

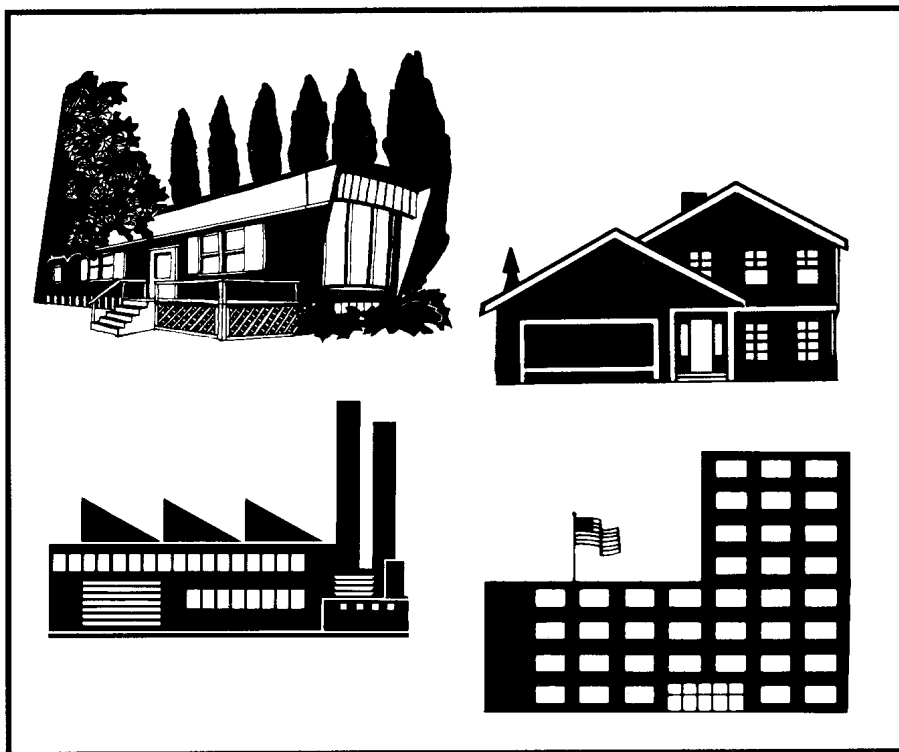


Reliable. Essential.

Requirements for the installation of

Electric Services & Meters

September 8, 2003



Specifications for Electric Installations

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SECTION I INTRODUCTION

Section I - Introduction

1. Purpose. In this booklet, the Company presents information and general specifications relative to the use of electricity supplied from our lines. The booklet is intended as a guide in making electrical installations in order to protect the interests of our customers and to comply with regulations which experience has shown to be necessary for safe, adequate, and satisfactory service.

2. Scope. The information and specifications included in this booklet cover conductors and equipment connecting the Company's electric supply system to the customer's premises, and other subjects of mutual interest to the Company, customer, architect, engineer, and electrical contractor. It is not a complete set of rules governing the installation of electrical wire and equipment nor does it pertain to services above 600 volts (except as referenced in Sections III, IV, VII and IX). For service above 600 volts, the customer shall submit detailed plans and specifications for inspection and review by the Company prior to purchasing equipment or proceeding with the installation. The Company will inform the customer concerning its requirements for electrical insulation, protective equipment, and metering facilities, and will supply additional information such as estimated short circuit data, relay recommendations, etc.

3. Rate Schedule. For Rate Schedules and the rules and Regulations pertaining thereto, reference is made to the Schedule for Electric Service on file with the Public Service Commission. The schedule is available for examination at any business office of the Company.

4. Cooperation. It is the sincere desire of the Company to provide and maintain dependable, safe, and satisfactory electric service in a courteous and efficient manner. Cooperation of customers and their agents is appreciated. PRELIMINARY INFORMATION FURNISHED TO THE COMPANY EARLY IN THE DEVELOPMENT OF PLANS LEADING TO NEW OR INCREASED ELECTRIC SERVICE, WILL AID IN PROPER SCHEDULING OF THE SERVICE WORK. Cooperation of all interested parties and strict adherence to the specifications in this booklet will expedite satisfactory connection of the electric service.

5. Codes. These specifications are a supplement to the National Electrical Code, but they are not a substitute for that code or municipal, county, state and federal codes. The Company requires that the customer's wiring installations be made in accordance with all applicable codes and these specifications. Service may be denied if these codes and specifications are not met.

6. Requests For Information. The Company will assist the customer with any problem relating to the utilization of electric service. Company representatives are available at our offices to receive requests for information regarding the application of these specifications.

SECTION I INTRODUCTION

7. Responsibility. Adequate electrical capacity of the service equipment is the responsibility of the customer. The electrical contractor should assist the customer in determining existing and future needs.

Significant increases or changes in connected electrical loads must be reported to the Company.

The Company will only accept responsibility for equipment that it supplies to the customer to become part of the electrical service and the meter itself. The Company shall not be liable for problems resulting from improper use and installation of said equipment by the customer or customer's agents. See Section 7, "Meters and Meter Boards".

8. Electrical Inspections. To protect the customer's interests as well as its own, the Company requires the customer to furnish an electrical inspection certificate before energizing a new installation or upgrade of service. The Company may also require re-inspection before re-energizing a service.

Inspection certificates will only be accepted from agencies approved by NYSEG for that purpose.

Inspections shall confirm compliance with the latest version of the National Electric Code, any municipal, county, state or federal codes, and any NYSEG specification that may supersede portions of the aforementioned codes. NYSEG reserves the right to challenge the inspection when Company personnel observe deficiencies in the installation at any time prior to energizing the installation.

The Company's local offices maintain lists of electrical inspectors and application forms, and should be contacted on specific questions dealing with electrical inspections.

9. Revisions. These specifications are subject to revision without notice and will be revised or amended as required by developments of the industry to protect the mutual interests of the customer and Company. The latest revisions should always be used. Additional copies of this booklet and any revisions can be obtained at the Company's local offices or online at www.nyseg.com.

SECTION II DEFINITIONS

Section II - Definitions

1. Building. A structure which stands alone or which is separated from adjoining structures by approved fire walls with all openings therein protected by approved fire doors.

2. Company. New York State Electric & Gas Corporation (NYSEG).

3. Cost or Expense. The cost of all materials and equipment, labor and other definite charges applicable thereto, plus a reasonable percentage for engineering, purchasing, the use of construction equipment and other costs of a general character, associated with the work to be performed.

4. Customer. A present or prospective user of the Company's electric service.

5. Easement. A right granted by a property owner for a specific use of a defined area of said owner's property.

6. Ground. A conducting connection between an electrical circuit or equipment and earth, or some conducting body which serves in place of the earth.

7. Line. A system of poles, wires and fixtures, or the equivalent ducts, conduits, cables, etc. (when placed underground), used for general distribution of electricity.

8. Mobile Home. A mobile home is a factory assembled structure or structures equipped with the necessary service connection, made to be readily movable as a unit on its own running gear, and designed to be used as a dwelling unit(s) without a permanent foundation.

9. Permanent Foundation. A foundation structure for a mobile home or building to which the mobile home or building is securely attached and not readily moved.

10. Permanent Sewer System. An installation consisting of an approved septic tank, dry well and/or leach fields, in compliance with local zoning laws, or connection to a municipal sanitary sewer system.

11. Permanent Structure. A structure will be considered permanent when it is connected to an approved permanent sewer and water system and is in compliance with local zoning laws.

12. Permanent Water System. A supply of running water derived from connection to a municipal water piping system, well, or other suitable source.

SECTION II DEFINITIONS

13. Recreational Vehicle. A vehicular type unit primarily designed for recreational, camping or travel use, which has its own motive power or is mounted on or drawn by another vehicle. The basic entities are: travel trailer, camping trailer, truck camper, or motor home.

14. Recreational Vehicle Park or Campgrounds. An accommodation for recreational vehicles or other camping facilities where individual rented site occupancy is normally of short duration (not intended for permanent or year-round living).

15. Right-of-Way. The right of ingress and egress over and/or to the easement.

16. Riser. The portion of a system(secondary or primary wires) which transitions between above grade(pole mounted) and below grade or underground.

17. Service. The conductors and equipment for delivering energy from the electric supply system to the wiring system of the premises served.

18. Service Connection. A service connection is one service drop or lateral and its associated service entrance.

19. Service Drop. The overhead service conductors between the Company's last pole or other aerial support and the customer's first point of attachment to the building or other structure of the premises being served.

20. Service Entrance. That part of the installation from the point of attachment or termination of the service drop or lateral to and including the service equipment on the customer's premises.

21. Service Entrance Conductors. The service conductors or cable which extend from the point of attachment or termination of the service drop or lateral to the terminals of the service equipment.

22. Service Equipment. The necessary equipment, usually consisting of circuit breaker or switch and fuses and their accessories, located near the point of entrance of supply conductors to a building and intended to constitute the main control and means of cutoff for the supply to the premises.

23. Service Lateral. A system of underground conductors and equipment for delivering electricity from the Company's distribution system to the wiring system of a building of premises.

24. Temporary Service. Service to be used for a limited time (normally not to exceed one year) for construction, exhibits, decorative lighting or similar purposes, or service to non-permanent structures.

SECTION II DEFINITIONS

25. UD (Underground Distribution). The terminology used to describe the placement below ground of the Company's electric distribution system.

26. URD (Underground Residential Distribution). The terminology used to describe the placement below ground of the Company's electric distribution system (except transformers and switchgear) and customer's service laterals in residential developments.

27. Wire Size. Where stated, conductor size is in terms of American Wire Gauge (AWG).

SECTION III GENERAL INFO. & REQUIREMENTS

Section III - General Information and Requirements

1. Access to Customer's Premises.

The Company's authorized employees or agents shall have access, at all reasonable times, to its meters and equipment installed on the customer's premises.

2. Identification of Employees.

Employees or representatives of the Company authorized to visit the customer's premises are furnished with identification which they will show upon request. This is done to protect customers from unauthorized persons representing themselves as Company employees.

3. Application for Service.

Application for service may be made by telephone, mail, or by personal application at the Company's offices; however, written application on the Company's forms may be required. Application for service should be made as far as possible in advance of the date electric service is required.

THE CUSTOMER OR HIS CONTRACTOR SHALL CONSULT THE COMPANY REGARDING THE CHARACTER OF SERVICE AVAILABLE BEFORE PLANS ARE COMPLETED, EQUIPMENT PURCHASED OR CONSTRUCTION COMMENCED ON FACILITIES TO BE CONNECTED TO THE COMPANY'S DISTRIBUTION SYSTEM. INFORMATION THE CUSTOMER OR HIS CONTRACTOR FURNISHES THE COMPANY REGARDING THE CUSTOMER'S PROPOSED ELECTRICAL INSTALLATION SHOULD BE IN WRITING. THE COMPANY WILL NOT BE RESPONSIBLE FOR THE ERRORS RESULTING FROM THE ORAL TRANSMISSION OF INFORMATION.

4. Temporary Service.

Examples of temporary service are those supplied to non-permanent structures, during the construction of permanent structures or projects, or for short time service (usually not to exceed one year) to carnivals, exhibits, decorative lighting, etc. The customer may be required to pay charges prior to connection of service(see definition #3 under Section II. Installation judged to be unsafe by the Company will not be energized.

Service entrance, meter and other wiring on temporary installations are to be installed in the same manner as required for permanent installation. Inspections and approval by an authorized inspection organization shall be required prior to the Company making the service connection. The customer shall be required to provide a substantial and adequate support, guyed if necessary (see Section IV, paragraph no. 17).

SECTION III GENERAL INFO. & REQUIREMENTS

5. Insulation Certificate.

An insulation Certificate of Compliance may be required by the Company before a residential electric service will be connected. It certifies conformity with applicable minimum insulation standards adopted by the New York State Public Service Commission and/or by New York State in the Energy Conservation Construction Code. The latter code applies to all buildings (including non-residential) for which application for a building permit is made and plans are filed in this State on or after January 1, 1979. Copies of the Certificate of Compliance form are available from the Company. Contact the Electric Market Services Department regarding specific requirements.

6. Time Of Use (TOU) Service.

For residential and qualifying non-residential customers, the Company offers to meter and bill separately, at a lower TOU rate, all electricity used for all purposes during the applicable hours (Eastern Standard Time). For more information, see the appropriate NYSEG rate schedules. With this service, there is a cost advantage if certain energy using appliances, such as electric water heaters, are "controlled" to operate during all or most of the lower cost time.

7. TOU Controlled Appliances.

An example of this installation is where the heating elements of an electric water heater are "controlled" by a customer-owned time clock that is set to operate only during the residential hours of 11:30 p.m. to 7:00 a.m. EST. (Other times may be applicable-). Various other appliances may be controlled, including Electric Thermal Storage (ETS) heating equipment and swimming pool filtration equipment. The time clocks that control "off-peak" load(s) should be synchronized by the customer to follow the timing of NYSEG's billing meter. An illustration is shown in Figure 6.

The load control timer should have manual override capability to energize the appliance(s) during the non-TOU hours if necessary. The controller must automatically reset at the end of the selected override period. The Electric Market Services Department should be consulted for information in regard to recommended appliance sizes-and heating specifications.

8. TOU Controlled Metering.

New installations of "controlled" appliances, such as electric water heaters and Electric Thermal Storage (ETS) heating equipment, will require the installation of a NYSEG Electronic billing meter.

The electronic meter will have battery backup for continuous time keeping in the event of a power interruption. Customer-owned time clocks, shown in Figure 6, must be programmable to allow synchronization with NYSEG's electronic meter, and must have a carryover capability (minimum 3 hours) for continuous time keeping.

SECTION III GENERAL INFO. & REQUIREMENTS

9. Residential Heating Element Requirements.

Electric resistance heating elements used in equipment such as furnaces, boilers, water heaters, etc., shall not exceed 10KW per element or stage. Heating loads composed of multiple stages shall be automatically controlled. A minimum delay of 10 seconds between operations of stages is allowed.

Some types of electronic control systems may cause noticeable electrical interference. Only full wave type controls are recommended.

10. Residential Electric Space Heating.

The total electric heating system capacity shall not exceed by more than 20 percent the most extreme (coldest day) design heat loss as calculated according to an acceptable method used in the heating industry. For example, ACCA Manual J, NEMA, or ASHRAE. An exception to this is for Electric Thermal Storage (ETS) heating equipment, which must be sized according to manufacturer's specifications. The Company may refuse to accept an oversized system on its lines. In such case, it would be the responsibility of the customer and the contractor or dealer to rectify the situation. The Electric Market Services Department should be consulted for information and recommendations regarding system sizing, installation, and control specifications necessary to provide the customer with adequate and satisfactory service.

11. Special Equipment.

Services for electrical furnaces, welders, X-ray apparatus, large motors and other types of equipment, which may interfere with satisfactory service to other customers, require special consideration (see Section XI).

12. Character of Electric Service.

The Company will designate the character of electric service. The service voltage, number of phases and wires will depend upon available lines, the customer's location, and the size and nature of the proposed service. All types of systems are not available at all locations. Available voltages and characteristics of service are normally considered to be those voltages and types of service that are existing at the customers location. Generally, only one service voltage will be provided to a particular location. To determine the type of service to be supplied, THE CUSTOMER SHALL CONSULT THE COMPANY BEFORE PROCEEDING WITH THE INSTALLATION OF WIRING OR ORDERING OF ELECTRICAL EQUIPMENT.

SECTION III GENERAL INFO. & REQUIREMENTS

SECONDARY OR LOW VOLTAGE SERVICE OF THE FOLLOWING TYPES WILL BE SUPPLIED BY THE COMPANY ONLY WHERE AVAILABLE:

<u>Phase</u>	<u>No. Of Wires</u>	<u>Nominal Voltage</u>	<u>Demand</u>
1	2	120	3kW Max
1	3	120/208	
1	3	120/240	
3	4	120/240	
3	4	120/208	50kW Min
3	4	277/480	50kW Min

Note: Padmount transformer installations for three-phase service are only available in voltages of 120/208 and 277/480 volts. 50kW minimum demand for 277/480 volt service generally applies to new services where NYSEG 277/480 facilities do not exist. *50kW minimum for 120/208 volts recommended for underground areas.

13. Service Above 600 Volts.

Service voltage above 600 volts will be supplied where conditions warrant. It is particularly important that the Company be consulted in advance for these cases. The Company will designate the type of service based on the location, size and nature of the proposed load, and its proximity to the Company's facilities. Reference shall be made to NYSEG publication SP-1099.

14. Service Taps.

All connections between Company and customer facilities will be made and removed exclusively by Company authorized personnel.

The Company reserves the right to make all service connections. The connection of the Company's electric service or any alternative thereof by anyone except Company authorized personnel is PROHIBITED BY THE PENAL LAW AND PUNISHABLE AS A MISDEMEANOR, IF DONE WITH THE INTENT TO INJURE OR DEFRAUD. VIOLATORS OF THIS RULE WILL BE PROSECUTED.

The law provides that the user of such an illegal connection is presumed to have made or consented to the unauthorized connection and is punishable therefore, as well as the party making the unlawful connection, unless proven to the contrary.

15. Load Balance.

The customer shall balance the load so that a minimum of unbalanced current occurs.

16. Customer Owned Generation.

The Company shall be consulted before any generating equipment is connected to circuits which are, or may be supplied from the Company's lines (see Section XIII, Customer Owned Generators - Including Standby Generators).

SECTION III GENERAL INFO. & REQUIREMENTS

17. Objectionable Effects.

The Company reserves the right to discontinue service where equipment used by the customer results in objectionable effects upon or interference with the operation of facilities of the Company, its customers, or another public service company unless the customer discontinues the use of such equipment or installs corrective equipment to overcome the objectionable effect or interference.

18. Unauthorized Attachments to Poles.

The Company forbids any unauthorized attachments to its poles, such as banners, signs, clothes lines, antennas, basketball hoops, lighting fixtures, etc. It forbids the use of its poles for placards, political posters or any advertising matter. The Company will remove any such unauthorized attachments without notice and may prosecute such trespassing.

The Company forbids any work by contractors on its poles or in its manholes without specific written authorization.

SECTION IV SERVICE CONNECTIONS

Section IV. Service Connections

General

1. This section applies to new service installations and to existing installations when changes and/or rearrangements are made. Each case shall be referred to the Company before electrical work is begun.

2. Normally only one type of electrical service will be made available to a customer's building or premises. Exceptions may be by special permission in accordance with the National Electrical Code, Article 230 - Services. These exceptions must be approved by the Company before work is started (see Section II for the definition of "Building").

3. The type of construction and route of the service connection will be determined by the Company and the customer. Services will not be run from building to building. When crossing property, service drop wires should not be carried over buildings and shall not be carried over swimming pools.

4. The customer shall furnish, install, own and maintain all service entrance conductors and service equipment.

5. The Company will furnish, install, own and maintain adequate metering to measure the energy and demand used in accordance with its contracts.

6. To provide for future load growth, the Company recommends that the capacity of service entrance conductors and service equipment be greater than the National Electrical Code's required minimum.

7. Where service in excess of 600 volts is desired, the customer shall consult the Company at an early stage to allow design and coordination of the service connection. In addition, the Company will advise the customer of any additional requirements for electrical insulation, grounding, service equipment and metering facilities. Reference shall be made to NYSEG publication SP-1099. The Company will inform the customer of available short circuit currents. The customer shall submit detailed plans for approval by the Company prior to the purchase of equipment or before proceeding with the installation.

8. Overhead Service Connection. The minimum service entrance and service equipment shall be single phase, three wire, 100 ampere. A variation will be permitted only after the prospective customer assures the Company, in writing, that a smaller service will be adequate for requirements, or when service is to be used solely for supplying loads of less than 3000 watts, such as signs, traffic signals, CATV power supplies or temporary construction.

9. Underground Service Lateral (URD Subdivisions only). The minimum service lateral conductors shall be #2/0 AWG Aluminum (see Section XVI, Specification 1 for details). No variation will be permitted for residential application. Exception shall only

SECTION IV SERVICE CONNECTIONS

be when the service is to be used solely to supply loads of less than 3000 watts, such as signs, traffic signals, etc.

Overhead Service Connections from Overhead Distribution Lines

10. The Company will usually install, own and maintain the overhead service drop. The customer may be required to contribute towards the cost of the excess service length or make other arrangements according to NYSEG policy.

11. The Company reserves the right to designate the location at which its service drop will be attached to the customer's structure. This point will normally be not less than 15 feet nor more than 25 feet above final grade. Where the customer's building is too low to permit the installation of the service bracket at the minimum of 15 feet above grade, the Company may, if local ordinances and field conditions permit, approve the attachment at a point not less than 10 feet above finished grade provided that the minimum heights specified in the National Electrical Code can be obtained (see Fig. No. 31 for Swimming Pool Clearance Specifications).

12. The point of service attachment must be accessible from the ground by ladder.

13. The Customer will furnish and install a suitable attachment for the service drop to be securely bolted to a stud or plate at the point designated by the Company.

14. Where the customer's structure is too low to provide a point of attachment that will assure the minimum required conductor clearance, the customer may be required to install a mast type riser as shown in Figure No. 19.

15. The customer's service weatherhead shall be located above and within 12 inches of the point of attachment of the Company's service drop.

Service entrance conductors shall extend a minimum of 36" beyond the service head to allow for connection to the service drop (see Figure No. 18).

16. On farms or other premises where buildings under a single occupancy or management will be supplied through one meter, it may be desirable to install the meter on a pole (see Figure No. 13, 14). In such cases, the meter pole with necessary guys shall be furnished, installed, owned and maintained by the customer. The Company shall be consulted in all cases for its requirements regarding the poles and guys.

17. Where temporary service is to be supplied, the customer shall provide, at the point of attachment, a substantial and adequate support. The support shall be capable of withstanding a horizontal pull of 1000 pounds at the center of the service bracket. Such a support should be a pressure treated pole (Figure 12) or a pipe riser attached to the framing of a building. The point of attachment to these risers shall be made according to Figure 19. The Company shall be consulted in all cases for required pole sizes, setting depths and guying requirements.

SECTION IV SERVICE CONNECTIONS

Underground Service Connections from Overhead Lines Below 600 Volts

18. General. If a customer desires an underground service lateral where the Company's line is overhead, the customer shall furnish, install, own, and maintain the necessary facilities at the customer's expense. The installation shall be in accordance with NYSEG's specifications (see Figure 20) and the National Electrical Code. The Company shall be consulted in every case before work is started so that it may designate the pole from which the service will be taken, the location of the riser on the pole and meter location. Precautions must be taken when trenching near poles to prevent undermining of the pole. The customer or contractor performing the work will be held responsible for any damage to NYSEG facilities. If multiple service laterals will emanate from the same pole, NYSEG has the option to install and own the pole riser portion and a handhole at the base of the pole to terminate the customer service laterals. (see Paragraph 22)

In some circumstances, the customer may be required to secure a high way occupancy permit for installations within the public right-of-way. In such cases, the customer shall provide the company with proof that the appropriate permits have been obtained prior to starting the installation.

Underground service laterals are difficult and costly to change. The Company emphasizes the need to size the cable to allow for future load additions.

19. Company Pole Replacements or Relocations. If the pole from which a residential underground service (400 Amp or below) originates is replaced or relocated, NYSEG will assume the responsibility to transfer the service lateral and riser to the new pole provided that only reasonable hand excavation is required. NYSEG reserves the right to make this judgment. The customer shall otherwise bear the responsibility to relocate or replace the underground service lateral. All services above 400 Amp will be the sole responsibility of the customer to transfer.

20. Replacement. The replacement and/or installation of additional or larger conductors, due to customer initiated service changes, will be at the customer's expense.

21. Direct Buried Cable. The service cables may be buried directly in the ground. The cable and its installation must be in accordance with the National Electrical Code (see Section XVI, Specification 1 for installation requirements).

22. Conduit at Pole. On Company owned poles, the Customer shall install galvanized rigid steel conduit, or Schedule 80 PVC to a point not less than 8 ft. or more than 12 feet above the ground line and extending at least 18 inches below the ground line to protect the cables. Provided the Customer has utilized materials that are compatible with the Companies stock materials, the Company will furnish and install the protective conduit, u-guard, adapters, and mounting straps above the customer installed portion in order to reach the Company's secondary conductors (see Figure No. 20 for installation details). The Company's stock conduit sizes are 2" and 4" with attachment directly to the pole being the standard installation. If the Customer requires alternate sizes or attachment methods, the Customer may be required to provide the materials or

SECTION IV SERVICE CONNECTIONS

cover the cost of material purchase. Two 4-inch risers or their space equivalent are the maximum permitted on Company owned poles.

On privately owned poles, the customer shall furnish and install the galvanized steel conduit, or schedule 80 PVC conduit adapters, and mounting straps up the pole to a point 12 inches above the Company's secondary conductors. The Company will assist in the installation if the pole supports the Company's energized conductors.

23. Conduit to Meter. When the underground service lateral terminates in a meter enclosure on the outside of a building, the cable shall be protected by a galvanized steel or Schedule 80 PVC conduit up the wall to the meter socket. When direct burial cable is used, the conduit shall extend 18 inches below grade (see Figure No. 20).

24. Where the underground service cable terminates in a building, it shall be protected by a galvanized steel conduit through the wall and 5 feet outside the wall. All conduits entering a building underground shall be sealed at their indoor ends with a suitable compound to prevent the entrance of moisture and gases.

