Town of Danvers Department of Public Works

Danvers Electric

Electric Service Policy and Requirements Handbook

06-30-2012

2 BURROUGHS STREET
DANVERS, MASSACHUSETTS 01923
Telephone: (978)–774–0005

FOREWORD

Danvers Electric is one of the 41 Massachusetts Municipal Light Plants who is a Public Power Utility serving the electrical needs of the Town of Danvers, Massachusetts. It is governed by the Town Manager with an appointed Municipal Light Board made up of 3 members.

Town Manager

Wayne Marquis

Municipal Light Board

Joe Younger – Larry Crowley – Walter Milano

Electric Utility Director

Coleen O'Brien-Pitts

Public Works Director

Dave Lane

Business Manager

Leonard Marshall

The Municipal Light Board generally meets on the third Tuesday of the month at 8:30 am. Meeting schedule with agendas are posted at Town Hall. This information is also posted on line at http://www.danvers.govoffice.com.

INTRODUCTION

This booklet is published for the benefit of our Customers, architects, engineers, municipal inspectors, employees and contractors to provide a convenient reference as an informational guide. This handbook sets forth the types of services that Danvers Electric currently offers – residential, commercial, temporary services, service upgrades and relocation of an existing service. ***Design or construction should not be undertaken until complete information is obtained from Danvers Electric personnel***. Danvers Electric should be contacted a minimum of 15 days before starting work, noting certain equipment could take up to a 6 month lead time.

Danvers Electric supplies electricity subject to our Terms and Conditions, policies and procedures, rate schedules, and industry standards; and applicable laws and regulations; all of which form Danvers Electric's requirements for service. This handbook reflects Danvers Electric's standard practices and procedures and does not necessarily address every requirement, limitation or particular situation.

Danvers Electric reserves the right to revise, amend or change the information set forth in this handbook without prior notice. Readers should inquire as to whether any revisions, amendments or changes to contents have been made since publication. Please contact Danvers Electric at (978) 774-0005 if you have any questions about the contents of this handbook, your rights or responsibilities, or terms of service. We endeavor to supply electricity adequately and reliably. We do not guarantee a continuous supply and do not assume liability for direct or consequential loss or damage to persons or property due to the supply delivered, or as a result of any interruption or variation in the supply. Momentary interruptions can occur due to the normal operation of our system's protective devises.

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

DANVERS ELECTRIC REQUIREMENTS

Danvers Electric's requirements for electric service are designed to ensure reliable and appropriate service to our Customers. Danvers Electric has published this Electric Service Handbook in an effort to provide guidance on the respective responsibilities regarding electric service to residential, commercial and industrial locations. This handbook is intended to improve communications and coordination between our Customers, electricians, inspectors, contractors, architects, engineers, Town Boards, and Danvers Electric. This manual covers the most common situations and sets guidelines and policies in an effort to apply its service requirements uniformly and in a non-discriminatory manner. Danvers Electric reserves the right to waive or modify any requirement on a case by case basis.

The Customer or its representative must contact both the Town Wiring Inspector and Danvers Electric and apply for all the necessary Utility Work Authorization numbers and permits. Please note that electric distribution equipment such as padmount transformers have long lead times, often 6 months or more. For this reason it is imperative that Danvers Electric be contacted early in the planning process.

Useful Contact information:

Contact	Hours of Operation
Danvers Electric Engineering Services 1 Burroughs St. 978-774-0005	Mon., Tues., Wed.: 7 a.m. to 4 p.m. Thursday: 7 a.m. to 7:30 p.m. Friday: 7 a.m. to 1:30 p.m.
Department of Public Works - Business Division 2 Burroughs St. 978-774-0005	Mon., Tues., Wed.: 8 a.m. to 5 p.m. Thursday: 8 a.m. to 7:30 p.m. Friday: 8 a.m. to 1:30 p.m.
Town Hall 1 Sylvan St. 978-777-0001	Mon., Tues., Wed.: 8 a.m. to 5 p.m. Thursday: 8 a.m. to 7:30 p.m. Friday: 8 a.m. to 1:30 p.m.

www.**danvers**.govoffice.com/

TABLE OF CONTENTS

1.0 GENERAL INFORMATION

1.1. PURPOSE

The “Electric Service Policy and Requirements Handbook," is issued to provide information to all Danvers Electric Customers, electrical contractors, architects and engineers regarding electric service, installations, billing, metering, system efficiency, safety and reliability, and other information pertaining to service from Danvers Electric. Certain sections have been prepared as a guide and are supplementary to the applicable National, State and Local Electrical Codes, Safety Code, OSHA requirements, etc. The issuance of this booklet by Danvers Electric shall not be construed as relieving the Customer and/or contractor from the responsibility of installing wiring in accordance with the aforementioned codes, nor shall Danvers Electric be deemed thereby to have accepted any responsibility for the condition of the Customer's wiring and equipment.

1.2. APPLICABILITY AND REVISIONS

This issue of the Electric Service Handbook reflects Danvers Electric’s current requirements and practices. Exceptions may apply for the completion of work in progress or already under contract. Revisions of this information will be made when necessary and Danvers Electric reserves the right to make such revisions. Danvers Electric cannot guarantee to give notice of revisions to persons who may have received this book. The most current edition of the handbook can be found on the Town website. The most current electric rates and tariffs filed with the DPU can be found in Appendix C.

ENFORCEMENT OF RULES

Danvers Electric requires that all wiring intended for connection to its electric system shall be installed in accordance with the rules of the applicable National, State and Local Electrical Codes as well as the Rules and Regulation set forth in this handbook. All connections to Danvers Electric's system shall be designed, installed and operated in a manner that will not adversely impact other Customer’s electric service or the ability for Danvers Electric to maintain proper system conditions.

Danvers Electric reserves the right to refuse to connect and/or the right to disconnect a service where the Customer's installation does not comply with the provisions and requirements outlined in this handbook.

1.3. ADVISORY SERVICE

Danvers Electric offers an engineering advisory service to all Customers, architects, contractors and engineers, to assist them in obtaining installations, which conform to the requirements of Danvers Electric. All persons are encouraged to avail themselves of the advisory services of the Division with respect to applications of power, electric heating, lighting, water heating, etc. Such advice may avoid delays and result in greater satisfaction and more efficient use of electrical service.

Although Danvers Electric endeavors to keep informed of conditions under which Customers use electricity, it is expected Customers will check their use against available rates, or request Danvers Electric to do so, as Danvers Electric does not guarantee any particular rate to be the most favorable.

However, neither by inspection, nor by the rendering for an advisory service, nor in any other way, does Danvers Electric give any warranty, expressed or implied, as to the adequacy, safety, or other characteristics of any equipment, wires, appliances, or devices owned, used or maintained by Customers. It is the Customer's responsibility to ensure that its equipment complies with all applicable codes. Danvers Electric reserves the right to suspend service if it has any reason to believe there is a safety risk. Danvers Electric does no assume responsibility for detecting any unsafe conditions with the Customer's equipment.

1.4. DIGGING / EXCAVATIONS / DIGSAFE

Danvers Electric is a participant in the "DIG SAFE" Program. Prior to any excavation work, the "DIG SAFE" call-center must be contacted at their toll-free number in Massachusetts, 1-888-344-7233.

All contractors, municipal Divisions and Customers who may have the necessity to excavate in roads or highways and anywhere there may be underground electric cables in the area should provide a minimum of three working days' notice to Danvers Electric of their intent to excavate and **must contact DIG SAFE.**

Upon request, drawings will be made available that show the approximate location of underground ducts and cables, if present.

1.5. CONSTRUCTION IN THE PROXIMITY OF OVERHEAD CONDUCTORS

Equipment, such as ladders, scaffolding, etc., regardless of what they're made of, can become electrified if brought in contact with wires. Use extra caution when installing siding, painting, cleaning gutters or other reasons to work near our facilities. Any person who is unqualified to work on high voltage power lines (1kV – 50kV; OSHA General) must give advance notice and make satisfactory arrangements with Danvers Electric before performing *any* type of work within ten (10) feet of overhead high voltage lines.

In every case in which work needs to be performed near electrical lines, Danvers Electric must be contacted 48 hours prior to the beginning of the work. Contacting Danvers Electric does not guarantee a line will be de-energized unless specified by Danvers Electric – treat all overhead lines as if they are energized. At the request of the Customer, Danvers Electric will furnish overhead rubber insulator sleeving for work done near overhead lines – a one week notice is required. The use of overhead rubber insulator sleeving may not provide adequate protection in all circumstances.

General contractors, electrical contractors, electricians, their employees, and other persons performing construction and/or maintenance work in proximity to Danvers Electric's overhead lines, must take the precautions and observe the prohibitions prescribed by

federal and state law when working or using any tools, machinery, or construction equipment near these lines.

1.6. STREET AND PRIVATE AREA LIGHTING

REPORTING NON-WORKING STREET LIGHTS

To report non-working or otherwise non-functioning street lighting, fill out the form at http://www.danvers.govoffice.com under *Departments – Danvers Electric – Report Non-Working Street Light* or call 978-774-0005.

REQUESTING ADDITIONAL STREET LIGHTING

Residents may request streetlights be installed on public ways. The streetlight policy consists of one fixture mounted approximately every other pole. An exception may be considered at intersections and other areas with potential safety concerns.

To start the process, simply complete the streetlight request/petition form and return it to Danvers Town Hall, at 1 Sylvan St. Once the required petition process has been completed and reviewed by DPW staff, the Town of Danvers will determine the necessity of any additional lighting.

The Town of Danvers retains exclusive authority to determine final placement of all streetlights. See Appendix I for the Street Lighting Request form.

REQUESTING PRIVATE AREA LIGHTING

Residents may request new or additional private area (dusk to dawn) lighting. See Appendix C for the private area lighting rates and conditions.

1.7. VEGETATION MANAGEMENT

PRIVATE PROPERTY

a. Danvers Electric will provide tree trimming services for all Danvers Electric equipment on all accepted public right of ways.

b. Danvers Electric will provide tree trimming services two pole spans in on private property. Danvers Electric will notify a Customer if it is determined that vegetation trimming is required on private property - the Customer is required to coordinate solely with Danvers Electric for any additional vegetation trimming (beyond two pole spans) on all private property at the Customer's expense.

WORKING CLEARANCES AROUND PADMOUNTED EQUIPMENT

Clearances around padmounted equipment shall be maintained in accordance with Appendix H - *Figure* 1 by the Customer. These clearances are required in order to

operate and maintain the equipment. Obstructions can cause delays when restoring electric service.

METER CLEARANCES

At and directly in front of each meter location, a clear, safe work space shall be maintained by the Customer. Such work space shall be at least four (4) feet wide, shall extend out from the meter at least three (3) feet, and up to a height of at least six (6) feet. Appendix H - See Figure 8.

1.8. USE OF ELECTRICITY

Danvers Electric shall not be liable for damage to the person or property of the Customer or any other persons resulting from the use of electricity or the presence of Danvers Electric equipment on the Customer's premises. The provision of electricity is for the Customer's own use and that electricity shall not be resold.

1.9. SAFETY

Danvers Electric is dedicated to making safety its top priority. While the items listed below require particular attention, Customer safety, property and the safety of employees, will always be our first concern.

a. Any contact with our wires may cause serious injury or death. Treat all downed, hanging or burning wires as though they are "LIVE" – energized – and stay away from them. Do not regard the covering, which may be observed on our wires, as insulation.
b. Report any downed, hanging or burning wires to Danvers Electric at 978-774-0005 or the police (978-774-1212) or Fire Department (978-774-2424).
c. Massachusetts state law requires contacting "DIG SAFE" three (3) full working days prior to doing any excavation, digging holes, or driving posts regardless of whether it is within the street or on private property. Obtain information by calling 1-888-344-7233.
d. Swimming pools and spas must not be installed beneath our overhead facilities or above our underground facilities in accordance with code.
e. Proper installation of generators is essential to avoid electrical source feeding back into our lines and endangering unsuspecting utility workers.

UNSAFE EQUIPMENT

It is the Customer's responsibility to ensure that all service equipment on the Customer's premises complies with all applicable NEC, NESC, UL, state, and local safety codes. Danvers Electric reserves the right to suspend service if it has any reason to believe the Customer's equipment poses a safety risk.

Danvers Electric does not assume responsibility for detecting any unsafe conditions with the Customer's service equipment. However, if upon inspection Danvers Electric determines that any part of a Customer's service is in violation of applicable electric

codes or otherwise poses an electrical safety risk, Danvers Electric has the right to declare a service 'unsafe'.

Upon determination that a Customer's service is 'unsafe', Danvers Electric will post notice at the service address or otherwise notify the Customer. Whenever Danvers Electric or Code Administration determines that any electrical system, or portion thereof, has become hazardous to life, health or property, Danvers Electric will issue in writing that such electrical systems either be removed or restored to a safe condition. A time limit for compliance with such order shall be specified in the written notice. When such electrical system is to be disconnected, written notice as prescribed in this section shall be given. In cases of immediate danger to life or property, such disconnection shall be made immediately without such notice. See Appendix J for the Unsafe Electrical Equipment Notification form.

Danvers Electric may refuse or discontinue service to a Customer if:

a. Any part of the Customer's wiring or other equipment or the use thereof is determined by Code Administration or Danvers Electric Personnel to be unsafe or
b. In violation of applicable laws, rules, or regulations, or
c. If any condition existing upon the Customer's Premises is determined to endanger the wellbeing of the Customer or any electrical worker.

Danvers Electric will not connect or restore service until the Customer has contracted a licensed electrician to remedy the unsafe equipment issue and gets wiring approval from Code Administration. No person shall use or maintain a defective electrical system after receiving a disconnection notice.

Danvers Electric does not assume any responsibility of repairing the Customer's wiring or other equipment and assumes no liability.

1.10. EFFICIENCY PROGRAMS

Danvers Electric offers energy efficiency and conservation programs which provide incentives and rebates for residential and commercial Customers. See Appendix G for a description of all available programs. Danvers Electric retains the right to make final determination of Customer eligibility. Qualifying measures are subject to rebate availability. Danvers Electric may suspend or discontinue any programs in its discretion at any time.

1.11. ISO-NE DEMAND RESPONSE PARTICIPATION

The ISO-NE Demand Response program pays participants the greater of the wholesale electricity price for the estimated kWh usage they reduce during Price Event Days (when wholesale pricing exceeds $0.10/kWh). Participants must have the ability to reduce their demand by at least 100 kW. Danvers Electric does not participate in the ISO-NE Demand Response program. However, Customers within Danvers' service territory may participate in the ISO-NE DR through a 3rd party vendor wherein Danvers has no participation in or responsibility for the process.

1.12. DANVERS ELECTRIC SYSTEM VOLTAGE CONVERSION AND UPGRADES

Danvers Electric reserves the right to convert from one distribution voltage to a higher distribution voltage during system upgrades. Primary metered Customers (Customers who own private pole lines, underground cable, transformers, and any other equipment) in areas undergoing voltage upgrade are required to upgrade their facilities at their expense to support the new system voltage.

1.13. REQUIREMENTS AND COMPLIANCE WITH ELECTRIC CODES

The Danvers Electric requirements stated in this manual are not intended to supersede or conflict with the pertinent standards of the Underwriters Laboratories, NEC, NESC, or with any state or municipal rule now in effect or which may later be enacted. The latest revision of the National Electric Code is a minimum requirement. Some requirements in addition to those in the latest edition of the National Electric Code are contained herein because Danvers Electric deems them advisable for the public safety and the safety of Danvers Electric representatives. Service Connection will not be made until approval is received from Code Administration.

Danvers Electric has no obligation to determine whether or not the Customer's wiring and installations are proper and safe or comply with the National Electrical Code, National Electric Safety Code, or other codes or regulations in effect at the Customer's location. However, if it comes to the attention of Danvers Electric that the Customer's wiring and electrical installations are not proper and safe, or do not comply with such codes, Danvers Electric reserves the right to refuse or discontinue service until such time as the issues are resolved.

