



CONSTRUCTION HANDBOOK

*Guidelines and Information for
Members, Builders & Developers*

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- GETTING STARTED
- PRE-CONSTRUCTION PLANNING
- PLANNING AN EXCAVATION
- TRENCHING
- METERING INSTALLATIONS
- COLORADO STATE ELECTRICAL INSPECTIONS
- APPENDIX

***FOR NEW SERVICES & LINE EXTENSIONS CONTACT
OUR ENGINEERING DEPARTMENT AT ONE OF THESE OFFICES***

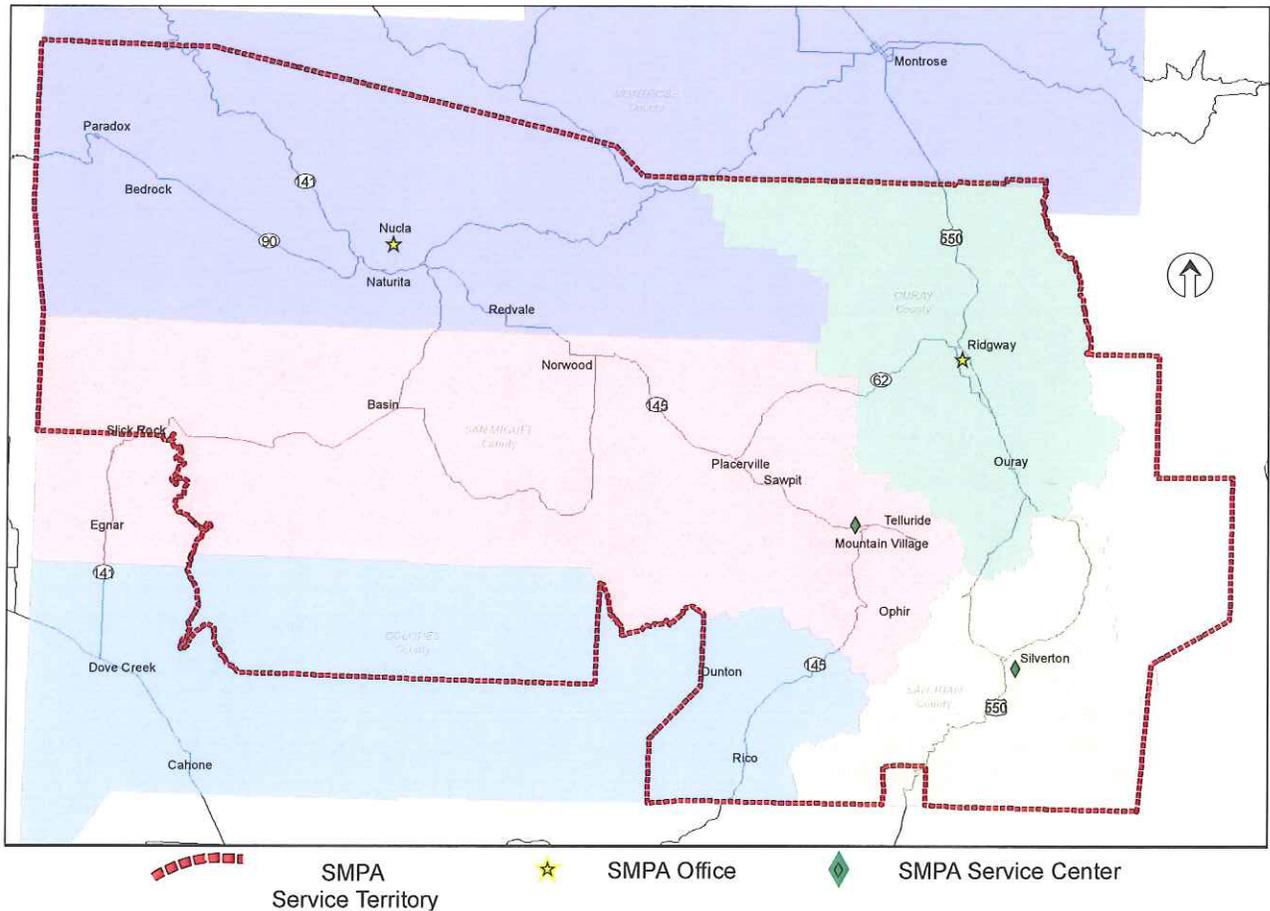
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Nucla, CO 81424
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ISSUE 2011

SAN MIGUEL POWER SERVICE AREA MAP



SMPA Offices are located in Nucla and Ridgway. SMPA also has a Service Center in Telluride and Silverton.