SECTION IV SERVICE CONNECTIONS

25. Grounding. Metallic riser conduits on the outside of a building shall be grounded in accordance with the National Electrical Code. A metallic pole riser shall be grounded to an approved ground clamp at the top of the metal conduit on the pole (see Figure No. 20 for installation details).

26. Length of Lateral. The customer shall install service lateral cable long enough to extend from the terminals of the meter device to a point 48 inches beyond the top of the Company's secondary conductors or transformer secondary terminals. Pending the connection, the cable shall be carefully coiled and fastened to the pole at the top of the conduit and the conduit opening sealed with Duct Seal or equivalent compound (see Figure No. 20). The Company will make final connections to the distribution system.

Underground Service Connections in Underground Network Areas Below 600 Volts

27. General. The Company must be consulted for the location of these areas during the design stage of any project.

28. Conduit. When the Company's low voltage distribution line is underground in a public street adjacent to the customer's building, the Company will furnish, install, own, and maintain at its expense, the conduit to the customer's property line. The conduit on private property (including any necessary adapter) must be furnished, installed, owned, and maintained by the customer. The Company will designate the service lateral location.

29. Junction Box. If the point where the conduit enters the building is within ten feet of the property line, the Company will provide and the customer shall install a junction box on the inside where the conduit enters the building. If the distance from the property line to the point where the conduit enters the building exceeds ten feet, the customer shall furnish, install, own, and maintain a handhole at the property line. The handhole shall be constructed to Company specifications.

30. Cable. The Company will furnish, install, own, and maintain the cable to the customer's property line. If a Junction Box is within ten feet of the property line, the Company will furnish, install, own, and maintain the cable to the Junction Box. The customer will reimburse the Company for the installed cost of the cable on private property. If a handhole is used, the Company will furnish and install the cable to this handhole. The customer will install the cable from this handhole to the service equipment.

31. Relocations. If a service is relocated on an order from a public authority, the customer will be responsible for that portion of the service on private property. If the service is relocated at the customer's request, the customer shall pay the entire cost of the relocation both on private and public property.

32. Company Lines on Private Property. Where the Company's underground low voltage distribution line is on private property, on or adjacent to the customer's property, the division of responsibility will be the customer's outside building line instead of the property line as covered in the previous paragraphs.

SECTION IV SERVICE CONNECTIONS

Exception: Where the Company's underground low voltage distribution line is underground on private property, and where the Company has a right-of-way, one side of which is adjacent to public property, the Company will install all facilities within and up to the edges of this right-of-way. Any facilities on the adjacent public or private property will be installed in accordance with the previous paragraphs.

33. Service Entrance Equipment. An overcurrent device of adequate short circuit and load current interrupting capacity shall be furnished, installed, owned, and maintained by the customer. The customer is cautioned that underground systems generally have high short circuit currents available. The Company will furnish the customer information on equipment short circuit current requirements.

(URD) Underground Service Connections for Residential Developments

34. General. Public Service Commission regulations require that underground electric systems be provided in a government approved subdivision consisting of five or more dwelling units or to a multiple dwelling of four or more units. Any new mobile home development or extension of an existing development to serve five or more sites with a permanent water and sewer connection is considered by NYSEG to be the same as a development of conventionally constructed single-family homes for the purposes of determining if underground facilities must be installed. Information on URD and related costs is available at the Company's local offices.

Because of the special nature of underground systems, the developer must make application to the Company with sufficient lead time for design of the underground electric facilities within the development.

The Company will not install the underground electric facilities until water and sewer are installed and the final grade of the streets has been established. The developer shall rough grade (within six inches of final grade) the electric utility's easement strip, place and maintain construction survey stakes indicating grades, property lines and the locations of other utilities. Curbing and paving shall not be installed until the underground electric facilities are installed.

35. Service Lateral. The service lateral within the lot line and running to a building will be installed by the applicant in accordance with the Company's specifications. The Company shall be consulted in every case before work is started in order to designate the location of the meter and the route of the service. The minimum permitted service lateral for a single family dwelling will be 150 Amps (see Section XVI, Specification #1).

36. Replacement. Where the Company owns and maintains a Company or customer installed URD service, the replacement and/or installation of additional or larger conductors due to customer initiated service changes will be at the customer's expense.

Underground Service Connections for Commercial Developments

37. General. Where the customer applies for underground electric facilities, the Company will install underground distribution in new commercial developments where

SECTION IV SERVICE CONNECTIONS

there is no existing distribution system and the development meets qualifications. Information on undergrounding in commercial developments and related costs to the developer is available at the Company's offices.

38. Because of the special nature of underground systems, the developer must provide the Company with sufficient lead time to design the underground electric facilities within the development.

39. Prior to any installation of electric distribution facilities by the Company, the developer will install sewage and water facilities and will establish final roadway and parking area grades, stake curbs, and drainage within the development and maintain these during construction.

40. The Company shall be consulted in every case before work is started so that it may designate the location from which service will be taken and the metering location.

SECTION V SERVICE EQUIPMENT

Section V. Service Equipment

1. General.

Each service entrance shall be provided with disconnecting means and overcurrent protection.

Service equipment shall conform to the National Electrical Code and local authorities having jurisdiction.

The location of the service equipment and the general electrical arrangement will be agreed upon after mutual consideration of all factors by the customer and the Company. The final location of the service equipment will be determined by an authorized Company representative.

2. Ampere Rating.

Service Connected to Overhead Lines: The capacity of service equipment for an installation of one meter shall not be less than 100 amperes.

Service Connected to Underground Lines: The capacity of service equipment for an installation of one meter shall not be less than 150 amps.

A reduction of the above minimum requirements to 60 amperes may be permitted with Company approval for signs, traffic signals, CATV power supplies, and for temporary construction buildings, etc., where the load will not exceed 3000 watts.

3. Commercial or Industrial.

Because each business establishment has their own particular electrical requirements, it is essential that details of each installation be reviewed with the Company at an early date. The Company will specify the service voltage and general electrical and arrangement, and will guide the customer in the selection of service equipment.

NOTE: The minimum ampere ratings stated above do not apply to individual meters in a group of stores (such as in a mall) where a main service switch exists. In this case a reduction in size of the individual service equipment to 60 amperes is permitted with the provision that #2 aluminum or equivalent conductor is installed on both the line and load side of the meter socket. The company shall be consulted before work is started.

4. Service Less Than 400 Amperes, Less than 600 Volts.

Service equipment shall conform to the requirements of the National Electrical Code. Refer to Section VII - Meters and Meter Boards, to determine when metering transformers are required.

SECTION V SERVICE EQUIPMENT

5. Service 400 Amperes and Above, Less than 600 Volts.

The customer should arrange an early meeting with the Company to review the service equipment and its arrangements. It is important that the customer provide the Company with detailed plans and specifications prior to the purchase of service equipment or proceeding with the installation.

The Company, upon request, will inform the customer concerning the magnitude of the current, which the service equipment may be called upon to interrupt.

Any tap made ahead of the main service equipment for fire pumps, exit lights, control power for the circuit breaker, etc., shall be provided with disconnecting means and overcurrent protection adequate for the duty. Such connections shall be made only where specifically approved by the Company and must be metered, either by the existing or an additional meter.

Services above 800 amperes shall normally be served underground by either a pole mounted or pad mounted transformer installation.

6. Requirements.

The customer shall install service equipment which is UL listed for the intended use, and which will meet the following criteria:

- a) A voltage rating suitable to the service.
- b) An ampere rating which is adequate for the initial and anticipated future load requirements. The device shall be capable of interrupting load current equal to its ampere rating.
- c) A fault current interruption capability at the service voltage of not less than the value specified by the Company.

If a disconnecting switch and fuse combination is utilized, it shall meet the following requirements in addition to those in 6a, b, and c above:

- d) The fuse shall conform to the latest NEMA Standard for Power Fuses.
- e) The customer shall take full responsibility for maintenance of a spare stock of fuses.

If an air breaker is utilized, it shall meet the following requirements in addition to those in items a, b and c:

- f) An operating mechanism of mechanically trip-free construction.
- g) An overcurrent tripping device on each pole arranged for delayed overcurrent protection with instantaneous tripping for currents of fault magnitude.
- h) Conformance with latest NEMA and ANSI Standards for Power Circuit Breakers.

SECTION V SERVICE EQUIPMENT

Notes:

1. The Company recommends that any undervoltage tripping devices required by the customer be arranged to trip individual feeder circuits rather than the main breaker.
2. The customer is responsible for the maintenance of the service equipment.

SECTION VI GROUNDING

Section VI. Grounding

1. General. The grounding conductor and equipment of the service entrance shall be effectively and permanently grounded in accordance with the latest edition of the National Electrical Code as approved by the American National Standards Institute, or in accordance with the requirements of applicable authorities having jurisdiction where any difference occur.

2. AN APPROVED GROUND SHALL BE MADE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND COMPANY SPECIFICATIONS (SEE FIGURE 29). NYSEG REQUIRES A MINIMUM OF #4 COPPER GROUNDING CONDUCTOR FOR ALL SERVICE GROUNDS.

NOTE: UNDER NO CIRCUMSTANCES SHALL A GAS OR FUEL OIL PIPING SYSTEM BE USED AS A GROUNDING ELECTRODE.

3. Lightning or Surge Protection Grounding. See Section XII for lightning or surge protection grounding requirements.

SECTION VII METERS AND METER BOARDS

Section VII. Meters and Meter Boards

1. General

These general specifications apply to metered installations rated 600 volts or less. Reference to NYSEG publication SP-1099 has been made in Section III of this booklet for installations above 600 volts. Customer installation of metering equipment shall be in accordance with requirements specified in this publication and NEC Article 312. All metallic equipment used for metering purposes shall be properly bonded and grounded as required by this installation specification and NEC Article 250.

2. Equipment Requirements Through 800 Amps

The Company will furnish and install all meters and auxiliary equipment required for billing. Meters will be located outdoors and shall be accessible to Company personnel.

For 100 ampere and 200 ampere residential services, the Customer will furnish the meter socket(s). The Company will provide meter sockets for all non-residential accounts, and any service greater than 200 amps. In either case, the Customer has the responsibility for installation of meter socket(s). Metering transformers and transformer enclosures through 800 amperes (primary rating of metering current transformer) will be supplied by the Company.

The maximum number of service disconnects is limited to six by NEC Article 230 for one set of service entrance conductors. Where additional meters/disconnects are required, a main service disconnect switch (fully rated for the service size) on the service entrance is required. Contact NYSEG before purchasing and installing any equipment.

3. Equipment Requirements Above 800 Amps

Above 800 amperes, the customer will furnish, install, and maintain metering transformer enclosures or switchgear. The customer will coordinate the requirements for meter installations with the Company prior to the purchase of equipment over 800 amperes. The Company will furnish physical and electrical specifications for metering transformers above 800 amperes upon request. Physical and electrical space requirements and conformance to applicable standards and codes is the customer's responsibility.

4. Meter Sockets

For residential services, the Customer will install, own and maintain all 100 ampere and 200-ampere self-contained, non-lever bypass type meter sockets. Meter sockets supplied by the Customer must meet the following requirements:

Conform to the latest revision of ANSI/UL 414, ANSI C12.7, NEMA 250, NFPA and other relevant standards.

SECTION VII METERS AND METER BOARDS

Must be UL approved and carry the UL label.

Be of a ringless design and include a horn style by-pass mechanism suitable for connecting insulated jumper leads for use in installing or removing the meter. This enables the Company to test or exchange the meter without causing a service interruption.

At minimum, the enclosure of the meter sockets must be of NEMA TYPE 3R design (an enclosure intended for outdoor use to provide a degree of protection against windblown dust and rain). Other NEMA TYPE designs or enclosures with multiple TYPE designs are allowed as long as the minimum environmental requirements of TYPE 3R are met.

Have a sealing mechanism, which allows the socket cover to be sealed to the meter socket body by a Company padlock seal. The sealing mechanism must be made of stainless steel.

Individual meter sockets shall be rated for 100 amperes or 200 amperes continuous load. For a 100 ampere service it is permissible to use a higher rated meter socket up to 200 amperes continuous.

Each position of a ganged meter socket shall be rated for 200 amperes continuous. The design of a ganged meter socket shall allow for the cover to be opened, closed, and sealed individually.

The Company shall furnish all meter sockets for non-residential accounts and for any service greater than 200 amperes. If self-contained, these meter sockets are required to have a single handle, lever operated by-pass, which locks the meter blades in the socket jaws. This by-pass mechanism enables the Company to test or exchange the meter without causing an interruption in service.

Specifications for meter sockets of more than four positions and meter pedestal assemblies shall be submitted to the Company for review and concurrence prior to purchase. Only multi-socket equipment specifically designed for that application will be used to feed additional meter positions. (For example, two, two-position multiple socket assemblies will not be used as a four-position assembly, the second fed from the first.) For additional information on pedestal assemblies, see Figure 25 and adjoining installation specification.

5. Connections

The customer is responsible for providing lugs and making connections to meter socket terminals and current transformer primary connections on the line and load side with the exception of pole mounted or overhead installations. The Company will make all secondary connections to the primary potential tap of current transformers.

Meter installations shall be connected to the load side of service equipment when supplied from an underground network supply.

SECTION VII METERS AND METER BOARDS

Self-contained meters will be used for services up to 400 amperes. A line side disconnect must be provided for each self-contained 277/480 volt meter position.

Metering shall be connected to the line side of service equipment in all other cases unless specified by the Company.

6. Meter Access & Location

The main disconnect, metering transformers, and meters shall be accessible to the Company at all times and located as close together as practical. In the interest of both the customer and the Company, a suitable meter location must be identified. The Company will designate the meter location. The location of all metering equipment must be approved by the Company prior to installation.

Minimum clearances are required between gas and electric meters, and the Company should be consulted where combined services are being installed.

Residential meters, sockets and instrument transformer enclosures are installed outdoors not more than 6 feet or less than 5 feet from permanent ground level. A minimum of 4 feet is allowed for horizontally grouped and pedestal installations. Vertically stacked meters shall be installed with no less than 2 feet between permanent ground level and the center opening of the first position. A minimum of 10 inches is required between the centers of the adjacent positions. The meter must be accessible to the Company at all times, and at least 4 feet of clear work space must be provided in front of the meter. All meter sockets or enclosures shall be mounted in a true vertical position.

Commercial and industrial installations using indoor switchgear instrument transformers may require the meter to be located indoors. The Company preferred location is outdoors, but certain conditions necessitate an indoor location. The customer should consult with the Company to determine the meter location.

If a meter must be installed indoors, it shall be located as close as practical to the point where the service enters the building. It must be accessible to the Company at all times.

There shall be at least 4 feet of clear work space in front of the meter. The meter shall not be installed in stairways, coal bins, bathrooms, bedrooms, attics, store windows, behind shelves, transformer vaults, near moving machinery or other similar inaccessible or dangerous location. The meter shall be protected against exposure to excessive moisture, dust, chemicals, vibration, temperatures, corrosive material, etc. The meter location shall afford protection against vandalism.

The Company will make a reasonable effort to protect the meter. However, if vandalism is severe and all equipment the Company normally provides to protect the

SECTION VII METERS AND METER BOARDS

meter is ineffective, the customer must provide adequate protection or accept billing for damage to the meter installation, estimated loss of revenue, and labor charges.

7. Meter Identification

Whenever there is more than one meter installed on any one premise, each meter socket or enclosure shall be permanently and clearly marked to properly identify the portions of the premises being served. Marking shall be made with paint or permanent marker on the inside and outside of the meter enclosure; not on the cover. Marking shall be the responsibility of the owner/customer.

8. Meter Board

Where meter boards are used, they shall be made of 3/4 inch exterior grade plywood and painted with a good quality flat paint suitable for the location. The meter board shall be large enough to accommodate all metering equipment (connection boxes, switches, meters, etc.) necessary to each particular type of installation. There shall be a minimum of 21 inches clear board space above the meter box where meters are to be mounted above the meter box. A minimum of 6 inches of space shall be maintained between meter boxes and other equipment. No meter board with multiple positions shall be mounted on a single pole. See Figure 26.

Meter sockets may be mounted directly to a masonry wall using Figure 22 as a guide.

9. Relocation

Any change in the location of a meter or service entrance after installation will be made at the expense of the applicant or customer if it has been: (1) requested by an applicant or customer for their accommodation, providing such a change is approved by the Company, or (2) deemed necessary, by the Company, to provide suitable location or adequate protection for the meter. When there is a change by the customer from one service classification to another, such change shall be governed by the requirements applying to a new installation.

A service entrance shall not be left un-metered unless approved by the Company. Connection of any device made ahead of the meter, other than a main disconnect when required, is not permitted.

10. Seals

All meter installations and points of access to unmetered wiring on the customer's premises will be sealed by the Company. All cabinets, and equipment enclosures containing unmetered conductors shall be made sealable before the service is energized.

SECTION VII METERS AND METER BOARDS

11. Tampering Penalties

Breaking of seals or tampering with meters or unmetered wiring by unauthorized persons is prohibited. Attention is called to Section 165.15 of the New York State Penal Law, which makes such unauthorized tampering a misdemeanor punishable by fine or imprisonment or both.

SECTION VIII MOTORS AND CONTROLLERS

Section VIII. Motors and Controllers

1. General.

It is important that the Company be consulted concerning the type of electrical service available to assure correct application (phase and voltage) of the motor to be used.

Starting current limitations are prescribed for conventional motorized equipment rated in horsepower, and air conditioning or heat pump equipment rated in BTUH.

2. Company to be Advised.

The Company shall be advised before any single phase motor rated in excess of 5 HP (equivalent 40,000 BTUH) or any three phase motor rated 10 HP (equivalent 75,000 BTUH) or larger is installed by a customer. The information given to the Company shall include the nameplate data of the motor, the nature of the load and operating characteristics of the proposed installation, such as how frequently the motor will be started and if the load fluctuates rapidly, such as in a sawmill, stone crusher, elevator, etc.

3. Single Phase Motors.

Single phase motors larger than 1/2 HP or with running current exceeding 10 amperes should normally be arranged for operating at 208 or 240 volts. Generally, motors larger than 5 HP should be three phase, but the Company may require the use of single phase motors or appropriate phase converters where three phase service is not readily available.

4. Protection.

All motors should be properly protected against overload, including overloads caused by low voltage conditions. It is the customer's responsibility to protect three phase motors against the possibility of single phase operation. Reverse phase relays, together with circuit breakers, or the equivalent devices should be used on all three phase installations for elevators, cranes and similar applications to protect the installation from phase reversal.

5. No Voltage Release.

Motor controllers are recommended to be arranged so that in the event of sustained interruption the motor will be disconnected from the line, unless it is equipped for automatic starting after such an interruption. Where continuous operation of motorized equipment is essential, motor controllers should be arranged to allow motors to operate through a transient no-voltage condition lasting for 1/2 second (30 cycles). The Company should be consulted where problems of this nature might be encountered.

SECTION VIII MOTORS AND CONTROLLERS

6. Motor Starting Requirements.

Momentary fluctuation of circuit voltage occurs each time a motor is started on the circuit. Where this effect is pronounced, a visual disturbance or lighting flicker may be observed by the customer or other customers served from the same system. In extreme cases, the motor itself may have difficulty in starting.

To avoid objectionable voltage variations and maintain proper service to the customer and neighbors, it is necessary to set a maximum permissible limit to the current drawn from the service during each step of a motor-starting operation, based upon frequency of starts.

7. Motor Starting Currents.

The maximum starting currents permitted for single phase and three phase conventional motorized equipment rated in horsepower and for air conditioning or heat pump equipment rated in BTUH are:

SINGLE PHASE MOTORS

Service Voltage	Max. Starting Current per Step, Max. Four Starts per Hour	Max. Equiv. Rating of Air Conditioner or Heat Pump BTUH
120 Volts	50 Amperes	10,000
208 or 240 Volts	60 Amperes for 2 HP Motor	20,000
208 or 240 Volts	80 Amperes for 3 HP Motor	25,000
208 or 240 Volts	120 Amperes for 5 HP Motor	40,000

THREE PHASE MOTORS

Service Voltage	Max. Starting Current per Step, Max. Four Starts per Hour	Max. Equiv. Rating of Air Conditioner or Heat Pump BTUH
208 or 240 Volts	100 Amperes up to 5 HP Motor	40,000
208 or 240 Volts	130 Amperes for 7½ HP Motor	50,000
208 or 240 Volts	160 Amperes for 10 HP Motor	75,000
208 or 240 Volts	230 Amperes for 15 HP Motor	150,000
480 Volts	50 Amperes up to 5 HP Motor	40,000
480 Volts	65 Amperes for 7½ HP Motor	50,000
480 Volts	80 Amperes for 10 HP Motor	75,000
480 Volts	115 Amperes for 15 HP Motor	150,000

8. Explaining Starting Limits.

The specific motor-starting current limitation stated in Paragraph 7 is the maximum allowable increase in current on the line side of the motor-starting device at any instant during the starting operation.

The limitation does not restrict the total current that can be taken by the motor in starting, but may require that the total be built up gradually, or in steps, each of which does not exceed the specific limitation for the motor. Where a step type starter is used, an appreciable time must be allowed on each step and the current increase of each step shall not exceed the imposed limitation.

SECTION VIII MOTORS AND CONTROLLERS

9. Group Starting.

When motors are started in group instead of individually, the starting current limitations apply to the group and not to the individual motors. In some case sequential starting may be necessary.

10. Favorable Locations.

There are locations on the Company's system where starting currents larger than specified may be permitted. These locations are on network systems or systems which supply large loads or where special conditions exist. The Company shall be consulted whenever larger starting currents are contemplated for a specific installation.

SECTION IX OUTDOOR TRANSFORMERS

Section IX. Transformer Installations and Vaults on Customers Premises

1. Information for primary voltage supply from 2400 volts to 34,500 volts is available at the Company's local offices (refer to Specification SP-1099) or online at www.nyseg.com.

Section X. Mobile Homes, Mobile Home Parks, Recreational Vehicle Parks

1. General Service Requirements

The requirements for electric service and meters for mobile homes, mobile home parks and recreational vehicle parks differ from the requirements for other types of service and, therefore, must be given special consideration. All installations must be in accordance with the National Electrical Code.

The customer shall provide a suitable meter board for support of the Company's meters. WHEN MORE THAN ONE MOBILE HOME IS SERVED, EACH METER POSITION SHALL BE PERMANENTLY MARKED BY THE CUSTOMER TO CLEARLY IDENTIFY THE MOBILE HOME IT SERVES.

The Company shall be consulted in advance for detailed information regarding each installation.

2. Single Mobile Homes Not in a Development or Park.

100 AMP MINIMUM service for a single meter position is required.

- a. When the service is OVERHEAD, the customer shall be required to provide a substantial and adequate support, adjacent to, but not attached to, the mobile home for the attachment of the service drop to serve 100 amp minimum size service equipment. The support shall be capable of withstanding a horizontal pull of 1,000 pounds at the center of the service bracket. The support shall be a preservative pressure treated pole set in solid earth and guyed, if necessary. The pole shall be of sufficient length to provide necessary clearance (see Figure 12). The Company shall be consulted in all cases for required pole sizes, setting depths and guying requirements.
- b. When an UNDERGROUND service to a mobile home is served from an overhead distribution line, 100 amp minimum size service equipment for a single meter position is necessary (150 AMP RECOMMENDED). Where service entrance conductors are underground, the meter may be located on an approved service pedestal (see Figures 24, 25, 26 and 27 for typical methods of installation.)
- c. Mobile Home on a Permanent Foundation (see definition of permanent foundation in Section II.)

A mobile home with all running gear removed and securely mounted to a permanent foundation, can be considered a standard home for service entrance requirements (NEC Article 550 "Service Equipment" A & B), must also comply with NEC Article 230 "Services" & Article 250 "Grounding". The permanent foundation must be a poured concrete or block foundation with a cellar or crawl space, but not a slab on grade with removable skirting. NYSEG will attach a service to a

SECTION X MOBILE HOMES

manufactured home which meets Article 550 if and only if the proper written evidence is provided that the NEC code is being met for permanent installation, service and grounding from the local authority(s) having jurisdiction.

- d. **Mobile Homes Considered as Permanent Structures.** The requirements of a permanent structure are an approved permanent water supply and sewer system, and compliance with municipal zoning requirements. If not met, the service will be considered to be a temporary service. All Company work required for temporary service will be at the customer's expense.

3. Mobile Homes Within A Development or Park.

Mobile home services may be provided with the service equipment sized at 100 amperes minimum for both overhead and underground services. For installations within a development or park 150 ampere service conductors are recommended.

The above also applies to figures 26 and 27, meter board installations, if used for mobile homes.

NOTE: 100 ampere service equipment may not be adequate for some electrically heated mobile homes. 150 ampere service equipment is recommended for developments or parks to provide adequate capacity for future utilization by such mobile homes. It is the responsibility of the development owner to upgrade the service equipment if mobile homes requiring greater than 100 amperes capacity are located at positions constructed for 100 amperes.

Service to mobile homes in which it is planned to install five units or more must comply with Specifications for Direct Buried Installations of Underground Service to Residential Buildings (URD), Section XVI and Section IV, paragraphs 34, 35, and 36.

4. Recreational Vehicles and Recreational Vehicle Parks.

- a. **Service to Individual Recreational Vehicles.** An individual recreational vehicle, not in a recreational vehicle park or campground shall be served with a temporary service (see Figure 12). If it meets the definition of a permanent structure, the service shall be considered as a permanent service.
- b. **Service to Recreational Vehicle Parks.** The service to a recreational vehicle park or campground will be provided through one service to one location in the name of the Park Operator. Individual vehicle sites in a park, or campsites, will not be metered by NYSEG and must meet the requirements of Article 551 of the National Electric Code.