1.14. SERVICE INTERRUPTION

Danvers Electric shall not be liable for any interruption, abnormal voltage, or discontinuance of its service if such interruption, abnormal voltage, or discontinuance is without willful misconduct on its part, or is due to causes beyond its immediate control, such as;

- Fire
- Explosion
- Flood
- Weather conditions
- Accident
- Labor difficulties
- Gross negligence

- Conditions of fuel supply
- Reduction in voltage
- Rotating of the use of feeders
- Selected blackouts
- Failure by a Danvers Electric Power or Transmission Service Provider to provide electricity for which in any manner it has contracted
- Emergency load reduction program issued by ISO-NE (OP-4)
- Inability for any other reason to maintain uninterrupted service.

CRITICAL CARE CUSTOMERS

Danvers Electric does not maintain a list of medically disabled or otherwise electric dependent Customers. Danvers Electric does not guarantee power or assign priority for power restoration. In the event of a power outage, electric dependent Customers are advised to seek professional medical attention or secure a small house generator to ensure that any critical care equipment can operate.

ISO-NE REQUIRED LOAD SHED (OP-4)

When instructed by ISO-NE, electric power may be cut off to large blocks of Customers to protect the electric system - this is known as 'load shedding'. In extreme situations– such as during a severe generating shortage or the loss of a major transmission line— load shedding may be implemented and usually only after ISO New England and Danvers Electric have pursued all other available actions. Depending on the situation, load shedding could be immediate, with no prior actions taken and Danvers Electric may temporarily not be able to keep power flowing to essential facilities.

ISO New England and Danvers Electric continually take steps to maximize the availability of electricity supplies. Still, power shortages are possible if the region experiences an extended heat wave, there is an extremely heavy demand for electricity, or an extraordinarily high amount of unplanned power outages occur.

2.0 PLANNING YOUR ELECTRIC SERVICE

2.1. AVAILABLE SERVICE VOLTAGES & CHARACTERISTICS

- Single Phase – 3 Wire 120/240V
- Single Phase – 3 Wire 120/208V (from 4 wire system)
- Three Phase – 4 Wire 120/208V
- Three Phase – 4 Wire 277/480V

2.2. SERVICE TYPE INDEX

When planning electric service work in the Town of Danvers please identify the bulleted item that best describes your circumstances. Then refer to the recommended section for requirement details that pertain to your project.

- Appling for a new service at an existing location that you own and occupy:

SECTION 5.1 PAGE 29

- Apply for service at an existing location that you do not own (rental property):

SECTION 5.2 PAGE 29

- Temporary Service to supply power during construction:

SECTION 6.1 PAGE 33

- Basic new residential service up to 200 amperes:

SECTION 7.1 PAGE 36

- Large residential services, with a main breaker 400-amperes or larger:

SECTION 7.1 PAGE 36

- Very large residences, multifamily, apartment complexes, and condominium complexes:

SECTION 7.4 PAGE 38

- Commercial and industrial installations three-phase120/208V or 277/480V:

SECTION 8.1 PAGE 42

- Electric Services using back-up generator(s):

SECTION 13.3 PAGE 58

- Demolition of Service:

SECTION 2.3 PAGE 22

2.3. PERMENANT SERVICES AVAILABLE FROM DANVERS ELECTRIC

RESIDENTIAL

Residential service is defined as service to a single family residence or service to multi-family residence such as a duplex or condominium. Single-phase service (120/240Volts) is available for all residential services up to 400 amperes. Residence services over 400 amperes may require three-phase (120/208V) however Danvers Electric will determine this requirement on an individual basis.

RESIDENTIAL SUB-DIVISIONS

The Town of Danvers requires all new subdivisions to install underground electric facilities. Danvers Electric will supply (at the expense of the developer) any required transformers, riser poles, fiberglass light poles, street lighting and any other materials required by Danvers Electric and make the final connection for utility service. Each residence in the subdivision will be supplied 120/240Volt supply rated up to 400 amperes.

The subdivision developer will be responsible for trenching, installing secondary cable, transformer pads, hand holes, transformer ground grids, terminators, and anything else not provided by Danvers Electric. The contractor/developer is responsible for proving all underground conduits clear and installing Mule tape (2,000 lb) pulling line through each conduit installed. The developer is responsible to pay in full a non-refundable payment on all transformers.

RESIDENTIAL CIRCUIT BREAKER RATING

MAIN BREAKER CURRENT RATING	TYPICAL USE	PERTINENT INFORMATION
0 – 200 AMPS	SMALL HOME	A METER SOCKET RATE AT A MINIMUM OF 100 AMPS SHALL BE INSTALLED TO ACCOMMODATE OUR REVENUE METER. 200 AMP METER SOCKET AND SERVICE PANEL
400 AMPS	LARGE HOME	MAY BE FED FROM PADMOUNT TRANSFORMER ON CUSTOMER'S PROPERTY AT THE DISCRETION OF DANVERS ELECTRIC
OVER 400 AMPS	VERY LARGE HOME/ MULTIPLE DWELLINGS	IN GENERAL, THREE-PHASE 120/208 VOLTS ALTHOUGH THIS REQUIREMENT WILL BE ADDRESSED INDIVIDUALLY BY DANVERS ELECTRIC DUE TO LOCAL VOLTAGE AVAILABILITY AND OTHER MITIGATING FACTORS

COMMERCIAL/INDUSTRIAL SERVICE

The Customer is required to supply a plot plan showing the placement of buildings, an electrical design of the site, and a completed Utility Work Authorization form. Information supplied must include connected kW load, phase and neutral conductor sizes, desired voltage (120/208Y or 277/480Y volts) and a project schedule and flow chart well in advance of actual need. Small commercial business requiring up to a 400 amperes service may be supplied by 120/240V three wire services from the existing overhead system, this at Danvers Electric discretion.

NUMBER OF SERVICES PER BUILDING

Generally, one service will be installed to a building. Two or more services may be installed at the option of Danvers Electric and if approved by Code Administration. A separate Customer's service cannot be fed through an adjacent Customer's service drop – consult Danvers Electric for an alternative wiring scheme.

OUTBUILDING SERVICE

Danvers Electric shall not be required to install a service or meter for a garage, stable, or other outbuilding, if it is so located that it may *reasonably* be supplied with electricity through a service and meter in the main building.

SERVICE TO MOBILE HOMES AND TRAILERS

Service is available to mobile homes and trailer parks under the same arrangements as provided for other individual residences with the following considerations:

a. The meter facilities and service equipment shall be grouped and installed on a permanent support not physically attached to the mobile home or trailer.

b. An approved rain-tight disconnecting means having a capacity of not less than 100 amperes shall be provided at the meter location.

c. Pre-wired combination meter and service pedestal may be used subject to advance approval by Danvers Electric.

d. Access to existing poles and lines must not be restricted by Trailer or Mobile Home location.

e. Proper clearances to metering equipment must be maintained by the Customer at all times. See Section 15.4 and Figure 8 in Appendix H.

f. Grounding and bonding at mobile home parks needs to be approved by the Wire Inspector per NEC.

DEMOLITION OF SERVICE

Customers seeking to demolish an existing electrical service must obtain the proper permits from Code Administration. Contact the Inspector of Buildings, Code Administration Manager, and Sealer of Weights and Measures at 978-777-0001 ext. 3110 for more information.

A 48 hour notice must be given to Danvers Electric prior to demolition for scheduling removal of Danvers Electric property.

2.4. CONTRIBUTION IN AID OF CONSTRUCTION (POLICY APPLICABLE TO ALL CUSTOMERS)

INFRASTRUCTURE IMPROVEMENT FOR THE SYSTEM (NO AID TO CONSTRUCTION FROM CUSTOMER)

When Danvers Electric installs, replaces, or makes major repairs to electric infrastructure that will increase the reliability and/or safety of the system all costs will be assessed to the electric rate payers of Danvers.

CONTRIBUTION AID TO CONSTRUCTION POLICIES (AID REQUIRED FROM CUSTOMER)

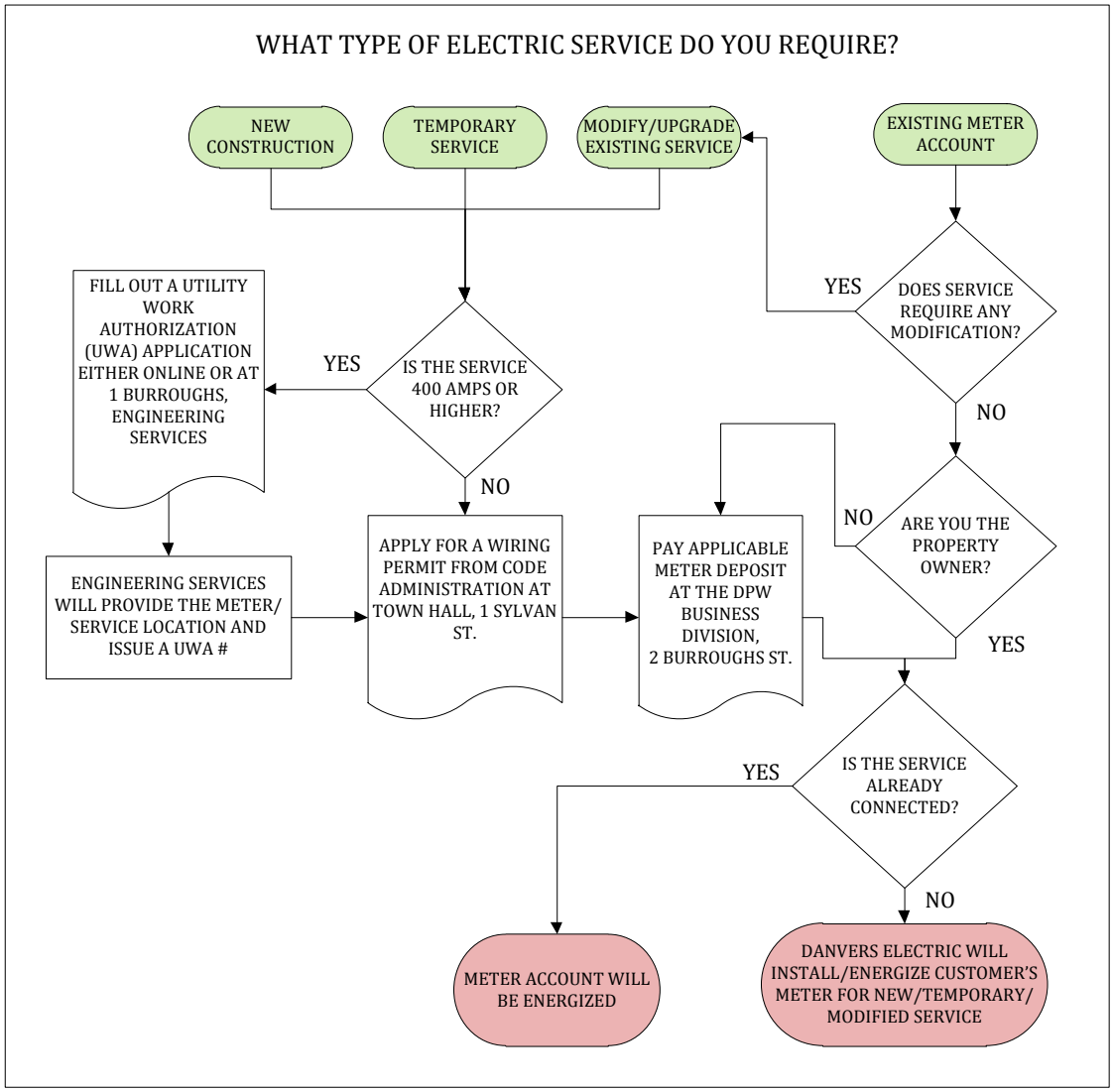
- If Danvers Electric must add to, expand, or upgrade its facilities due to the increased load of an existing Customer or the projected load of a new Customer, Danvers Electric may require the Customer to pay a Contribution in Aid of Construction reasonably related to the incremental cost of the additional facilities needed to provide the Customer with service.
- Danvers Electric may require a Customer who requests relocation, conversion (undergrounding), modification, or other alteration of Danvers Electric facilities to pay a contribution in aid of construction.
- Danvers Electric may require a contribution in aid of construction payment for any enhanced distribution system or enhanced distribution facilities installed at the request of, or to benefit, a Customer or potential Customer.
- Danvers Electric may require a contribution in aid of construction payment for any design, construction and related costs performed at the Customer's request and that is not specifically covered in the Handbook. Work will begin only after Danvers Electric determines the proper contribution in aid of construction amount and documents in the written agreement, any necessary additional terms and conditions.
- Danvers Electric may require a contribution in aid to construction for the facilities required to serve any load that, based on Danvers Electric estimates will not provide Danvers Electric an adequate return of investment.
- Danvers Electric may, at its option, compute its charges on the basis of standard unit costs as determined from periodic studies made by Danvers Electric of similar construction or removal.
- Any distribution line or service extension or reconstruction of facilities will be individually evaluated. Such line or service extension or reconstruction may require payment of a contribution in aid of construction. See Section 10.
- Danvers Electric requires a full value, non-refundable Working Capital Down Payment for all URD transformation equipment.
- A full-value, non-refundable Working Capital Down Payment is necessary from Customers that require transformation equipment which totals 500kVa and higher.

3.0 APPLYING FOR ELECTRIC SERVICE

In all cases new/modified electric service to an existing or new building is a joint effort between the Customer and Danvers Electric. The Customer is responsible for obtaining a Utility Work Authorization number from 1 Burroughs Street or online (for services 400 Amps and larger), a wiring permit from the Office of Code Administration at 1 Sylvan Street or online, paying the metering account deposit at 2 Burroughs Street (if applicable), paying for any applicable Contribution Aid to Construction, and ultimately having Code Administration sign off on all work performed before Danvers Electric will energize the new or modified service.

At the site the Customer must provide an unobstructed overhead path for Danvers Electric overhead service cable or a completed underground system ready for connection to Danvers Electric infrastructure. After the necessary paperwork has been completed and the site is readied, Danvers Electric will complete the connection to our infrastructure and install a revenue meter in the Customer's meter socket.

ELECTRIC SERVICE FLOW CHART



4.0 METERING, BILLING, PAYMENTS, AND NON-PAYMENTS

4.1. METERING

For the purpose of determining the amount of electricity delivered, meters shall be installed by Danvers Electric at locations to be designated by Danvers Electric, and upon the readings of such meters, all bills shall be computed. Bills for electric service will be calculated separately for each location served. A rate available for a certain class of service such as Residential or Commercial shall apply to all such service taken at an individual meter location.

METERING ACCOUNT DEPOSITS

See Section 5.3.

NET METERING

This rule incorporates the technical specifications related to interconnection requirements and safety standards for net metering systems. This rule is applicable to all net metered installations on the Danvers Electric system, and applies to every person, firm, company, and corporation engaged in the leasing, construction or operation of any net metering system or generator interconnection.

See Appendix C for Net Metering rates and Tariffs. See Appendix E for Danvers Electric Net Metering Policies.

PRIMARY METERING

See Section 8.7.

4.2. BILLING AND PAYMENTS

The Massachusetts Department of Utilities' (MDPU) billing and terminations regulations and procedures shall apply to matters regarding billing and payments to the extent applicable. To the event of any conflict, the MDPU's rules and regulations will govern.

a. Where electricity is delivered through more than one meter, the cost of electricity delivered through each meter will be computed separately.

b. Wherever reference is made to electricity delivered or a payment to be made for electricity "each month" or "per month" it shall mean the electricity delivered in the period between two successive regular monthly meter readings.

c. Danvers Electric shall have the right to discontinue its service on due notice and to remove its property from the Customer's premises in case the Customer fails to pay any bill due The Town of Danvers for electric service, or fails to perform any of its obligations to The Town of Danvers. For any restoration of service after such discontinuance, there will be a charge of twenty-five dollars.

d. All bills shall be due and payable upon presentation.

e. Residential Customers are allowed to pay their energy usage bills utilizing the DPW Business Division's pre-authorized payment plan. Residential Customers that want to use this program must fill out the proper application and return it with a voided check to the DPW Business Division at 2 Burroughs Street. Customer payments that are returned due to either insufficient funds or insufficient credit will be charged a service fee and may be removed from the plan at the discretion of the Business Division. Additionally, if the Customer receives a credit on their monthly bill for a payment, which is later returned, the Business Division will reverse said credit on the Customer's account.