SMPA “Your Rural Electric Co-op”

San Miguel Power Association Inc., is a Rural Utilities Services non-profit cooperative owned by the members it serves. Consumers become members when they apply for and receive electric service. Cooperative members have an ownership interest in their dollar investment. At present, there are 7 districts within SMPA’s service territory with one director elected from each district and serving on SMPA’s Board of Directors. The Board of Directors set the policies and direction of the Association.

SMPA supplies electric power to over 11,000 consumers in all or parts of San Miguel, Ouray, Montrose, Dolores, San Juan and Mesa Counties. SMPA’s service area covers some of the most rugged terrain in America. SMPA members own over 1,850 miles of electric power lines with 7.1 consumers per mile of line.

GETTING STARTED

SERVICE REQUEST FORM

The very first thing to do is to let SMPA know who you are and what you are doing. A service request form must accompany every request for electrical service. Service request forms may be obtained from a service planner or a local SMPA office. All information requested on the form must be provided to allow SMPA to prepare for your project. Service requests are required for new services, service upgrades and relocation of SMPA's facilities. A completed Service Request form and Application for Service **MUST** be returned before any new service is installed.

COSTS AND PREPAYMENT

After SMPA has received a Service Request Form, a good faith estimate of the actual cost of installing or modifying electrical facilities will be provided to the applicant. The estimate is good for 30 days.

In some cases a non-refundable advance deposit may be requested before an estimate is prepared. The advance deposit will be applied to the engineering cost of the new service. Also, a deposit for additional engineering, consultants, etc. may also be requested in advance.

The estimate will include labor, engineering, material and equipment costs, applicable fees (Facility Reinforcement Fee and/or tap fee), and other costs (re-vegetation, permitting, etc.).

The provisions in *SMPA's Service Connection and Line Extension Policy* require a deposit in the amount of the estimated cost of the project be paid to SMPA before construction will be scheduled.

PLANS

Plans such as plats, site surveys and electrical drawings including loading data are needed on service requests. **SMPA may require that plats, surveys and site plans be submitted in electronic format before an estimate and utility plan is prepared.** Design and associated cost can not be determined until proper planning information is received. If design changes occur after the estimate is completed or after facilities have been installed, service hook-up may be delayed and/or additional costs incurred.

Keep SMPA informed of any change in plans!

EASEMENTS AND PERMITS

When easements and/or special use permits are needed, they must be obtained and conveyed to SMPA prior to the start of construction. Development projects should show platted easements on the site plans. Property pins shall be in place before SMPA design can begin. All the incorporated towns and cities within SMPA's Service Territory require excavating permits. Underground and overhead power line construction within county right-of-ways in Montrose, Ouray and San Miguel counties require county permits. Power line construction within CDOT right-of-ways and federal lands requires permitting. SMPA requires projects obtain the required local permitting before proceeding with power line construction except CDOT and federal permits; for which SMPA will apply.

UNDERGROUND POWER LINE INSTALLATION

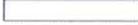
Members and developers will provide, at their own cost, all required trenching and excavating, bedding and/or shading, conduit, backfilling and site preparation for electrical facilities.

Planning a Power Line Installation?

Check with your local SMPA Service Planner first!

COLOR CODE

FOR MARKING UNDERGROUND UTILITY LINES

	PROPOSED EXCAVATION
	TEMPORARY SURVEY MARKINGS
	ELECTRIC
	GAS, OIL, STEAM
	COMMUNICATION, CATV
	POTABLE WATER
	IRRIGATION, RECLAIMED WATER, SLURRY LINES
	SEWER

UNCC
UTILITY NOTIFICATION
CENTER OF COLORADO



3 Days Before You Dig:
Call: 1-800-922-1987
Click: www.UNCC.org

Before digging call 8.1.1 or 1-800-922-1987 for cable locates!

Homeowners often make risky assumptions about whether or not they should get their utility lines marked, but every digging job requires a call – even small projects like planting trees and shrubs.

The depth of utility lines varies and there may be multiple utility lines in a common area. Digging without calling can disrupt service to an entire neighborhood, harm you and those around you and potentially result in fines and repair costs.

