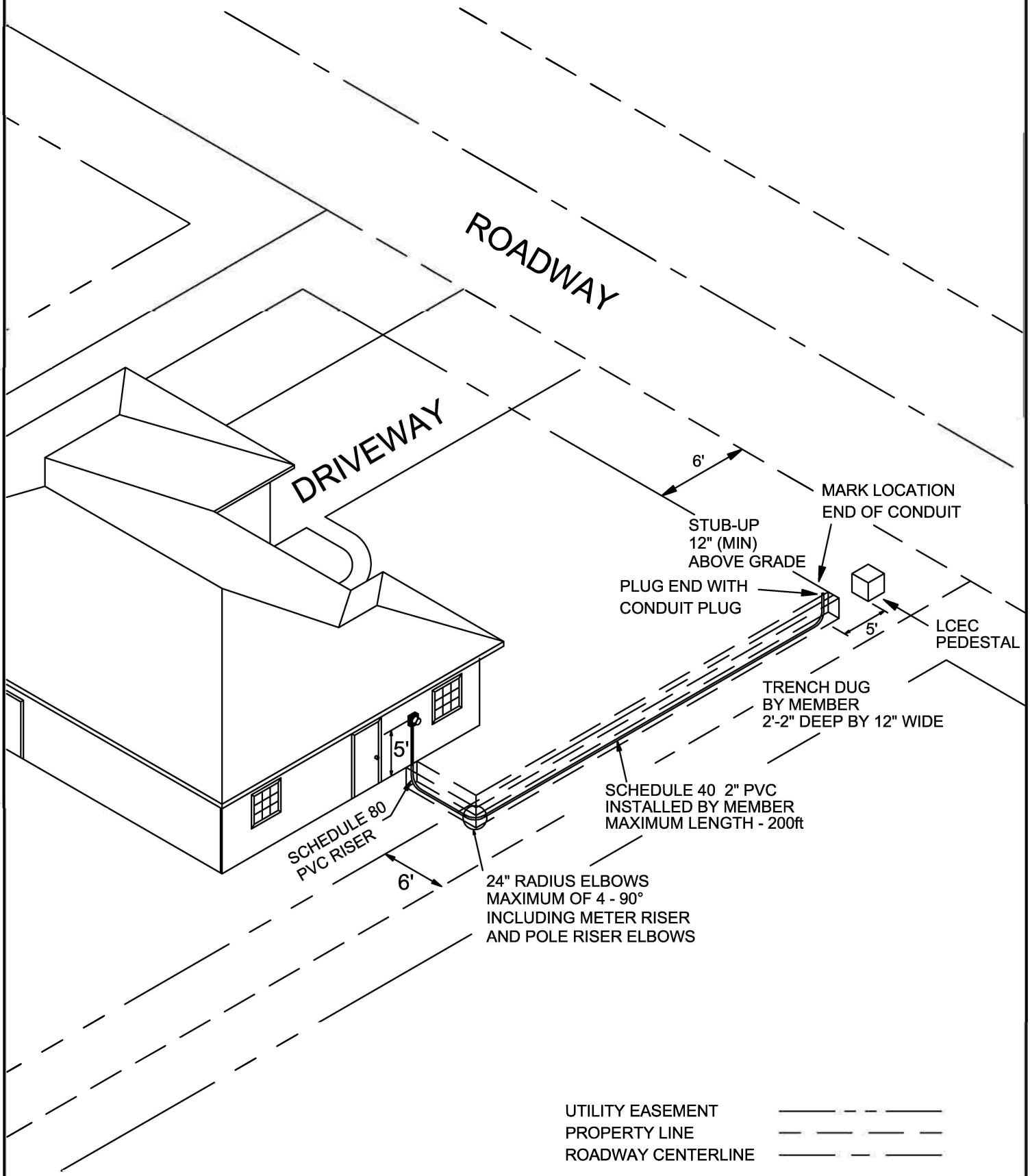
FIGURE 27

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 3 REV. DATE 11-01-2011

DIMHO-01027



2 CHANGED "CUSTOMER" TO "MEMBER".

LCEC

MEMBER-INSTALLED SERVICE CONDUIT ENCLOSURE-FED (TYPICAL)