SECTION XI DISTURBANCES

Section XI. Disturbances

1.General

Radio and Television Transmitters, Flashing Signs, Welders, Electric Furnaces. The operation of large flashing signs, welders, arc furnaces, dielectric and induction heaters, inverters, variable voltage and frequency devices, radio and television transmitters, X-ray equipment, reciprocation compressors and similar apparatus having intermittent flow of large current, sometimes interferes with other users of the electric service. The customer shall consult the Company in each case before planning to use such equipment so that the character of electric service that will be supplied, the corrective equipment needed, and other special precautions that must be taken will be mutually known.

2. Radio, TV Interference.

Items above may also be a cause of radio and/or television interference. For further information, refer to the NYSEG booklet "How to Find Radio and TV Interference in Your Home", available at Company offices.

3. Customer Installed Generators.

These items can sometimes cause disturbances to other customers. Consultation with the Company (see Section XIII - 3) is required.

4. Harmonics.

Certain devices installed by the customer such as SCR controllers, large rectifiers, inverters, variable voltage and frequency devices, etc. may cause harmonic waveform distortion. Harmonic voltage distortion on the system shall not cause any applicable ANSI standards for NYSEG equipment connected to the system to be exceeded, shall not exceed 3% for any single frequency or 5% total harmonic distortion, and shall not injuriously affect NYSEG's equipment or its service to others.

NYSEG will endeavor to maintain reasonable limits on the harmonic distortion levels present on its system through proper design and application of related equipment, yet NYSEG cannot guarantee an essentially distortion free waveform. Those customers whose particular service requirements necessitate such a waveform are encouraged to install, own, and maintain signal conditioning equipment.

SECTION XII SPECIAL PROVISIONS AND EQUIPMENT

Section XII. Special Provisions and Special Equipment

1. Customer Installed Capacitors.

Customers installing capacitors to improve the power factor of their load should contact the Company for advice regarding supply system characteristics and essential coordination details.

2. Electric Fences.

CAUTION! Due to the problems involved in the operation of electric fences, the Company urges extreme care in selection of the electric fence system and close adherence to the standard for electric fence controllers, ANSI/UL 69. A direct electrical connection to a fence, or a connection through resistance, reactance or lamp bulb, without an approved controller is not permitted. For guidance in methods, materials and equipment to construct electric fences, those interested are referred to qualified experts such as your County Cooperative Extension agent, your local NYSEG Agricultural Representative, or the Department of Agricultural Engineering, Cornell University, Ithaca, New York.

3. Swimming Pools.

Swimming pools shall be properly wired in accordance with the National Electrical Code. Circuits serving pools or associated areas shall be protected by Ground Fault interrupters (see Figure 31, for Swimming Pool Clearance specifications).

IMPROPERLY WIRED SWIMMING POOLS ARE HAZARDOUS

4. Lightning or Surge Protection Systems.

The Company recommends the use of secondary surge arresters for protection of customer's equipment, where such additional protection is desired. Arresters shall be connected on the load side of the main disconnect, not at the weatherhead.

Lightning rod systems, if desired, should be installed per NFPA 78 "Lightning Protection Code." A bond between the lightning rod system down ground and the service neutral should not be installed. Refer to National Electric Code Section 250-46 for spacing requirements. Spacing should be so arranged so that the meter enclosure is not bonded to the lightning rod system down ground conductors.

5. Transient Surge Protectors.

Transient surge protectors are available through distributors to help protect particularly sensitive customer equipment from low energy transient surges.

SECTION XIII CUSTOMER OWNED GENERATORS

Section XIII. Customer Owned Generators - Including Stand-by Generators

1. General.

All installations of customer's generating equipment require adherence to fundamental rules for safeguard of all personnel and the Company's equipment.

The Company must be consulted before any generating equipment is connected to any circuit which is or can be supplied from the Company's distribution system. This is to assure against any unanticipated backfeed of electricity into the Company's system. A brochure "Emergency Generator Safety" is available from the company's local offices.

2. Standby Generators.

This type of generator is for emergency supply for lighting and other load and is usually connected in case of loss of the normal supply.

- a. A double throw switch or contactor shall be provided to transfer all ungrounded conductors of an emergency lighting or power load to either the standby generator or the normal supply (see Figure 16 for typical connections). **Automatic transfer systems must be approved by the Company.**
- b. The standby generator should be 60 cycles alternating current.
- c. **Caution.** If a direct current generator is used, the installation must be arranged so that all motors, radios and other equipment that will not operate on direct current are disconnected from circuits before the circuits are energized from the standby generator.

3. Systems Operated in Parallel with NYSEG Supply.

Customers considering the installation of generating equipment to supply all or a portion of their electrical energy requirements and who wish to arrange for, or continue to receive, service from the Company system for their remaining electrical energy requirements and/or for standby service, **must consult with the Company** regarding the design, installation and operation of such generating equipment. This consultation must be done before the customer is committed to a specific system design. NYSEG guidelines and requirements for equipment of this nature are available at Company offices.

SECTION XIV CARRIER CURRENT SYSTEMS

Section XIV. - Carrier Current Systems

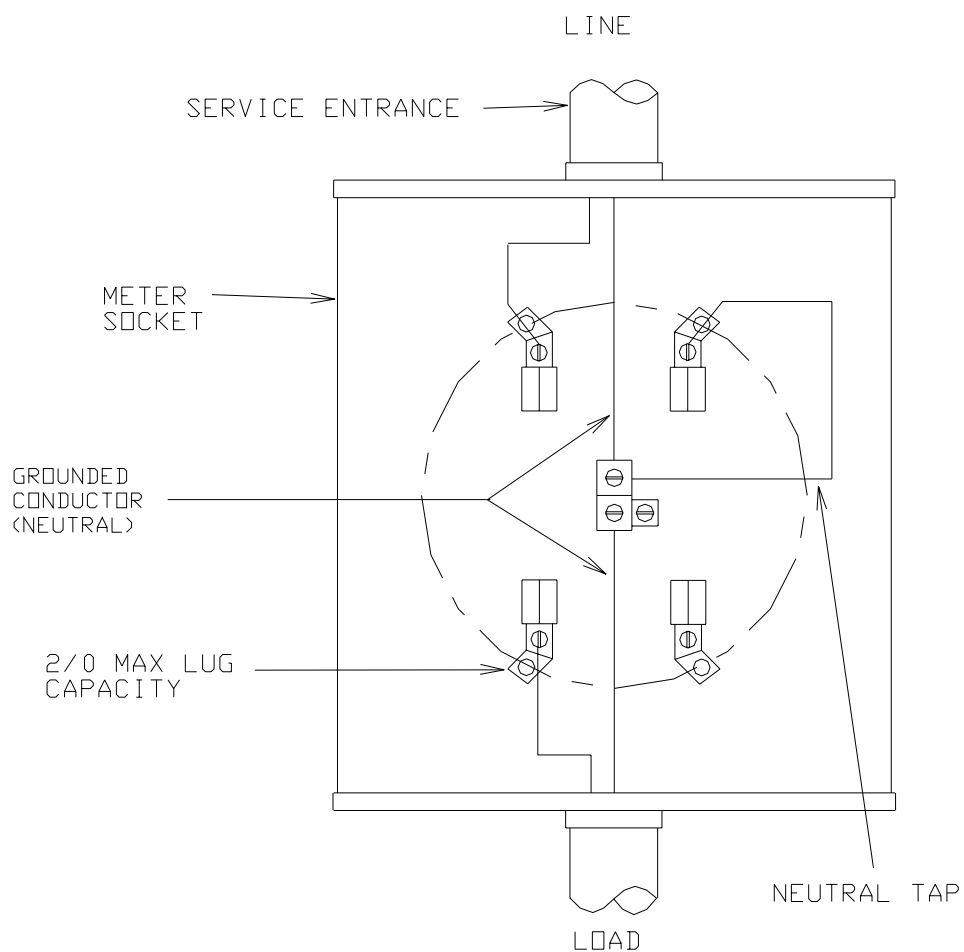
1. If a customer used building wiring for a carrier current system for communication or signaling purposes, the customer shall install suitable filter equipment or make other provisions approved by the Company to keep the Company's distribution facilities free from carrier currents produced by the customer's equipment.

FIG. #	TITLE
1	Typical One Meter Socket Installation Single Phase - 120 V Only
2	Typical One Meter Installation Socket Type Single Phase - 3 Wire - 120/240 Volt / Single Phase - 3 Wire - 120/208 Volt
3	Typical Multi-Meter Installation 120/240 or 120/208 3 Wire - Single Phase
3A	RESERVED FOR FUTURE USE
3B	RESERVED FOR FUTURE USE
4	RESERVED FOR FUTURE USE
5	RESERVED FOR FUTURE USE
6	Wiring Diagram For Two Element Water Heaters
6A	Typical 320 Amp Self Contained Single Phase Meter Socket
7	Typical Self Contained Polyphase Socket Installation 4 Wire - 3 Phase - Wye or Delta 120/240 V
7A	Typical Self Contained Polyphase Socket Installation 4 Wire - 3 Phase - Wye or Delta 277/480 V
8	Typical Single Phase Meter Installation Using Two Current Transformers 100-800 Amp. 120/240 Volts
9	Typical Three Phase 4 Wire Secondary Meter Installation Using Three 2 Wire Current Transformers
10	Typical Layout for Meter Board when Two Meters are Required Active (KWH) and Reactive (RKVAH)
11	Meter Socket Wiring for Underground Services
12	Typical Pole Service
13	Pole Type Metering Self Contained, Capacity 100, 150 or 200 A Single Phase - 3 Wire - 120/240V
14	Overhead Current Transformer Metering - Pole Installation Single or Three Phase - 120/240V, 120/208, 277/480
15	Overhead Current Transformer Metering – Mast Installation
15A	Overhead Current Transformer Metering – Wall Mounted
15B	Typical Trans-Socket Meter

FIG. #	TITLE
16	Pole Type Metering with Disconnected Switch For Emergency Standby Generator
17	Suggested Generator Locations Farms with Outbuildings
18	Service Entrance to Residence or Small Commercial Building
19	Details of Riser and Service Attachment to Low Buildings and Ranch Houses
20	Method of Installing Underground Secondary Service from Overhead Lines at Building or Structure
20A	Method of Installing Underground Secondary Service from Overhead Lines at Building or Structure
21	RESERVED FOR FUTURE USE
22	Meter Socket Installation on Masonry Construction
22a	RESERVED FOR FUTURE USE
23	Method of Installing Underground Service Connections for Residential Customers
24	Typical wiring method Pedestal Mounted Service Equipment
25	Typical Meter Pedestal Installation for Mobile Home Etc.: 120/240 Volt Single Phase (Pre-Assembled Pedestal)
26	Mobile Home Multi-Meter Installation Overhead Service
27	Mobile Home Multi-Meter Installation Underground Service
28	Mobile Home Connections
29	Grounding Illustrations
30	Application of rigid Non-Metallic Conduit for Low Voltage Services (Underground)
31	Page Removed -- Reference Dist UG Stds, Sect 3 Trenching for Joint Metering Locations
31A	Page Removed -- Reference Dist UG Stds, Sect 3 Trenching for Joint Metering Locations
32	Swimming Pool Clearances

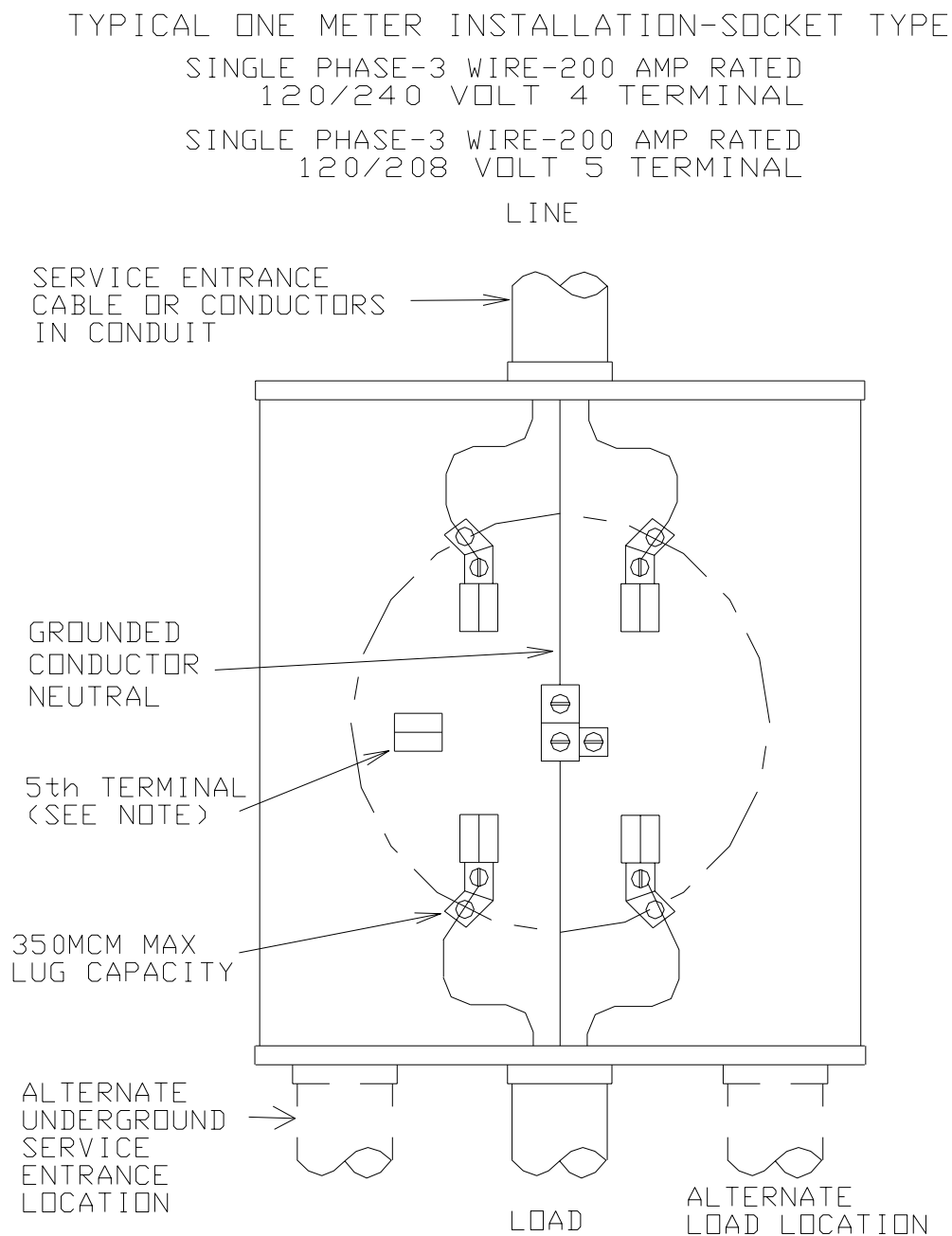
FIGURE 1

TYPICAL ONE METER SOCKET INSTALLATION
SINGLE PHASE-100 AMP RATED-120 VOLTS ONLY
4 TERMINAL
MAX DEMAND 3KW OR LESS



ALL CONNECTIONS MUST BE

MADE AS SHOWN BY CONTRACTOR

FIGURE 2

NOTE :

5th TERMINAL WILL BE PROVIDED FOR 120/208 VOLT SERVICE AND MUST BE GROUND.

5th TERMINAL WILL ALSO BE PROVIDED FOR 120/240 VOLT SERVICE WHERE THE 5th TERMINAL IS USED FOR DIRECT LOAD CONTROL AND MUST NOT BE GROUND.

FIGURES 3-5

RESERVED FOR FUTURE USE

FIGURE 6

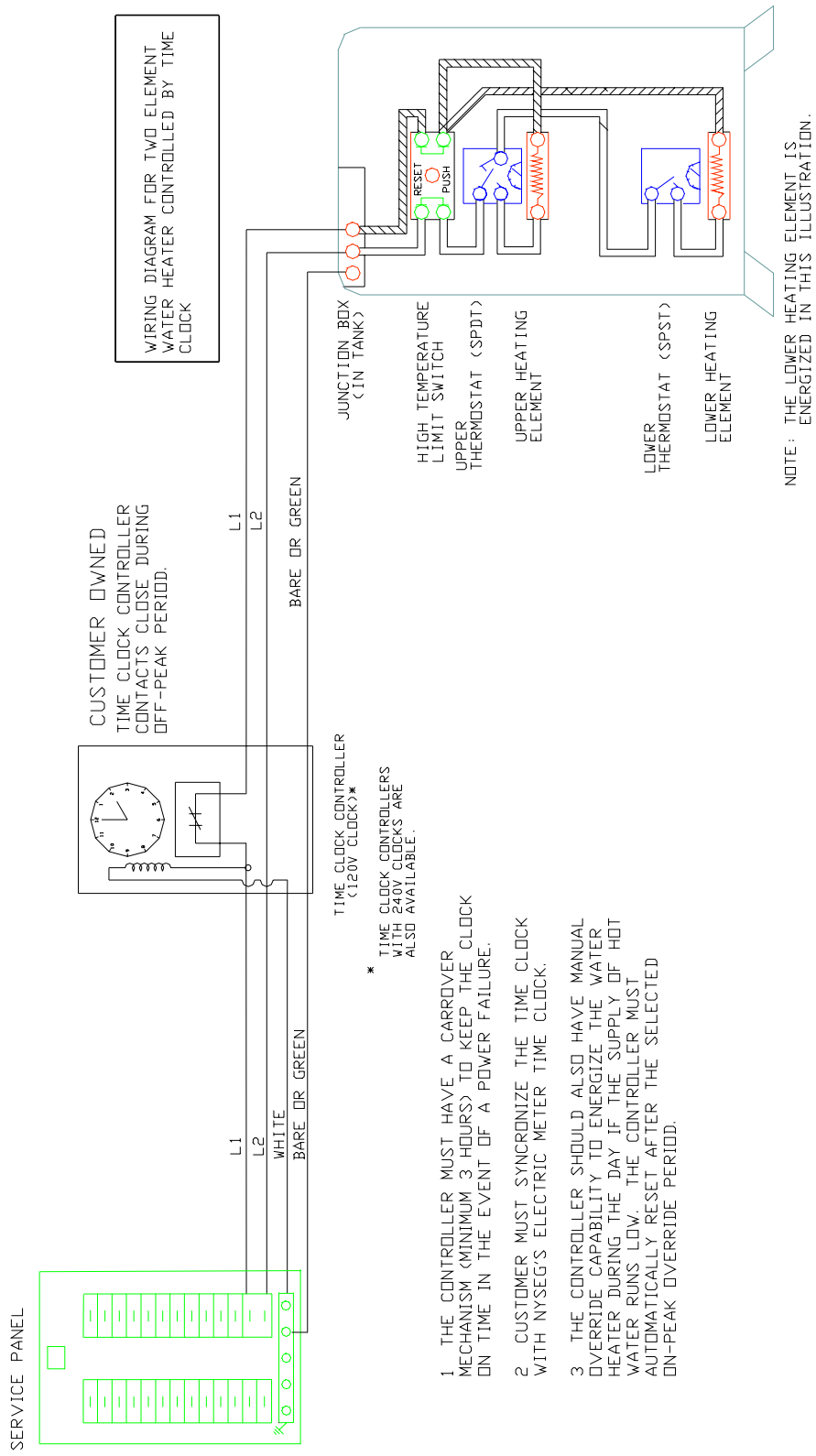


FIGURE 6A

TYPICAL 320 AMP RATED SELF CONTAINED
SINGLE PHASE METER SOCKET

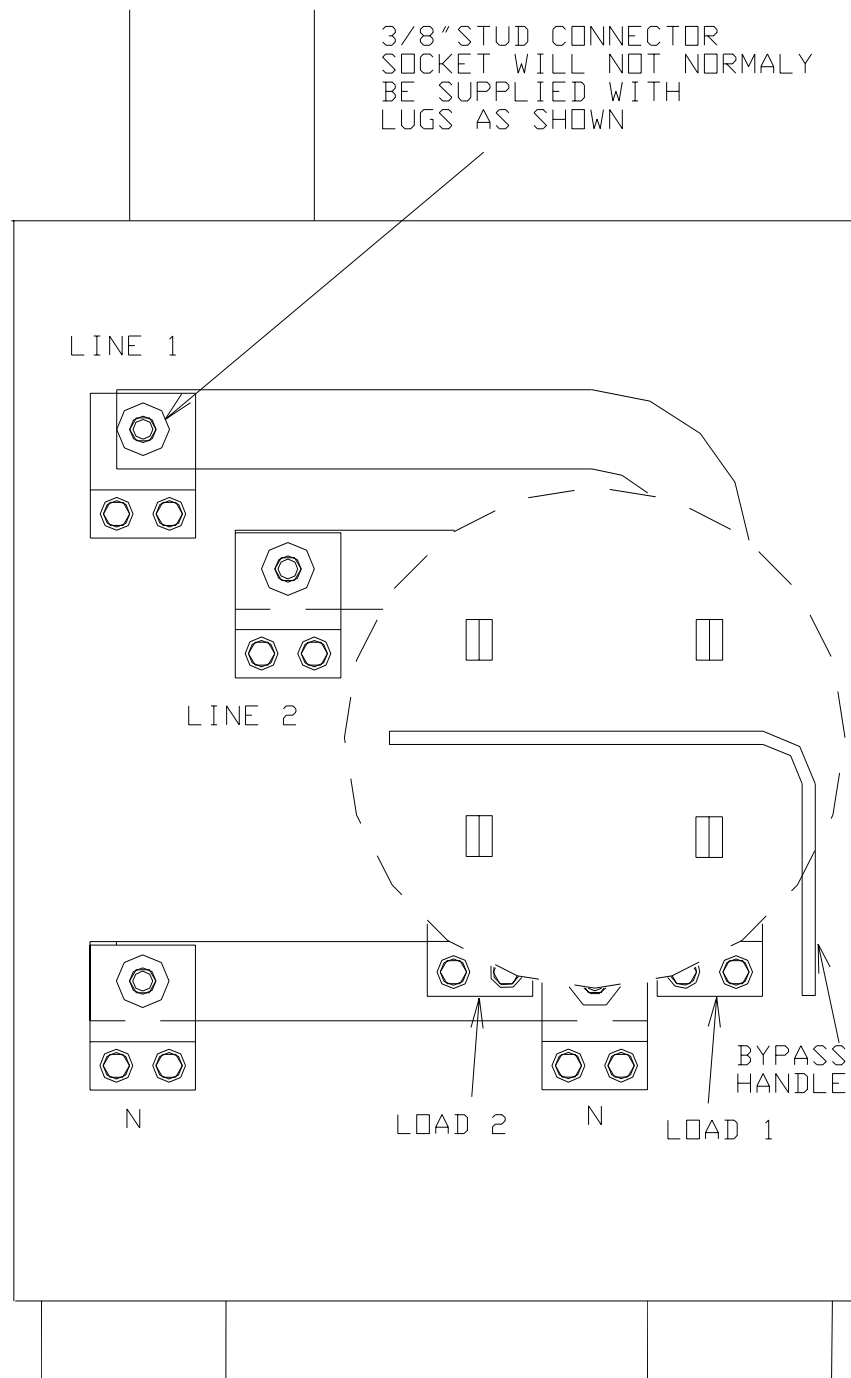
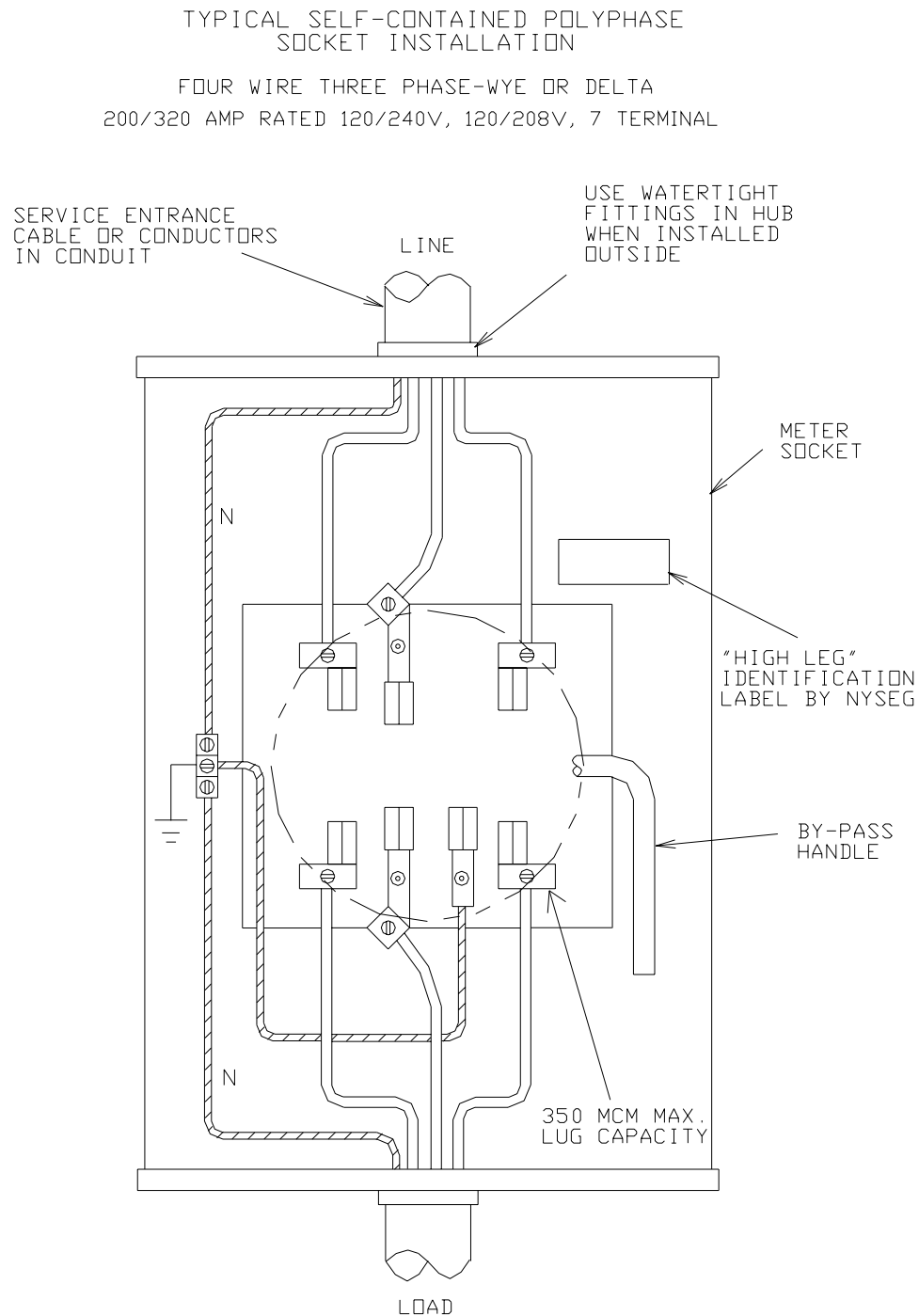
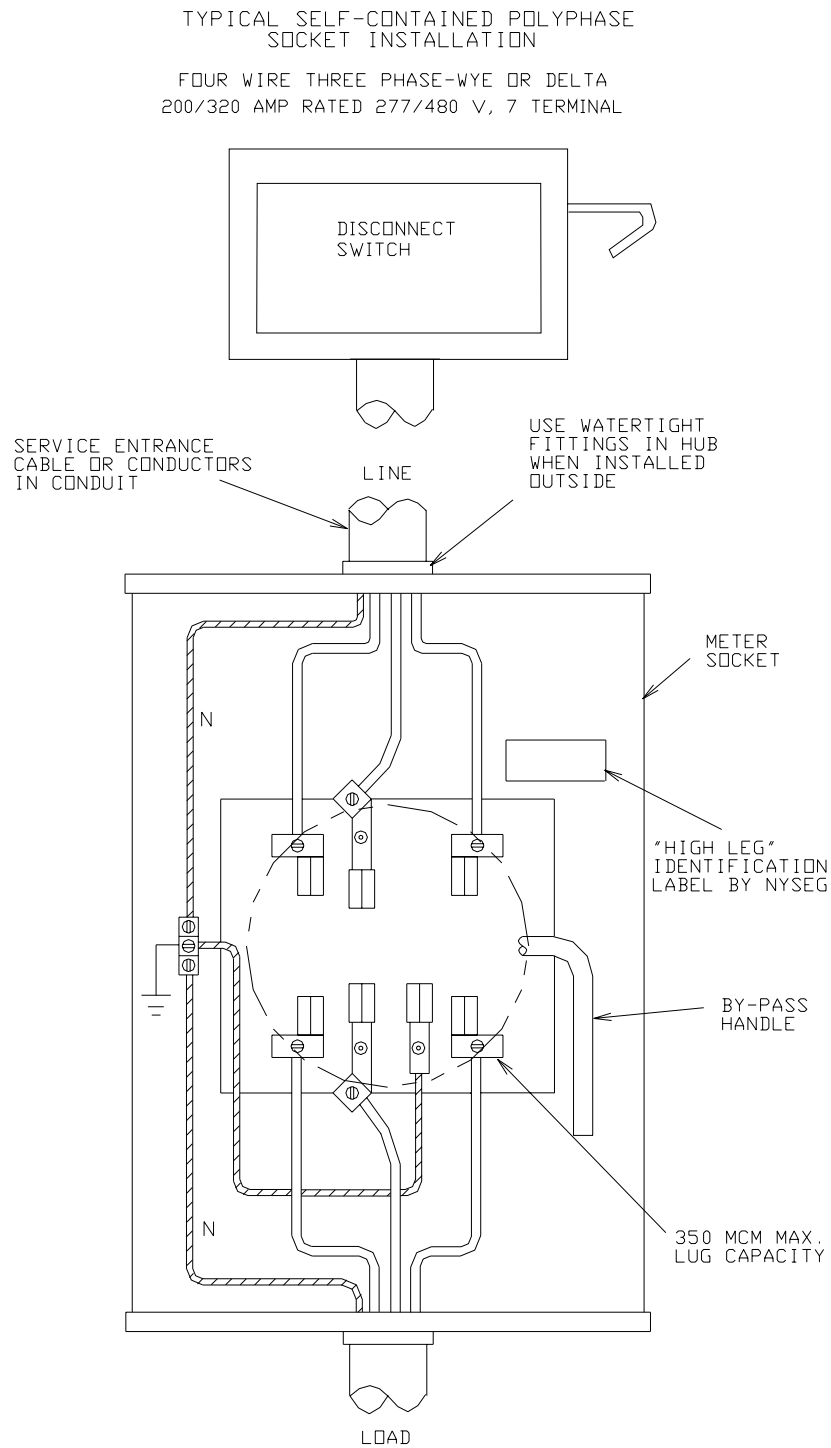