   Residential Customers may also pay their bill online at: https://danversutilities.com/ecare_elec/login.asp

f. Non-Residential Customers are allowed to pay their energy usage bills by authorizing the DPW Business Division to directly withdraw funds from the Customer's checking account. Non Residential Customers that want to use this program must fill out the proper application and return it with a voided check to the Danvers Business Division at 2 Burroughs St. Customers' payments that are returned for insufficient funds will be charged a service fee and may be removed from the plan at the discretion of the Business Division. Additionally, if the Customer receives a credit on their monthly bill for a payment that is later returned, the Business Division will reverse said credit on the Customer's account.

   Non-Residential Customers may also pay their bill online at: https://danversutilities.com/ecare_elec/login.asp

g. No officer or agent of the Town of Danvers shall charge, demand, collect, or receive a greater, lesser or different compensation for supplying electricity than the rates and charges applicable thereto, as specified in the Town of Danvers Rates and Tariffs in effect at the time – see Appendix C.

h. Sub-metering of retail electric service is not permitted.

i. See Appendix C for the current Danvers Electric Rates and Tariffs.

4.3. SERVICE DISCONNECTION DUE TO NON-PAYMENT

Except at the request of the Customer, Danvers Electric shall not disconnect electric service unless payment of a valid bill or charge is delinquent and notice of disconnection has been furnished to the Customer, as provided by the DPW Business Division. This shall not apply to any disconnection or interruption of service made necessary for reasons of health or safety of the Customer or the general public. The MDPU's billing and terminations regulations and procedures shall apply to matters regarding service disconnection to the extent applicable. In the event of any conflict, the MDPU's rules and regulations will govern.

Any service that is discontinued will be in strict accordance with applicable billing and termination procedures of the MDPU. Danvers Electric will remove its equipment from the

Customer's premises for violation of any federal, state, or local laws or government regulations.

4.4. SERVICE RECONNECTION

a. Any service reconnection will be in strict accordance with applicable billing and termination procedures of the MDPU.

b. Danvers Electric will restore service if the disconnected Residential Customer pays the $25.00 disconnection notification fee and pays one-half of the delinquent bill, or a lesser negotiated amount, and enters into a repayment plan to pay the balance over a minimum period of three months, except that The DPW Business Division is not obligated to enter into more than two plans of this type with a particular Customer within a calendar year. Commercial Customers are required to pay a $125.00 disconnection notification fee.

c. The disconnection notification fee and any other charges associated with disconnection and restoration of service shall be paid within thirty days of service restoration.

ESTABLISHMENT OF A REPAYMENT PLAN

When establishing a reasonable repayment plan, The DPW Business Division will consider the Customer's payment history, the size of the arrearage, the amount of the current bill, the amount of time the bill has been outstanding, and the reason for the outstanding bill.

TREATMENT OF PAYMENTS

The DPW Business Division will treat all Customer payments in the same manner unless The DPW Business Division receives instructions to the contrary. Payments shall be applied toward the delinquent portion of the account before being applied to the current bill.

4.5. BUDGET BILLING PLANS

The DPW Business Division will offer budget payment plans to a residential Customer at a primary residence, as defined above, in accordance with items a – g in this section.

a. The plan shall be designed to reduce fluctuations in the Customer's bills due to seasonal patterns of consumption.

b. A Customer may elect to participate in the budget billing plan at any time of year.

c. A budget payment plan shall be based on the Customer's recent twelve-month consumption, adjusted for known changes, including anticipated length of occupancy. If twelve months of billing data are not available for the Customer, then twelve months of billing data for the premises shall be used. If twelve months

of billing data are not available for the premises, then The DPW Business Division will estimate the future consumption over the next twelve-month period.

d. Each plan shall provide that bills clearly identify actual consumption and state the amounts that would be due without budget billing.

e. Between six and nine months after the payment plan is initiated, The DPW Business Division may compare the payment plan with the projected energy consumption and if the difference exceeds 10% of the estimated annual consumption, The DPW Business Division may adjust the monthly payment amount.

f. The DPW Business Division will reconcile a Customer's budget payment plan twelve months after initiating the Customer's plan and annually thereafter either on the anniversary of the initiation of the plan or at a set time of the year as defined in the Electric Service Policy and Requirements Handbook.

g. Any budget payment plan Customer who pays the budget payment amount within 15 days of the date of the monthly invoice will be entitled to receive the prompt payment discount.

5.0 EXISTING RESIDENCE OR COMMERCIAL SERVICE

5.1. OWNER OCCUPANT – EXISTING RESIDENCE OR COMMERCIAL PROPERTY

To apply for electric service at an existing residential or commercial property which is already metered and connected to the Danvers Electric distribution system, please contact the DPW Business Division at 978-774-0005 during regular business hours. After the DPW Business Division has received notification of a change in ownership from the new Customer, a final meter reading will be taken within two business days and the billing will be changed to the new name. Please remember that it is the Customer's responsibility to inform the DPW Business Division two business days prior to change in ownership or when moving.

5.2. RENTER/TENANT – EXISTING RESIDENCE OR COMMERCIAL PROPERTY

To apply for electric service at an existing residential rental property which is already metered and connected to the Danvers Electric distribution system, please contact the DPW Business Division at 978-774-0005 during regular business hours. An Application for Electricity for Rental Property form must be completed. The DPW Business Division requires a deposit, picture identification and all prior (Town of Danvers) electric service accounts to be paid in full before establishing a new account. After the DPW Business Division has accepted the application a meter reading will be taken within two business days and the billing will be changed to the new name. Please remember that it is the Customer's responsibility to inform the DPW Business Division two business days prior to change in ownership or when moving. See the following section for a complete explanation of Customer deposits.

5.3. RESIDENTIAL CUSTOMER DEPOSITS

Danvers Electric Tenant Customers or Rental Customers will be required to make a metering account deposit equal to the estimated bills for three (3) months use of service except residential or commercial accounts in the names of the property owners.

APPLICABILITY

This policy shall apply to all residential Tenant Customers or Rental Customers of Danvers Electric.

TERMS

All residential deposits will be held for a minimum of one (1) year. After which, residential deposits will be refunded providing all payments have been made on a timely basis for the preceding twelve months. A timely basis is no arrears from the previous month. The current bill is 30 days from the date of that bill. All bills must be kept current.

INTEREST

Interest is earned on Customer deposits at a rate equal to yields on U.S. Treasury securities at a constant, fixed one-year maturity.

ACCOUNT TERMINATION AND RECONNECTION

Upon the Customer's request for termination of service all deposits and accumulated interest will be applied to any outstanding balance; any remaining credit will be returned to the Customer.

At such time a Customer requests a reconnection of service, any changes in service requirements shall be reviewed by the DPW Business Division staff in regards to the metering account deposit which shall then be adjusted to satisfy the changes in deposit requirements.

Any account which has been terminated shall not be reconnected until the following conditions of service have been satisfied:

a. All bills due to the Town of Danvers for service previously provided have been paid in full or;

b. A satisfactory payment plan has been established with the DPW Business Division

c. A deposit as determined in this section of the handbook has been paid.

d. A service disconnection notification fee of $25 has been paid in full.

Note: It is the Customer's responsibility to notify the DPW Business Division when vacating premises – the Customer will be held responsible for all bills incurred until official notice of account termination has been received by the DPW Business Division.

HARDSHIP

Should a Customer believe that an undue hardship would result from payment in full of the metering account deposit; such Customer may request a review by the Business Manager, who may arrange a satisfactory installment plan for the payment of such deposit. In any event, if such a plan is approved, the first installment payment much be paid prior to the connection of service to the account in question. Should an account become delinquent, in the case of such Customers whose metering account deposit requirement is being met through an installment plan, any such subsequent payments shall first be applied against the metering account deposit requirement until such deposit has been paid in full. The remainder of such payment shall be credited against the monthly billing for such account.

5.4. NON-RESIDENTIAL CUSTOMER DEPOSITS

Danvers Electric Tenant Customers or Rental Customers will be required to make a metering account deposit equal to the estimated bills for three (3) months use of service except residential or commercial accounts in the names of the property owners.

APPLICABILITY

This policy shall apply to all non-residential Rental Customers or Tenant Customers of Danvers Electric. Any account receiving service prior to the effective date of this policy and having met the deposit requirements of the policy in effect at the time such original service was installed shall not be required to meet the deposit requirements of this policy except as otherwise provided herein.

TERMS

All non-residential Rental Customers or Tenant Customers of Danvers Electric shall be required to pay a metering account deposit to the DPW Business Division prior to the connection of service with exception for Customers who own the land and building(s) at the service address. Such deposits shall be in an amount equal to three months of electrical service billings as estimated by the DPW Business Division staff. No other waivers of such metering account deposit shall be granted to any new account except those meeting the criteria as cited above.

All non-residential deposits will be held for a minimum of one (1) year. After which, non-residential deposits will be refunded providing all payments have been made on a timely basis for the preceding twelve months. A timely basis is no arrears from the previous month. The current bill is 30 days from the date of that bill. All bills must be kept current.

INTEREST ON DEPOSITS

Any account in existence for a period greater than six months shall accrue interest on metering account deposits. Interest is paid on Customer deposits at a rate equal to yields on U.S. Treasury securities at a constant, fixed one-year maturity. Such interest will be credited based on the deposit of record as of December 31, of the previous year.

ACCOUNT TERMINATION AND RECONNECTION

If a Customer requests a reconnection of service, any transfer of accounts or changes in business location shall also be considered as new accounts except if the Customer has previously paid a deposit in full and made all bill payments within the 30 day time frame. Each additional business location shall be considered as a separate account and will be required to individually satisfy the metering account deposit requirement. Any changes in service requirements shall be reviewed by the DPW Business Division staff in regards to the metering account deposit which shall then be adjusted to satisfy the changes in deposit requirements. Should any termination be the result of an error on the part the Town of Danvers, the account shall be considered as an existing account.

Upon the Customer's request for termination of service all deposits and accumulated interest will be applied to any outstanding balance; any remaining credit will be returned to the Customer.

Any account which has been terminated shall not be reconnected until the following conditions of service have been satisfied:

a. All bills due to the Town of Danvers for service previously provided have been paid in full or;

b. A satisfactory payment plan has been established with the DPW Business Division.

c. For Tenant Customers or Rental Customers, a deposit as determined in this section of the handbook has been paid.

d. A service connection fee has been paid in full.

Note: It is the Customer's responsibility to notify the DPW Business Division when vacating premises – the Customer will be held responsible for all bills incurred until official notice of account termination has been received by the DPW Business Division.

HARDSHIP

Should a Customer believe that an undue hardship would result from payment in full of the metering account deposit; such Customer may request a review by the Business Manager, who may arrange a satisfactory installment plan for the payment of such deposit. In any event, if such a plan is approved, the first installment payment much be paid prior to the connection of service to the account in question. Should an account become delinquent, in the case of such Customers whose metering account deposit requirement is being met through an installment plan, any such subsequent payments shall first be applied against the metering account deposit requirement until such deposit has been paid in full. The remainder of such payment shall be credited against the monthly billing for such account.

6.0 TEMPORARY ELECTRIC SERVICE

6.1. GENERAL

- Temporary services will be provided at construction sites for a maximum period of one calendar year after connection to the Danvers Electric distribution system. The intent of these services is to provide temporary power during new construction or renovation. Danvers Electric reserves the right to determine the justification for temporary service at the time of request and thereafter until removal. Remember that Temporary electrical service is not in lieu of or a substitute for a fully inspected permanent service in any residence or building.

- Danvers Electric allows two categories of temporary services; the Home Builder Loop (HBL) and the Temporary Power Loop (TPL). The HBL is used during the construction of a single or two-family residence. When construction is competed at this location another new home or building is frequently built adjacent to the one just completed. In these cases the HBL may be used for the new adjacent construction if it is not moved; however, if it requires relocation it becomes a TPL. In this case Danvers Electric often uses the same service cable and attachment pole but redirects it to the new adjacent construction site. TPL temporary services are used to supply power during the construction of commercial or multifamily building projects, temporary offices, construction trailers/sites. Often during phases of a project a TPL is moved closer to the work site, Danvers Electric considers this as a new location requiring new fees, permits and inspection by the Town Wiring Inspector. Danvers Electric must make all connections (or removals) from the Danvers Electric distribution facilities. Violation will result in immediate termination of service by Danvers Electric.

- Temporary services indicate to Danvers Electric that a new load will soon be permanently connected to our infrastructure. For this reason the owner or owner's representative should be prepared to discuss and document planned electrical loads that will result from the new construction by applying for a Utility Work Authorization number. Later in this process a Danvers Electric representative will meet with the owner's electrical contractor to determine the exact revenue meter location. If the new building foundation is in place, the final metering location will be marked. If the foundation is not in place, the building plans and plot map will be used to finalize the metering location. Danvers Electric reserves the right to have the final say on service and revenue meter location.

- Temporary services cannot cross property lines and they must meet all National Electric Code Requirements including clearance requirements.

- No generator is to be connected in parallel with Danvers Electric distribution facilities at any time.

6.2. APPLYING FOR TEMPORARY SERVICE (AVAILABLE AT SECONDARY VOLTAGES ONLY)

A Utility Work Authorization application must be completed and filed online or at 1 Burroughs St. Once Danvers Electric Engineering has issued a Utility Work Authorization number, a permit to perform electric work must be obtained online or from Code Administration at 1 Sylvan St. A UWA number is required to obtain a wiring permit. Once the wiring permit has been issued the Customer can go to the DPW Business Division at 2 Burroughs St. and pay the $50.00 metering account deposit in order to be energized.

6.3. COSTS FOR TEMPORARY SERVICE

There will be a fee charged inclusive of all Danvers Electric costs for all temporary services extending beyond a standard overhead one pole span installation. This charge will be based on the total labor and other costs plus the total costs of any non-reusable materials. Labor costs include the hourly cost of Danvers Electric labor and equipment. Any materials used solely for the temporary service, and deemed non-reusable by Danvers Electric will be billed to the Customer. Rates and material costs are subject to periodic change without notice. Customers requiring a temporary service 500 kVa or greater will be charged the total cost of all materials and labor. See Appendix A for a description of Danvers Electric temporary service methods.

Upon completing the application for service and a field visit by a Danvers Electric representative, the applicable temporary service fee will be estimated for the Customer. This estimate will be based on information supplied by the Customer, as well as information gathered during our site visit. The Customer will be required to pay the final temporary service fee prior to the connection and installation of the electric revenue meter.

Please note that if Danvers Electric representatives travel to a site at an agreed upon time but cannot make the final connections due to blocked physical access, clearance deficiencies, installation deficiencies, or other conditions beyond our control an additional charge will be assessed for the return trip.

6.4. RESPONSIBILITIES ASSOCIATED WITH TEMPORARY SERVICE

The following lists the general division of work between the contractor/Customer and Danvers Electric. This is subject to change without notice and the contractor may be required to perform additional tasks under unusual situations.

CUSTOMER/CONTRACTOR RESPONSIBILITIES:

- Complete the Utility Work Authorization application and submit to Engineering at 1 Burroughs St. See Appendix B for a sample of the UWA form.
- Meet on-site with a Danvers Electric representative to determine the location of the temporary service.
- Apply for and obtain a wiring permit as required with Danvers Code Administration.

- Call Dig Safe (1-888-Dig Safe) for the underground utilities to be marked prior to any digging.
- Install the required temporary service equipment for either overhead or underground connection to the Danvers Electric system.
- Pay the applicable non-refundable temporary service fee to Danvers Electric for the temporary service.
- Notify the Wiring Inspector that an inspection is required and gain the Inspector's approval of the temporary service equipment.
- Notify Danvers Electric that the temporary service is approved for connection.