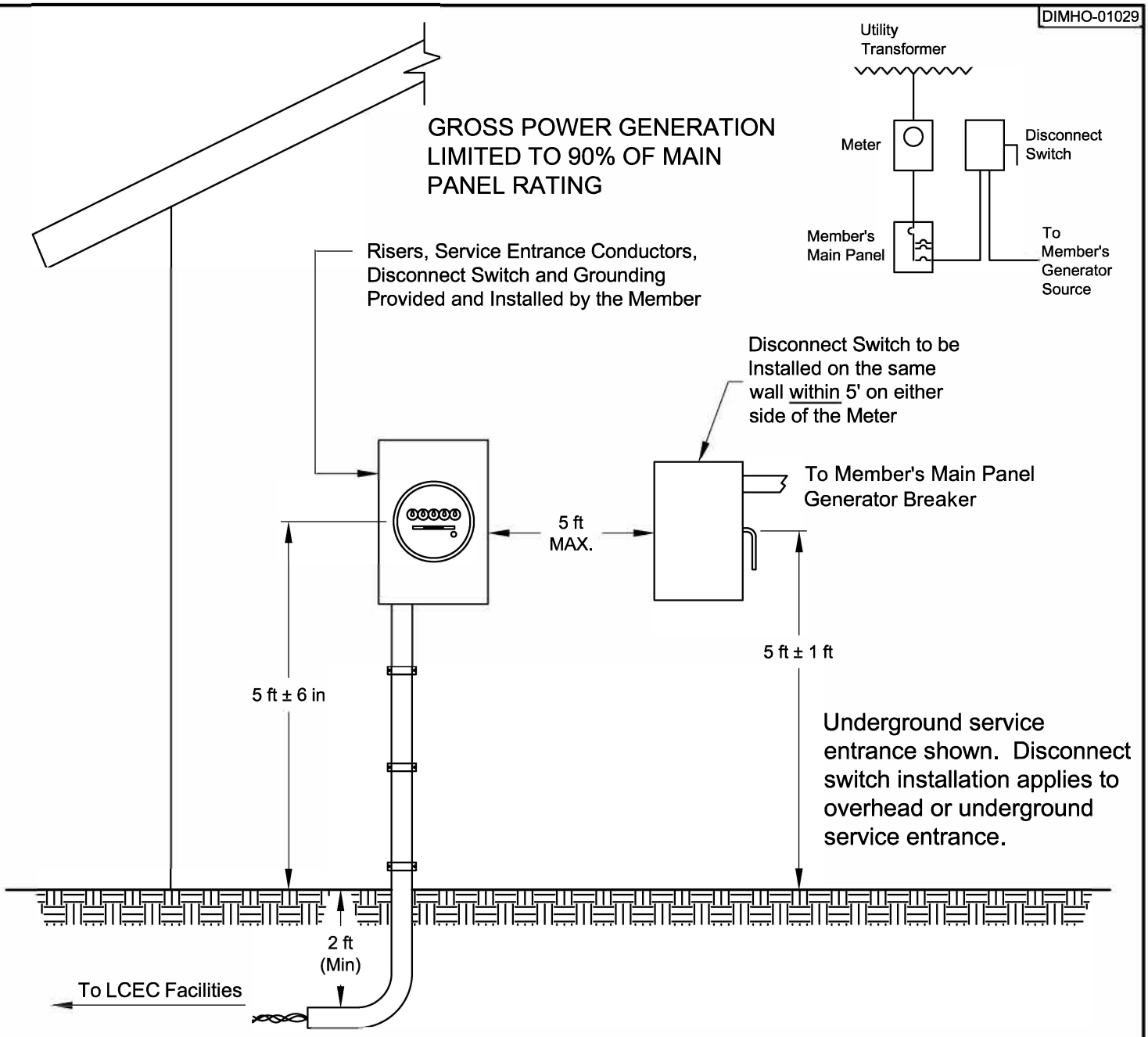
FIGURE 28

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 2 REV. DATE 11/01/2011

DIMHO-01029



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. DISCONNECT SWITCH TO BE A UL LISTED DISCONNECT SWITCH OF THE VISIBLE LOAD-BREAK TYPE RATED FOR THE MEMBER'S RENEWABLE GENERATION SOURCE AND CAPABLE OF BEING LOCKED IN THE OPEN POSITION. THE DISCONNECT SWITCH MUST BE POSITIONED ELECTRICALLY AS THE FIRST DEVICE DOWNSTREAM OF THE BREAKER FOR THE GENERATION SOURCE.
3. AN EXISTING MEMBER-OWNED DISCONNECT SWITCH FEEDING THE MEMBER'S MAIN PANEL MAY BE USED IN LIEU OF ITEM 2 ABOVE IF IT ISOLATES THE METER FROM THE CUSTOMER'S LOAD.
4. THE DISCONNECT SWITCH MUST BE GROUNDED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
5. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
6. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