FIGURE 7

DELTA CONNECTED-IS "HIGH LEG" PHASE OR HIGHEST
VOLTAGE TO GROUND, MUST BE CONDUCTOR AT FAR
RIGHT (ORANGE CONDUCTOR)

ALL WIRES TO BE IDENTIFIED AT THE
WEATHERHEAD AND IN METER ENCLOSURE.

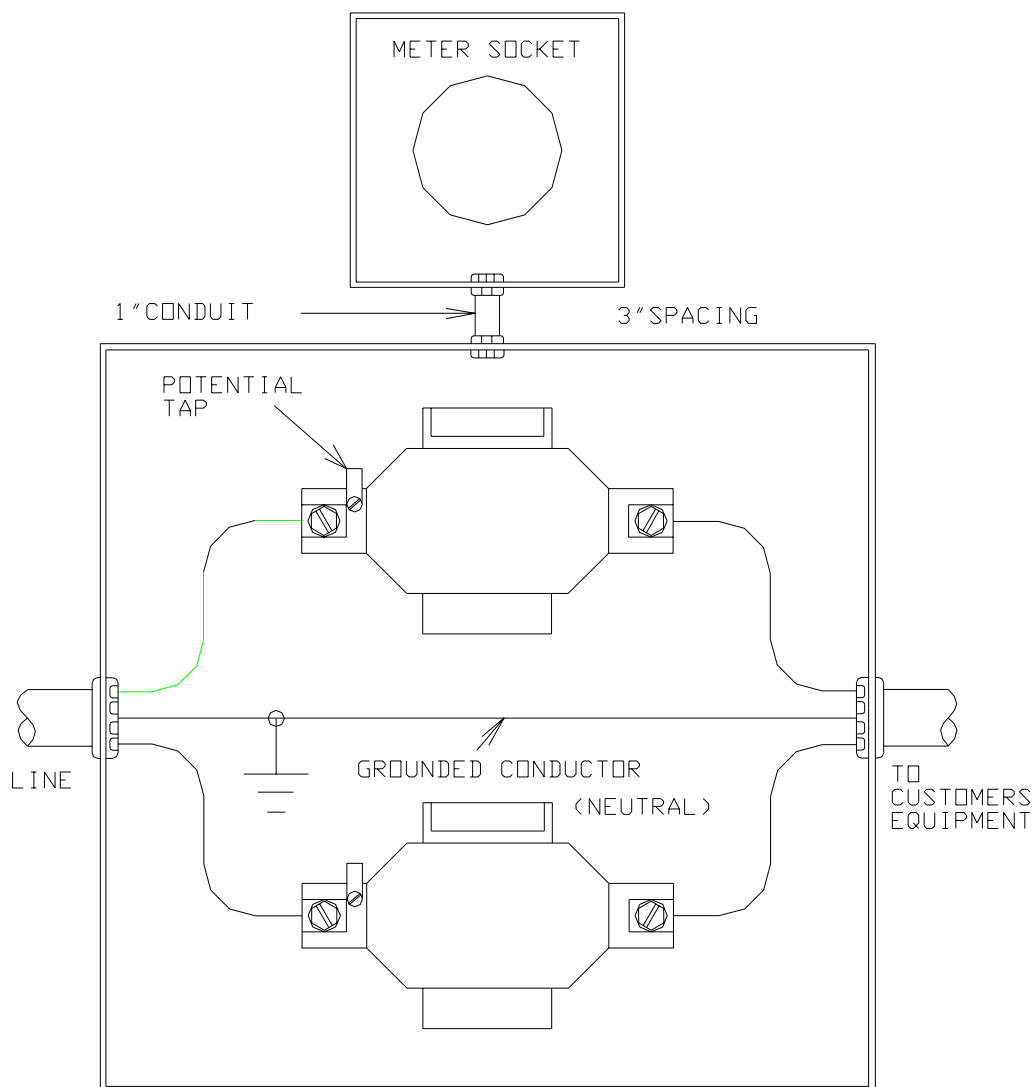
FIGURE 7A

DELTA CONNECTED-IS "HIGH LEG" PHASE OR HIGHEST VOLTAGE TO GROUND, MUST BE CONDUCTOR AT FAR RIGHT (ORANGE CONDUCTOR)

ALL WIRES TO BE IDENTIFIED AT THE WEATHERHEAD AND IN METER ENCLOSURE.

FIGURE 8

TYPICAL SINGLE PHASE METER INSTALLATION
 USING TWO CURRENT TRANSFORMERS
 120/240V
 (FOR INDOOR INSTALLATIONS ONLY)



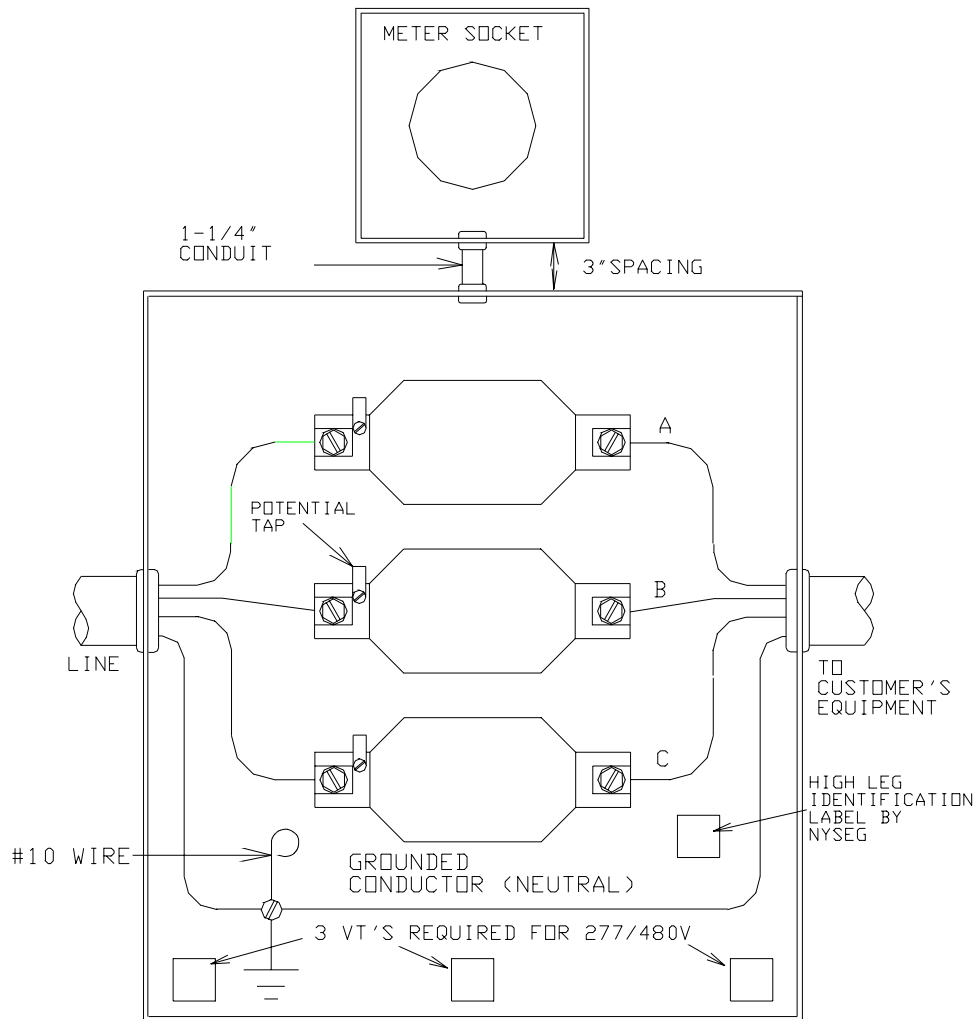
METER TEST SOCKET AND TRANSFORMER CABINET
 MUST BE PROPERLY GROUNDED.

ENCLOSURES ARE AVAILABLE IN THREE NOMINAL SIZES:

30" x 30" x 10"
 36" x 30" x 10"
 42" x 35" x 10"

FIGURE 9

TYPICAL THREE PHASE 4 WIRE WYE OR DELTA
SECONDARY METER INSTALLATION
USING THREE 2 WIRE CURRENT TRANSFORMERS
120/240V, 120/208, 277/480V
(FOR INDOOR INSTALLATIONS ONLY)



DELTA CONNECTED HIGH LEG OR HIGHEST VOLTAGE
TO GROUND, MUST BE BOTTOM PHASE CONDUCTOR
(ORANGE CONDUCTOR)

WHEN WYE CONNECTED ALL PHASES HAVE EQUAL
VOLTAGE TO GROUND. ALL CABINETS TO BE
PROPERLY GROUNDED.

ALL WIRES TO BE IDENTIFIED AT WEATHERHEAD
AND IN THE CT CABINET.

ENCLOSURES ARE AVAILABLE IN THREE NOMINAL SIZES:

30" x 30" x 10"
36" x 30" x 10"
42" x 35" x 10"

FIGURE 10

TYPICAL LAYOUT FOR METER BOARD

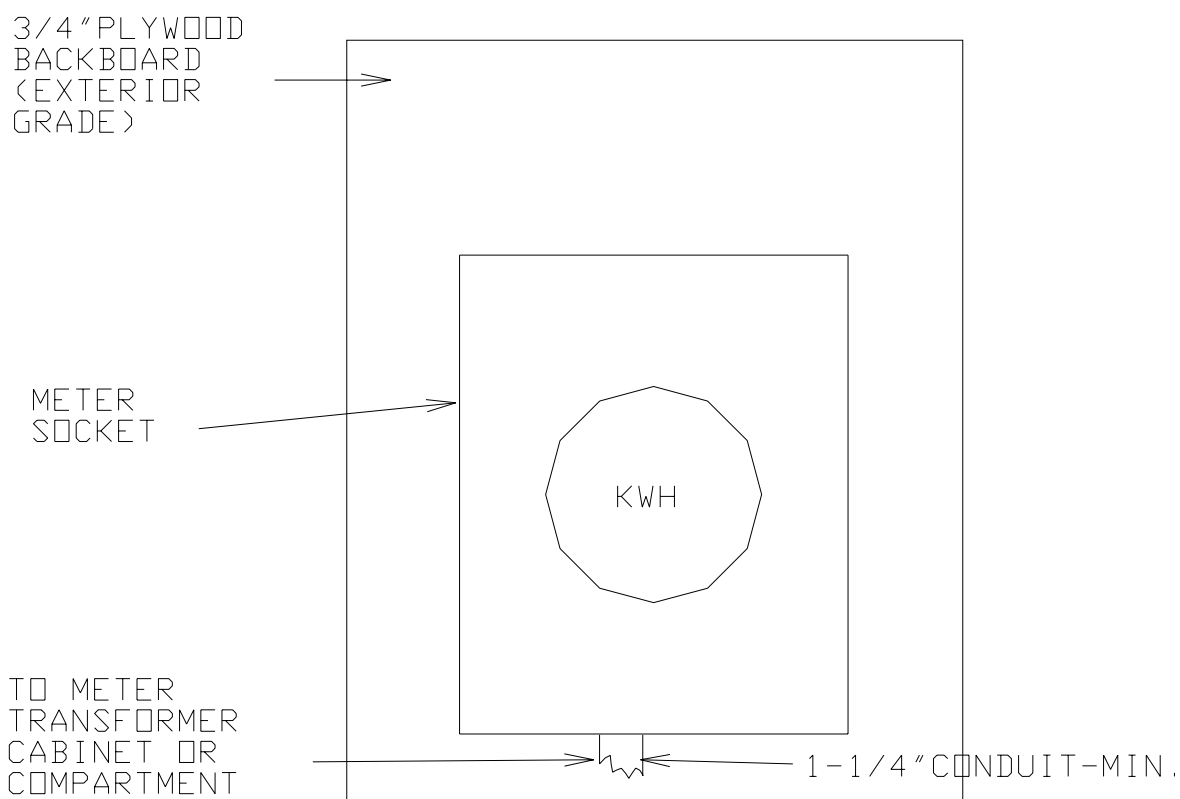
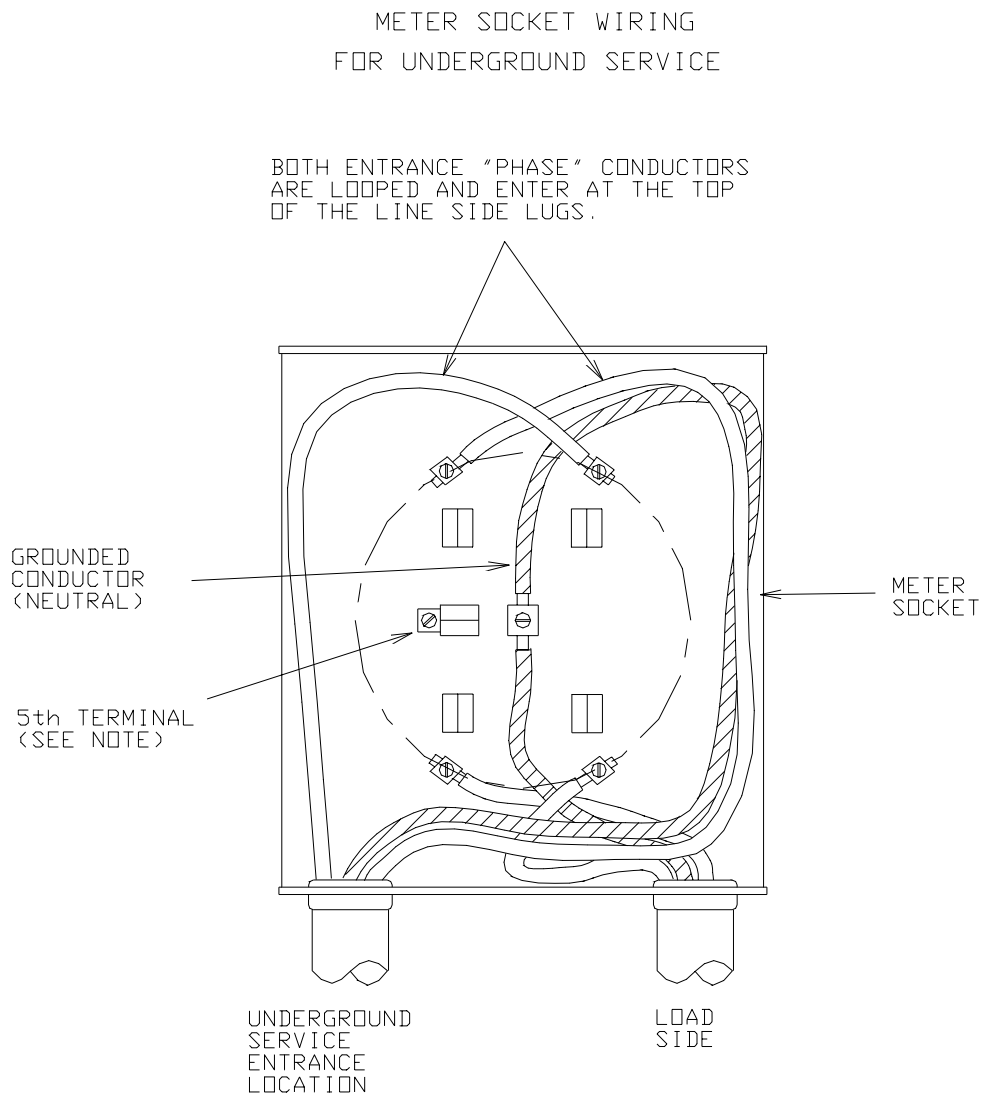


FIGURE 11

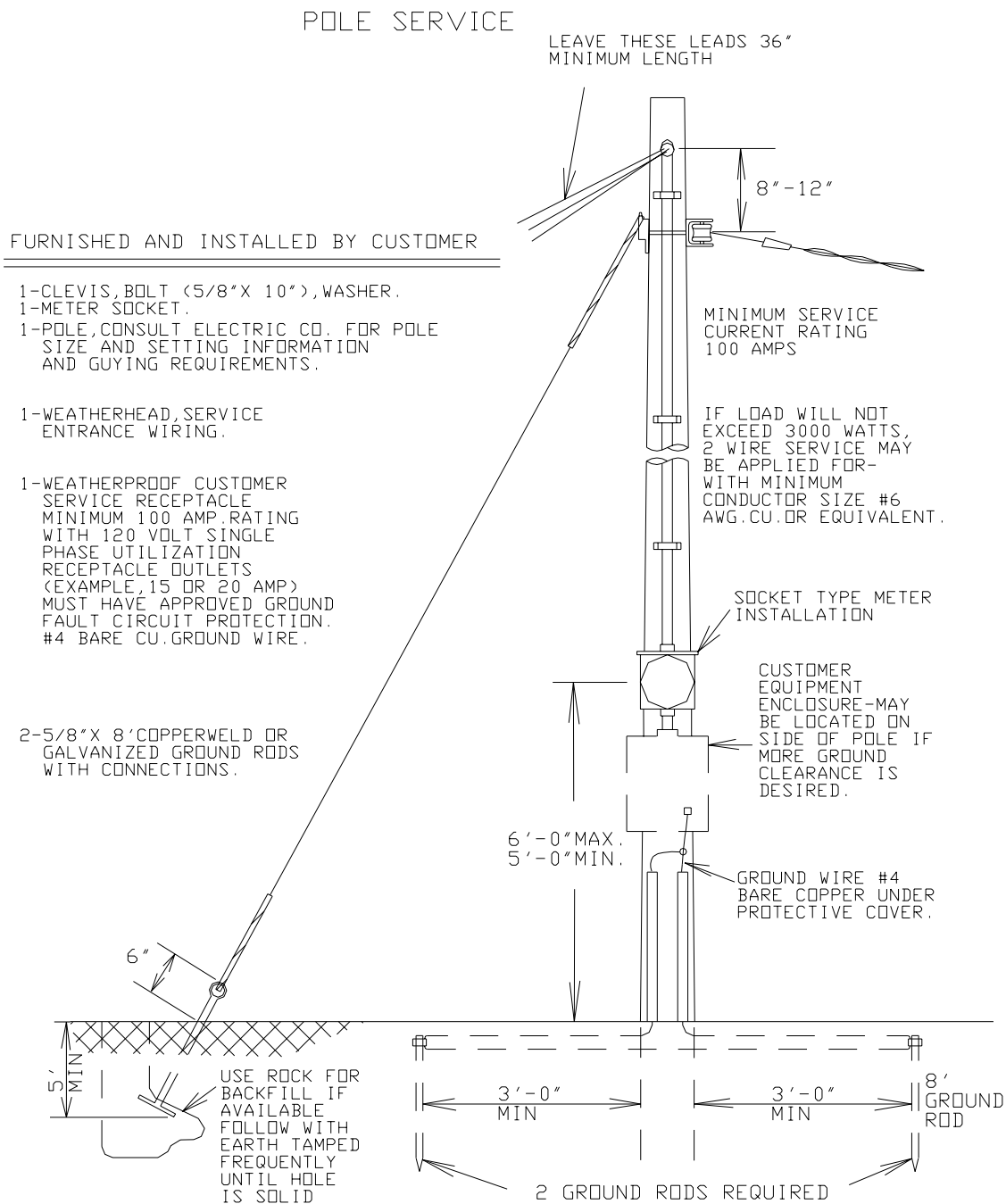
LOOPING OF CONDUCTOR AS SHOWN MINIMIZES
DAMAGE TO CABLE AND STRESS ON CONNECTIONS.