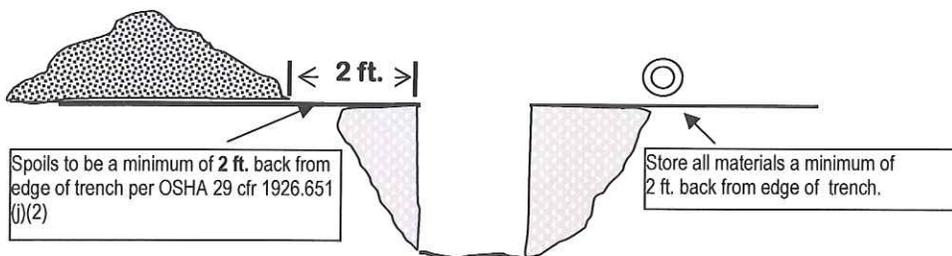
Calling 8-1-1 before every digging job gets your underground utility lines marked for free and helps prevent undesired consequences.

Please note the following:

SMPA employees will not enter trenches without proper spoil layback or shoring and any excavations where water accumulation hazards exist, or where employee protection requirements have not been met as required in the Code of Federal Regulations 29, Part 1926, , Subpart P - Excavations.

OSHA 29 CFR 1926.651 (j)(1) and (2) require employees be protected from excavated or other materials, and equipment that could pose a hazard by falling or rolling into excavations. Protection must be provided by placing and keeping such materials and equipment at least 2 feet from the edge of excavations [see drawing below], or by the use of retaining devices, or both, if necessary.

OSHA 29 CFR 1926.651 (h)(1), (2) and (3) require employees be protected from the hazards associated with water accumulation in excavations. OSHA 29 CFR 1926.652 contains requirements for protective systems.



UNDERGROUND ELECTRICAL FACILITIES

Electrical facilities such as transformers and pedestals should lie at lot lines wherever possible. Final grades need to be established prior to cable installation. Lot corners must be marked prior to trenching. Facilities should be sited off the road as far as practical yet still be accessible for future maintenance. Facilities should be slightly above road grade to provide drainage away from equipment. If different utilities use the same site, proper clearance between the different equipment installed must be maintained.

ELECTRICAL FACILITY SITE PREPARATION

Site preparation is required for installation of electrical equipment. The contractor, member, developer, is required to provide a trench from the SMPA power source to the equipment site. The site must be leveled and prepared for the equipment to be installed. Transformer and "j-box" vaults are to be installed on undisturbed soil, not on trenching backfill. Around all sites, backfill material will be free of rocks and other unsuitable material.

TRENCHING REQUIREMENTS

SMPA allows joint-use trenches for the installation of buried cables provided that there is adequate clearance from other buried utilities and facilities. See the table on this page for minimum clearance requirements.

SMPA will not install cable until after "deep" utilities are installed. If the trench is located along the edge of roadways, the road must be within 6" of final grade. Lot corners and easement lines must be surveyed and staked prior to trenching. SMPA requires above-ground facilities be installed as required for grounding purposes.

Access for SMPA's line trucks must be provided alongside trenches for high-voltage cable.

TRENCH DEPTHS

Proper trenching depths must be maintained.

Trench depth for high-voltage cable is 40" deep. (from finished grade)

Trench depth for secondary cable is 30' deep. (from finished grade)

Trench depths will be the same if conduit is used. Clearances from other utility lines and buried facilities must be maintained. (See table on next page) Trench depth must be maintained when crossing drainages and culverts. The trench should follow the contours of the grade while maintaining proper depth. Cutting or filling of the areas to be trenched should take place prior to trenching.

In some instances SMPA will allow a variance from the required trench depth. You must see your local SMPA Service Planner for approval of a depth variance.

MINIMUM HORIZONTAL CLEARANCE FROM OTHER UTILITIES

(measured from edge to edge of cables, conduits, gas, sewer and water lines)

SMPA requires that electric lines not be located directly over water or sewer lines but be offset horizontally.

SMPA requires that gas, telephone and CATV lines not be located directly over electric lines but be offset horizontally.

Distance from:	Min. Clearance	Distance from:	Min. Clearance
Gas Line	36"	Telephone	12"
High Pressure Gas Line	60"	CATV	12'
Water Line	36"	Sewer Line	36"

CABLE BEDDING and TRENCH COMPACTION

Trenches should be free of rocks prior to laying underbedding. All trenches need to be smooth bottomed including conduit trenches. Access for SMPA's line trucks must be provided alongside trenches for high-voltage cable.