△5 REVISED NOTES

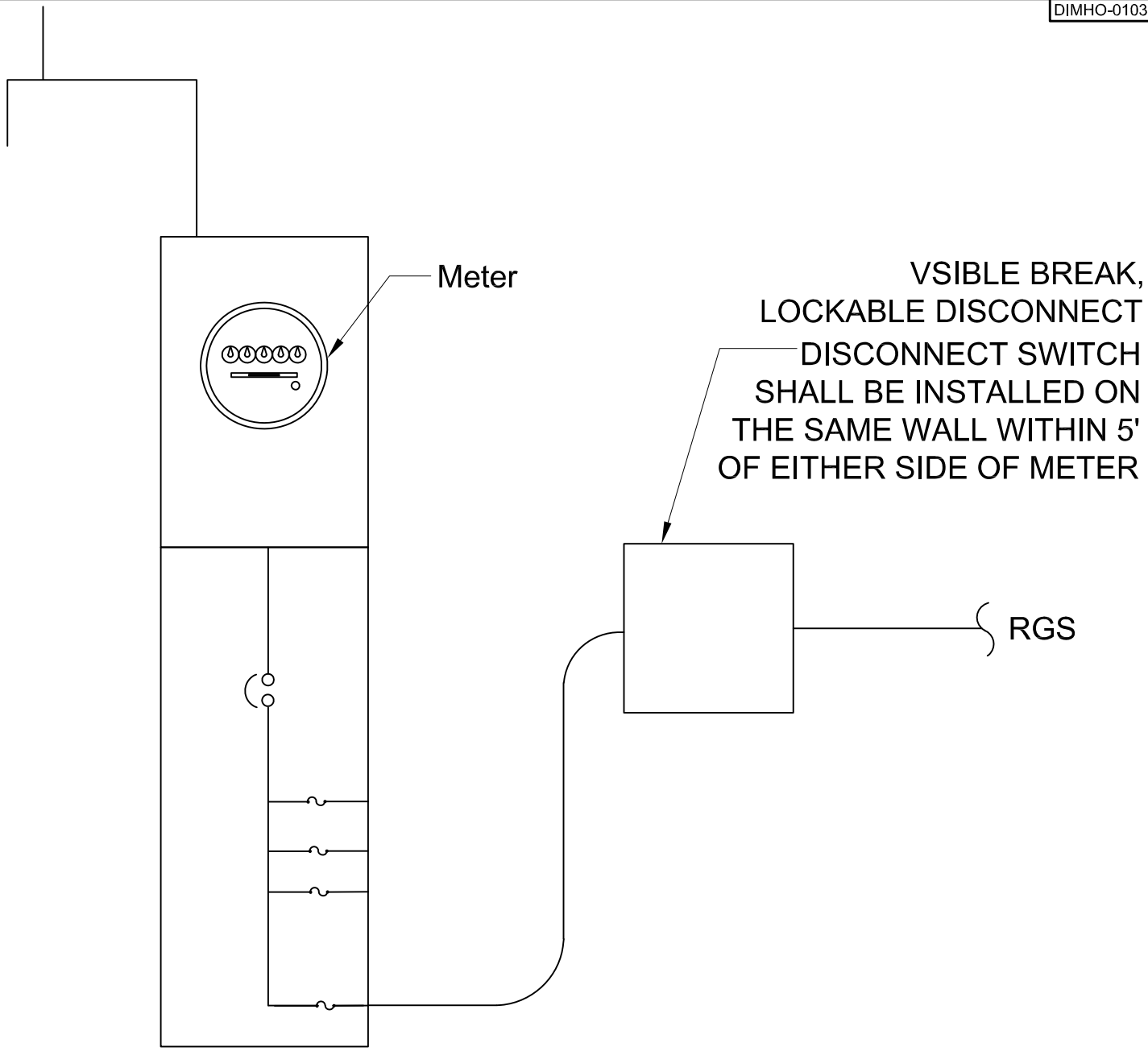
LCEC

RESIDENTIAL/COMMERCIAL SERVICES RENEWABLE GENERATION GREATER THAN 10 kW TO 100 kW

FIGURE 29

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. 5 REV. DATE 02/01/2014



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. DISCONNECT SWITCH TO BE A UL LISTED DISCONNECT SWITCH OF THE VISIBLE LOAD-BREAK TYPE RATED FOR THE MEMBER'S RENEWABLE GENERATION SOURCE AND CAPABLE OF BEING LOCKED IN THE OPEN POSITION. THE DISCONNECT SWITCH MUST BE POSITIONED ELECTRICALLY AS THE FIRST DEVICE DOWNSTREAM OF THE BREAKER FOR THE GENERATION SOURCE.
3. THE DISCONNECT SWITCH MUST BE GROUNDED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
4. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
5. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

