

6.0 SERVICE AT 480Y/277 VOLTS

6.1 GENERAL

- 6.1.1 The specifications as set forth in this section apply to secondary services of 480Y/277 volts only. The customer/contractor shall consult with the Distribution Design Department before ordering or installing any equipment since this type of service may not be available to the customer. Information within this section does not preclude other requirements for electric installations as set forth within this book.
- 6.1.2 Maximum single service entrance shall not exceed 2,500 amperes.
- 6.1.3 Minimum 100 KW connected load is required.
- 6.1.4 Services up to and including 800 amperes may use integrated phase construction. Services 1,000 amperes and above must be isolated phase construction.
- 6.1.5 Only one service lateral will be supplied from a transformer. Where local building codes require a fire pump to be installed on the line side of the main switch, a second service may be allowed, at the discretion of LIPA.
- 6.1.6 Service above 400 amperes shall only be supplied from pad mount transformers. Service up to and including 400 amperes may be supplied from pole mounted overhead transformers.
- 6.1.7 Isolated phase service run shall not exceed 50 feet. Installations in excess of 50 feet shall be reviewed with LIPA for special consideration prior to construction.
- 6.1.8 Direct burial of 480Y/277 volt cables is prohibited.
- 6.1.9 All metering equipment must be transformer rated.
- 6.1.10 All services must display a permanent label "480Y/277 volts". Label must be orange background with black lettering and a minimum of 1" high by 4.5" long. Label must be located on both the inside and outside of the meter enclosure and on the outside of the main distribution panel.

6.2 APPROVED CABLE TYPES 480Y/277 VOLTS

- 6.2.1 A minimum of four (4) conductors, of which all must have a minimum voltage rating of 600 volts, shall be installed for all secondary service installations in this category.
- 6.2.2 The following types of cable, both aluminum and copper, when rated for 90 degreeC will be approved when properly installed in conduit in and out of the meter equipment *(regardless of whether the meter pans are before or after the main switch)*:

USE-2 XHHW-2 RHW-2 THWN-2

6.3 CONDUITS FOR 480Y/277 VOLTS

- 6.3.1 Conduit shall be sized in accordance with the current edition of the NEC but in no case shall be less than two inches (2") in diameter.
- 6.3.2 Integrated phase construction, may use either metallic or non-metallic conduit. Metallic conduit shall be in accordance with section 4.5, non-metallic conduit shall be as outlined in 6.3.3.

- 6.3.3 Isolated phase construction must utilize non-metallic conduit. This conduit must be made of either fiber, concrete, or U.L. approved plastic (*minimum Schedule 80*).

6.4 GROUND FAULT PROTECTION FOR 480Y/277 VOLTS

- 6.4.1 Services to a **single meter with multiple main disconnects**, all of which are rated 800 amperes or less, do not require Ground Fault Protection. However, it is recommended that a main disconnect switch be installed and equipped with Ground Fault Protection. Any switch 1,000 amperes or greater requires Ground Fault Protection as per NEC Article 230-95.
- 6.4.2 Any service of 1,000 amperes or more, requiring a single main disconnect per the latest edition of the NEC, shall have Ground Fault Protection at the main disconnect.
- 6.4.3 Services supplying multiple metered customers, require a single main disconnect switch with Ground Fault Protection regardless of service size.
- 6.4.4 Where metering equipment is installed on the load side of a switch with ground fault protection, neutral terminals of meter equipment must be isolated from ground. Grounding strap of the neutral bus must be disconnected (see drawing D29).