NOTE

5th TERMINAL WILL BE PROVIDED FOR 120/208 VOLT
SERVICE AND MUST BE GROUNDED

5th TERMINAL WILL ALSO BE PROVIDED FOR 120/240
VOLT SERVICE WHERE THE 5th TERMINAL IS USED FOR
DIRECT LOAD CONTROL AND NOT BE GROUNDED

FIGURE 12



INSTALLATION TO BE IN ACCORDANCE WITH THE
NATIONAL ELECTRICAL CODE

FIGURE 13

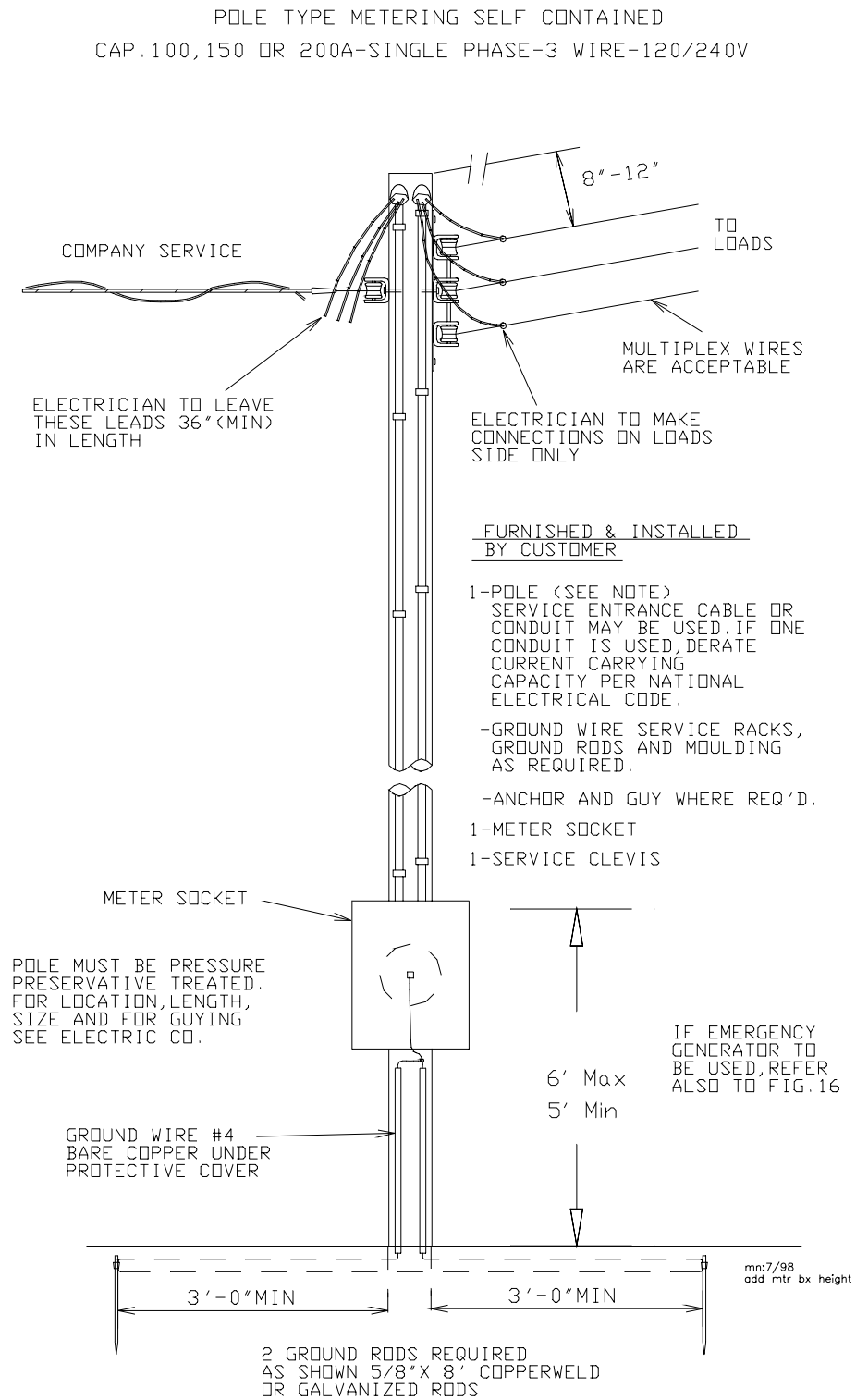
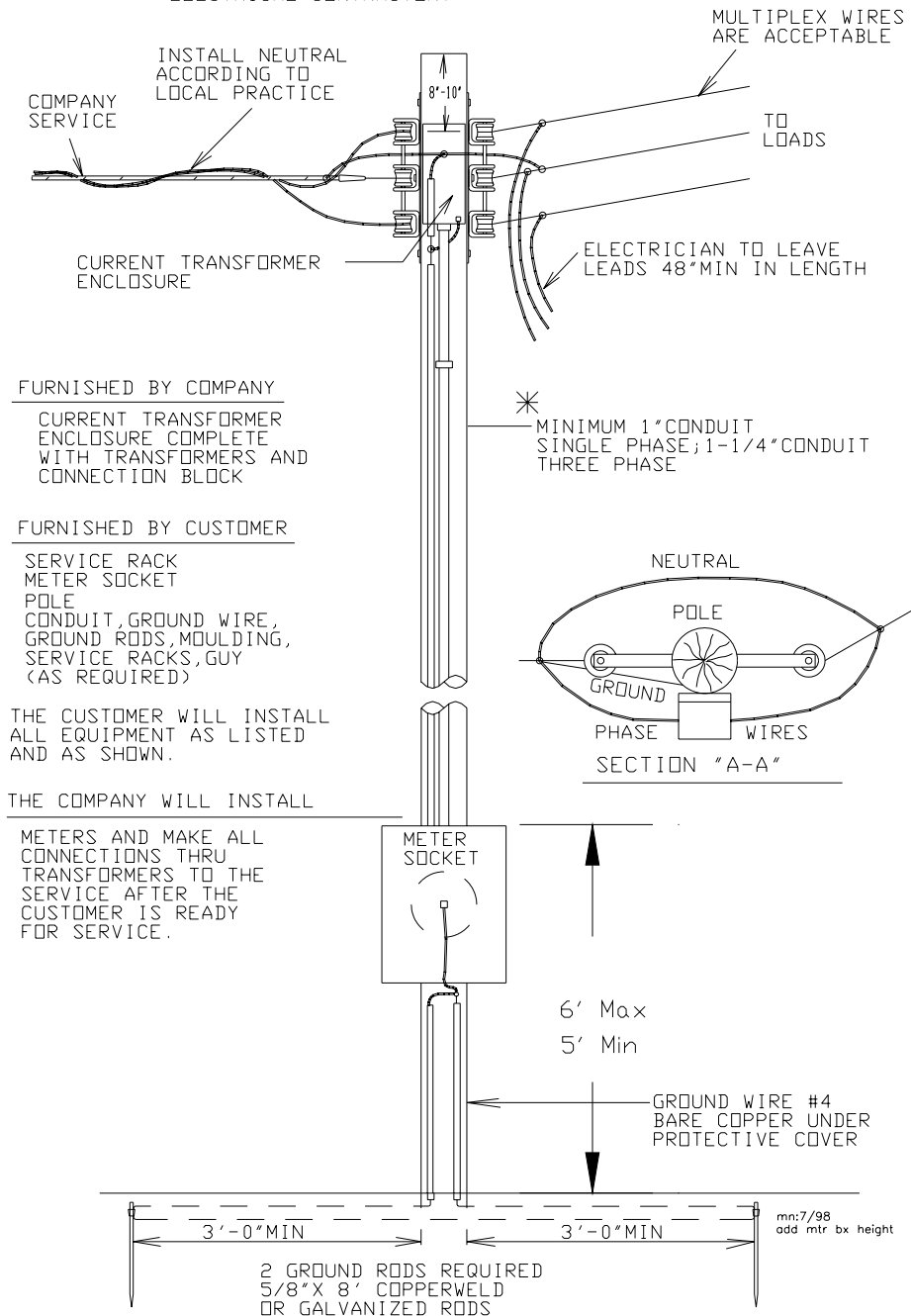


FIGURE 14

FOR SPECIAL APPLICATIONS (SEE FIG 8 & 9) FOR NORMAL INSTALLATIONS

**OVERHEAD CURRENT TRANSFORMER METER - POLE INSTALLATION
SINGLE OR THREE PHASE - 120/240 , 120/208, 277/480 VOLT**

* INSTALLATIONS MUST BE COORDINATED WITH THE DIVISION
METER DEPARTMENT IN CONJUNCTION WITH THE
ELECTRICAL CONTRACTOR.



THIS STANDARD NOT ADAPTABLE TO EMERGENCY GENERATORS

FIGURE 15

FOR SPECIAL APPLICATIONS:

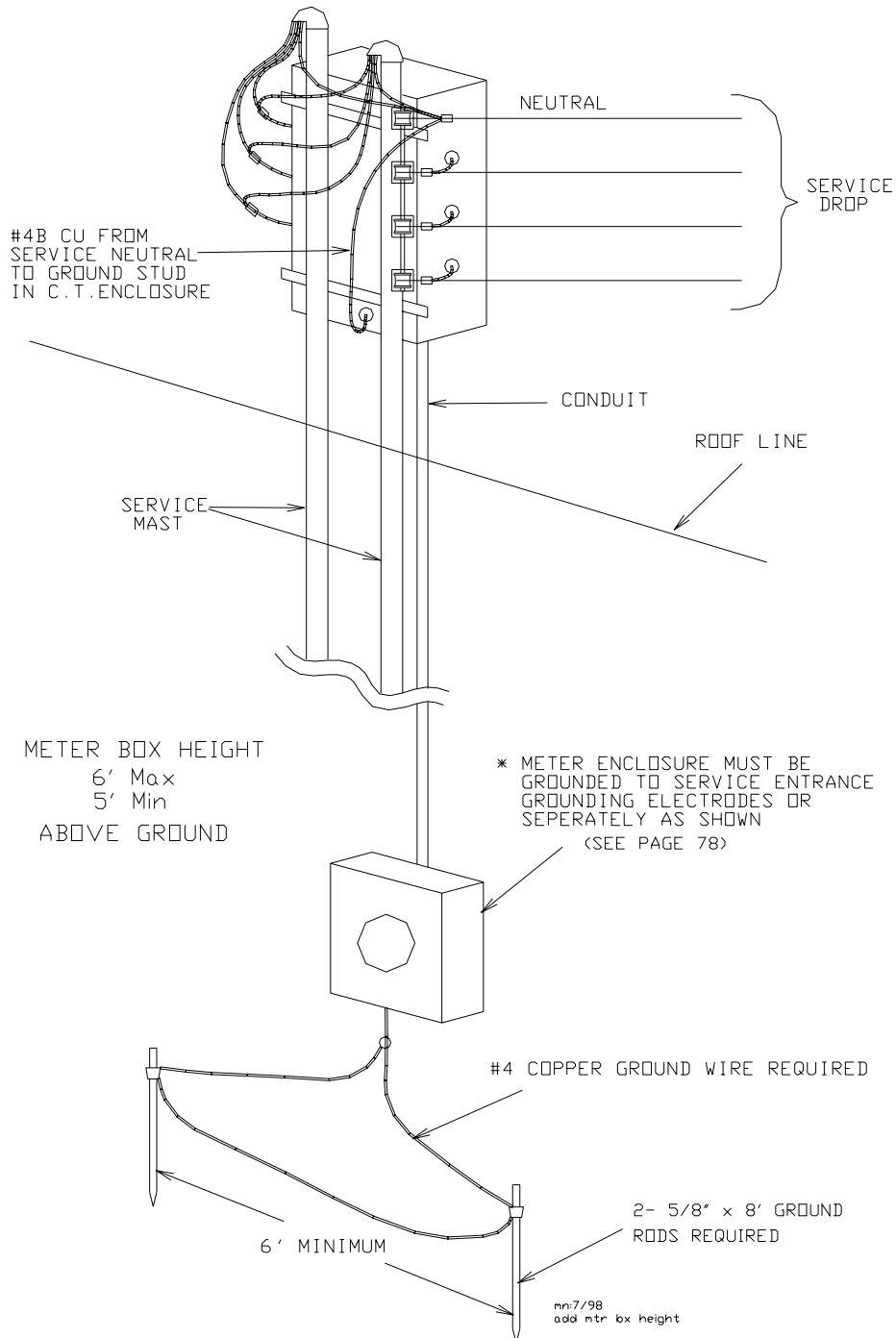
**OVERHEAD CURRENT TRANSFORMER METER - MAST INSTALLATION
SINGLE OR THREE PHASE - 120/240 , 120/208, 277/480 VOLT**INSTALLATIONS MUST BE CO-ORDINATED WITH DIVISION METER
DEPARTMENTS IN CONJUNCTION WITH ELECTRICAL CONTRACTOR

FIGURE 15A

FOR SPECIAL APPLICATIONS:

OVERHEAD CURRENT TRANSFORMER METERING - WALL MOUNTED
SINGLE OR THREE PHASE-120/240;120/208;277/480 VOLT

INSTALLATION MUST BE CO-ORDINATED WITH DIVISION METER DEPARTMENT IN CONJUNCTION WITH ELECTRICAL CONTRACTOR.

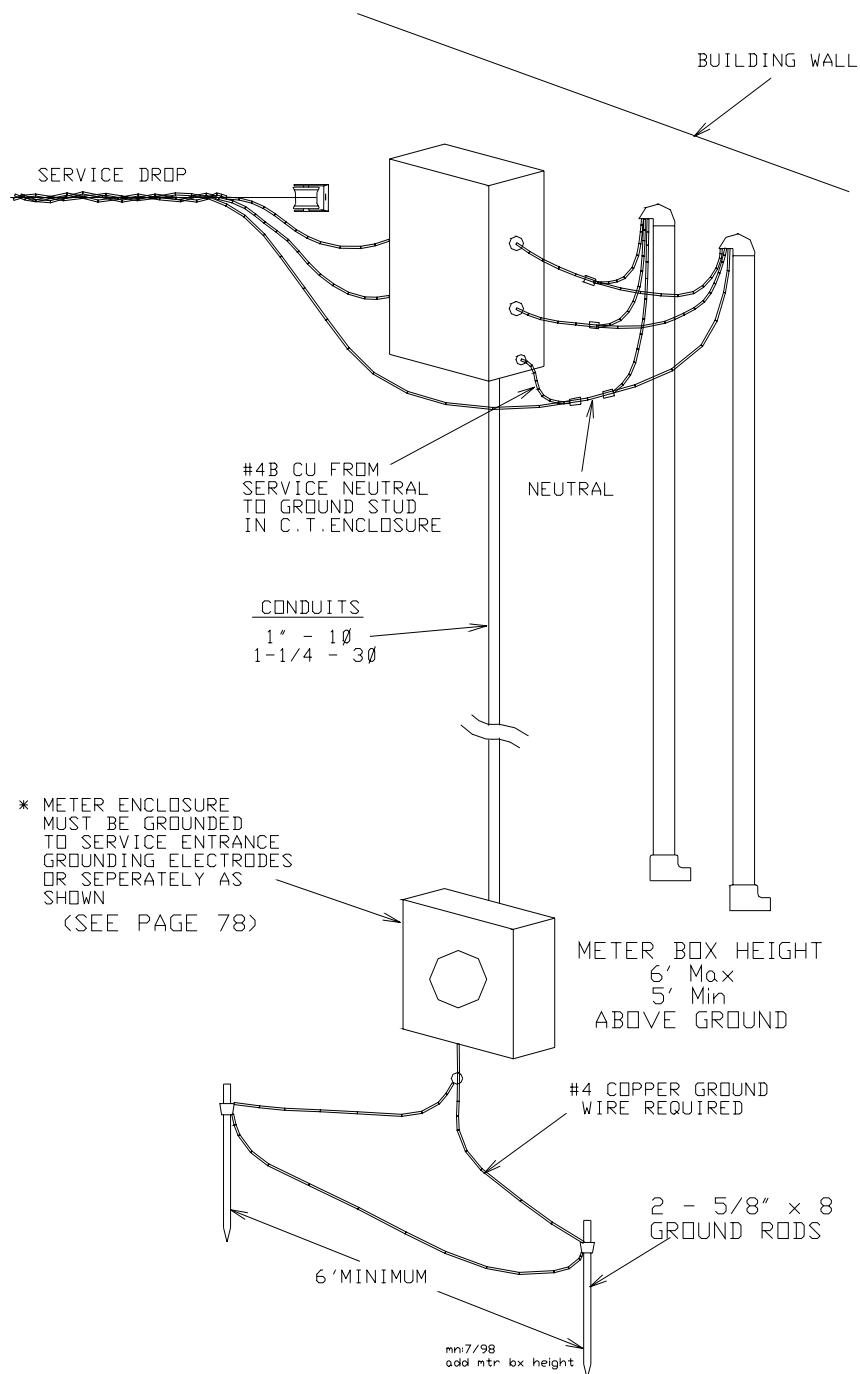


FIGURE 15B

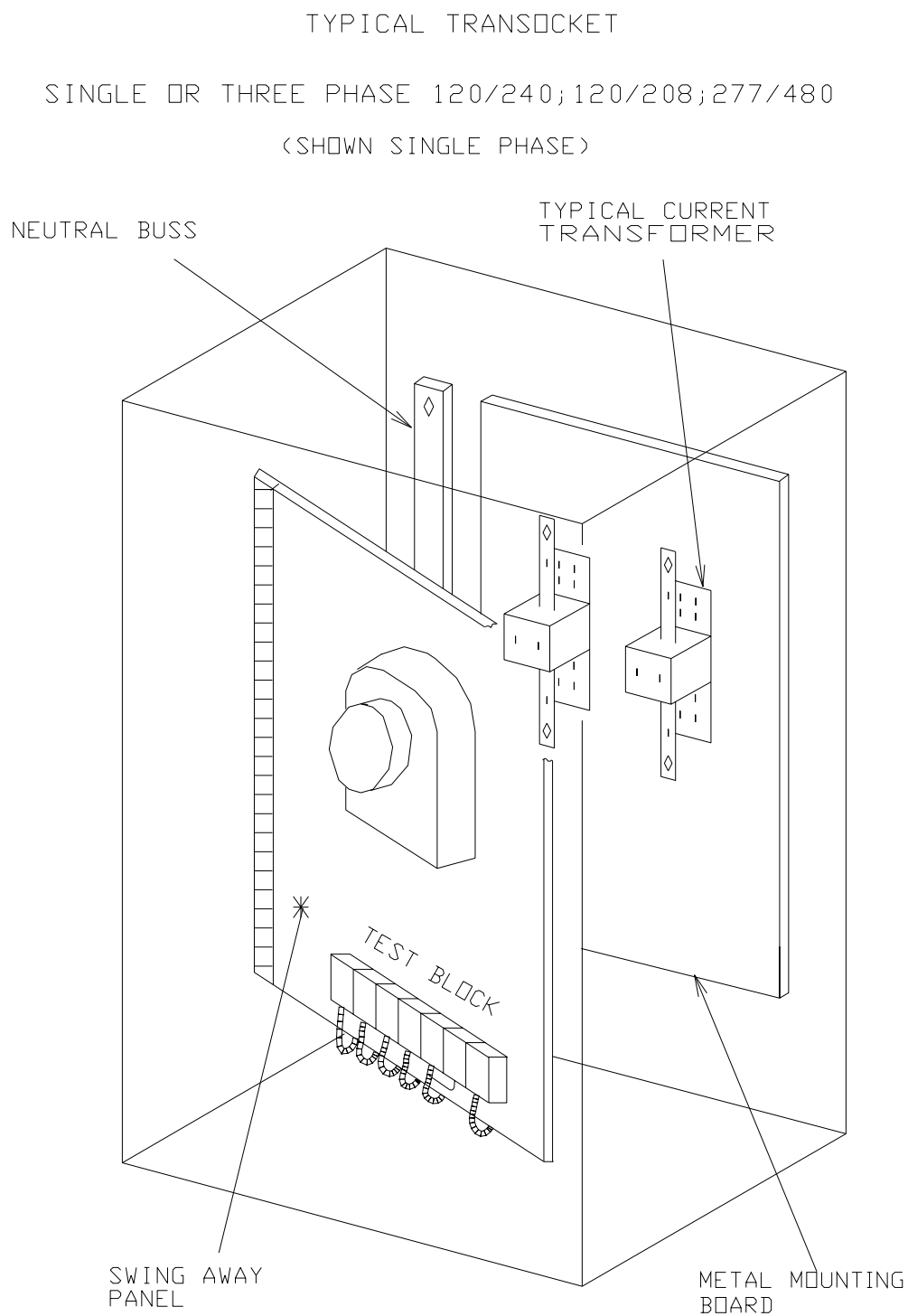
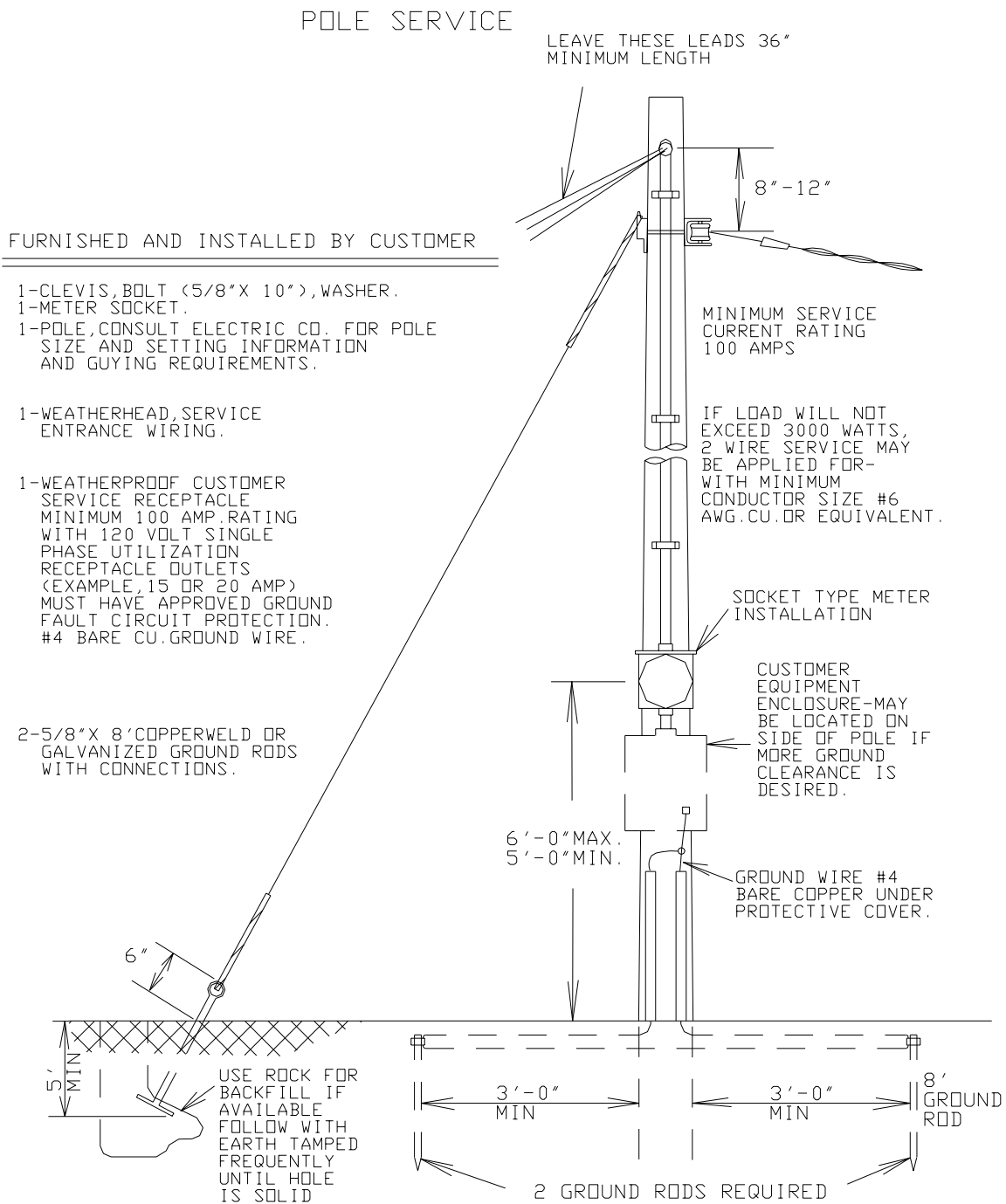