LCEC

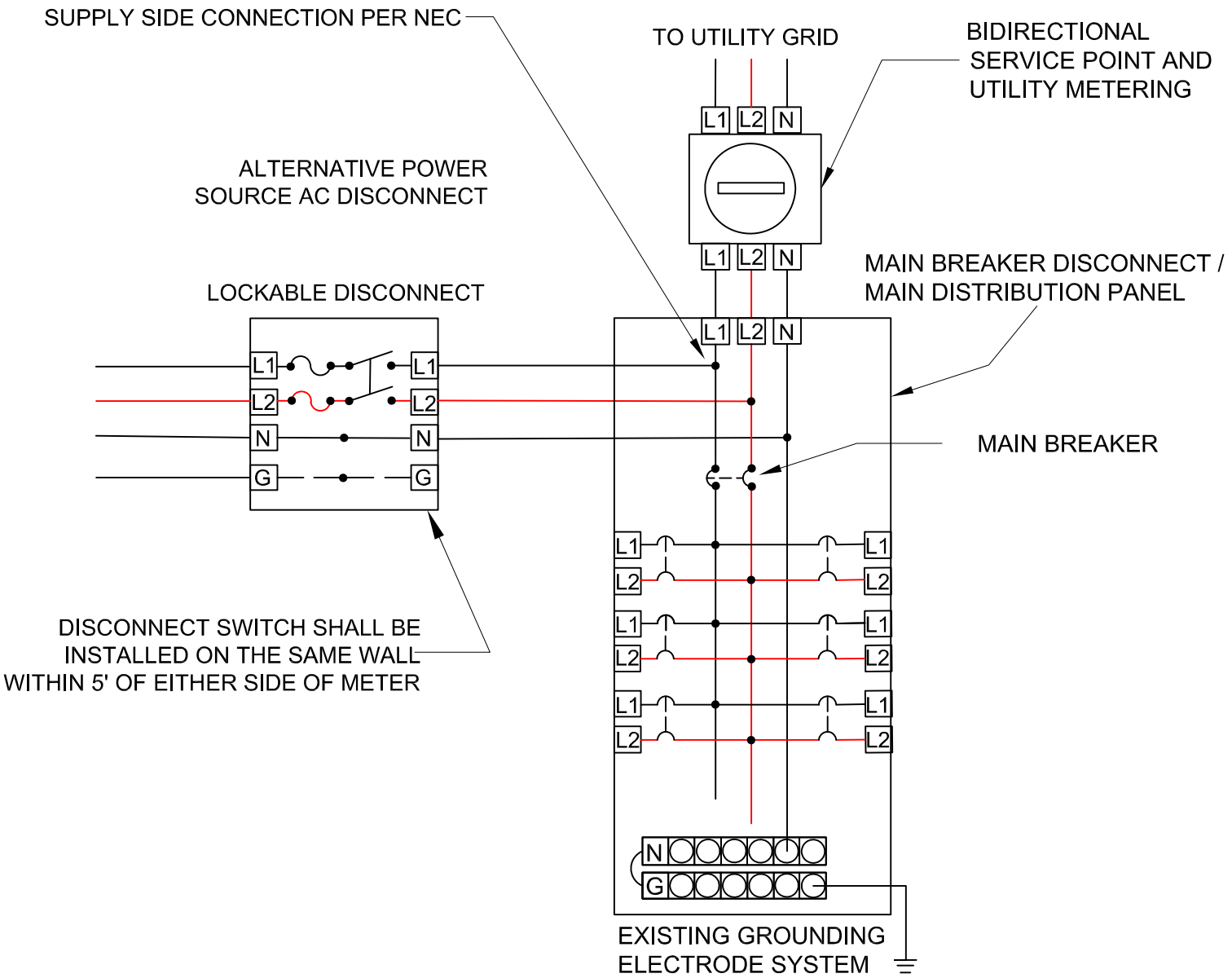
PV INTERCONNECTION
BACKFEEDING CIRCUIT BREAKER

FIGURE 29A

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. REV. DATE



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. DISCONNECT SWITCH TO BE A UL LISTED DISCONNECT SWITCH OF THE VISIBLE LOAD-BREAK TYPE RATED FOR THE MEMBER'S RENEWABLE GENERATION SOURCE AND CAPABLE OF BEING LOCKED IN THE OPEN POSITION. THE DISCONNECT SWITCH MUST BE POSITIONED ELECTRICALLY AS THE FIRST DEVICE DOWNSTREAM OF THE BREAKER FOR THE GENERATION SOURCE.
3. THE DISCONNECT SWITCH MUST BE GROUNDED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
4. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
5. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