DANVERS ELECTRIC RESPONSIBILITIES:

- Meet with the Customer to determine an acceptable location of the temporary service.
- Provide an estimated temporary service fee to the Customer in a timely fashion.
- Check prior to installing power to the temporary that all National Electric Safety Codes for clearances to buildings and roadways will be met.
- Install the OH service lines to the temporary structure to bring power when applicable.
- Install underground feed temporaries and connect the Customer's cables to the Danvers Electric distribution facilities.
- Install a billing meter in the socket.
- De-energize the temporary service after notification by the Customer that it is no longer needed.

6.5. TEMPORARY CONNECTION METHODS

See Appendix A for a list of possible methods for connecting temporary service to Danvers Electric grid. The Customer may request a particular method; however, Danvers Electric personnel will make the final decision as to the method of interconnection.

7.0 RESIDENTIAL ELECTRIC SERVICE – NEW, UPGRADE OR RELOCATION

7.1. GENERAL

Danvers Electric residential services to single and multiple family housing units are generally provided at 120/240V single-phase (up to 400 amperes).

Very large homes and multi-family dwellings that require a 400 ampere main breaker will be generally supplied using a single 120 /240 volt padmount or pole mount transformer. For residential dwellings with a main switch above 400 amperes Danvers Electric will work with the Customer or contractor in an effort to achieve the required power in the most economical, sensible and safe manner. Generally this will involve one or more 120/208 volt three-phase padmount transformer(s) located on the Customer's premises. These transformers will require a primary voltage feed from the Danvers Electric distribution facilities.

7.2. COSTS FOR PERMANENT SERVICE

GENERAL

A single or three-phase transformer will be supplied by Danvers Electric to residential Customers and Danvers Electric will make necessary connections to the distribution facilities at no charge. This includes the connections to the transformer and at the riser pole. Danvers Electric will also provide the secondary service pedestal. All other charges such as trenching, conduit, primary and secondary cable, terminators, transformer base and ground grid, riser, etc. are the Customer's responsibility.

OVERHEAD SERVICE

Danvers Electric will connect a Customer to the Danvers Electric overhead distribution facilities at no additional charge if they are located within approximately 150 feet of the our overhead distribution facilities (terrain and angle dependent) with Danvers Electric supplying and installing *up to* one pole and one section of wire and a service drop. Please see the Danvers Electric policy in Section 10 of this handbook for residential Customers that require longer connecting facilities. All construction from Danvers Electric primary distribution system leading up to the Customer meter will be owned and operated by Danvers Electric.

UNDERGROUND SERVICE

Customers connecting to the Danvers Electric 120/240V distribution facilities via underground conductors to a pole, transformer, or secondary hand hole will be connected at no additional charge and supplied with 150 feet of cable; however, the trenching, conduit, wire, terminators, pole riser and other costs associated with the UG service are the Customers' responsibility. All construction from Danvers Electric primary distribution system leading up to the Customer meter will be owned and operated by Danvers Electric.

7.3. APPLYING FOR PERMANENT RESIDENTIAL SERVICE

A Utility Work Authorization application must be completed and filed online or at 1 Burroughs St for all residential services 400 Amps or larger. Once Danvers Electric Engineering has issued a Utility Work Authorization number (when applicable – Customer's requiring less than 400 Amp service don't need to apply for a Utility Work Authorization number), a permit to perform electric work must be obtained from Code Administration at Town Hall, 1 Sylvan St. See appendix B for a sample of the Utility Work Authorization application. The Customer is then responsible for paying the metering account deposit at 2 Burroughs St. before being energized.

7.4. OPTIONAL CONNECTIONS TO DANVERS ELECTRIC DISTRIBUTION FACILITIES

The Customer may choose how they wish their residence to be connected to the Danvers Electric system if the facilities are available and they agree to the additional charges necessary to accomplish the desired task.

RESIDENTIAL OVERHEAD SERVICE

The most basic service connection is a service drop from an existing or a new pole to the service entrance on a house. Typically Danvers Electric can reach the Customer within the maximum (no charge) allotment of one pole on private property, one section of wire, and a service drop. The meter location and service attachment point are identified early in the project by Danvers Electric. Upon final inspection by the Wiring Inspector, Danvers Electric will route service cable to the homeowner's service point of attachment and install the revenue meter in the Customer's socket then energize the service upon approval of the wire inspector.

The Customer is required to provide an easily accessible, clear path (both aerial & on the ground), devoid of trees, wetlands, and other obstacles, where our crews can route your service cable. Danvers Electric will provide a maximum of one utility pole with associated infrastructure at no cost to the Customer. The Customer will be financially responsible for all poles and other infrastructure beyond this 1 Pole Limit. See Section 10 for details. Please note that tall growing vegetation planted under power lines could encroach on your power line – see Section 1.8. The Customer is responsible to provide a clear path to Danvers Electric meters at all times.

RESIDENTIAL UNDERGROUND SERVICE

Customer may be in an area that requires the service to the residence to be underground with no new aerial wires. Danvers requires all new developments to be supplied via underground residential design guidelines. This may also include underground requirements in areas of the Town designated as only allowing underground service entrances. The Building Inspector, Wiring Inspector, as well as Danvers Electric may assist in determining the requirements and options available to you.

RESIDENTIAL SERVICE WITH A 400 AMP MAIN

Large homes requiring a 400 Amperes main breaker will require the installation of a single-phase 120/240V padmount or overhead transformer on the Customer's premises. The underground conductors shall then be routed to a Customer to a pedestal or house mounted revenue meter.

Residential Customers requiring this type of installation due to load requirements will be supplied the transformer, secondary service pedestal, and final connection to the Danvers Electric distribution facilities at no additional charge. This includes the connections in the transformer and the riser pole. All other items such as trenching, conduit, primary and secondary cable, terminators, transformer base and ground grid, riser, etc. are the Customer's responsibility. All work must as a minimum meet NEC requirements. Danvers Electric may require conduit be concrete encased for durability and safety.

RESIDENTIAL SERVICE GREATER THAN 400 AMPS (LARGE HOMES/MULTI-FAMILY)

Homes requiring a main breaker over 400 Amperes will generally require the installation of a three-phase120/208V padmount transformer on the Customer's premises. At these locations the Customer must route the necessary underground cables from the transformer to either a building mounted revenue meter or a pedestal revenue meter.

Customers requiring this type of installation will be supplied the transformer and final connection to the Danvers Electric distribution facilities at no additional charge inclusive of the required connections in the transformer and on the riser pole. All other tasks such as trenching, conduit, primary and secondary cable, terminators, transformer base and ground grid, riser, etc. are the Customer's responsibility. All work must as a minimum meet NEC requirements. Danvers Electric may require conduit be concrete encased for durability and safety.

UNDERGROUND SERVICE TO HOMES FED FROM OVERHEAD INFRASTRUCTURE

In existing overhead service areas the Customer shall tap (120/240 Volt secondary) to the Danvers Electric distribution facilities via underground conduit. The Customer will be responsible for any required trenching, conduit, wire, concrete to protect the conduit, the service riser (including the weather seal) on the pole as well a meter socket and the service conductors. Danvers Electric will not be liable for the weather seal or any leakage that occurs on the service riser. If concrete encased steel conduit is used, Danvers Electric will supply to the Customer a ground rod at the pole and it will be the electrician's responsibility to drive and ground the conduit system to this ground rod in accordance with NEC guidelines – see Appendix H, Figure 12. If the Customer chooses to use gray PVC electrical grade conduit (40 or 80) encased in concrete they must use a steel sweep (36", 90 degree) at the pole and ten feet of underground conduit. Additionally they will be required to install a properly sized grounding wire in the conduit that will be used to bond to the steel conduit, the Danvers Electric supplied ground rod, and service entrance equipment. Danvers

Electric will make the final connections at the pole including attaching all riser poles above 10 feet (safety issue) and the installation of a suitable meter.

UNDERGROUND SERVICE TO HOMES FED FROM EXISTING UNDERGROUND INFRASTRUCTURE

In existing underground service areas (UG) the Customer will be required to meet the Danvers Electric system via underground conduit and wires to the existing hand hole or transformer using electrical grade gray PVC schedule 40 below ground schedule 80 above ground. The service entrance shall be connected to the underground conduit via an expansion coupling to allow for settling of the construction site without damage to the service. The Customer will be responsible for any required trenching, conduit, wire, concrete to protect the conduit, the service riser on the pole as well a meter socket and service. Danvers Electric will make the final connections at the hand hole or transformer.

UNDERGROUND SERVICE TO METER PEDESTAL

Customers building new residences may elect to have the meter and service to their location connected using a pedestal meter, typically located some distance away from the house. Conduit to the Customer's service panel as well as other utilities is then run underground from the pedestal into the basement area of the house.

PEDESTALS IN DANVERS ELECTRIC OVERHEAD DISTRIBUTION SERVICE AREA:

The procedure will be the same as when the meter is on the house with Danvers Electric making the final connections at the pole and installing the meter. The Customer will be responsible for any required trenching, conduit, wire, concrete to protect the conduit, the service riser on the pole as well a meter socket and service. If concrete encased steel conduit is used for the run, The Customer will drive a Danvers Electric supplied ground rod at the pole and ground the conduit system in accordance with NEC guidelines. If the Customer chooses to use gray PVC electrical grade conduit (40 or 80) encased in concrete they will use a Rigid Conduit steel sweep (36" 90 degree) and rigid steel riser at the pole. In addition they will be required to run an additional wire in the conduit to bond to the steel conduit, the Danvers Electric supplied ground rod, thru the PVC and back to the service entrance. Danvers Electric will make the final connections at the pole including installation of (Customer supplied) riser pole above 10 feet (safety issue) and the installation of a suitable revenue meter.

PEDESTALS IN DANVERS ELECTRIC UNDERGROUND SERVICE AREA:

The procedure for a pedestal will be the same as when the meter is on the house with Danvers Electric making the final connections at the transformer or hand hole. In existing underground service areas (UG) the Customer will be required to meet the Danvers Electric system via underground conduit and wires to the existing hand hole or transformer using electrical grade gray PVC schedule 40 below ground (concrete encased) schedule 80 above ground (or rigid steel conduit as an alternative). The service entrance shall be connected to the underground conduit via an expansion

coupling to allow for settling of the construction site without damage to the service. The Customer will be responsible for any required trenching, conduit, wire, concrete to protect the conduit, the service riser on the pole as well a meter socket and service. Danvers Electric will make the final connections at the hand hole or transformer.

7.5. RESPONSIBILITIES AND EASEMENTS ASSOCIATED WITH RESIDENTIAL PERMANENT SERVICE

a. A Customer's premises may be connected to Danvers Electric aerial distribution facilities via an underground connection where the Customer installs and maintains the entire underground service inclusive of the riser pole. Ownership of all service equipment located on Customer's property shall remain the property of the Customer. The service connection when located in the public way shall become the property of Danvers Electric.

b. If for any reason it becomes necessary for the Division to relocate any of its pole, wire, or cable facilities by which a Customer is served, the Customer shall change the location of its point of delivery to a point readily accessible from the new location. The cost of this work is the responsibility of the Customer.

c. Electric service must not be used in such manner at to cause unusual fluctuation or disturbance in the Division's supply system and in the case of violation of this rule, Danvers Electric may discontinue service, or require the Customer to modify the installation and/or equipment using approved controlling devices that will eliminate such disturbance.

d. The Customer will be required to pay the cost of any special installation necessary for service at other than standard voltages or for service with closer voltage regulation than required by standard practice. The excess cost will represent the difference in costs between the special installation and a normal installation.

e. Applications involving extension requiring abnormal construction which would result in extraordinary costs, such as crossing rivers, railroads, ponds, extending to an island, use of submarine cable, and other special conditions, are considered as special cases. Customers or other parties requesting such extensions shall be responsible for all costs incurred including maintenance and repair costs in the future.

f. If, at any time, Danvers Electric is required to remove a Customer's meter and determines that it is unsafe to do so, the Customer is required to upgrade any equipment necessary to ensure the safe removal/installation of the meter at their expense.

ELECTRIC FACILITY EASEMENTS AND PLANS

The Customer, owner, developer, and contractor shall be monetarily responsible for providing, granting and furnishing an easement for all electric facilities. Typical electric utility easement requirements are stated below:

- A fifteen (15) foot wide strip or cable easement along all front and or street property lines.
- A five (5) foot wide street crossing easement from front property line to front property line wherever cable crossings are required.
- A twenty-two feet wide by twelve feet deep (22'W X 12'D) equipment easement for sectionalizing cabinet and or a padmount transformer installation.
- A twelve feet wide by twelve feet deep (12'W X 12'D) equipment easement for padmount transformer installation at the front lot corner(s) and located equally on each lot.
- Note that such easement requirements are project dependent. Project easement requirements will vary both upward and downward from the above stated requirements. All project easement requirements should be filed with definitive subdivision plans.
- Danvers Electric Residential service easements should be determined during the planning stage; however, late stage design changes may be required after open trench inspection.
- Two recordable copies of easement plans—Underground As Built drawings showing all underground conduits, sweeps, distance between sweeps, property lines, structures, and utility easements, must be provided to the Danvers Electric engineering office at 1 Burroughs St. prior to energizing of any underground circuits. The total cost for your primary underground installation must also be submitted.

- Deeded private primary underground line easements are required by Danvers Electric. A copy of this deed must be provided to Danvers Electric prior to energization. The size and scope of these easements will be established by Danvers Electric after a site visit.

8.0 COMMERCIAL/INDUSTRIAL/RESIDENTIAL DEVELOPMENT ELECTRIC SERVICE

8.1. GENERAL

- Danvers Electric can often provide adequate power to small commercial enterprises requiring no larger than a 400 ampere 120/240 single Phase service via existing overhead facilities.
- Check with Danvers Electric to determine if Danvers Electric can deliver Three Phase 120/208 or 277/480 Volt power to any specific location. Three Phase Customers are responsible for ringing out the secondary lines before Danvers Electric will energize.
- Larger Customers must provide Danvers Electric with site electrical one line drawing(s) and a completed Utility Work Authorization application so that Danvers Electric can plan the utility infrastructure needed to accommodate your service.
- Danvers Electric will supply the facility revenue meter(s) as well as all complex metering accessories such as PT's and CT's that supply load information to the revenue meter Customer. These metering accessories will also provide electric demand and power factor information. All revenue meters are owned by Danvers Electric therefor we have exclusive right to all of the generated information.
- The Customer will be responsible for all trenching, installing all conduit, transformer Pads, necessary ground grid(s), and transformer protective bollards if necessary.
- The Customer will be responsible for the installation of all the necessary equipment in accordance with the latest NEC standards.
- Danvers Electric owns and maintains all transformers, primary and secondary wiring, and meters. The Customer is responsible for all electrical infrastructure past the meter.

8.2. APPLYING FOR PERMANENT COMMERCIAL/INDUSTRIAL/RESIDENTIAL DEVELOPMENT SERVICE

A Utility Work Authorization application must be completed and filed online or at 1 Burroughs Street for all services 400 Amps or greater. Once Danvers Electric Engineering has issued a Utility Work Authorization number, a permit to perform electric work must be obtained online or from Code Administration at Town Hall, 1 Sylvan Street. See appendix B for a sample of the Utility Work Authorization application.

8.3. COST FOR COMMERCIAL AND INDUSTRIAL SERVICE

Danvers Electric will provide 1 pole span from existing primary (150' – overhead/underground) onto private property at no cost to the Customer. See Section 2.4 for Customer Contribution in Aid of Construction information.

a. All equipment and wiring leading to the Customer transformer(s) secondary will be owned and operated by Danvers Electric exclusive of Customer cost contribution. All additional wiring and equipment beyond the first 150' will be paid for by the Customer. Danvers Electric will provide secondary service pedestals and

transformation equipment which does not meet or exceed 500KVA. See Section 8.4 for transformer cost guidelines.

b. All Commercial/Industrial Customers requesting a service 500 kVA or greater are required to pay for all equipment (including transformer) and wiring beyond Danvers Electric's complimentary 150 foot span.

All Residential Development Customers are required to pay for all equipment (including transformers) and wiring beyond Danvers Electric's complimentary 150 foot span.