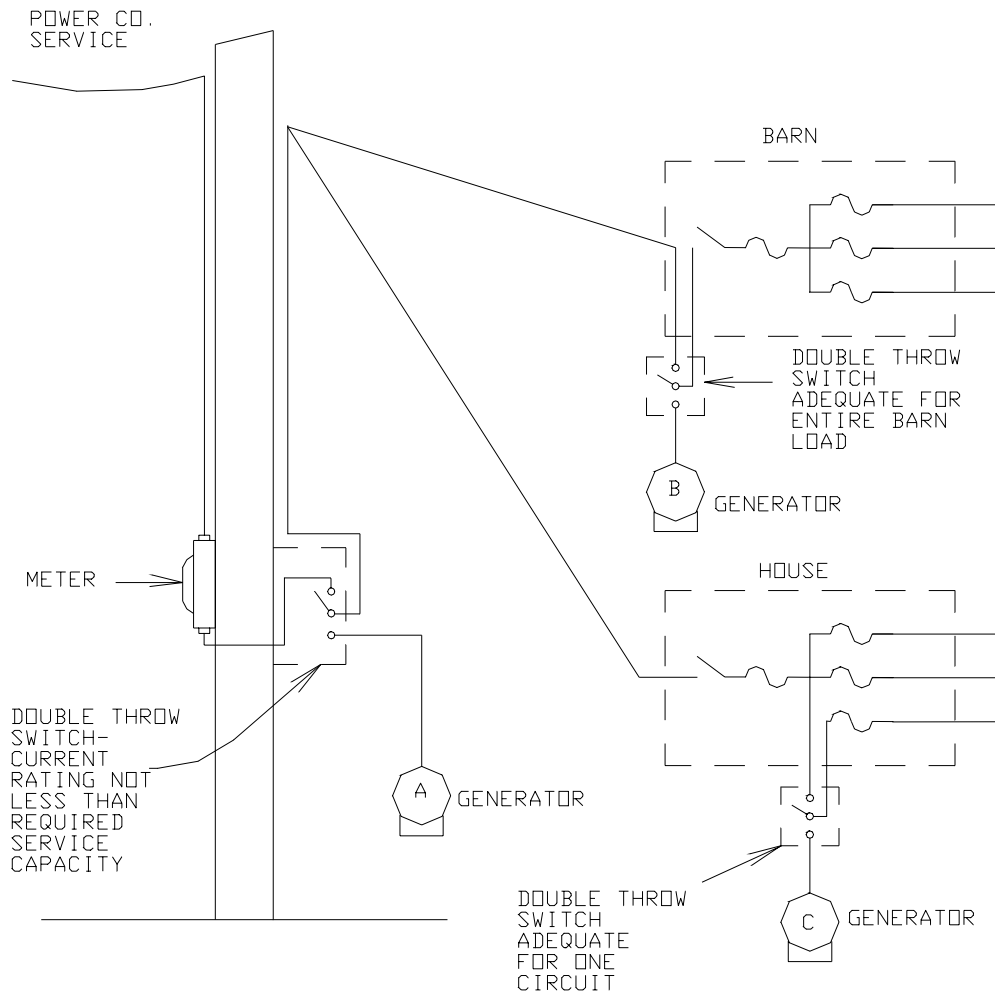
FIGURE 16



INSTALLATION TO BE IN ACCORDANCE WITH THE
NATIONAL ELECTRICAL CODE

FIGURE 17

SUGGESTED GENERATOR LOCATIONS FARMS WITH OUTBUILDINGS



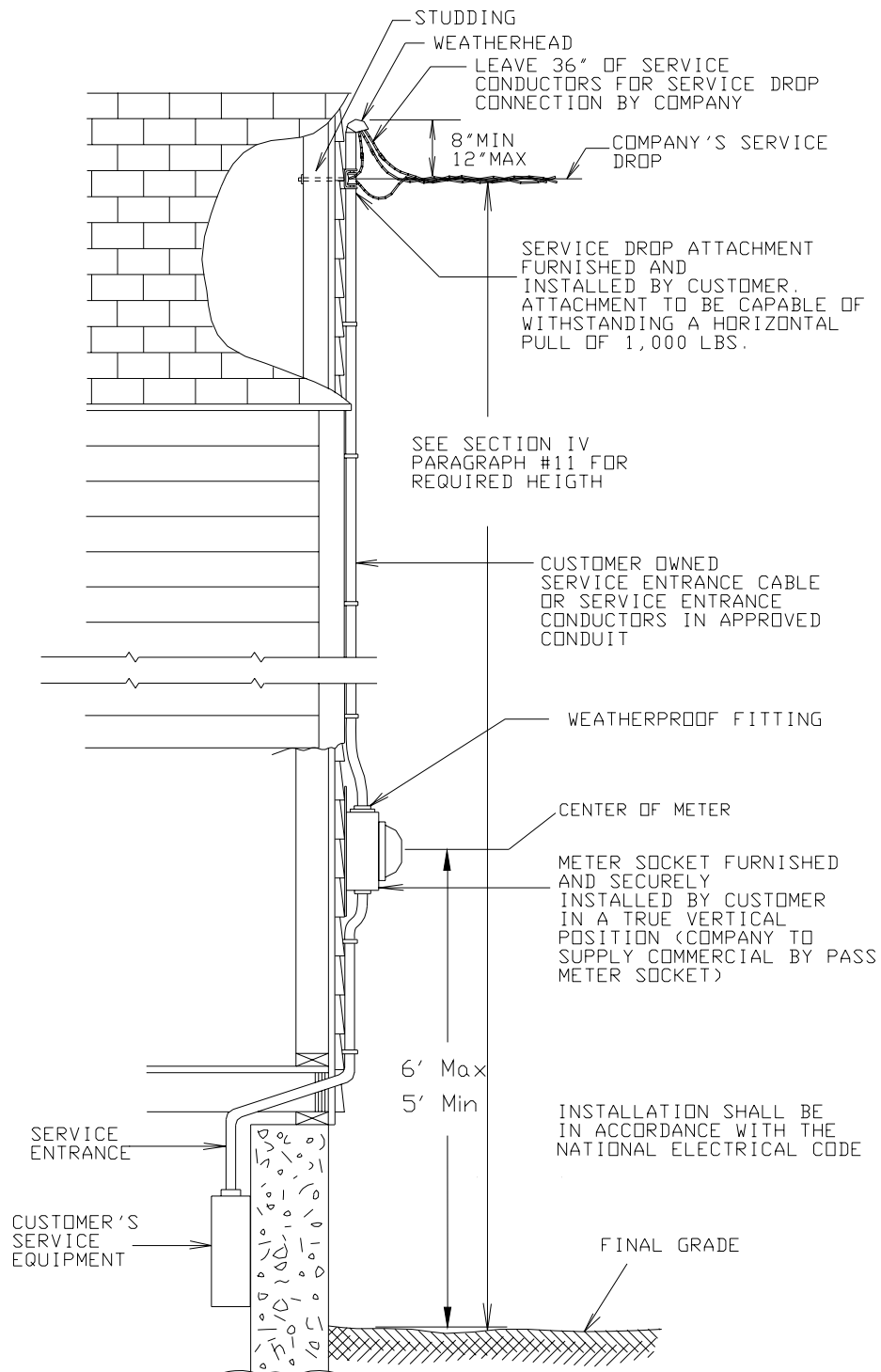
mn:7/98
modified schematic

LOCATION	"A" - ENTIRE SYSTEM CAN BE ENERGIZED OR, ONLY CERTAIN BUILDINGS.
	"B" - ONE BUILDING (BARN) MAY BE SERVED.
	"C" - ONE CIRCUIT FOR CRITICAL EQUIPMENT MAY BE SERVED.

NOTE: IF WATER HEATER CONTROL IS DESIRED, CUSTOMER SHALL OWN, INSTALL AND MAINTAIN SEPARATE TIME SWITCH AT WATER HEATER LOCATION.

FIGURE 18

SERVICE ENTRANCE TO RESIDENCE
OR SMALL COMMERCIAL BUILDING



GROUNDING TO BE AS REQUIRED IN FIGURE 29

FIGURE 19

DETAILS OF RISER AND SERVICE ATTACHMENT
LOW BUILDINGS - RANCH HOUSES

TRIPLEX CONDUCTOR	MAXIMUM UNBRACED LENGTH FROM FLASHING TO CONDUCTOR						
	**			RIGID AL. CONDUIT			
	2"	2-1/2"	3"	2-1/2"	3"	3-1/2"	4"
NO. 2	28"	48"	48"	24"	39"	48"	48"
NO. 1/0		25"	40"	—	18"	25"	34"

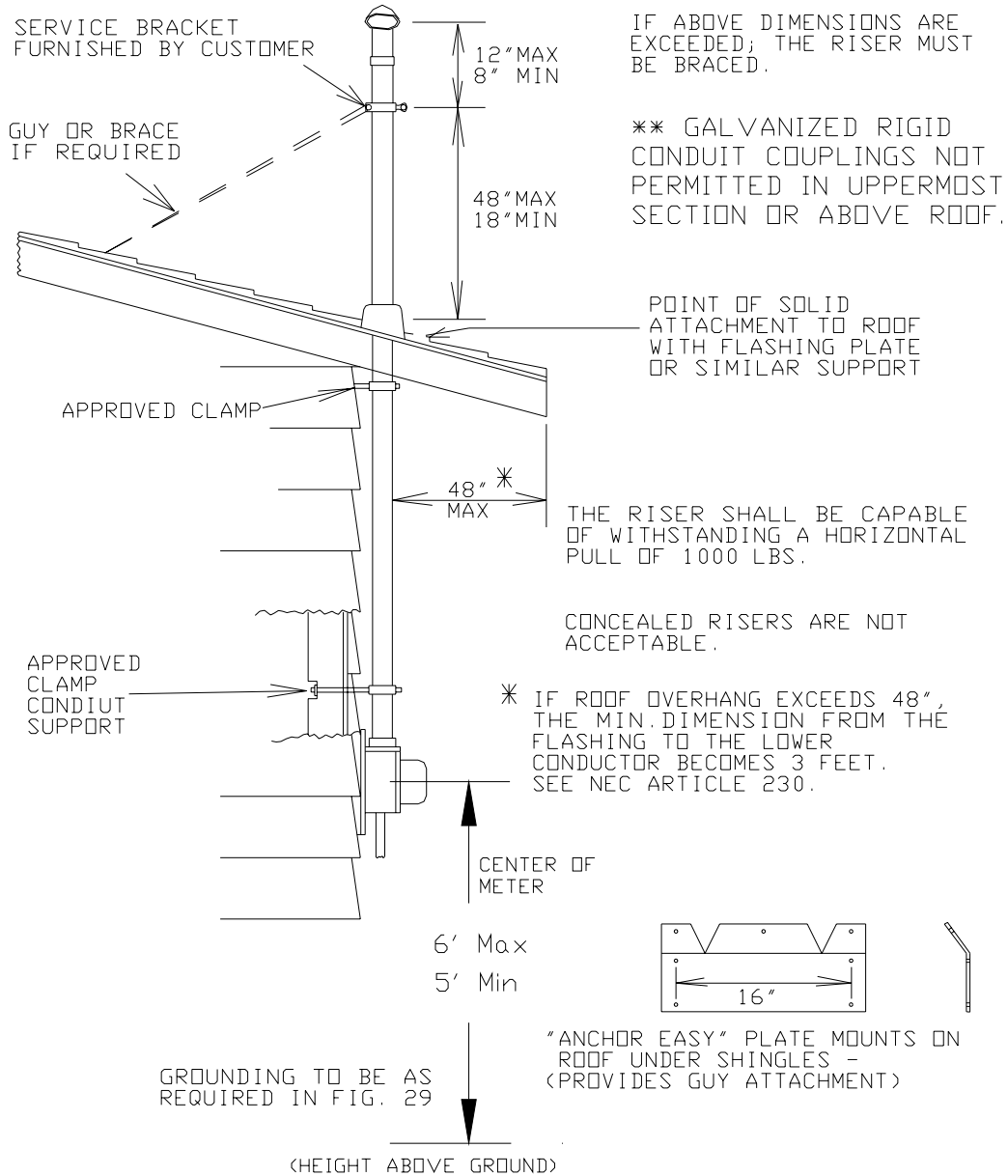
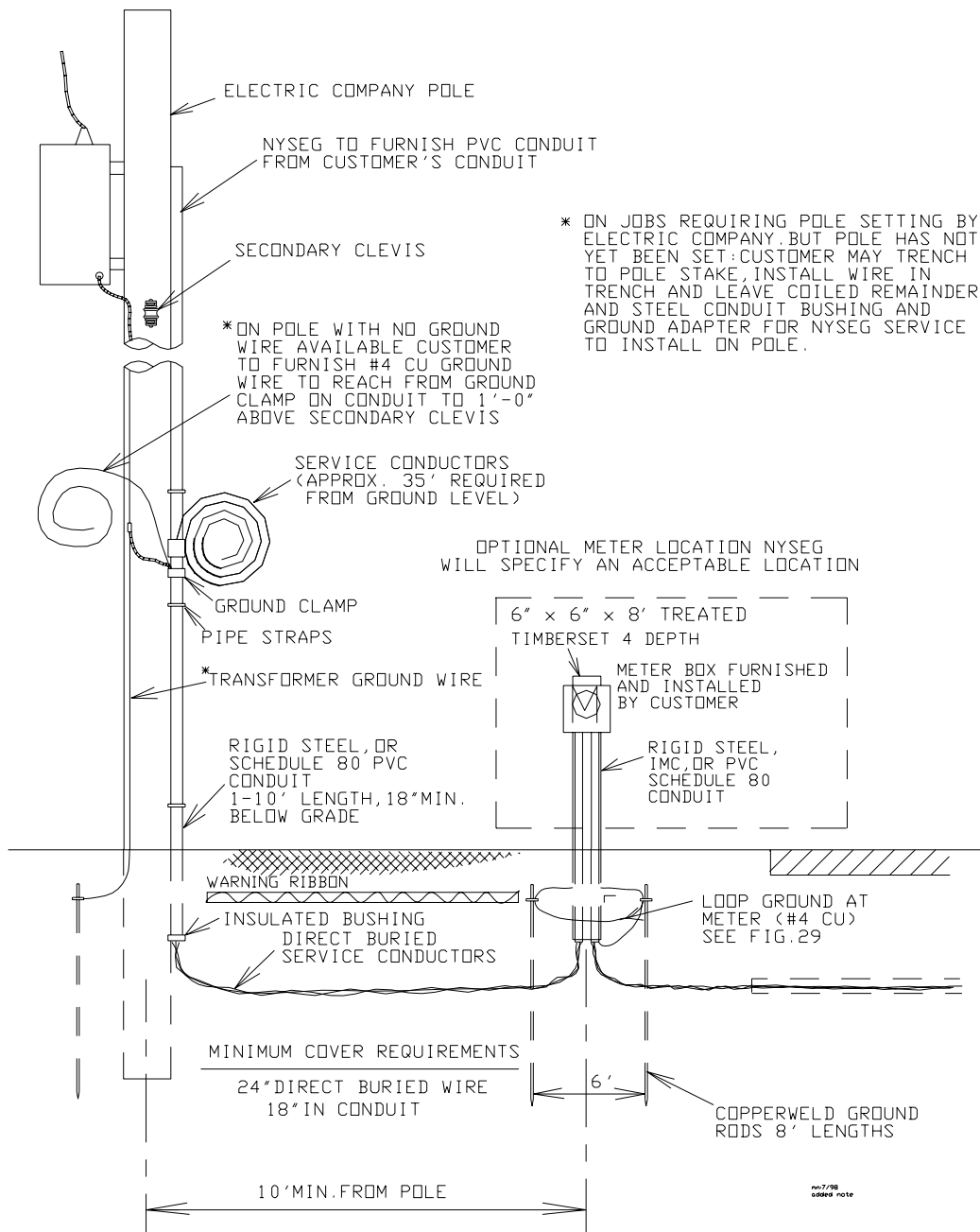


FIGURE 20

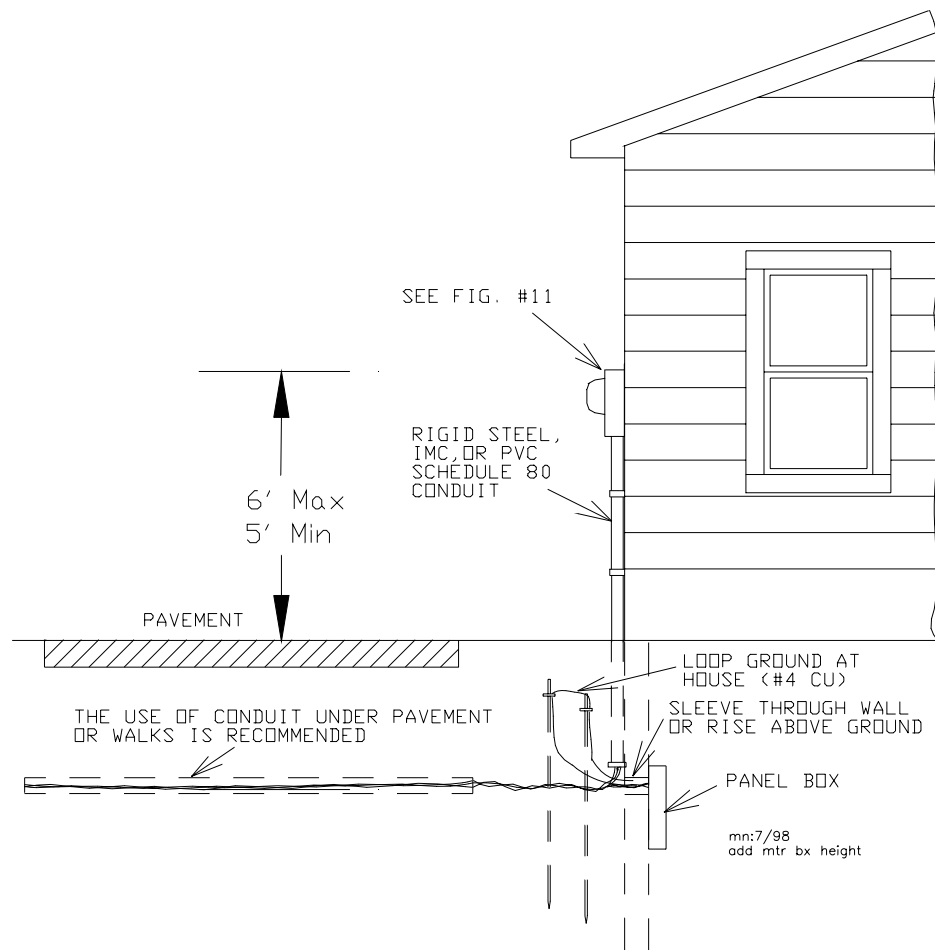
UNDERGROUND SERVICE CONNECTIONS
FROM OVERHEAD LINES
SECT. 4, PARA. 18-26



NOTE: IF SERVICE FROM RISER TO METER BOX IS COMPLETELY IN CONDUIT, DUCT SEAL OR A WEATHERHEAD IS NEEDED.

FIGURE 20A

UNDERGROUND SERVICE CONNECTIONS
FROM OVERHEAD LINES
SECT. 4, PARA. 18-26



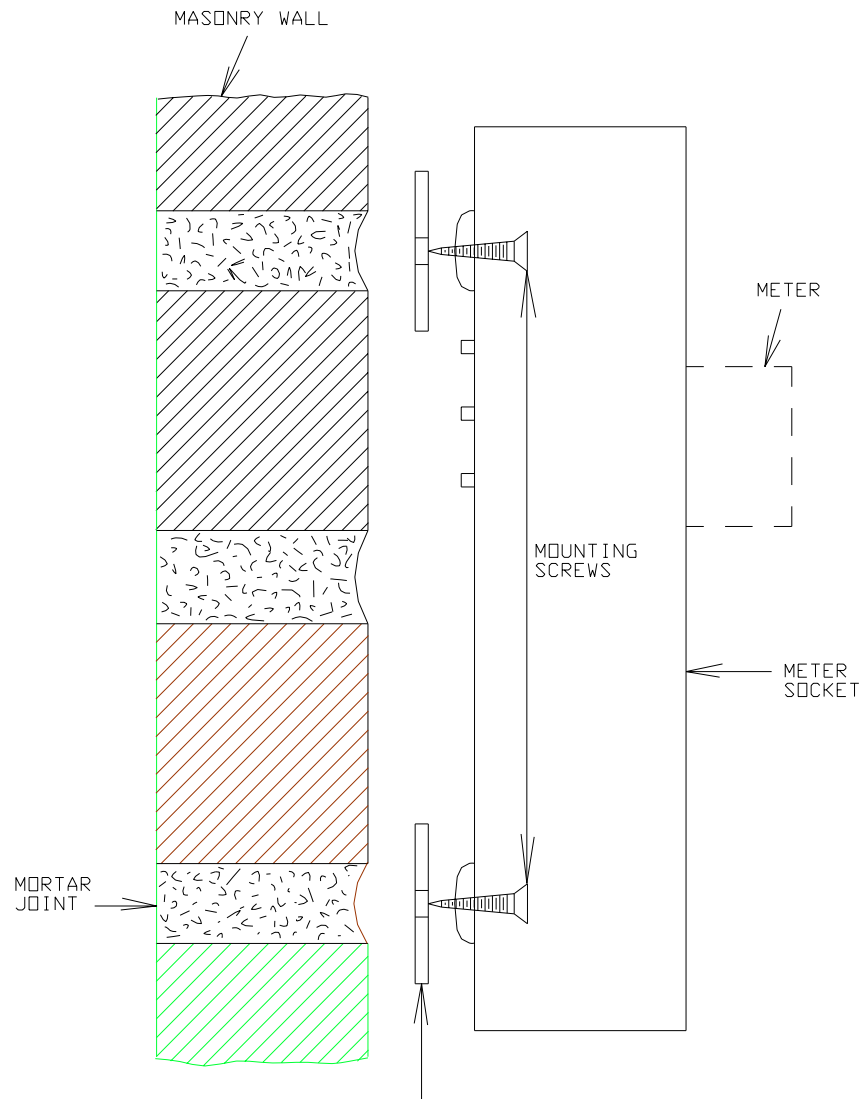
WHERE NECESSARY TO PREVENT PHYSICAL DAMAGE TO DIRECT BURIED CONDUCTORS FROM ROCKS, SLATE, ETC., OR FROM VEHICULAR TRAFFIC ETC., DIRECT BURIED CONDUCTORS SHALL BE PROVIDED WITH SUPPLEMENTARY PROTECTION SUCH AS SAND, SAND AND SUITABLE RUNNING BOARDS, SUITABLE SLEEVES OR OTHER APPROVED MEANS.

RESERVED FOR FUTURE USE

FIGURE 22

MOUNTING OF METER SOCKETS ON
MASONRY CONSTRUCTION

WHEN MOUNTING DIMPLES ON METER SOCKETS ARE INSTALLED
ON RECESSED MASONRY, THE FOLLOWING MOUNTING PROCEDURE
SHALL BE FOLLOWED TO PROVIDE A PLUMB AND LEVEL INSTALLATION.



- WASHER LARGE ENOUGH TO SPAN MORTAR JOINT.
- TOTAL THICKNESS OF WASHER SHIMS IS NOT TO EXCEED 3/16".
- WASHERS ARE TO BE WEATHER RESISTANT PLATED.
- USE APPROPRIATE ANCHORS FOR MASONRY CONSTRUCTION

RESERVED FOR FUTURE USE

FIGURE 23

UNDERGROUND SERVICE CONNECTION
FOR RESIDENTIAL DEVELOPMENTS
SECT. 4, PARA. 34-36

THE SERVICE CABLE AND CONDUIT (IF USED) ARE NOT TO BE INSTALLED CLOSER THAN TWO (2) FEET FROM THE TRANSFORMER OR HANDHOLE LOCATION.