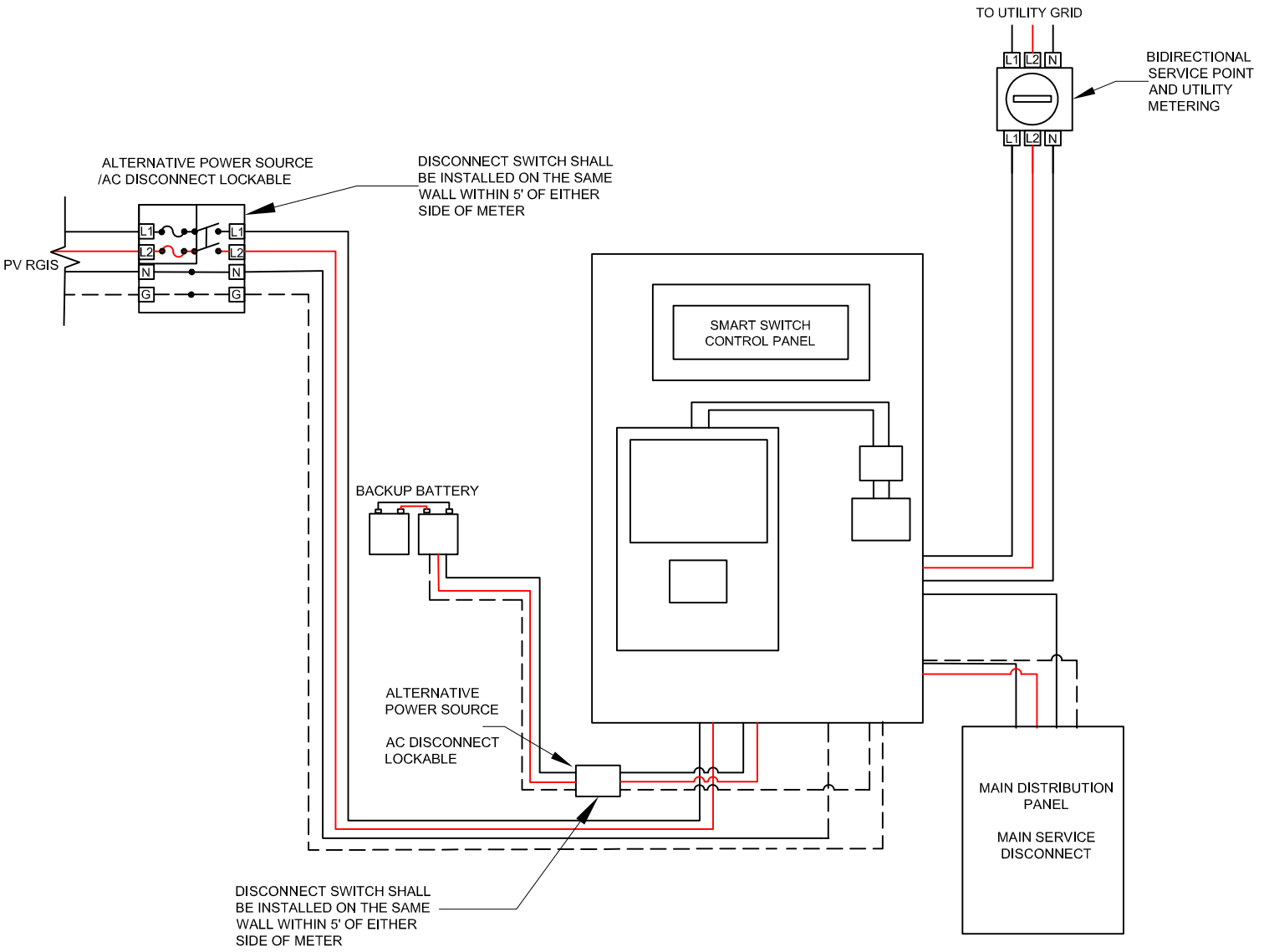
LCEC

PV INTERCONNECTION
LINE SIDE TAP
MAIN PANEL

FIGURE 29B

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE | REV. NO. | REV. DATE



NOTES:

1. FACILITIES PROVIDED BY MEMBER TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
2. DISCONNECT SWITCH TO BE A UL LISTED DISCONNECT SWITCH OF THE VISIBLE LOAD-BREAK TYPE RATED FOR THE MEMBER'S RENEWABLE GENERATION SOURCE AND CAPABLE OF BEING LOCKED IN THE OPEN POSITION. THE DISCONNECT SWITCH MUST BE POSITIONED ELECTRICALLY AS THE FIRST DEVICE DOWNSTREAM OF THE BREAKER FOR THE GENERATION SOURCE.
3. THE DISCONNECT SWITCH MUST BE GROUNDED IN ACCORDANCE WITH THE N.E.C. AND THE A.H.J.
4. ADEQUATE GROUNDING OF FACILITIES MUST BE PROVIDED IN ACCORDANCE WITH THE N.E.C. AND A.H.J.
5. LCEC REQUIRES A VISIBLE GROUND CONNECTION WITHIN THE METER SOCKET.