8.4. DEPOSITS AND PAYMENTS

- Customers that requiring transformation equipment 500 kVa or greater will be required to pay a **non-refundable** Working Capital Down Payment to cover the total new value cost of the transformer(s) before an order will be placed.

- Danvers Electric requires non-refundable, new value Working Capital Down Payment for the transformers on residential developments to insure recovery of capital investment.

- Customers requiring non-stock or otherwise special order transformer(s) can expect up to a 6 month or longer lead time upon making the Working Capital Down Payment **in full.**

8.5. OVERHEAD SERVICE TO SMALL COMMERCIAL BUSINESS (G-1 CUSTOMERS)

Small commercial establishments in areas of existing Danvers Electric OH system will be served from the existing system if there is proper voltage of adequate capacity to service your enterprise now and into the reasonable future.

Depending on the infrastructure in the area the service may be provided from overhead or underground distribution facilities. The Customer will be responsible for any required trenching, conduit, service wire, protective concrete, conduit including the service riser on the pole as well a revenue meter socket and all service conductors. If concrete encased steel conduit is used for the run, the Customer will drive a Danvers Electric supplied ground rod according to Danvers specifications at the pole that will be used to ground the conduit system - see Figure 12.

If the Customer chooses to use gray PVC electrical grade conduit (40 or 80) encased in concrete they must use a 10' steel underground section, a steel sweep (36" 90 degree) at the pole and a steel riser - see Figure 12. In addition they will be required to run an additional wire in the conduit to bond to the steel conduit, the Danvers Electric supplied ground rod, thru the PVC and back to the service entrance. Danvers Electric will make the final connections at the pole including attaching the any riser pole above 10 feet (safety issue) and the installation of a suitable revenue meter. Danvers Electric may charge the Customer based on time and materials required for this work. In the case of Underground

services, the Customer is responsible for trenching, conduit, concrete encasement, cable, rise pole(s), and other associated items.

8.6. PADMOUNT TRANSFORMER FOR MEDIUM TO LARGE COMMERCIAL CUSTOMERS (G-2 AND G-3 CUSTOMERS)

After medium to large usage commercial Customers submit a completed Utility Work Authorization application, Danvers Electric will determine how best to serve these new load requirements. Danvers Electric normally services larger loads through a padmount transformer or transformers set on the Customer's property. Padmount transformer(s) and other infrastructure will be purchased for URD and/or if greater than 500 kVa and installed by Danvers Electric. Danvers Electric will supply and install the revenue meter(s), revenue metering equipment, and one pole span necessary to connect the transformers to the Danvers Electric distribution facilities.

The Customer is required to provide all trenching, conduit, Mule tape (2,000 lb) pulling line for conduit systems, risers, secondary cable, a suitable locations for the transformers, transformer foundations and ground grids, transformer protective bollards if necessary, etc. The Customer is also responsible for the installation of all the necessary equipment in accordance with the latest NEC standards.

The Town of Danvers Wiring Inspector is responsible for approving all the electric facilities from the secondary of the transformer to the Customers building. Danvers Electric will require a final inspection by the Inspector prior to energizing the transformer.

8.7. PRIMARY METERING

Requests for primary metering, totalized metering, or any other proposed departures from standard metering will be made in writing to the Danvers Electric Engineering staff. The request will document the need and circumstances for the proposed metering.

Rate structure allowances for primary metering or high voltage metering are not intended to provide any additional economic benefit to Customers (a primary meter measures both the load and the transformer losses – the high voltage discount accounts for the losses the Customer incurs. See Appendix C for high voltage and primary metering discounts).

Primary metering allowances are distinctly separate from any allowances for Customer ownership of facilities. Engineering staff will, in all cases, make the final determination of the metering scheme and will be based on cost to Danvers Electric and the reliability and accuracy of the overall metering installation.

Primary metering is not an option for the Customer – Danvers personnel will determine eligibility.

8.8. RESPONSIBILITIES AND EASEMENTS ASSOCIATED WITH COMMERCIAL PERMANENT SERVICE

- A Customer's premises may be connected to the Division's aerial distribution facilities via an underground connection where the Customer installs and maintains

the entire secondary underground service inclusive of the riser pole. Ownership of all secondary service equipment located on Customer's property shall be purchased by the Customer (with the exclusion of metering CT's/PT's) and owned/operated by Danvers Electric. The service connection when located in the public way shall become the property of Danvers Electric. Although owned by Danvers Electric it will be maintained by Danvers Electric at the Customer's expense.

- If for any reason it becomes necessary for Danvers Electric to relocate any of its poles, wire, or cable facilities by which a Customer is served, the Customer shall change the location of its point of delivery to a point readily accessible from the new location. The cost of this work is the responsibility of the Customer.
- Electric service must not be used in such manner to cause unusual fluctuation or disturbance in the Division's supply system and in the case of violation of this rule, the Division may discontinue service, or require the Customer to modify his installation and/or equipment using approved controlling devices that will eliminate such disturbance.
- Applications involving extension requiring abnormal construction which would result in extraordinary costs, such as crossing rivers, railroads, ponds, extending to an island, use of submarine cable, and other special conditions, are considered as special cases. Customers or other parties requesting such extensions shall be responsible for all costs incurred including maintenance costs.

ELECTRIC FACILITY EASEMENTS AND PLANS

The developer and/or contractor shall be monetarily responsible for providing, granting and furnishing an easement for all electric facilities. Typical electric utility easement requirements are stated below:

- A fifteen (15) foot wide strip or cable easement along all front and or street property lines.
- A five (5) foot wide street crossing easement from front property line to front property line wherever cable crossings are required.
- A twenty-two feet wide by twelve feet deep (22'W X 12'D) equipment easement for sectionalizing cabinet and or a padmount transformer installation.
- A twelve feet wide by twelve feet deep (12'W X 12'D) equipment easement for padmount transformer installation at the front lot corner(s) and located equally on each lot.
- Note that such easement requirements are project dependent. Project easement requirements will vary both upward and downward from the above stated requirements. All project easement requirements should be filed with definitive subdivision plans.
- Danvers Electric Residential service easements should be determined during the planning stage; however, late stage design changes may be required after open trench inspection.
- Two recordable copies of easement plans—Underground As Built drawings showing all underground conduits, sweeps, distance between sweeps, property lines, structures, and utility easements, must be provided to the Division engineering office prior to energizing of any underground circuits. The total cost for your primary underground installation must also be submitted.
- Deeded private primary underground line easements are required by Danvers Electric. A copy of this deed must be provided to Danvers Electric prior to energization. The size and scope of these easements will be established by Danvers Electric after a site visit.

9.0 CUSTOMER SERVICE CONNECTION CLEARANCES AND RESPONSIBILITES

The Customer shall furnish and install the service entrance conductors, revenue meter socket and equipment. These items shall at a minimum meet the current requirements of the National Electric Code (NEC), National Electric Safety Code (NESC), the Massachusetts Electric Code and any additional requirements of Danvers Electric. The Customer must grant Danvers Electric any utility easement(s) needed as dictated throughout this document. Danvers Electric requires that these easements be recorded (in perpetuity) on the property deed in all cases. Danvers Electric must be provided with a copy of these deeds prior to utility connection.

9.1. LOCATION OF METER AND SERVICE ENTRANCE

Danvers Electric will identify suitable locations for padmount transformers, revenue meters, and the appropriate riser pole for underground services or point of attachment for overhead services. Under no circumstances shall construction begin prior to these assignments. See section 14 and 15 of this handbook for more information.

Notes:

- Pedestal meters are allowed in underground areas.
- Although Danvers Electric retains the right of final say, Customer requests will be considered during this process.
- Customers must notify Danvers Electric of intent to start work at least 72 hours in advance to allow time for a service location to be assigned. All necessary Danvers Electric applications, service request and Utility Work Authorization forms must have been completed and returned to Danvers Electric prior to this notification.

9.2. POINT OF ATTACHMENT

Overhead service entrance conductors must be securely fastened to the building, with a weather head height in accordance with the NEC section 230.24 and any additional requirements of Danvers Electric or Code Administration. An attachment eye bolted and securely fastened to the structure of the building must be installed at a point 6 inches below the weather head or at a suitable point determined by Danvers Electric. Danvers Electric will provide a D-Eye and galvanized bolt, washers and nut for this purpose upon request at no charge to the Customer. Attachments must be made to a structurally sound and well secured surface, suitable for the purpose as approved by Code Administration and Danvers Electric personnel. Attachment to siding, soffits and the like are not acceptable. Customer's service cable shall be extended beyond the weather head by 30 inches for connection allowing for a cable drip loop to prevent water from wicking into the cable where it can travel into the meter socket and service panel.

9.3. SERVICE MASTS

Service masts are a suitable alternative to gain the required height when installed in accordance with NEC section 230.28 and any additional requirements of Danvers Electric or Code Administration. The mast shall be adequately attached. All service masts with a service drop over 100 feet long must be back guyed. In these cases the mast will have a

Customer provided insulated conduit clevis for an attachment point. The mast will allow for the required vertical clearance to the ground. See Figure 7 in Appendix H.

9.4. CONCEALMENT OF SERVICE ENTRANCE

Service entrance cables or conduit containing service entrance cables shall not be placed within a building wall or concealed in any way, except where they pass horizontally through the building wall to the service panel or inside service mast conduit passing thru a roof.

9.5. SERVICE CLEARANCES TO BUILDING STRUCTURES

CLEARANCES TO PADMOUNT TRANSFORMERS

The following clearances must be maintained to structural features of the building and other potential hazardous situations. In all cases the closest edge of the padmount to the building feature or hazard is used in the measurement. If the structure has an overhang (i.e. deck, staircase, eave) clearance distance is measured from the outside edge of the overhang. In no case shall a padmounted transformer be located under any type of overhang.

BUILDING FEATURE OR HAZARD	**REQUIRED MINIMUM CLEARANCE**
ANY OBJECT	12 FEET IN FRONT AND 3 FEET TO BOTH SIDES AND TO REAR
SPECIFIC FEATURE OR HAZARD	**ADDITIONAL TO REQUIRED MINIMUM CLEARANCE**
BUILDING NON-COMBUSTIBLE WALL	3 FEET HORIZONTAL
FIRE SPRINKLER VALVES, STANDPIPES AND FIRE HYDRANTS	6 FEET HORIZONTAL
COMBUSTIBLE WALLS, INCLUDING STUCCO	10 FEET HORIZONTAL
FACILITIES USED TO DISPENSE OR STORE HAZARDOUS LIQUIDS, SUCH AS GASOLINE PUMPS, AND PROPANE TANKS	20 FEET HORIZONTAL
WATER'S EDGE OF A POOL OR BODY OF WATER	15 FEET HORIZONTAL
DOORS AND WINDOWS	20 FEET HORIZONTAL FOR DOORS – 10 FEET HORIZONTAL FOR WINDOWS
VEGETATION	12 FEET IN FRONT AND 3 FEET TO SIDES AND REAR
OVERHANGING STRUCTURES	NO PADMOUNTED TRANSFORMER IS TO BE LOCATED BENEATH AN OVERHANG
AIR VENTS	20 FEET HORIZONTAL AND 10 FEET EITHER SIDE

CLEARANCES TO ELECTRICAL SERVICE ENTRANCES

The Following Clearances From the Service Entrance Must Be Maintained To Structural Features Of The Building And or other Potential Hazards:

BUILDING FEATURE OR HAZARD	REQUIRED MINIMUM CLEARANCE
DOORS, PORCHES, FIRE ESCAPES AND WINDOWS	3 FEET VERTICALLY AND HORIZONTALLY ON ALL SIDES
NATURAL GAS METERING EQUIPMENT	3 FEET HORIZONTAL
LP STORAGE TANKS – BURIED AND ABOVE GROUND	10 FEET HORIZONTAL

9.6. OVERHEAD SERVICE DROP CLEARANCES

SERVICE CABLE REQUIRED MINIMUM VERTICAL CLEARANCES NOT EXCEEDING 300 VOLTS TO GROUND

CABLE WITH A BARE NEUTRAL CONDUCTOR	REQUIRED MINIMUM VERTICAL CLEARANCE
RESIDENTIAL PROPERTY ACCESSIBLE ONLY TO PEDESTRIANS	12 FEET VERTICAL
RESIDENTIAL PRIVATE DRIVEWAYS AND COMMERCIAL AREAS NOT SUBJECT TO TRUCK TRAFFIC	16 FEET VERTICAL
PUBLIC STREETS, ALLEYS, ROADS, PARKING AREAS, SUBJECT TO TRUCK TRAFFIC, AND ALL NON-RESIDENTIAL DRIVEWAYS	18 FEET VERTICAL

MINIMUM VERTICAL CLEARANCES TO STRUCTURES

Minimum allowed Vertical Clearances over Structures for Service Cable with a Bare Neutral conductor (Not exceeding 300 Volts to Ground)

LOCATION	REQUIRED MINIMUM VERTICAL CLEARANCE
DECKS ATTACHED TO RESIDENTIAL PROPERTY	10 FEET VERTICAL CLEARANCE
SHED-METALLIC ROOF NOT ACCESSIBLE TO PEDESTRIANS	8 FEET VERTICAL CLEARANCE
SHED-NON METALLIC ROOF NOT ACCESSIBLE TO PEDESTRIANS	3.5 FEET VERTICAL CLEARANCE
SHED-NON METALLIC ROOF FLAT WALKABLE	10 FEET VERTICAL CLEARANCE
STAIRS TO BUILDING, INCLUDING LANDING	10 FEET VERTICAL CLEARANCE
SWIMMING POOLS INCLUDING DIVING BOARDS FOR A DISTANCE OF 10 FEET HORIZONTALLY IN ANY DIRECTION, WADING POOLS, AND HOT TUBS	CANNOT BE PLACED UNDER DANVERS ELECTRIC SERVICE OR PRIMARY CONDUCTORS

10.0 LINE EXTENSIONS

When a Customer requests an electric line extension, Danvers Electric will inform the Customer in writing of Customer rights, responsibilities and options for line extensions, including but not limited to: payment terms; easement and right-of-way information; contribution-in-aid-of-construction; basic information about design, siting and location, such as overhead or underground placement, and road-side or off-road siting.

OVERHEAD EXTENSION OVER PRIVATE PROPERTY/PUBLIC HIGHWAY

Danvers Electric will at no charge to the Customer extend an overhead single-phase residential line up to one pole section per Customer service over private property providing an acceptable right-of-way or easement.

When an extension of an overhead line is necessary to provide service to a permanent residence and the length of the extension over private property exceeds 150 feet or one pole span, a contractual agreement will have to be negotiated with Danvers Electric to compensate for the cost of all construction in excess of these limits.

a. The length of the extension shall be measured from the last pole carrying the circuit with the required voltage from which a Customer can be served. If the extension involves both public streets and private property, the negotiated contract will cover the entire extension and any deposits required will be the sum of the deposits required to cover the total cost of the extension.

b. Transformer installations and one permanent service drop per Customer shall be furnished at no charge.

c. All construction will be owned and maintained by the Danvers Electric up to the Customer service entrance.

d. Danvers Electric will schedule construction of a line under this policy when the Customer to be supplied has signed the necessary contract. If no contract is required, construction under this policy will be scheduled when the Customer to be supplied has completed most of the wiring of the premises to be supplied.

e. Construction will not commence or continue during periods of inclement weather or other abnormal conditions.

ABNORMAL CONDITIONS

For extensions in areas with abnormal conditions such as unpaved roadways or undefined roadways requiring excessive tree clearing, surveying, etc., the excess cost will be treated the same as cost of an extension in excess of 150 feet.

OVERHEAD LINE EXTENSION TO MORE THAN ONE CUSTOMER

Where a line extension on a public highway or on private property is necessary to service more than one Customer, consult Danvers Electric.

11.0 METER TAMPERING / THEFT OF SERVICE

11.1. DEFINITION

Theft of service is diversion of electrical energy by any method or device used by any person that prevents the electric meter from properly registering the quantity of electricity supplied by Danvers Electric and/or any taking of any electric energy without Danvers Electric's consent. Making an unauthorized connection to obtain unmetered electric service is theft of services and punishable as a crime in Massachusetts. Where there is evidence of meter tampering or theft of electric energy with intent to avoid a lawful charge for electricity by themselves or another person, such person or persons responsible shall be liable for prosecution under penalty of law.