Where bedding is required, 4" will be placed, prior to cable installation, under the cable(s). After installation, 6" of bedding material will be placed over the cable(s). Suitable bedding material is defined as soft soil or sand free of rocks or other abrasive objects greater than 1/2" in diameter. Mine tailings are not allowed. The bedding of the cable must be inspected by SMPA prior to backfilling of the trench.

SMPA will supply red terra tape to be installed 1 foot below the surface over the buried conduit/CIC.

Terra tape is to be used only for power line installations.

Trenches will be compacted after backfilling. Compaction is not allowed until 24" of backfill has been placed over cables. Care must be taken to not allow equipment to damage cable by driving over it or by falling onto it in the trench.

(See trench detail on pg. 10)

CONDUIT INSTALLATION and REQUIREMENTS

SMPA requires the use of conduit in rural, residential and commercial areas, under landscaping, under pavement and sidewalks and otherwise as specified by SMPA.

Conduit type and size will be specified by SMPA. All conduit runs must be inspected and approved by SMPA before they can be buried. All conduit installations must be clean and dry. SMPA will "proof" conduit and install its own pull cable or strap. Should the conduit not "proof" then the conduit installation will not be accepted by SMPA. The use of sweeping Galvanized Rigid Conduit elbows may be required at vaults or other locations when specified by SMPA.

Conduit will be required at road crossings as well as other designated areas. Conduit type will be electrical grade PVC schedule 40 or GRC as specified by SMPA. Service entrance "risers" will be Sch 80 PVC in accordance with the NEC. When using GRC conduit for 3 phase construction, all 3 conductors must be in a single conduit. Conduit size will be 2-1/2", 4", or 6" as specified by SMPA. Conduit will be provided by the builder or developer.

Expansion joints used at service entrances cannot be "rocked or mortared in"; they must be able to move.

Conduit will not be routed under buildings without SMPA granting specific permission to do so.

SHADING OF CONDUIT OR CIC

Conduit and cable-in-conduit ("CIC") will be installed in smooth bottomed trenches free of rocks. They will be shaded either by hand or by machine before backfill. Shading requires the careful placement of 12" of trench spoils on the conduit or "CIC" to avoid causing bends or separation of conduit. Large rocks and other unsuitable material will not be used for shading. Compaction requirements are the same as mentioned above. The shading of the conduit must be inspected by SMPA prior to backfilling of the trench.

SMPA will supply red terra tape to be installed 1 foot below the surface over the buried conduit/CIC.

Terra tape is to be used only for power line installations.

(See trench detail on pg. 10)

PERMANENT METERING INSTALLATIONS

All new and upgraded electrical services will be approved by the State Electrical Inspector or other local authority having jurisdiction prior to SMPA energizing the service.

All metering installations, including the location, need prior approval by SMPA. Meters shall be located, when practical, on the exterior wall of the premises being served. Meter locations shall be located on the gable ends of residences, when practical, or should be protected from snow and ice shedding from roofs. Meter pedestals are allowed for "front lot" and meter locations not located on the exterior wall of the premises.

*Meter location shall be such that the meters are easily accessible for reading, testing, and servicing, and shall not be located in locked areas except with express permission of the Association.
(SMPA General Rules & Regulations, Sheet #43, No. 22, c.)*

(See page 12 for meter installation details.)

SMPA requires a load break disconnect be installed adjacent to or in combination with the meter base on the exterior wall of the premises .

Meter base cable lugs will accept the installed cable size.

Meters shall be located in accordance with accepted safe practice. Meter locations shall have the appropriate NEC working space clearance minimums for width and depth; SMPA requires 7 foot of headroom. *Meter rooms will not be used as storage areas.*

Multi-meter stacks will have an embossed tag at each meter socket with the unit designation on the tag.

SMPA will deny connection of a multi-metered service until unit designation tags are affixed.

All meters fed by three-phase 208 volt transformers must have fifth-jaw meter sockets with the fifth-jaw being in the "9 o'clock" position.

CT metering for 400 Amp services is not accepted by SMPA. All 400 amp single phase and three phase meter sockets (capacity 400 amp continuous—600 volts) require two position 5/16" stud type meter mounts that will accept a Form 2K or 16K, Class 480 meter. Position 1 provides service and position 2 (optional) provides out of service storage of meter. 400 Amp meter bases can be purchased from SMPA.