LCEC

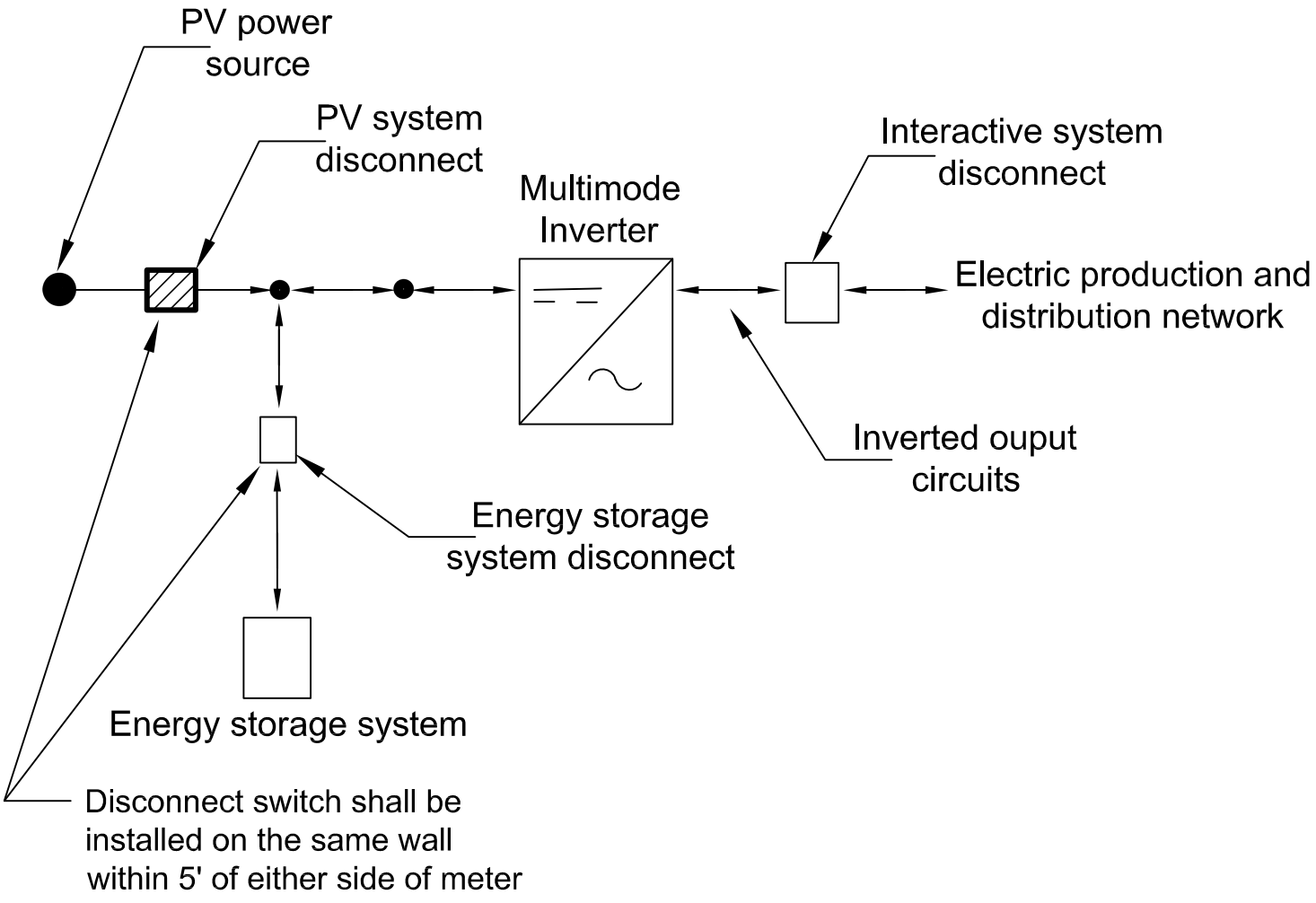
PV INTERCONNECTION
INTERACTIVE SMART
CONTROL PANEL

FIGURE 29C

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. REV. DATE



LCEC

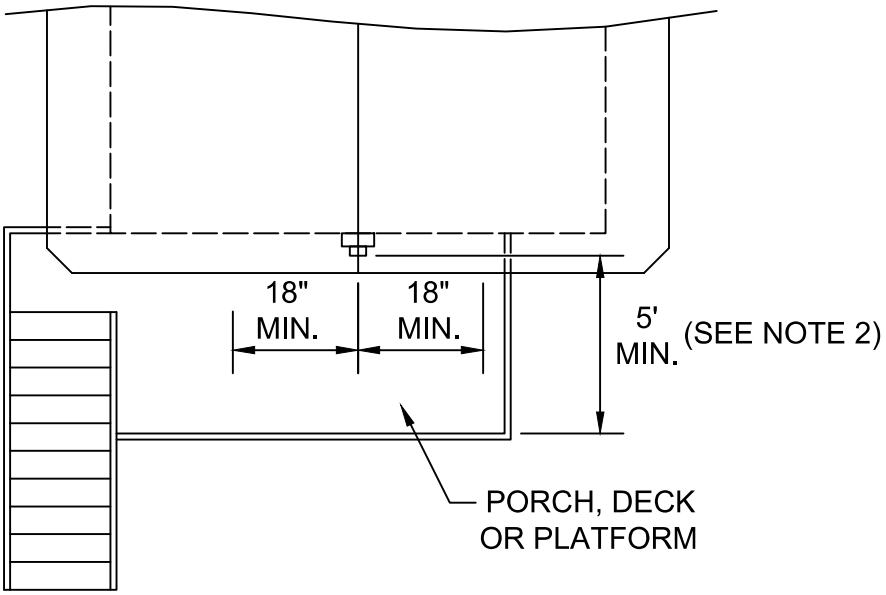
PV INTERCONNECTION
INTERACTIVE SMART
CONTROL PANEL