Under Massachusetts General Laws, the applicable sections dealing with theft of electrical energy are Chapter 164, Sections 127 and 127A; Chapter 266, Section 30; and Chapter 266, Section 127 (See Appendix D).

11.2. METER TAMPERING WARNING

a. Meter seals and other locking devices installed by Danvers Electric on metering equipment shall not be cut or removed except by authorized Danvers Electric personnel or by a licensed contractor who has been issued a permit by the Town of Danvers Wiring Inspector.

b. All meters and metering equipment enclosures are sealed by Danvers Electric with various types of locking devices. Seals and locking devices shall not be broken or removed by electrical contractors or other unauthorized personnel before obtaining the appropriate work permit from the Wiring Inspector and/or written approval from Danvers Electric. Electric contractors may request removal of meter seals and locking devices to perform work on service equipment. A 24 hour advance notice to Danvers Electric is required from the contractor to allow Danvers Electric to schedule a personnel visit to the work site. The contractor is required to notify Danvers Electric within 24 hours of completing work so Danvers Electric personnel may reseal the meter.

c. <u>In no case shall any person who is not authorized by Danvers Electric jumper the service or otherwise tamper with any Danvers Electric metering equipment.</u>

d. Protection of Danvers Electric owned meters and metering equipment is the responsibility of the Customer. Relocation of meters and equipment damaged due to tampering, vandalism or negligence will be at the Customer's expense.

11.3. NOTICE OF VIOLATION

a. A "Notice of Violation" ***may*** be mailed or otherwise delivered at the discretion of the Danvers Electric Utility Director if:

    I. Evidence suggests the possibility of theft of utility service at the Customer's premises, including evidence of meter tampering, or

II. The violation does not constitute an immediate threat of safety or equipment integrity to the system.

b. A "Notice of Violation" ***will*** be mailed or delivered and Customer service is subject to immediate cut-off in any of the following situations:

I. In the opinion of the Danvers Electric Utility Director, theft of service is clearly evident on the Customer's premises; or

II. When in the opinion of the Danvers Electric Utility Director a situation exists that may endanger public health.

11.4. BILL ADJUSTMENTS FOR THEFT

If Danvers Electric determines theft of service has occurred, it reserves the right to adjust the Customer's current bill and the bills for the past twelve (12) months usage. If the approximate amount of service that was stolen cannot be reasonable determined, the Customer's usage will be set at two to four times the minimum bill from the previous twelve (12) months as set on a case by case basis by the Utility Director, according to the facts of each case.

11.5. RESTORATION OF SERVICE

Service will not be restored until all payments for the following are received by Danvers Electric:

a. Adjusted payment for utility service;

b. All service call charges;

c. Labor;

d. Replacement parts;

e. Disconnection Notification Fee.

Service will be reinstated only during regular working hours, Monday through Friday, except in the case of an emergency.

11.6. CUSTOMER PAYMENT LIABILITY

Discontinuance of service from Danvers Electric shall not release the Customer from liability for payment for service already received or from liability from payments that

thereafter become due under the minimum bill provisions or other provisions of the Customer's contract.

11.7. CUT-OFFS AND LIABILITY

Danvers Electric shall not be liable for any loss or damage resulting from the discontinuance of service.

11.8. CUSTOMER RESPONSIBILITY

The Customer(s) whose name(s) appear(s) on the application for service is responsible for payment of all charges. That Customer is also responsible for any rules or policy violations that occur regarding electric service to that property. Personal participation by the Customer in any such violation shall not be necessary to impose personal responsibility on the Customer.

11.9. COURT AND ATTORNEY'S FEES

In the event any Customer fails to pay any Danvers Electric service fee or charge, the Customer shall pay all costs of collection including court costs and reasonable attorney's fees incurred by Danvers Electric in collection such sums.

12.0 CUSTOMER SYSTEM PROTECTION GUIDELINES

12.1. SECONDARY SURGE ARRESTERS

a. Secondary surge protective devices may be installed by and at the expense of the Customer. For protection to be effective, such devices should be connected to the service-entrance conductors and bonded to the metallic water-piping system, the raceway system, the grounded service conductor at the service-entrance equipment, and any metallic drainage system.

b. Where the service is 750 volts or less, the surge arrester may be mounted on the service-equipment enclosure. The Customer shall be responsible for providing and installing any secondary surge protective devices and for operating, maintaining, and inspecting any such installations.

c. Danvers Electric will not be responsible for the operation, maintenance or inspection of a Customer's installation or for damage to a Customer's equipment resulting from voltage surges, which may occur on the Customer's wiring.

12.2. SHORT-CIRCUIT CURRENTS

So that architects, engineers, and contractors may select proper service equipment to meet Code requirements for short-circuit ratings, the following will apply to new installations served:

a. Residential - supplied at 120/240 volts from overhead or URD single-Phase transformers.

b. Fault currents available at residential service equipment will generally be more than 5,000 amperes, but less than 20,000 amperes.

c. Commercial, Industrial and Apartment Complexes - Available fault currents will vary with each installation. Inquiries for a particular location should be directed to Danvers Electric Engineering.

12.3. GROUNDING

All grounding shall be done in accordance with the National Electrical Code or any other applicable Code enforced by the Wiring Inspector. Danvers Electric shall not be liable for damage to the property of the Customer resulting from unbalanced voltage conditions due to the opening of a grounding neutral service conductor.

GROUNDING SECONDARY AC SERVICE

a. Where the secondary system is grounded at any point, the grounded conductor shall be run to each individual service.

b. Services having a grounded conductor shall have that conductor and the service equipment grounded on the Customer's premises by connecting the grounding

electrode conductor to the grounded service conductor of the distribution system on the supply side of the service disconnecting means. This connection should be made within the service-entrance-equipment enclosure.

c. An underground metallic water pipe, either local or supplying a community, shall always be used as a part of the grounding electrode system where such pipes are available. It shall be supplemented by one or more acceptable grounding electrodes as required by the Massachusetts Electrical Code or any other applicable Code for other grounding electrodes and equipment grounding.

d. To minimize the hazard of electrical shock, all metallic water-piping systems inside a building shall be bonded to the grounding electrode.

e. Where extensive metal in or on buildings may become energized, adequate bonding to the grounding electrode shall be provided.

f. Three-phase, 3-wire, 240-volts or greater, delta service conductors shall be insulated from the service equipment and shall not be grounded. The service equipment shall be grounded by an equipment grounding conductor connected to the grounding electrode.

12.4. INSULATING TRANSFORMERS

Where lighting or other reduced-voltage equipment is permitted from three-phase, 3-wire, delta services, insulating transformers having adequate primary and secondary windings are required.

a. The secondaries of these insulating transformers shall be properly grounded.

b. The minimum number of single-phase transformers that may be used to serve the reduced-voltage load on a three-phase, 3-wire service is shown in the following table:

Reduced-Voltage Load in Kilowatts or % of Total Demand on Service (Whichever is the Larger)	**Minimum Number of** Transformers
Less than 5	**1**
5 to 10 inclusive	**2**
Over 10	**3**

c. Danvers Electric should be consulted prior to buying insulating transformers for this type of installation.

AUTO-TRANSFORMERS

a. Since auto-transformers do not provide insulation between primary and secondary windings, they shall not be used on three-phase, 3-wire, and ungrounded-delta service except to supply reduced voltage for motor starting.

b. Auto-transformers used to supply other branch circuits shall be supplied only by a grounded system as outlined in the National Electrical Code or of any other applicable Code.

13.0 GENERATION INTERCONNECTION

The following general requirements apply to Customer generating facilities designed to operate directly connected to Danvers electrical system (parallel operation) and those which are designed to operate isolated from the system (non-parallel operation). Requirements and specifications for various types and sizes of Customer facilities shall be obtained from Danvers Electric prior to installation.

All Customers that want to interconnect a generator within the Danvers Electric service territory must first obtain all proper zoning and building permits from the appropriate authorities. Before leasing, designing, or contracting any generator the Customer must obtain approval from Danvers Electric.

13.1. PHOTOVOLTAIC (PV) GENERATOR REQUIREMENTS

PV SYSTEMS UNDER 10 kW

A manual external disconnect is not required for PV systems under 10 kW. For UL-listed, non-islanding inverters, which already have external DC and AC disconnects as outlined in Appendix E of the Electric Service Policy and Requirements Handbook, an additional external AC disconnect is redundant.

PV SYSTEMS 10 kW – 500 kW

a. The PV system shall have an external, lockable, and visible disconnect switch between each solar array and the inverter (DC Disconnect) as well as between the inverter and the utility Delivery Point (AC Disconnect).

b. The AC and DC disconnect switches must be rated for max system voltage and current and be accessible at all times to Danvers Electric personnel.

c. The AC disconnect switch must be clearly labeled as the Danvers Electric Utility Disconnect Switch.

d. The Danvers Electric Utility Disconnect Switch may be required to be installed at the primary voltage level delivery point at the Customer's expense.

See Appendix F for the PV System Isolation schematic.

13.2. GENERATOR ISOLATION REQUIREMENTS

All potential generators must have an isolation scheme that adheres to NEC guidelines and the Customer must gather design approval from the wiring inspector.

13.3. STANDBY/BACK-UP GENERATION (NON-PARALLEL OPERATION)

The Customer may install a standby generator to supply all or part of the load in the event of a service interruption. The Customer must secure a permit from the Wiring Inspector

and notify Danvers Electric in advance of installing stand-by generating equipment and obtain approval for the method of connection.

a. Where the Customer installs a stand-by generator for the purpose of supplying all or part of the load in the event of an interruption in the supply of service, the Customer's wiring shall be arranged so that no electrical connection can occur between the Danvers Electric service and the Customer's other source of supply. This will require the installation of a double-throw switch that has a visual opening. This transfer scheme must meet the non-parallel requirements established by Danvers Electric. See *Figure* 2 in Appendix H.

b. Where automatic throw-over switching is installed, the Customer shall provide a load-break isolation switch in combination with each automatic transfer switch. The isolation switch shall provide a visible, lockable means for manually isolating the emergency generator.

c. Danvers Electric personnel will tag the isolation switch in a locked open position during maintenance or repair of Danvers Electric supply lines. **Arrangements utilizing interlocking of single-throw devices are not acceptable.**

13.4. FUEL STORAGE REQUIREMENTS

a. Customer's on-site generator and fuel storage are often located adjacent to Danvers Electric padmounted transformers for ease in using the same trench to the electrical room.

b. Danvers Electric requires protection between the transformer and the generator fuel storage unit, by either a twenty (20) foot separation or a masonry wall. This wall should be erected parallel to and located three (3) feet from one side of the padmounted transformer foundation. The wall should be six (6) feet high and extend approximately three (3) feet beyond each end of the transformer foundation. See *Figures 2 and 3* in Appendix H. Exact details for such application shall be supplied to Danvers Electric for approval.

13.5. CUSTOMER COGENERATION

A cogeneration facility is defined as a facility that produces electric energy and steam or forms of useful energy (such as heat), which are used for industrial, commercial, heating or cooling purposes. Prior to the design and installation of any equipment, a Customer considering a cogeneration installation shall consult with Danvers Electric personnel.

13.6. SYSTEM OPERATION GUIDELINES

Precautions must be taken where alternate means of generation are employed, whether emergency or otherwise, to eliminate the possibility of electrical connection between the distribution system and the Customer's alternate source of supply.

The Customer must notify Danvers Electric and provide electrical details of generator installation and isolation from Danvers Electric's system for **ALL generation interconnections**.

If it appears to Danvers Electric, at any time, that operation of the Customer's generator is adversely affecting or may adversely affect the Town of Danvers electrical system, Danvers Electric may immediately take any and all steps it reasonably believes necessary to mitigate or cure the conditions including, without limitation, disconnecting the Customer's source of generation from the Town of Danvers electrical system.

The Customer shall at all times permit Danvers Electric personnel access to inspect, test, or examine the system or metering equipment.

The Customer is liable for the costs and expenses incurred by Danvers Electric related to disconnection and reconnection of the generation system to the Town of Danvers electrical system.

Note: All Cogeneration required an automatic voltage regulator (AVR) before connecting to Danvers Electric infrastructure.

14.0 SERVICE ENTRANCE GUIDELINES

14.1. SIZE OF CONDUCTORS

The minimum size of service entrance conductors shall be 100 ampere for overhead services and 200 ampere for underground services.

14.2. SERVICE EQUIPMENT

One or more service switches or circuit breakers shall be installed as part of the permanent wiring for each service entrance. These devices shall conform to the following:

a. All service switches or circuit breakers shall meet the requirements of all applicable Electrical Codes and be of a type listed by the Underwriters' Laboratories, Inc. or approved by both Danvers Electric and the Wiring Inspector. All equipment shall be installed in accordance with all applicable Electrical Codes.

b. Any service equipment located on the line side of meters must be of the enclosed type, with facilities for sealing by Danvers Electric. Fuse replacement or breaker reset must be possible without disturbing the enclosure seal.

c. Where multiple service equipment is provided for either commercial or dwelling occupancy, each disconnecting means shall be marked in a conspicuous, legible and permanent manner to indicate which portion of the installation it controls.

14.3. LOCATION OF SERVICE DISCONNECT

a. In general, the service disconnect shall be located on the load side of the meter (hot sequence metering). The service disconnecting means may be installed either inside or outside the building wall.

b. At any location where more than six-meter sockets are required, the service disconnects shall be installed on the line side of the metering equipment (cold sequence metering).

c. Danvers Electric may give special permission to install a 2-wire service when supplying limited loads such as traffic signals, telephone booths, fire alarms systems, individual spotlights, small signs or other small loads.

14.4. MAIN SWITCHES AND DISCONNECTING MEANS

It is required that services be equipped with a main disconnect in order to be able to completely disconnect all of the conductors in the building from the service-entrance conductors. On all services supplied from Danvers Electric underground systems, main disconnects are required. They shall be located in a readily accessible place as near as possible to the point of entrance of the service conductors into the building and be of a type approved by Underwriters' Laboratories, the Wiring Inspector, and Danvers Electric.

14.5. ASSIGNING LOCATION OF SERVICE AND METERING EQUIPMENT

The locations of the service and metering equipment shall be assigned by Danvers Electric. No wiring dependent upon service-entrance and meter locations shall be started until these locations have been definitely assigned and approved. The Customer or his agent will notify Danvers Electric.

14.6. UNMETERED CONDUCTORS

a. Unmetered conductors on Customer's premises shall not be installed in the same raceway or conduit with metered conductors.

b. When unmetered conductors are run through private basements or other private areas not containing Danvers Electric equipment, they shall be enclosed in a continuous length of exposed, rigid metal raceway.

c. The installation of pull boxes or other similar devices is not permitted in such raceways, except where bends exceed those permitted by the applicable Electrical Codes.

d. In a block of stores, the unmetered conductors shall be enclosed in a rigid metal raceway.

14.7. OVERHEAD

ANCHORAGE FOR SERVICE-DROPS

Anchorage for service-drop conductors will be provided by Danvers Electric as follows:

a. A service bolt or other suitable support is required on all buildings constructed of tile, brick veneer, stucco, concrete, concrete block, cinder block, asbestos shingle, sheet iron, plywood, insulating board or other materials which make it difficult to obtain a suitable anchorage for the service-drop conductors. The Customer shall install such bolts or other suitable support. Where a service bolt is adequate, it may be obtained from Danvers Electric at no cost to the Customer.

b. The service bolt shall be located below the service head or weather cap or as otherwise instructed by Danvers Electric.

A typical service-entrance-mast installation is shown in Appendix H - *Figure 6*.

TEMPORARY SERVICE ENTRANCES

a. The Customer shall provide a service entrance, which meets the requirements of a permanent installation with respect to service-drop clearances, metering, grounding and safety.

b. The service entrance may be installed on a guyed or braced 4 inch x 6-inch timber structure that meets the specifications and installation requirements of Danvers

Electric. Where a laminated 4-inch x 6 inch structure is to be assembled using two 2-inch x 6-inch planks, these planks should be bolted together at intervals not exceeding four (4) feet.

c. The temporary service drop span shall not be more than 100 feet. See Appendix H - *Figure 13*.