All current transformer (CT) metering applications require prior approval by SMPA.

The CT enclosure (CT "can") for 600, 800 and 1000Amp, single or three-phase services will be purchased from SMPA.

Exceptions can be made, upon review and with SMPA's approval, for some switchgear with provisions for CT metering.

The location of multi-metered switch gear and meter rooms located within large commercial building must be approved by SMPA. SMPA requires multi-metered switch gear and meter rooms be located on the inside of the exterior wall adjacent to the transformer location.

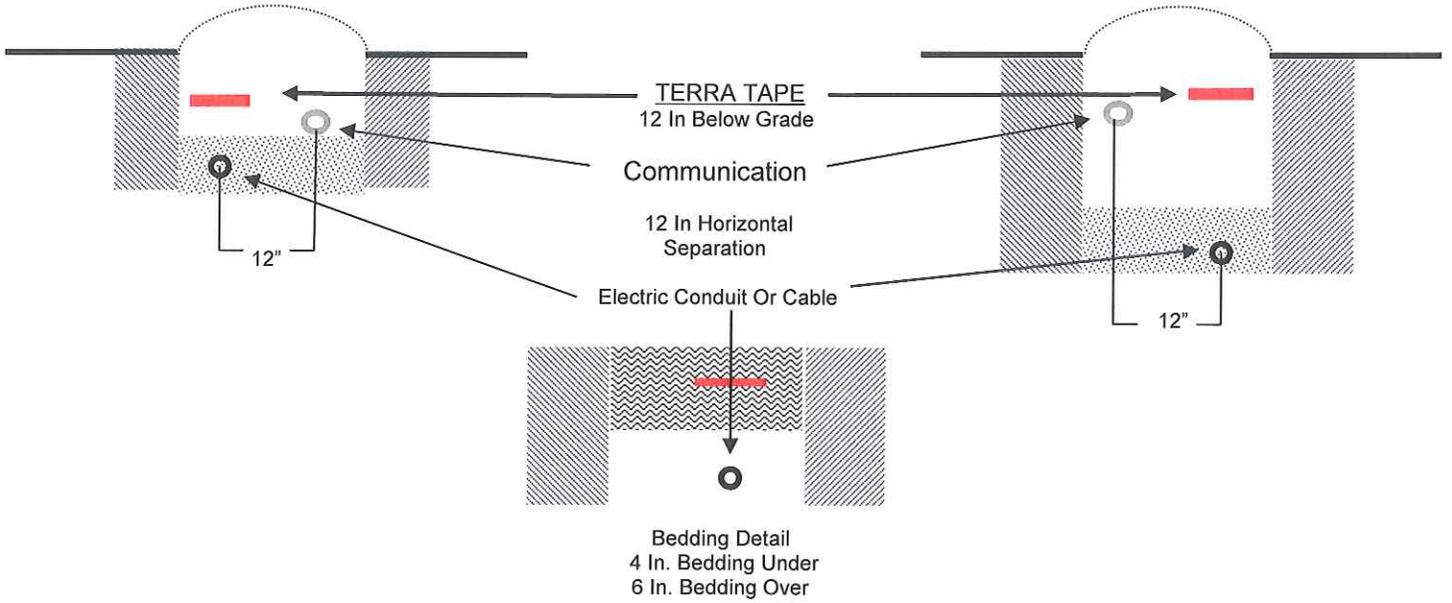
Appendix

Pg	10	Trench Detail
Pg	11	Transformer and Pedestal Detail
Pgs	12 - 13	Permanent Service Details
Pgs	14 - 15	Temporary Service Details
Pg	16	Net Metering Requirements
Pgs	17 - 20	SMPA Line Extension Policy
Pg	21	Harmonic Limitations Requirements
Pg	21	Motor Starting Requirements