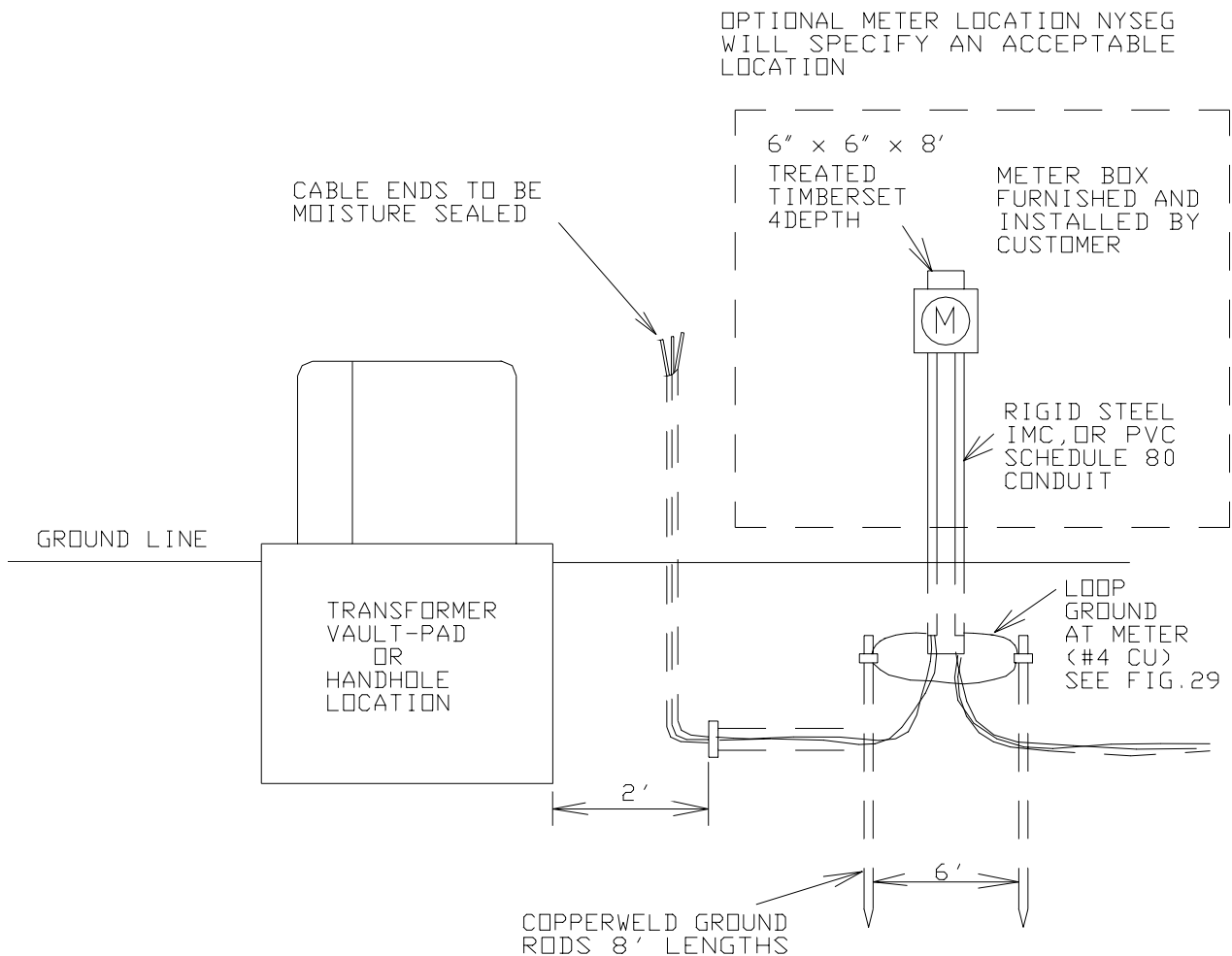
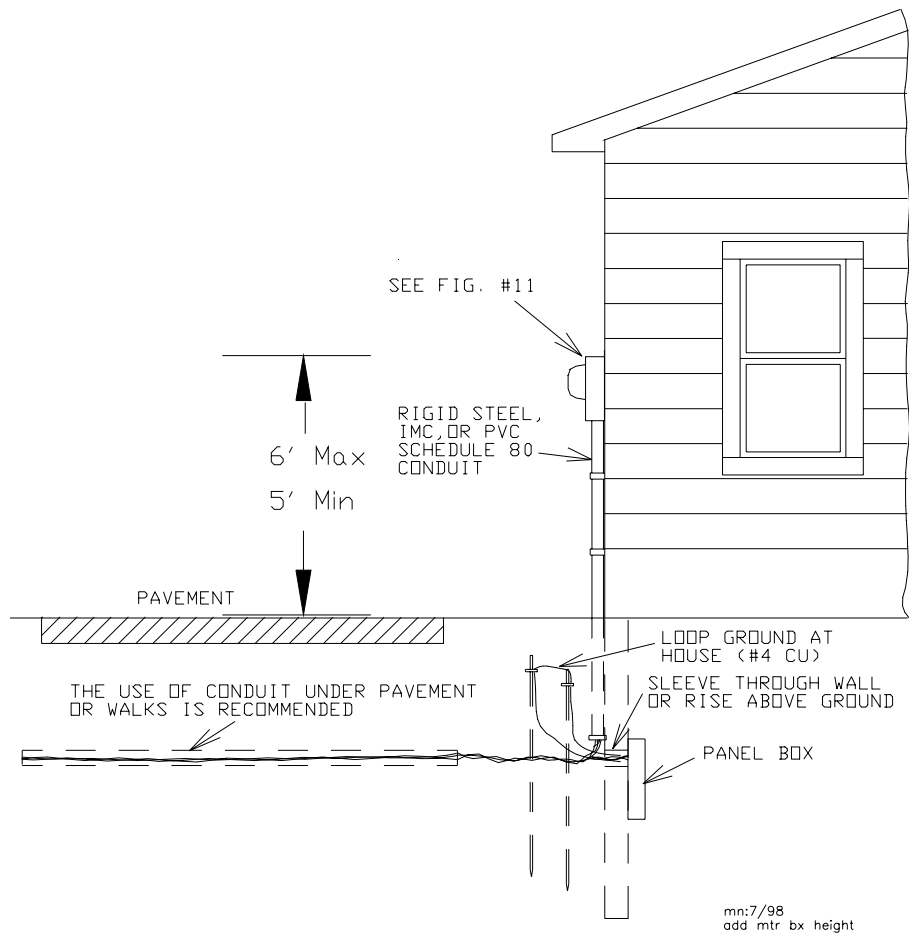


FIGURE 23A

UNDERGROUND SERVICE CONNECTION
FOR RESIDENTIAL DEVELOPMENTS
SECT. 4, PARA. 34-36



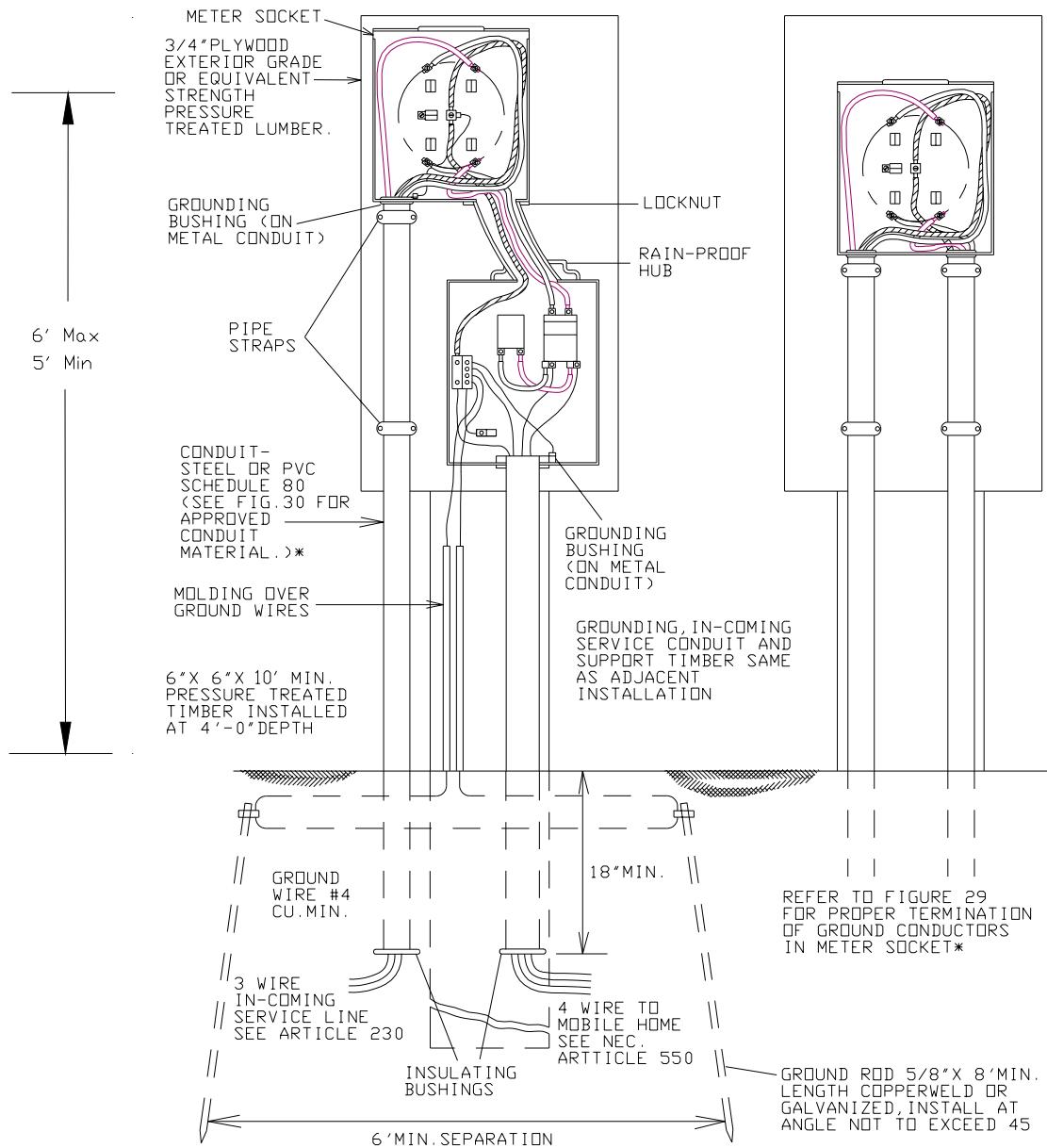
WHERE NECESSARY TO PREVENT PHYSICAL DAMAGE TO DIRECT BURIED CONDUCTORS FROM ROCKS, SLATE, ETC. OR FROM VEHICULAR TRAFFIC ETC. DIRECT BURIED CONDUCTORS SHALL BE PROVIDED WITH SUPPLEMENTARY PROTECTION SUCH AS SAND, SAND AND SUITABLE RUNNING BOARDS. SUITABLE SLEEVES OR OTHER APPROVED MEANS.

FIGURE 24

TYPICAL METER PEDESTAL

**SHOWN WITH TYPICAL SERVICE
EQUIPMENT FOR MOBILE HOME
WITH DIRECT WIRING 100 AMP,
150 AMP OR 200 AMP.**

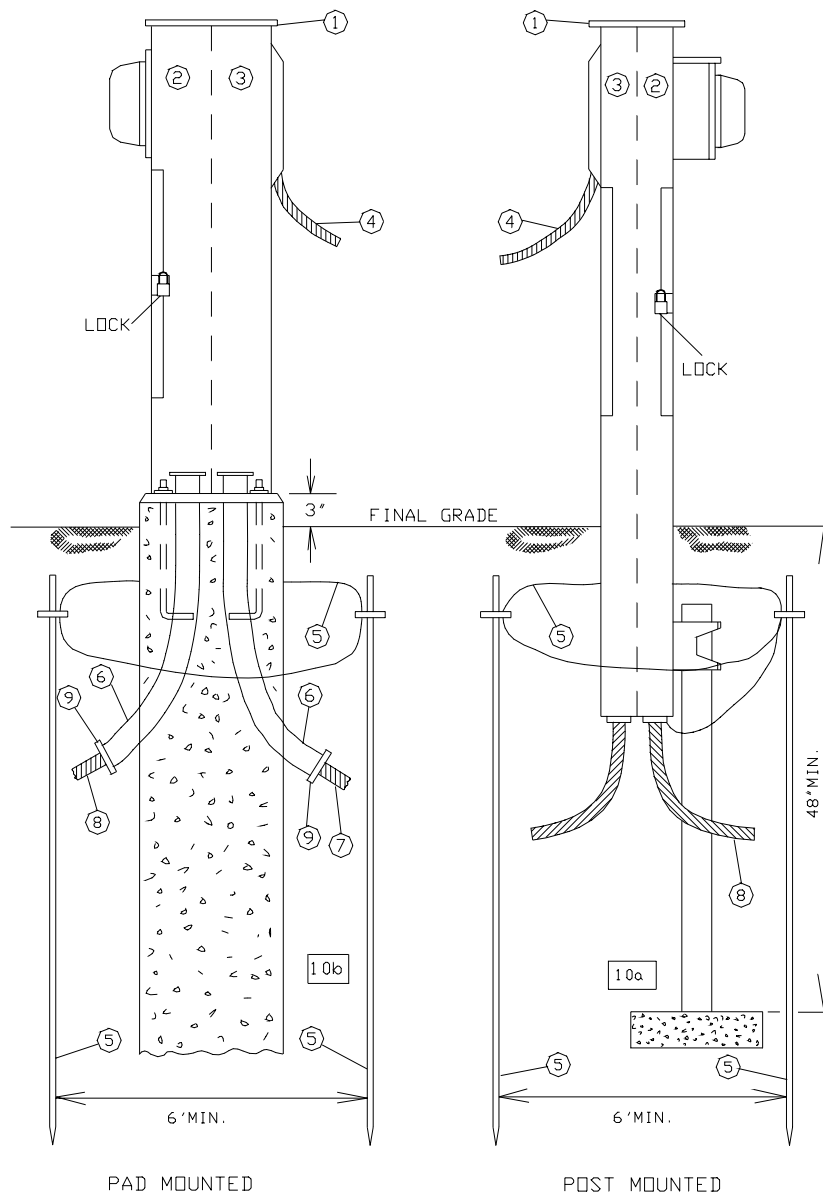
**METER INSTALLATION ONLY.
NOT FOR MOBILE HOME USE.**



*"SPECIFICATIONS FOR ELECTRIC INSTALLATIONS"

FIGURE 25

PRE-ASSEMBLED METER PEDESTAL
INSTALLATION FOR MOBILE HOMES, ETC.
120/240 VOLT SINGLE PHASE
(SEE PAGE 70 FOR SPECS)



**PRE-ASSEMBLED PEDESTAL
INSTALLATION SPECIFICATIONS**

Customer will submit the pedestal specification to the company for review prior to purchase.*

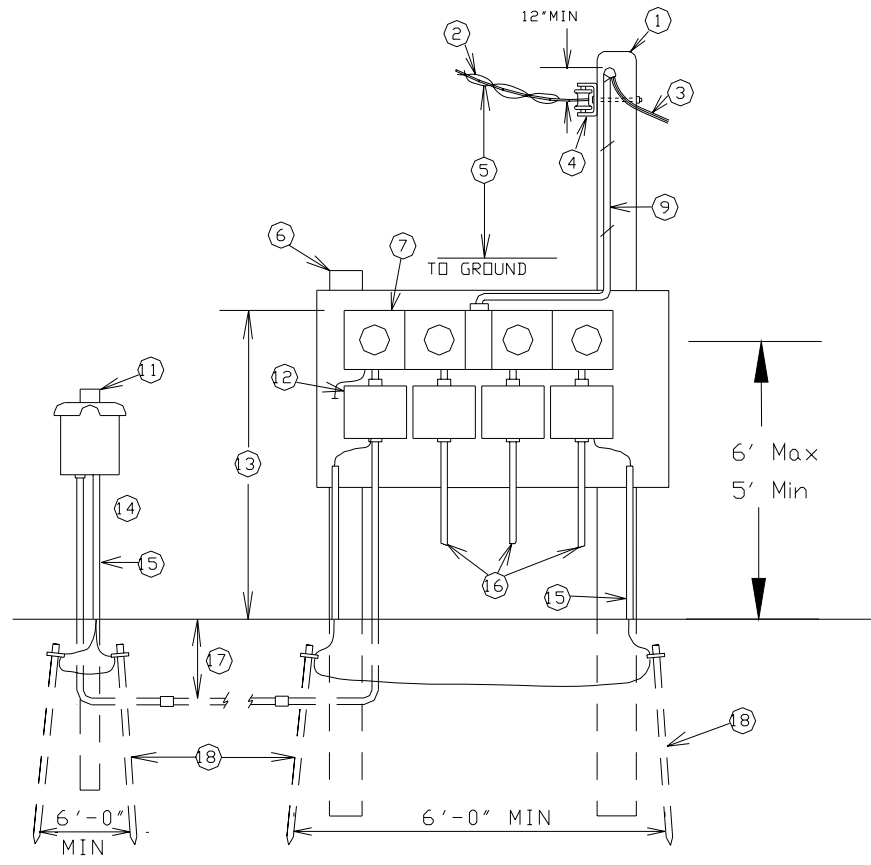
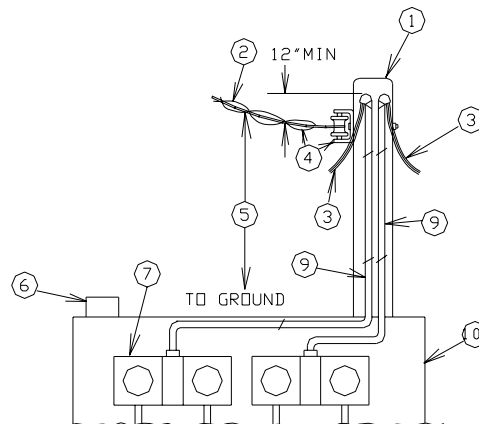
1. Meter Pedestal - Pad or Post Mounted, Top 4'0" min. - 5'6" max. above ground.
2. Line Compartment.
3. Load Compartment - including customer's service equipment, etc.: 150 amp. minimum.
4. Customer power supply cord, if used. See Section XV, Figure 27. (For direct wired service, see Item #7 below.)
5. Continuous #4 soft drawn bare copper ground wire connecting (2) ground rods (6' minimum separation) to ground lug in pedestal.
6. Conduit, size in accordance with the National Electrical Code.
7. Customer supply cable - permanent wiring method. Depth to be 18" minimum if in conduit, 24" minimum if cable is direct buried. (See Section XV, Figure 27.)
8. Service cable, Company's or Customer's.*
9. Insulated Grounding Bushing, if steel conduit is used.
10. Pedestal bases - two types:
 - a. Post mounted to be set a minimum of 4 ft. in ground on a stone or concrete pad.
 - b. Pad mounted to have concrete base poured to depth below frost line (4 feet minimum) and 3" above final grade.

NOTES:

1. Installation and equipment ratings must be adequate for the load to be served.
2. Customer's wiring to be in accordance with the National Electrical Code.
3. All 120 volt single phase utilization receptacle outlets must have approved ground fault circuit protection. Example: 15 or 20 amp. outlets.

*See specification #1 for details of cable.

*See specification #2 for details of pre-assembled meter pedestal

FIGURE 26MOBILE HOME MULTI-METER INSTALLATION
OVERHEAD SERVICE-SINGLE ENTRANCE CABLEMOBILE HOME MULTI-METER INSTALLATION
OVERHEAD-DOUBLE SERVICE ENTRANCE

SEE TOP DRAWING FOR INSTALLATION OF CUSTOMER'S
SERVICE EQUIPMENT, PRESERVATION PRESSURE
TREATED WOOD PRODUCTS AND GROUNDING REQUIREMENTS.

**METER BOARD INSTALLATION
SPECIFICATIONS-OVERHEAD SERVICE**

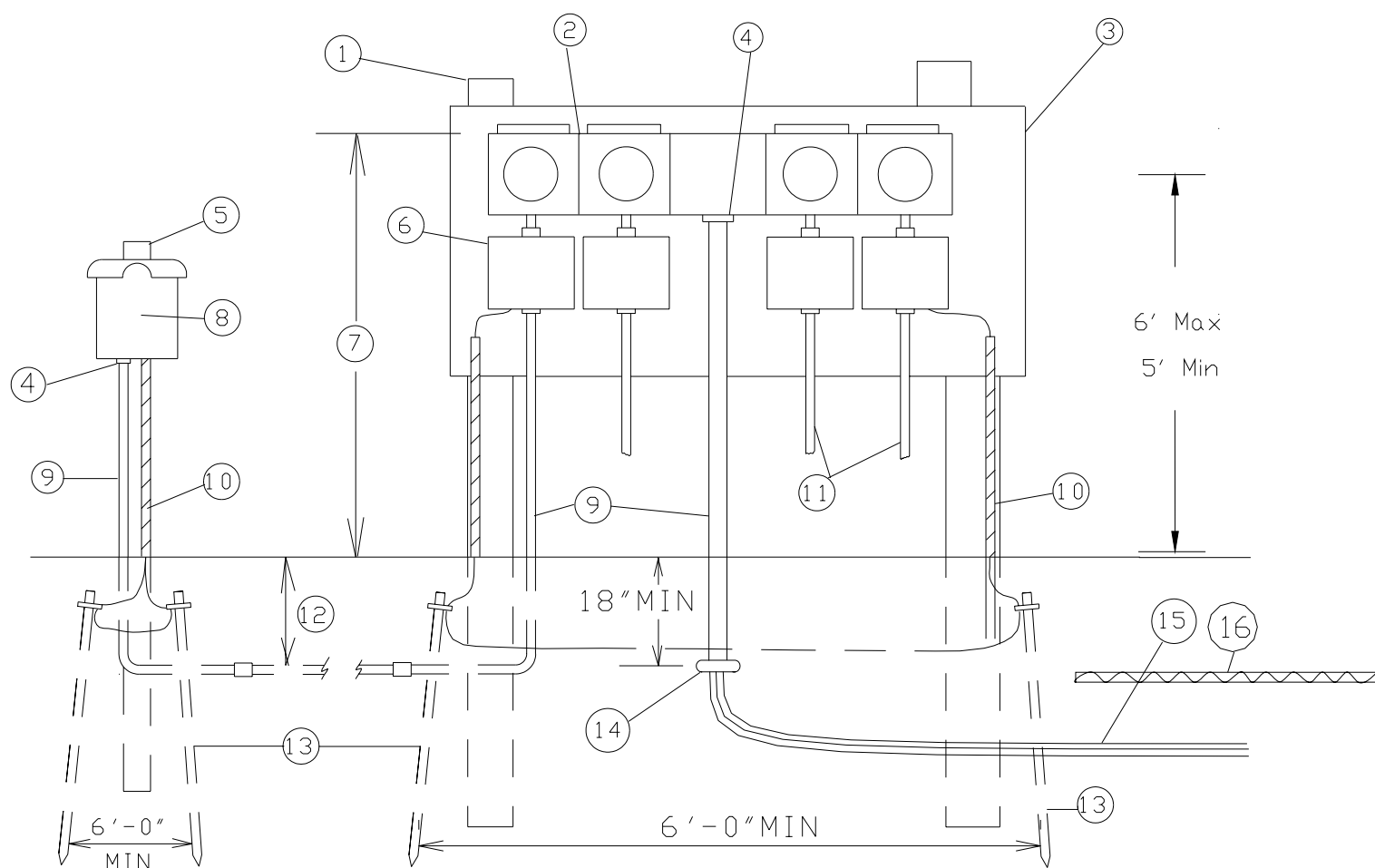
1. Preservative pressure treated pole (furnished and installed by customer). Consult Company for pole size, setting, and guying requirements.
2. Service drop furnished and installed by Company.
3. Electrician to leave leads 36 inches minimum in length.
4. Company will furnish and customer will install the service attachment bracket.
5. Minimum ground clearances shall be specified by NYSEG.
6. Preservative pressure treated pole butts or preservative pressure treated timber.
7. Meter sockets furnished and installed by customer.
8. Insulated grounding bushing.
9. Cable or conduit in accordance with National Electrical Code.
10. Board, 3/4" exterior grade plywood or equivalent pressure treated lumber in strength.
11. Customer's pedestal - 4" x 4" preservative pressure treated post (two 2" x 4" not acceptable) or equal, set a min. of 4 ft. deep.
12. Customer's service equipment in weatherproof enclosure (100 amp. min.; 150 amp. recommended).
13. Height above ground to top of meter enclosure - 4'0" min., 6'0" max.
14. Customer's service equipment as required by the National Electrical Code.
15. Continuous #4 soft drawn bare copper ground wire under protective cover terminated at the meter ground bus connection.
16. Additional service connections as required.
17. Depth to be 18" min. if conduit, 24" min. if cable is direct buried.
18. Approved driven ground rods; 2 required.

NOTES:

1. Installation and equipment ratings must be adequate for the load to be connected. 200 ampere positions may require a different arrangement.
2. A maximum of three (3) meters bussed together where all mobile homes are electrically heated.
3. All 120 volt single phase utilization receptacle outlets must have approved ground fault circuit protection. Example: 15 or 20 amp. outlets.

FIGURE 27

MOBILE HOME MULTI-METER INSTALLATION
UNDERGROUND SERVICE



**METER BOARD INSTALLATION
SPECIFICATIONS UNDERGROUND SERVICE**

1. Preservative pressure treated pole butts or preservative pressure treated timber set below frost level. (4 ft. minimum)
2. Meter sockets furnished and installed by customer.
3. Board - 3/4" exterior grade plywood or equivalent pressure treated lumber in strength.
4. Insulated grounding bushing.
5. Customer's pedestal - 4" x 4" preservative pressure treated post (two 2" x 4" not acceptable) or equal, set a min. of 4' deep.
6. Customer's service equipment in weatherproof enclosure (100 amp. min.; 150 amp. recommended).
7. Height above ground to top a meter enclosure - 4'0" min., 6'0" max.
8. Customer's service equipment enclosure as required by the National Electrical Code.
9. See Figure #30 for approved conduit material - furnished and installed by customer.
10. Continuous #4 soft drawn bare copper under protective cover terminated at the meter ground bus connection.
11. Additional service connections as required.
12. Depth to be 18" min. if in conduit, 24" min. if cable is direct buried.
13. Approved driven ground rods - 2 required.
14. Insulating bushing furnished and installed by customer.
15. Cable by Company or customer, minimum depth of trench 24"* (See Section IV, Paragraph 34 and 35.)
16. Warning ribbon 12" above direct buried conductor.

NOTES:

1. Installation and equipment ratings must be adequate for the load to be connected. 200 ampere positions may require a different arrangement.
2. Customer's wiring to be in accordance with the National Electrical Code.
3. A maximum of three (3) meters bussed together where all mobile homes are electrically heated.
4. All 120 volt single phase utilization receptacle outlets must have approved ground fault circuit protection. Example: 15 or 20 amp.

*See specification #1 for details of cable.