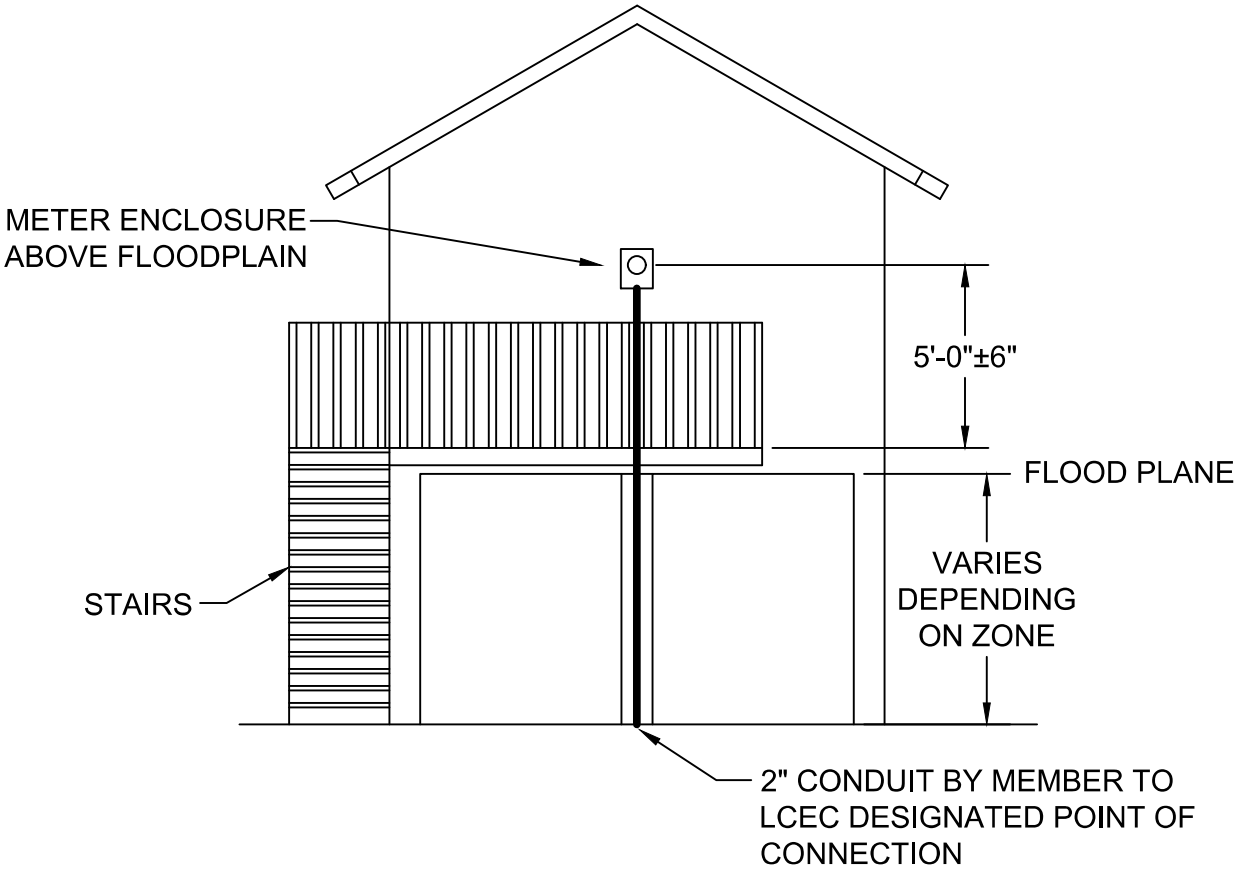
FIGURE 29D

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. REV. DATE





NOTES:

1. PERMANENT INSTALLATION OF DECK OR PLATFORM AND STAIRS SHALL BE INSTALLED AND PROVIDED BY MEMBER PRIOR TO ENERGIZING THE FACILITY.