RESIDENTIAL SERVICE REQUIREMENTS

a. **Single-Family Residence** - Meters shall be mounted on the outside of the building in an approved 100 ampere or larger meter socket supplied by 100 ampere or larger service-entrance conductors.

b. **Multi-Family Residences** - Meters shall be mounted on the outside of the building except as otherwise approved by Danvers Electric.

BUILDING ALTERATIONS AFFECTING ELECTRIC SERVICE

a. To insure continuity of service, the Customer should notify Danvers Electric before starting alterations to a building which might affect the electrical service. This will give Danvers Electric time to inspect the service-drop attachment and advise the Customer of any metering or service problems that could result from the alterations.

b. It will be the responsibility of Danvers Electric, at no cost to the Customer, to ***temporarily*** remove from the building the service-drop attachment to permit the alterations. Customer must supply an approved and inspected temporary mast or other approved structure for this purpose. See Appendix A.

c. When notified, Danvers Electric will reattach this equipment to the building.

d. It will be the responsibility of the Customer to have the service entrance equipment detached from the building and reattached when the work has been completed. It will also be the responsibility of the Customer to install a permanent service bolt or hook for the service drop.

ALUMINUM OR OTHER SIDING TO BE INSTALLED ON EXISTING BUILDINGS

To ensure continuity of service, the Customer should notify Danvers Electric **ten days** before installation is started. This will give Danvers Electric time to inspect the service-drop attachments and advise the Customer of any metering or service problems that could result from the installation of the siding. The Customer should check with the inspection authority having jurisdiction over service requirements for aluminum siding.

CONNECTION TO OVERHEAD CONDUCTORS

A minimum length of three (3) feet for each conductor shall be left at the upper end of the service entrance to provide for connection to Danvers Electric service-drop conductors. Connections to Danvers Electric lines will be made by Danvers Electric.

WIRING METHODS

Service-entrance cables and conduit shall normally be exposed for their entire length, except when they pass through building walls or are encased in two inches of concrete. The service disconnecting means shall be installed either inside or outside of a building or structure at a readily accessible location nearest the point of entrance of the service entrance conductors.

14.8. UNDERGROUND

UNDERGROUND CONDUCTOR CONNECTIONS

a. A minimum length of three (3) feet for each service entrance conductor shall be left at the junction box, hand hole, or above riser (see Figure 12) to provide for the connection to Danvers Electric service conductors.

b. Danvers Electric will provide and install the terminal block connectors in the Customer's hand hole.

c. If the Customer's entrance conductors are other than the Danvers Electric standard, a suitable adapter must be provided for the connectors.

HAND HOLES, JUNCTION BOXES, AND SECONDARY PEDESTALS

On underground services, hand holes and/or junction boxes will be furnished by Danvers Electric and installed by a licensed electrician. Only approved Danvers Electric hand holes and/or junction boxes may be used.

15.0 METER INSTALLATION AND MAINTENANCE GUIDELINES

15.1. GENERAL

All energy supplied by Danvers Electric shall, in general, be measured by appropriate meters for billing purposes. The installation of meters and metering equipment shall comply with the requirements set forth in this Section. Danvers Electric shall furnish and install all meters required for billing purposes.

Danvers Electric has the right to pull a Customer's meter at discretion of the Department; it is the Customer's responsibility to update and maintain secondary service connection (i.e. service panel, meter socket) to the National Electric Code standards. If a Customer's secondary connection is found to be unsafe or otherwise non-compliant after DE personnel have pulled the meter the Customer must upgrade the service at their expense before DE will energize.

15.2. DEFINITIONS

Only definitions of terms pertinent to this Section are included:

a. Delivery-point (service-point) is the point of connection to the facilities of the Customer and the terminus of Danvers Electric's ownership of lines or equipment.

b. Metering-point is the location of the meter or metering equipment such as instrument transformers.

15.3. STANDARD METER INSTALLATIONS

The following are standard meter installations normally specified for the various types of service installations:

a. Metering equipment shall be installed on the line side of the service disconnecting means (hot sequence).

b. The meter socket shall have an approved single handle operated manual bypass for all services 400 Amps or greater.

c. Meters will be installed on buildings, not on pedestals, except for service to mobile homes, temporary services or by arrangement with Danvers Electric.

d. For Single-Phase Services, where the load-side capacity is less than 400 amps, self-contained socket-type meters will be installed. Where the capacity is in excess of 400 amperes, socket-type meters with current transformers will be installed. All sockets shall be furnished by the Customer and have U.L. labels.

e. For Three-Phase Services, the Customer or his contractor shall always consult with Danvers Electric to ascertain whether socket-type or bottom connected meters will be used.

f. A switch will normally be required on the load side of the meter in three-phase services.

g. On services with more than one metering installation, the disconnecting devices must be arranged so that each Customer may be disconnected without affecting the other.

h. The service voltage must be clearly and permanently marked on the meter socket prior to meter installation.

15.4. OUTDOOR METER LOCATIONS

GENERAL

a. Outdoor meter locations are required for all installations or as otherwise approved by Danvers Electric.

ACCESSIBILITY

a. Each location shall be readily accessible to Danvers Electric representatives for meter reading, testing, and maintenance.

b. Service will not be provided if reaching the meter requires Danvers Electric employees to use adjacent property, climb fences or other obstructions, or cause damage to the Customer's shrubbery or flower beds in gaining access to the meter.

CLEARANCES

a. The meter socket shall not protrude over the sidewalk or driveway.

b. Meters on garages shall be so located that they will not be damaged by motor vehicles.

c. At and directly in front of each meter location, a clear, safe work space shall be maintained. Such work space shall be at least four (4) feet wide, shall extend out from the meter at least three (3) feet, and up to a height of at least six (6) feet. See Appendix H - Figure 8.

d. In addition, the meter socket must be located at least three (3) feet, measured horizontally, from a gas meter, regulator or propane cylinder. Appendix H - *See Figures 4 and 8*.

POLE MOUNTED METERS

Metering equipment shall not be installed on Danvers Electric owned poles, except for metered power supplies for communication companies.

15.5. INDOOR METER LOCATIONS

GENERAL

a. In areas subject to vandalism or damage, permission may be granted for indoor meters in single occupancy buildings for commercial and industrial accounts.

b. In multiple occupancy buildings, for residential or commercial use, meters may be installed indoors in one common location accessible to all occupants.

c. Additional meter rooms may be provided where requirements are in excess of six meters per location or the service capacity is in excess of 600 amperes per location.

ACCESSIBILITY

a. All indoor meters shall be in a readily accessible location next to the service-entrance equipment.

b. Danvers Electric will be supplied a key or code to access any enclosed meter location.

c. Any time the lock is changed for any reason, the Customer is required to provide Danvers Electric with a new key or access code to the meter enclosure.

15.6. METER HEIGHT

OUTDOOR METERS

In no instance will any Outdoor meter be installed with the top of the meter more than six feet nor the bottom of the meter less than three feet above the final grade. A clear area of three feet is required in front of each meter.

EXCEPTION: Meters for cable television power supplies or amplifiers must be installed above the normal height. Appendix H - *See Figure 19.*

INDOOR METERS

Multiple meter centers installed indoors shall be mounted so that the face of the meter is 60 inches maximum and 30 inches minimum above the floor level. A clear area of three feet is required in front of each meter.

VOLTAGE DROP

Meter locations and feeder sizes should be so chosen that the voltage drop between the point of service entrance and the meter will not exceed one percent at full load of the feeder.

MOUNTING

Meter sockets and meter/breaker centers shall be mounted plumb and firmly secured to supports. Where supports are attached to masonry or concrete walls, expansion bolts or anchors shall be used. Wood plugs driven into holes in masonry, concrete, plaster or similar materials are not acceptable.

15.7. IDENTIFICATION OF METER SOCKETS AND CUSTOMER DISCONNECTING MEANS

All meter sockets and Customer disconnecting means shall be plainly and permanently marked for proper suite, floor, office, etc. by the electrical contractor or owner. Permanent labels must be used – marker is not acceptable. Service will not be provided to a building that has unidentified meter sockets.

Where suites, offices, apartments or other areas are not assigned numbers by the building owner, the electrical contractor shall clearly designate the location of each tenant's premises, such as: "Basement Front," "1st Floor right," or "2nd Floor rear". Such locations shall be determined from a position facing the front of the building from the outside.

15.8. UNMETERED CONDUCTORS

a. Unmetered conductors shall not be installed in the same raceway with metered conductors.

b. Where unmetered conductors are run through Customer's premises, they shall be enclosed in a continuous run of rigid metal conduit or service bus way.

c. The installation of pull boxes or other similar devices is not permitted on unmetered raceways on the Customer's premises per electric code.

d. Where unmetered plug-in type armor-clad bus way is used to serve Customers in the same building, all plug-in access openings shall be provided with a steel hasp assembly for padlocking the hinged hood in the closed position.

e. The sealing of unmetered raceways with lead-wire or padlock type meter seals is not acceptable.

15.9. DEMAND AND KVA METER WIRING

Commercial and industrial installations may require kW and kVA demand metering. Contractors should obtain specific information from Danvers Electric for each such installation.

15.10. SECURITY

a. All cabinets, switches, circuit breakers and other enclosures giving access to unmetered wiring shall be equipped with approved locking provisions.

b. The service switch or circuit breaker, when installed on the line side of the meter, shall be so designed that the unmetered wiring is inaccessible without removing the locking device, even during the renewal of fuses.

15.11. MOVING OR REMOVING METERING EQUIPMENT

Meters, instrument transformers, and other metering devices are the property of Danvers Electric and must not be moved, removed or altered in regard to wiring or connections by other than authorized employees of Danvers Electric, except when written specific permission is obtained from Code Administration and/or Danvers Electric. Violators will be prosecuted.

ELECTRIC WORKER RESPONSIBILITY -METERS

Any qualified person who has been given permission to remove Danvers Electric metering equipment is required to label each meter socket and its associated meter *before* removing the meter. It is the sole responsibility of the person that removes a meter to re-install it in the same meter socket location it was pulled from.

MIXED/CROSSED METERING (METER NUMBER DOESN'T MATCH SERVICE ADDRESS)

Plugging or disconnecting a meter shall not be used as a means to determine mixed or crossed metering at a location where multiple meters are present. The owner or tenant is required to contact the DPW Business Division and arrange an appointment with meter services and the wiring inspector to determine if mixed/crossed wiring has occurred.

If mixed/crossed wiring is found all electric bills shall be forwarded to the owner until repairs are made, all meter sockets are proven to be properly labeled, and a re-inspection is made by meter services and the wiring inspector. Any over charge for crossed or mixed wiring shall be paid by the owner of the service address to affected tenants; Danvers Electric is not responsible for providing compensation.

15.12. METER SOCKETS

SELF-CONTAINED METERS

For each service with self-contained metering, the Customer shall furnish and install an approved meter socket that shall have the U.L. label and conform to Danvers Electric requirements as follows:

a. Automatic by-passes are never permitted.

b. All meter sockets installed on commercial and industrial services, shall be equipped with a safety arc shield and an approved visual, single-handle operated manual by-pass. Appendix H - *See Figures 14 and 15*.

c. The non-by-passed, in-service position of the operating mechanism must be visible when the meter is installed.

d. It must not be possible to replace the meter socket cover when the operating mechanism handle is in the by-passed position.

e. All sockets shall have a mechanism which locks the meter blades in the socket jaws.

f. After the meter socket has been installed, it is the contractor's responsibility to protect the interior of the socket by installing an optically clear cover obtained from Danvers Electric.

Warning: Do not use a manual by-pass as a disconnect to open or close a circuit carrying load.

COVER PLATES

After the wiring has been completed, the interior of the socket shall be protected. Socket covers will be furnished by Danvers Electric for unused socket meter positions. Sealing rings will also be furnished by the Danvers Electric.

INSTALLATION OF SOCKETS

a. Meter sockets must be mounted plumb and level, using wood screws of sufficient length and size to hold the socket securely, independent of conduit or cable connections.

b. Rust-resisting screws shall be used outdoors and in damp locations.

c. Standard expansion bolts or anchors shall be used for masonry walls.

d. The threads on conduit, fittings or sealing plugs screwed into the hubs of meter sockets located outdoors shall have joint compound applied to prevent the entrance of water.

CODE DISTANCE

The minimum clearance between the sides of multi-station troughs or single-position sockets and the building wall is 4 inches.

METER CONNECTIONS

The service or line-side conductors are always connected to the top terminals of meter sockets or troughs and the load-side conductors to the bottom terminals. A number of typical connections for socket meter installations are shown in Appendix H - *Figures 14 and 15*.

GROUNDING

Where the socket is installed on the load-side of the service disconnecting means, it shall be permissible to ground the socket by connection to the grounded (neutral) conductor on the load side of the service disconnect if:

a. No service ground-fault protection is installed, and

b. All meter sockets are located near the service disconnecting means.

c. The grounded (neutral) conductor may be insulated from the grounded parts of the socket.

d. For ungrounded delta services the meter socket shall be bonded by means of an equipment-bonding conductor if a metal raceway is not used to enclose the service conductors. The terminal and jaw of the middle phase conductor must be insulated from ground.

15.13. METER PEDESTALS

In general, these devices are only used for mobile homes and temporary services. However, at the discretion of Danvers Electric, they may be approved for certain other appropriate applications and follow the guidelines put forth in this section.

a. Meter pedestals are free-standing units intended to be mounted outdoors on a concrete pad in conjunction with underground wiring.

b. If a free-standing meter pedestal is used, it must extend a minimum of 34 inches above the finished grade or ground line. The pedestal shall have a stabilizing means extending below the frost line to insure that the meter mounting stays in a plumb position.

c. Meter pedestals for self-contained metering must be listed devices and shall incorporate circuit breakers, but these are not intended to replace the service disconnecting means required at the building.

d. The neutral strap in a meter pedestal is bonded to the enclosure, and must be provided with a terminal for a grounding conductor.

15.14. INSTRUMENT TRANSFORMERS

INSTRUMENT TRANSFORMERS AND ENCLOSURES

For all installations requiring instrument transformers, the transformers (current and voltage transformers) will be supplied by Danvers Electric. Transformer cabinets shall be supplied by the Customer. The Customer will install the transformer cabinet and provide and install the raceway (as required). Appendix H - *Figure 18* shows typical primary connections.

METER ENCLOSURE AND TEST SWITCHES

Meter enclosures and test switches for use with instrument transformers will be furnished by Danvers Electric. Meter socket enclosures shall be installed by the Customer and wired by Danvers Electric.

INSTRUMENT TRANSFORMER SECONDARIES

A metal raceway shall be provided between the transformer cabinet and the meter test switch cabinet for instrument transformer secondaries as follows:

a. Provide 1-1/4 inch raceway for secondary conductor runs that are less than 20 feet in length.

b. Provide 1-1/2 inch raceway for secondary conductor runs that are 20-50 feet (100 conductor feet) in length. The maximum distance between meter and instrument transformer shall be 50 feet.

c. Secondary wiring will be furnished and installed by Danvers Electric.

USE OF INSTRUMENT TRANSFORMER CABINETS

a. Instrument transformer cabinets shall not be used as junction boxes or for branch circuit wire-ways.

b. Service conductors shall enter and leave the cabinet as one circuit with no branches regardless of number of conductors per phase.

c. Line-side connections to other meters shall not be made in the transformer cabinet or enclosure.

MULTIPLE CONDUCTORS

Where multiple conductors are used or where conductor size is greater than 250 MCM, the Customer shall furnish and install a rigid mounting securely fastened to the transformer enclosure for connecting the conductors to the primary terminals of the current transformers.