FIGURE 28

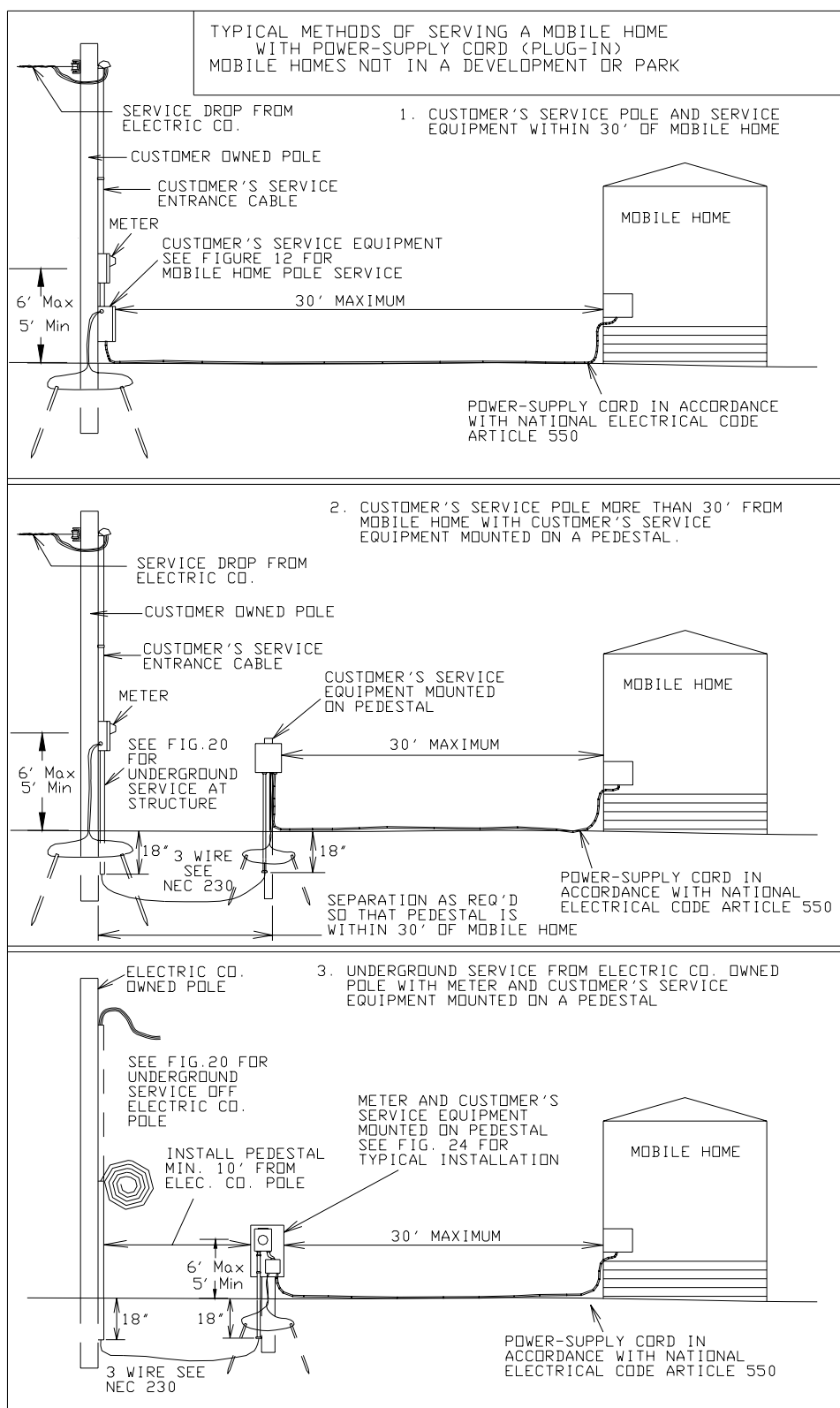


FIGURE 28A

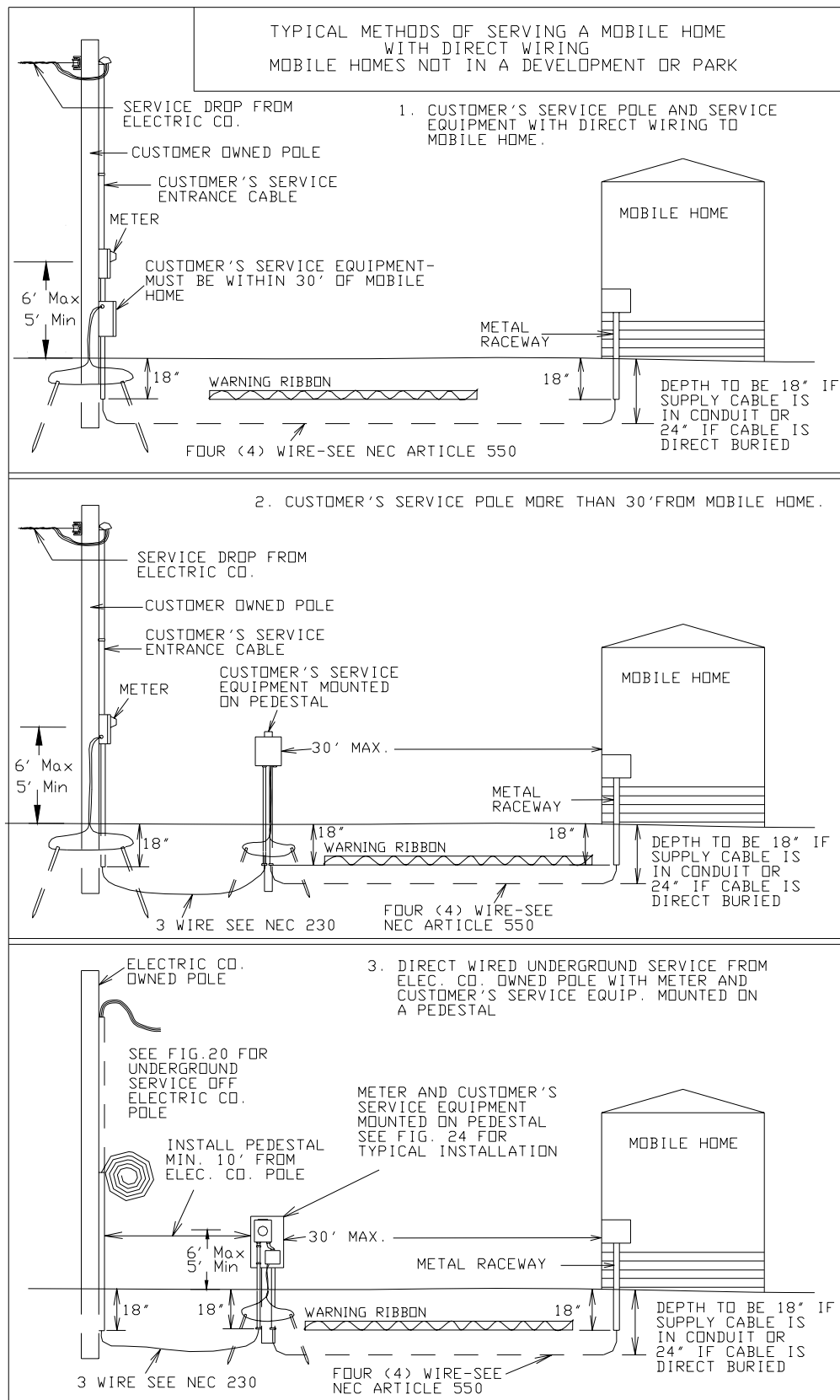


FIGURE 29

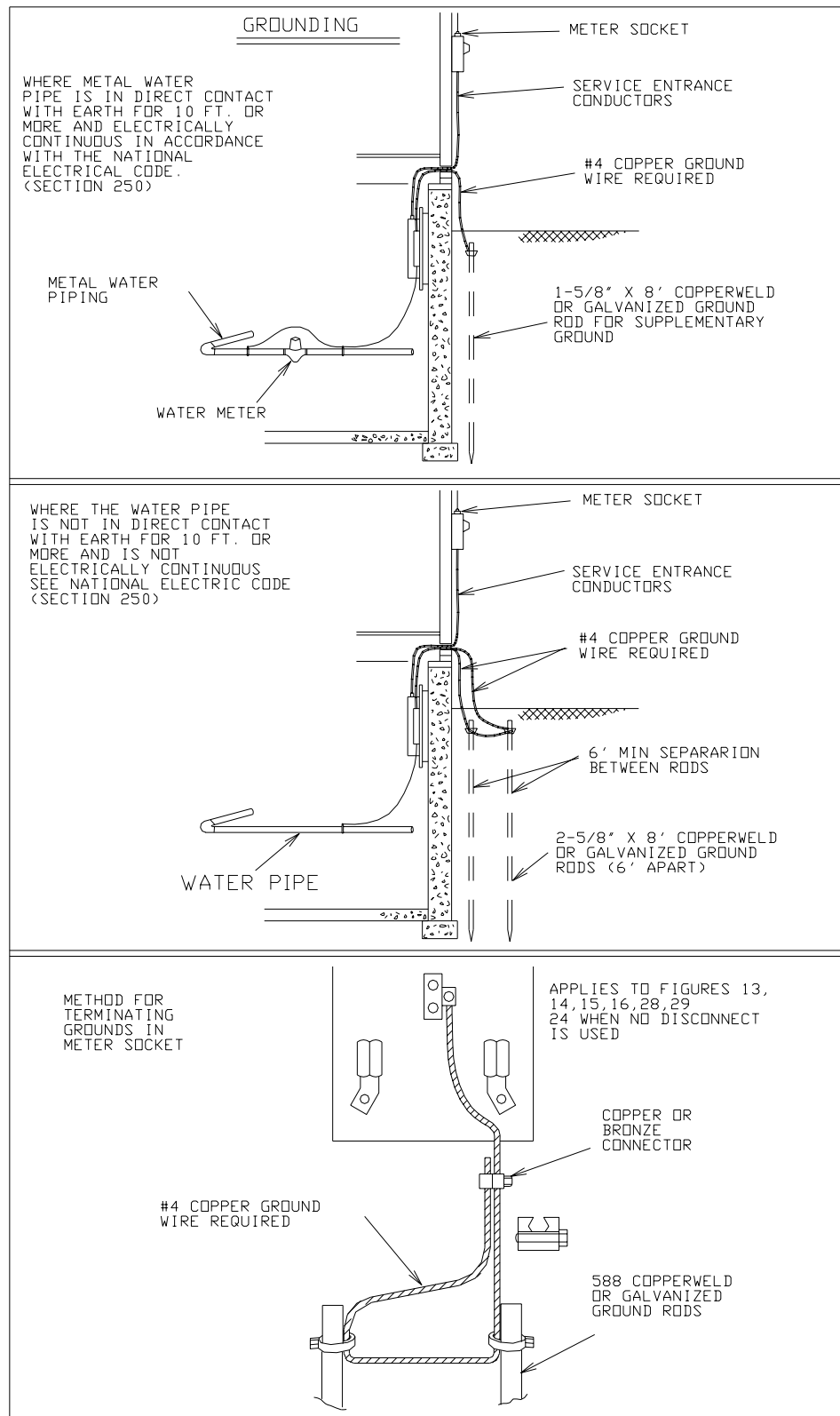
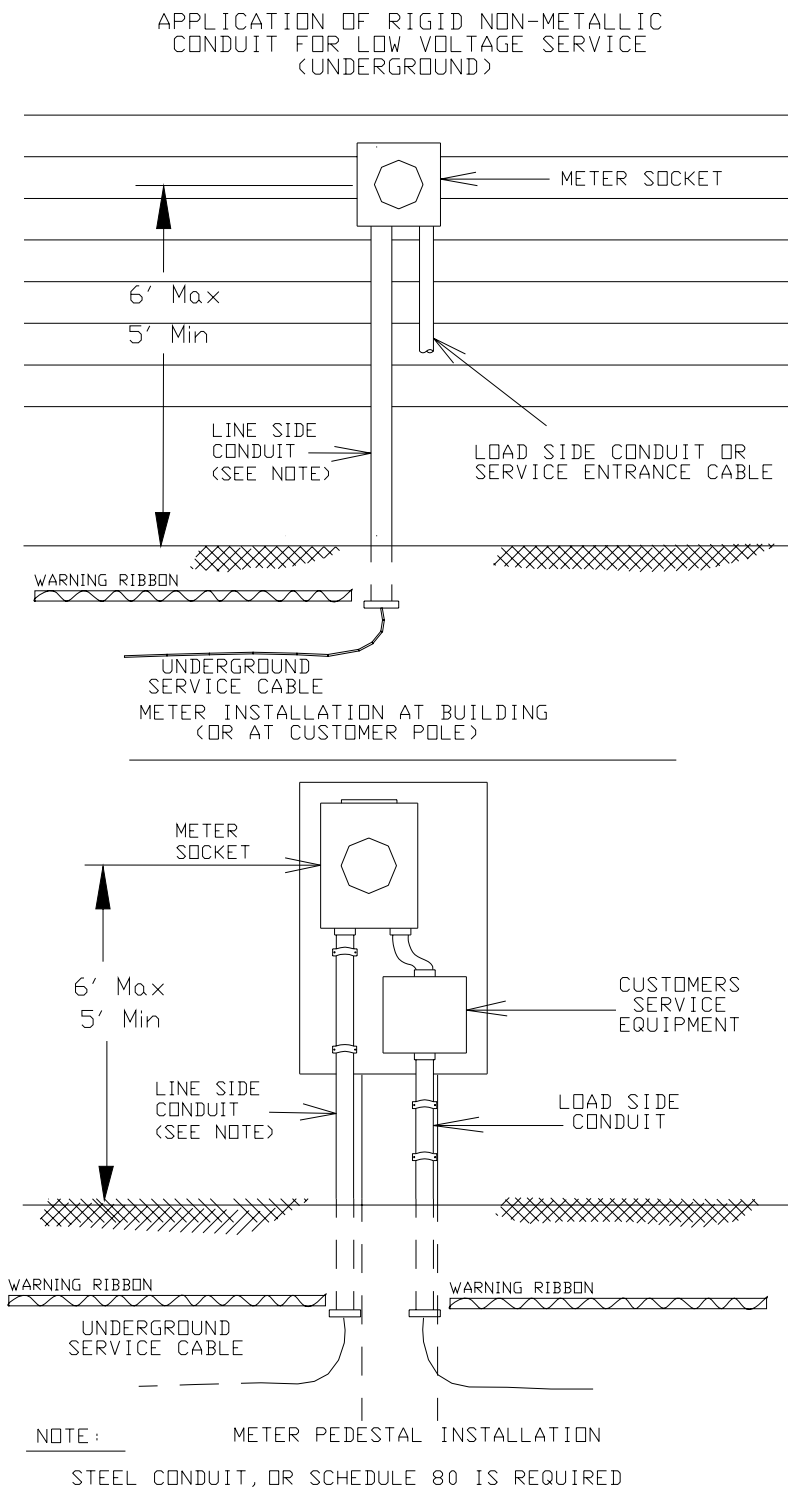


FIGURE 30

JOINT METERING LOCATIONS

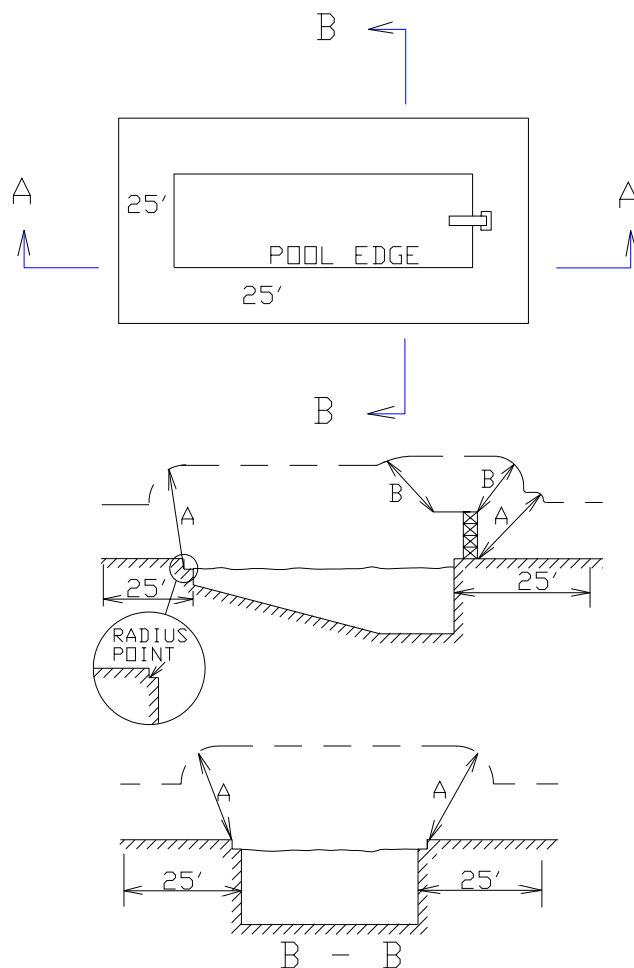
PLEASE REFERENCE THE ELECTRIC DISTRIBUTION
ENGINEERING AND CONSTRUCTION STANDARDS
(UNDERGROUND), SECTION #3-TRENCHING FOR
APPROPRIATE CLEARANCES

FIGURE 31A**JOINT METERING LOCATIONS**

PLEASE REFERENCE THE ELECTRIC DISTRIBUTION
ENGINEERING AND CONSTRUCTION STANDARDS
(UNDERGROUND), SECTION #3-TRENCHING FOR
APPROPRIATE CLEARANCES

FIGURE 32

CLEARANCE REQUIREMENTS FOR CONDUCTORS PASSING OVER THE SWIMMING POOL OR LAND WITHIN 25 FEET OF THE EDGE OF THE SWIMMING POOL.



SUPPLY LINE CONDUCTORS, STREET LIGHTING CONDUCTORS AND SERVICE DROPS

	NEUTRALS AND GUYS	CABLED SUPPLY	OPEN SUPPLY LINE CONDUCTORS		VOLTAGES PHASE TO GROUND
		0 - 750V	0 - 750V	750V TO 22KV	
A. CLEARANCE IN ANY DIRECTION FROM THE EDGE OF POOL. BASE OF DIVING PLATFORM OR ANCHORED RAFT.	22'	22' 6"	23'	25'	
B. CLEARANCE IN ANY DIRECTION TO THE DIVING PLATFORM OR TOWER.	14'	14' 6"	15'	17'	

THE ABOVE CLEARANCES MUST BE MET WHEN NEUTRALS, GUYS AND CABLED SUPPLY CONDUCTORS ARE AT SAGS OF 120°F AND OPEN SUPPLY LINE CONDUCTORS ARE 200°F.

SWIMMING POOL CLEARANCE

It is the policy of the Company that all electric facilities, Company owned or customer owned should be in accordance with applicable codes and local ordinances.

The National Electrical Code and The National Electrical Safety Code provide guidelines for clearance of conductors passing over swimming pools or surrounding land within 25 feet from the edge of the swimming pool.

Customers shall be requested to relocate any swimming pool (above grade pool or proposed below grade pool) to correct any violation created by the improper placement with respect to NYSE&G Corp. overhead lines.

Clearances for Installation of Electrical Facilities Near Pools

Conductor clearances shall be in accordance with Figure #31.

WHEN CUSTOMERS CREATE "POTENTIAL HAZARDS":**The Company Will At Its Own Expense:**

1. Replace or relocate service drop conductors to a new point of attachment established by the customer's electrical contractor to provide adequate clearance.

The Company Will At Customer's Expense:

1. Relocate poles and conductors that are part of a service lateral, including the installation of an additional service support pole in a short span if this will provide adequate clearance.
2. Relocate poles and conductors that are part of a line on easements at a customer's request assuming the customer provides any additional easements necessary.

XVI. SPECIFICATIONS

Specification #1

Specification for Direct Buried Installation of Underground Service
to Residential Buildings (URD-Single Family Dwellings)

Specification #2

Specification for Customer's Preassembled Meter Pedestal

Specification #3

Specification for Customer Supplied 100 Ampere
and 200 Ampere Self-Contained, Non-Bypass Meter
Socket

**SPECIFICATION #1: FOR DIRECT BURIED
INSTALLATION OF UNDERGROUND SERVICE
TO RESIDENTIAL BUILDINGS
(URD-SINGLE FAMILY DWELLINGS)**

The following materials and methods are approved by the New York State Electric & Gas Corporation for use by the applicant when installing a direct buried service lateral to a single family dwelling in a subdivision where the electric distribution facilities are underground.

A. Services

1. Material

The service cable assembly shall consist of aluminum or copper phase conductors, insulated with .080 inches black cross-linked polyethylene and a neutral conductor, insulated with .080 inches black cross-linked polyethylene with yellow or yellow striped coloring. The two phase conductors and one neutral conductor are to be triplexed and rated at 600 volts, manufactured and tested in accordance with the specifications of the ICEA publication # S-66-524, NEMA publication # WC7, latest edition or, Underground Service Entrance Cable (USE rated). The conductor shall be sized per the National Electrical Code (NEC) Article 310.

B. Sizes

1. 150 Amp Service – Minimum Size Permitted
2. 200 Amp Service
3. 400 Amp Service

C. Services larger than 400 Amp

For loads requiring installation of a service rated at more than 400 amperes, consult the New York State Electric & Gas Corporation.

D. Service Location

The New York State Electric & Gas Corporation will designate the service connection point at the building and the point the service lateral will connect to the electric distribution lines or equipment.

E. Installation

1. A continuous length of cable, free of splices, shall be direct buried with a minimum of 24 inches of cover from the meter to the point of connection with the utility system.
2. The cable shall be protected with conduit as it enters the meter as shown on Figure 23. Under driveways, sidewalks, patios, and other paved areas the cable must be protected by approved conduit. This conduit may be:
 - a. Fiber, or similar duct material encased in a 3" concrete envelope.
 - b. Galvanized steel conduit. If steel conduit is used, an insulating bushing shall be installed at each end of conduit.
 - c. Non-metallic duct designed and approved for use without a concrete envelope or other covering.
3. Underground service conductors that are not encased in concrete and that are buried 18" or more below grade shall have their location identified by a warning ribbon that is placed in the trench at least 12" above the underground installation.
4. The backfill must be soil, free of rock, stone, or other foreign material.
5. The customer will make all connections in the meter or entrance box, and install service to within 2 ft. of handhole or transformer foundation and leave 10 ft. of cable coiled. (See Figure 23.)
6. Cable ends will be adequately sealed. The cable is to be protected and left for inspection by an authorized inspection organization acceptable to the Company.
7. Upon receipt of a certified inspection, the New York State Electric & Gas Corporation will connect the service cable to its distribution system.

F. Inspection

Service cable which is installed by the applicant must be inspected and approved by an authorized inspection organization acceptable to the Company before the cable trench may be backfilled.

**SPECIFICATION #2: FOR CUSTOMER'S
PREASSEMBLED METER PEDESTAL**

1. The pedestal unit shall be submitted to the Company for review prior to purchase.
2. The pedestal to be constructed of minimum #14 gauge zinc coated steel.
3. Base of pedestal to be suitably corrosion protected for padmounting in outdoor atmosphere or for setting in concrete and earth.
4. The meter compartment **shall not** be of the enclosed or overall enclosure type.
5. At least one side of the pedestal to be hinged or removable for access to the interior, with a provision for padlocking.
6. The line terminals and socket terminals to be prewired and shall be located in a separate wireway from the load terminals or outlets.
7. Access to the line terminals to be possible only through a door or cover with provision for padlocking.
8. The socket terminal blocks to be of porcelain or phenolic and mounted to provide adequate support.
9. Meter sockets to be of the ringless type with a fifth (5th) terminal provided on the meter block and mounted in the 9 o'clock position.
10. Line terminals shall be capable of accepting #1/0 AWG-350 MCM copper or aluminum conductors.
11. Pedestal to be able to withstand without damage a concentrated force of 70 lbs. applied to the meter socket.
12. When supplied with--
 - a. Main breaker--continuous current rating shall be 150 amperes minimum.
 - b. Main breaker--shall have interrupting rating of 10,000 amperes minimum.
 - c. Receptacles--shall have provision for receptacle(s) and a permanent wiring method in accordance with the National Electrical Code.

13. Ground lugs shall be of adequate size to accommodate 2-#4 AWG copper ground wires.
14. Extra care should be taken to install posts, pedestals and meters in a true vertical position.
15. See Figure #25 for drawing and installation specifications.

**SPECIFICATION #3: FOR CUSTOMER SUPPLIED
100 AMPERE AND 200 AMPERE SELF-CONTAINED
NON-BYPASS METER SOCKET**

For residential services, the Customer will install, own and maintain all 100-ampere and 200-ampere self-contained, non-lever bypass type meter sockets. Meter sockets supplied by the Customer must meet the following requirements:

Conform to the latest revision of ANSI/UL 414, ANSI C12.7, NEMA 250, NFPA and other relevant standards.

Must be UL approved and carry the UL label.

Be of a ringless design and include a horn style by-pass mechanism suitable for connecting insulated jumper leads for use in installing or removing the meter. This enables the Company to test or exchange the meter without causing a service interruption.

At minimum, the enclosure of the meter sockets must be of NEMA TYPE 3R design (an enclosure intended for outdoor use to provide a degree of protection against windblown dust and rain). Other NEMA TYPE designs or enclosures with multiple TYPE designs are allowed as long as the minimum environmental requirements of TYPE 3R are met.

Have a sealing mechanism, which allows the socket cover to be sealed to the meter socket body by a Company padlock seal. The sealing mechanism must be made of stainless steel.

Individual meter sockets shall be rated for 100 amperes or 200 amperes continuous load. For a 100 ampere service it is permissible to use a higher rated meter socket up to 200 amperes continuous.

Each position of a ganged meter socket shall be rated for 200 amperes continuous. The design of a ganged meter socket shall allow for the cover to be opened, closed, and sealed individually.

The Company shall furnish all meter sockets for non-residential accounts and for any service greater than 200 amperes. If self-contained, these meter sockets are required to have a single handle, lever operated by-pass, which locks the meter blades in the socket jaws. This by-pass mechanism enables the Company to test or exchange the meter without causing an interruption in service.

Specifications for meter sockets of more than four positions and meter pedestal assemblies shall be submitted to the Company for review and concurrence prior to purchase. Only multi-socket equipment specifically designed for that

application will be used to feed additional meter positions. (For example, two, two-position multiple socket assemblies will not be used as a four-position assembly, the second fed from the first.) For additional information on pedestal assemblies, see Figure 25 and adjoining installation specification.

UPDATE HISTORY

REVISED SHEETS		MODIFICATION
SECTION	PAGE	
XV	78-79	DATE: 9/8/03 REMOVED FIGURES 31 & 31A REVISED BACK TO EXISTING CLEARANCES FOR APPROPRIATE CLEARANCES: REFERENCE ELECTRIC DISTRIBUTION ENGINEERING AND CONSTRUCTION STANDARDS – UNDERGROUND – SECTION 3

NYSEG

Electric Service Area