2. DEPTH CAN BE REDUCED TO 48" WITH APPROVAL FROM LCEC. THIS EXEMPTION APPLIES TO SETBACK REQUIREMENTS, UNAVOIDABLE OBSTACLES, OR OTHER APPROVED CIRCUMSTANCES BY LCEC.

4 UPDATED DIMENSIONS

LCEC

METER INSTALLATIONS IN FLOOD ZONES

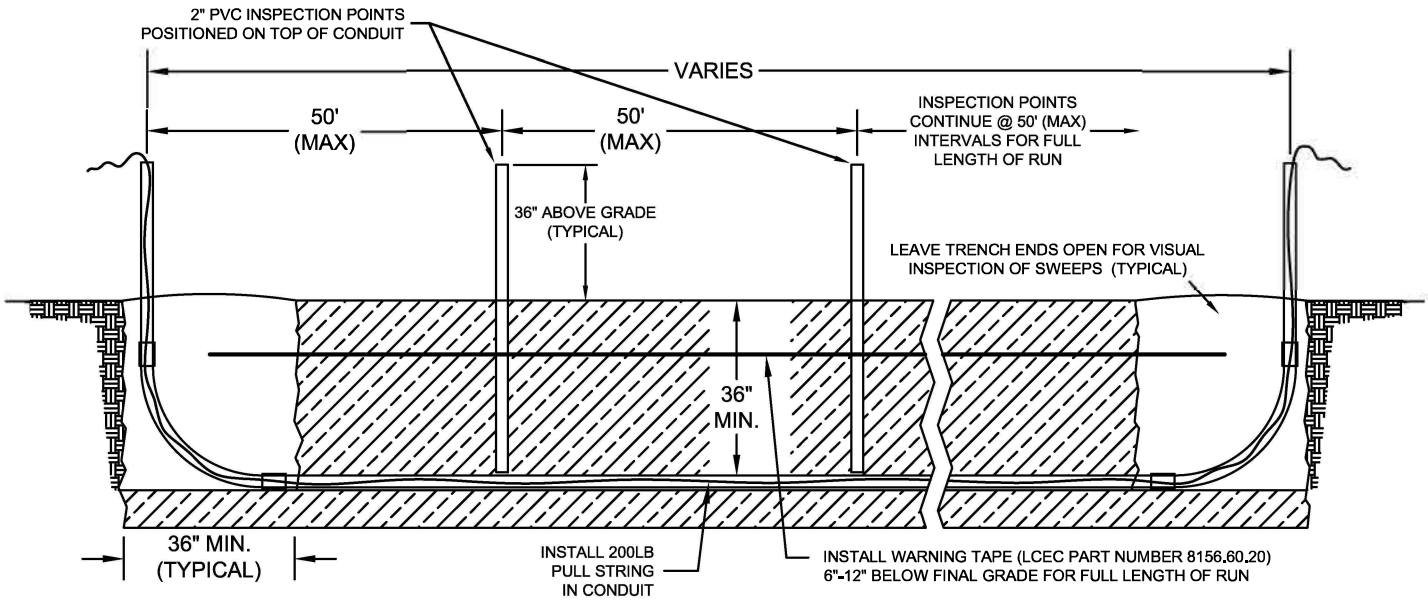
FIGURE 30

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1-(800) 282-1643 or (239) 995-2121

NOT TO SCALE

REV. NO. 4 REV. DATE 01/01/2021

PRIMARY CONDUIT INSPECTION SHEET



LEGEND

- ◯ – CABLE AND/OR CONDUIT
- ▦ – UNDISTURBED EARTH
- ▨ – EXISTING EARTH BACKFILL

NOTE:
EXISTING EARTH BACKFILL SHALL HAVE NO MATERIAL WITH SHARP EDGES AND SHALL BE SMALLER THAN 8 INCHES.

WORK REQUEST NUMBER: _____

LOCATION: _____

AUTHORIZED AGENT SIGNATURE: _____

PRINTED: _____

DATE: _____

LCEC

MEMBER-INSTALLED PRIMARY CONDUIT INSPECTION SHEET

FIGURE 31

4980 Bayline Dr., N. Ft. Myers, FL. 33917 Phone: 1–(800) 282–1643 or (239) 995–2121

NOT TO SCALE

REV. NO. 0 REV. DATE 10/7/2014