15.15. CUSTOMER REQUEST FOR METERING PULSES

Upon written request from a Customer, Danvers Electric will install at the Customer's expense, as part of its metering facilities at the metering point, a source of kWh pulses to the Customer so that the Customer may monitor load/demand for the purpose of load control. The following conditions apply:

a. The Customer's load is presently being measured with a watt-hour meter with pulse initiation equipment; or

b. If there is no pulse initiating equipment or if the output does not meet the Customer's requirements, the Customer will pay for the installation of the necessary additional equipment to furnish the pulses, including isolation relays where necessary.

c. The installation, operation, and maintenance of any equipment, other than that provided by Danvers Electric, shall be the responsibility of the Customer.

d. The point of connection of Danvers Electric and Customer equipment shall be designated by Danvers Electric and the connection made by Danvers Electric.

e. The Customer will be required to pay Danvers Electric for subsequent installation and maintenance charges and any alterations necessitated by a change to the existing meter installation.

Please contact Danvers Electric to request load data and/or installation of pulse metering equipment.

15.16. APPROVED METERING EQUIPMENT

General Requirements:

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

b. All meter sockets must have a UL label.

c. Any modification of a meter socket will void the UL listing and the manufacturer's warranty, making it non-compliant with Danvers Electric's approved standards.

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

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

f. The lever operated manual bypass is required to be single-handle operated:

- 100 ampere may be supplied with non-jaw release
- 200 ampere and 320 ampere must be supplied with jaw release

g. The non-bypassed, in-service position of the operating mechanism must be visible when the meter is installed.

h. Auxiliary straps or jumpers are not acceptable as bypass devices.

i. It must not be possible to override the bypass by replacing the cover when the operating mechanism handle is in the bypassed position.

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

k. Horn-type bypasses are not permitted.

l. Sliding-type bypasses are not permitted.

m. Automatic bypasses are not permitted.

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

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

p. Custom-made meter channels and modular metering panels may be used for groups of meters such as in apartment houses. Prints of these panel arrangements must be submitted to Danvers Electric for approval prior to installation. Line-side panels must be sealable.

q. All underground, residential, single-position sockets must be a minimum 16"W x 22"H x 5"D, 200 amp, ringless with line side lugs capable of accepting 350 KCMIL conductors with lever operated jaw release bypass. Sockets will also have a minimum 3-inch knockout to accept a 3-inch slip joint. If a service run is greater than 200 feet, contact Danvers Electric.

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

s. All underground hubs or knockouts must be a minimum of 3 inches diameter.

t. Hot sequence metering (6 socket positions or less) is required for single-phase 120/240-volt service.

u. New Equipment from manufacturers not listed in this book will be considered for approval. Samples must be submitted to Danvers Electric for approval.

16.0 POWER QUALITY

Danvers Electric delivers high quality power. The increased use of Customer-owned equipment that can adversely affect the quality of electric service to other Customers is of great concern. In order to maintain delivery of high quality power to all of our Customers, the installation of Customer-owned equipment, which may affect Danvers Electric's system, shall be required to meet the necessary specifications outlined in this section. Danvers Electric reserves the right to withhold or disconnect service where installation of such loads or equipment is detrimental to other Customers.

16.1. VOLTAGE SENSITIVE EQUIPMENT

Customers owning, or planning to own computers, reproduction, X-ray, data processing, emergency equipment, or other voltage sensitive equipment, are advised that auxiliary devices and relays must be employed to filter out voltage spikes and to adjust for voltage variations. Customers should consult the manufacturer of their equipment for suitable devices to protect against these conditions. Danvers Electric cannot assume responsibility for voltage variations that may be caused by switching, lightning surges, motor vehicle accidents or any other conditions either normal or emergency in nature.

16.2. FLUCTUATING LOADS

Electric welders, furnaces, boilers, x-ray equipment, compressors, pumps, molding machines or similar equipment with load fluctuations at a frequency greater than four times per hour should not be installed except under conditions specified by Danvers Electric. Voltage dips caused by load fluctuations, regardless of their frequency, shall not cause undue disturbance to other Customers nor hinder Danvers Electric in maintaining proper voltage conditions. Danvers Electric reserves the right to withhold and/or remove connection to loads that are considered detrimental to the service of other Customers.

16.3. SECONDARY LIGHTNING ARRESTERS

The Customer may install secondary lightning protective devices. The Customer will be solely responsible for the expense, installation, operation, maintenance, and inspection of such devices. Lightning arresters shall not be mounted on meter sockets or metering equipment. Installation of lightning protective devices shall be done in accordance with the National Electric Code (NEC).

16.4. SHORT CIRCUIT CURENTS

Danvers Electric recommends the use of an infinite bus for calculation of short circuit ratings and selection of the proper service equipment to meet the code requirements. Available fault currents will vary with each residential, commercial, and industrial installation.

16.5. UNBALANCED LOAD

The Customer shall at all times take and use energy in such a manner that the load will normally be balanced to within +/-10% between phases on three-phase services and

between live conductors on single-phase services. Danvers Electric reserves the right to require the Customer to make necessary changes at the Customer's expense to correct the unbalanced load conditions.

16.6. SIGNS AND AUTOMATICALLY CONTROLLED LIGHTING

Loads not exceeding 2 kVA may be wired two-wire. Loads in excess of this limit shall be wired three-wire or four-wire. Flashing signs shall be properly balanced throughout each portion of the flashing cycle. Danvers Electric shall be consulted in advance when signs or automatically controlled lighting are to be installed.

16.7. HARMONIC DISTORTION

Customers with loads that inject harmonic current/voltage distortion into the Danvers Electric grid shall follow **all practices and requirements for harmonic control in electric power systems** as established by the IEEE-519 standard. Any Customer found in violation of the guidelines set forth in table 17.7 will be subject to financial penalties as deemed by Danvers Electric personnel. It will be the Customer's responsibility to furnish all power quality correction equipment to bring their load within the specified tolerances outlined in Table 17.7.

Table 17.7

Maximum Harmonic Current Distortion in % of I_L						
Individual Harmonic Order (Odd Harmonics)						
I_{sc} / I_L	< 11	11≤ h < 17	17 ≤ h < 23	23 ≤ h < 35	35 ≤ h	TDD
<20*	4.0	2.0	1.5	0.6	0.3	5.0
20<50	7.0	3.5	2.5	1.0	0.5	8.0
50<100	10.0	4.5	4.0	1.5	0.7	12.0
100<1000	12.0	5.5	5.0	2.0	1.0	15.0
>1000	15.0	7.0	6.0	2.5	1.4	20.0
Even harmonics are limited to 25% of the odd harmonic limits. TDD refers to Total Demand Distortion and is based on the average maximum demand current at the fundamental frequency, taken at the PCC.						
* All power generation equipment is limited to these values of current distortion regardless of I_{sc} I_L.						
I_{sc} = Maximum short circuit current at the PCC I_L = Maximum demand load current (fundamental) at the PCC h = Harmonic number						

16.8. GROUNDING

All secondary services having a grounded neutral shall have that neutral adequately grounded in accordance with National Electric Code (NEC) on the Customer's premises at the service equipment. The system-grounding conductor shall be connected to the neutral conductor at the service equipment and not in the meter trough, thereby allowing inspection to be made without removing the meter. On premises where a metallic underground water piping system is not available to provide an effective ground, other approved grounding electrodes, as specified by the NEC and Massachusetts Electrical Code, shall be provided.

16.9. POWER FACTOR

Maintenance of a high power factor is of the utmost importance to both the Customer and Danvers Electric in the operation of the distribution systems. Power factors of 90% or higher are advantageous for both the Customer and Danvers Electric. Danvers Electric should be consulted in advance regarding any installation likely to create power factors of less than 90%. Danvers Electric reserves the right to require Customer to make the necessary modifications at the Customer's expense to correct power factors below 90%. Customers with less than a 90% power factor will be subject to a penalty charge – see below. **Danvers Electric reserves the right to de-energize any service that creates voltage distortion or inadvertent current flow to its system.**

POWER FACTOR CORRECTION CAPACITORS

When a Customer desires to install capacitors for the purpose of power factor correction, Danvers Electric should be consulted prior to the ordering of such equipment. Approval by Danvers Electric for all capacitor installations is required so service to other Customers will not be adversely affected by the manner in which such equipment is installed and operated.

POWER FACTOR PENALTY CHARGES

When a Customer's average power factor is determined by Danvers Electric to be less than 90% over the course of one (1) billing cycle, the Customer will receive notification. Upon notification, the Customer will have one (1) probationary billing cycle to employ power factor correction measures to bring their power factor within the 10% threshold. After the probationary billing cycle, each subsequent billing cycle the Customer is found to be below the power factor threshold, the Customer will be charged 1% of that billing cycle's total bill for each 1% the power factor is below 90%. For example, if a Customer has a power factor of 85% as measured at the end of the billing cycle subsequent to the probationary billing cycle, they will be charged an additional 5% of that electric bill.

17.0 ELECTRIC UTILIZATION EQUIPMENT

17.1. GENERAL

Danvers Electric should be consulted regarding the voltage and capacity available at each location. All installations must conform to the requirements of local or state authorities and to pertinent sections of the applicable Electrical Codes.

17.2. SYSTEM DISTURBANCES

Certain electronic equipment, such as computers and microprocessors, and some manufacturing processes are extremely sensitive to and can be damaged by disturbances, which are inherent in all supply systems. Therefore, it is the Customer's responsibility to furnish, install, own and maintain equipment needed to protect his operations.

17.3. SINGLE-PHASE MOTORS

Single-phase motors will be supplied at one of the nominal voltages indicated below. If the use of equipment with locked rotor currents listed below causes flicker in illumination or dips in voltage, which would be objectionable to other Customers, the locked-rotor current must be reduced. *Refer to Table No. 18.3.*

a. 120 Volt Supply Motors with ratings of 1/2 horsepower or less and window-type air conditioning units whose full-load running current does not exceed 7-1/2 amperes, with not more than four starts per hour and with a locked rotor current not exceeding 50 amperes, may be connected to a 120 volt supply.

b. Motors having a full-load running current of more than 7-1/2 amperes but less than 12 amperes, and conforming to the above locked-rotor current limitations, may be connected to a 120 volt branch circuit only if such branch circuit supplies the one unit and does not supply lighting units or other appliances. It is strongly recommended that units drawing more than 7-1/2 amperes full-load running current be connected to 240 or 208 volt circuits.

c. 208 or 240-Volt Supply Motors with ratings larger than 2-1/2 but less than 6-1/2 horsepower will normally be supplied at 208 or 240 volts, provided the locked rotor current does not exceed the values given in Table No. 18.3.

d. In predominantly residential areas, and for small commercial installations, Danvers Electric should be consulted before installing motors with ratings over five horsepower.

MAXIMUM LOCKED-ROTOR CURRENTS FOR SINGLE-PHASE MOTORS

a. Single-phase motors supplied from combined light and power secondary systems shall not have locked-rotor current in excess of those shown in Table No. 18.3 on page 85. Motors having locked-rotor current in excess of those shown in the Table shall be equipped with starters which will limit the current to the values specified.

b. Motors that start more than four times per hour are an exception to the above and may cause interference to other Customers. Automatically (frequently) started motors for general use, such as motors for refrigerators, oil burners, and similar devices shall not have a locked-rotor current exceeding 23 amperes at 120 volts or 29 amperes at 240 volts.

c. For multi-motored devices arranged for starting of motors one at a time, the locked-rotor current limits shall apply to each individual motor.

SINGLE-PHASE MOTORS ON THREE-PHASE SERVICE

Where single-phase motors are supplied from a three-phase service, they shall be properly balanced across the three phases.

TABLE NO. 18.3: SINGLE-PHASE MOTORS

This table is based on not more than four starts per hour with long periods of continuous operation under maximum load conditions. Consult Danvers Electric where these conditions cannot be met, or where equipment rating and/or starting characteristics exceed the following:

Rated At	**Maximum Locked-Rotor Current**
120 volts	50 amp
240 or 208 volts, single phase	
2 hp or less	60 amp
2.5 to 6.5 hp Residential Use	Consult Danvers Electric
2.5 - 6.5 hp Commercial Use	60 amp plus 20 amp per hp in excess of 2 hp
Air Conditioning or Heat Pump Equipment Rated in Btu per Hour - 240 or 208 volts, single phase	
20,000 Btu/hr. or less	60 amp
21,000-30,000 Btu/hr.	60 amp plus 3 amp per 1000 Btu/hr. in excess of 20,000 Btu/hr.
Over 30,000 Btu/hr.	Consult Danvers Electric

17.4. THREE-PHASE MOTORS

a. Three-phase motors shall not have locked-rotor currents in excess of those shown in Table No. 18.4 on page 88.

b. Starting compensators are ordinarily required for three-phase motors 10 horsepower and larger. Exception to this practice will be allowed to the extent local distribution facilities will permit.

c. Motors having locked-rotor current in excess of that shown in the Table shall be equipped with starters that will limit the currents to the values specified.

d. Increment-start motors must have not less than a one-half second interval between steps.

e. Danvers Electric should be consulted in regard to the installation of three-phase motors larger than 10 horsepower.

TABLE NO. 18.4: THREE-PHASE MOTORS

Maximum Locked-Rotor Current Values in Amperes

This table is based on not more than four starts per hour with long periods of continuous operation under maximum load conditions. Consult Danvers Electric where these conditions cannot be met, or where equipment rating and/or starting characteristics exceed the following:

Rated At	**Maximum Locked-Rotor Current**
230 volts, three-phase	
2 hp or less	50 amp
2.5 to 10 hp	50 amps plus 14 amp per hp in excess of 2 hp
Over 10 hp	Consult Danvers Electric
Air Conditioning or Heat Pump Equipment Rated in Btu Per Hour - 230 volts, three-phase	
20,000 Btu/hr. or less	50 amp
21,000-50,000 Btu/hr.	50 amp plus 2.5 amp per 1000 Btu/hr. in excess of 20,000 Btu/hr.
Over 50,000 Btu/hr.	Consult Danvers Electric

17.5. ELECTRIC UTILIZATION EQUIPMENT PROTECTION

The Customer's equipment shall be equipped with devices that protect against over-current, short-circuit and ground faults. Such devices shall conform to the requirements of the applicable Electrical Codes. Danvers Electric strongly recommends that all motor installations be adequately protected to prevent improper operation, equipment damage and personal injury which might result from abnormal conditions occurring in Danvers Electric's facilities or the Customer's wiring system.

17.6. PROTECTION AGAINST SINGLE-PHASE OPERATION

As required by the Massachusetts Electric Code, three-phase motors shall be protected against the possibility of the failure of any one phase of the supply circuit. Three over-current (overload) units shall be used on all motors unless the motor is protected against single-phase operation by other approved means.

17.7. UNDERVOLTAGE PROTECTION

Motors that cannot be safely subjected to full voltage at starting, or motors the starting of which on return of normal voltage after an interruption would endanger life or property, should be provided with automatic under-voltage protection. Such protective device should insure that with either no voltage or under-voltage, the motor will be disconnected from the line or the starter will be returned to the "off" position. Danvers Electric recommends the use of time delay under-voltage protection because instantaneous under-voltage protection will operate on momentary fluctuations of voltage.

17.8. OVERLOAD PROTECTION

All motors should be protected against overload by the installation of adequate over-current thermal protective devices or their equivalent, which will operate so as to prevent excessive motor winding temperatures.

17.9. PROTECTION AGAINST PHASE REVERSAL

On motors for passenger and freight elevators, cranes, hoists, and other equipment, where reversal of direction of rotation might cause property damage or injury, a reverse-phase relay should be installed so the motor circuit will be opened in the event of a phase reversal or the loss of any phase. The operation of this relay and associated circuit breaker should be instantaneous and should be such that the circuit cannot be re-energized until the normal phase relations are restored.

17.10. WATER HEATERS

Electric water heaters for domestic use in an individual private dwelling or an individual private apartment must be wired to Danvers Electric specifications for the applicable service voltage and domestic rate.

18.0 LIST OF APPENDICES

LARGE THREE PHASE TRANSFORMER
23 KV PADMOUNT SWITCHGEAR

APPENDIX I – STREET LIGHTING REQUEST FORM
APPENDIX J – UNSAFE ELECTRICAL EQUIPMENT NOTIFICATION FORM