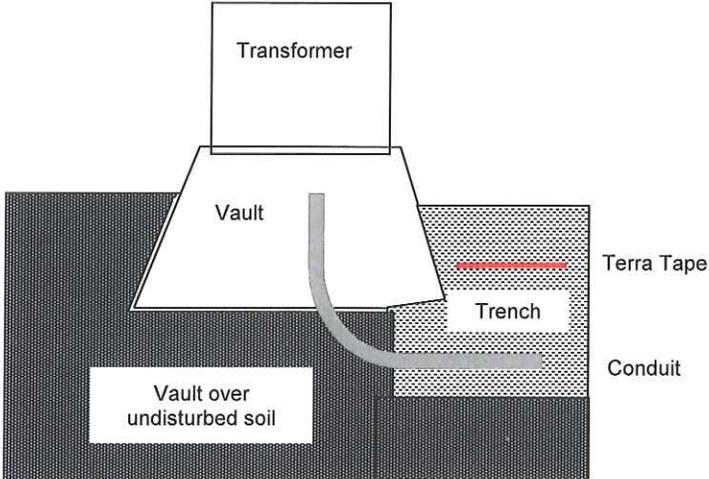
TYPICAL TRENCH DETAIL

Secondary Trench
Conductor Depth 30 In.
Allow Extra Depth for Bedding

High Voltage Trench
Electric Conduit depth 40 In.
Allow Extra Depth for Bedding

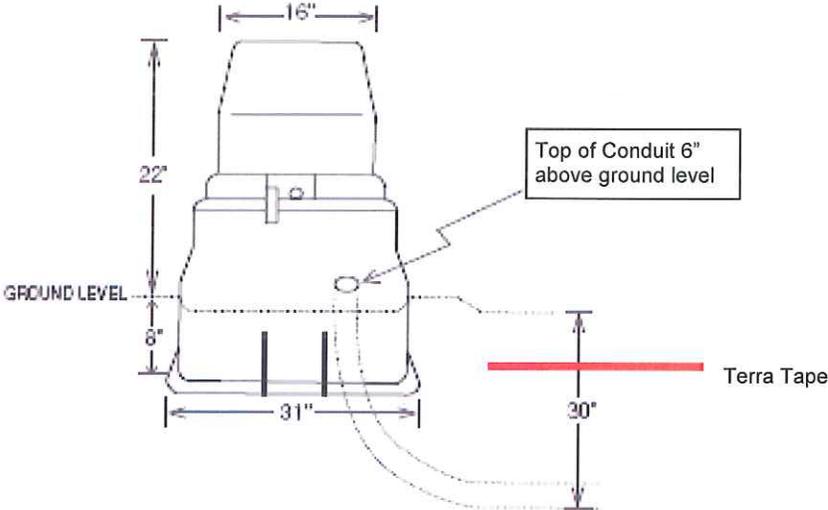


TYPICAL PAD-MOUNT TRANSFORMER INSTALLATION

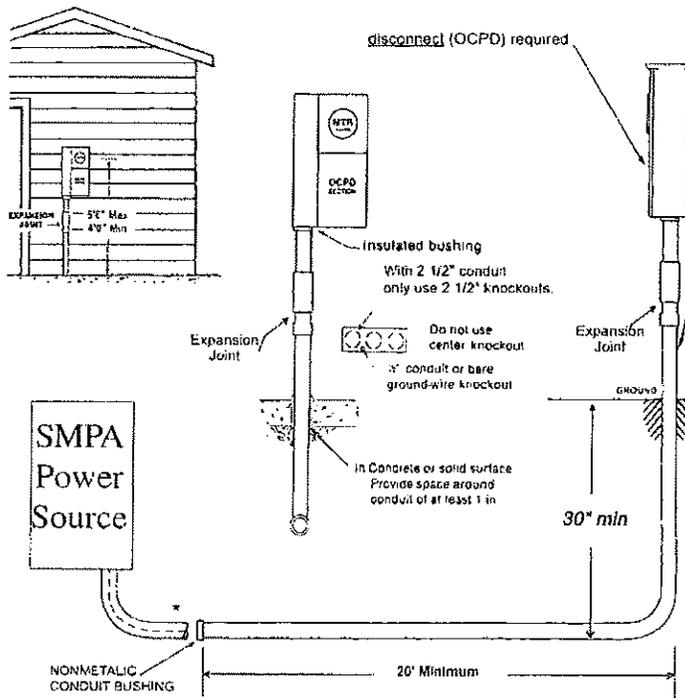


Call your Line Supervisor to arrange for conduit installation into a Transformer or Pedestal. An SMPA employee will open the transformer/pedestal and direct the installation of the conduit

TYPICAL SECONDARY PEDESTAL INSTALLATION



Typical Residential Underground Service



Member furnished meter and service equipment with outside disconnect adjacent to meter. (150 Amp min.)

Riser: GRC or PVC Sch 80 (Member furnished) Sized per SMPA

Member to provide trench and conduit for URD service conductor.

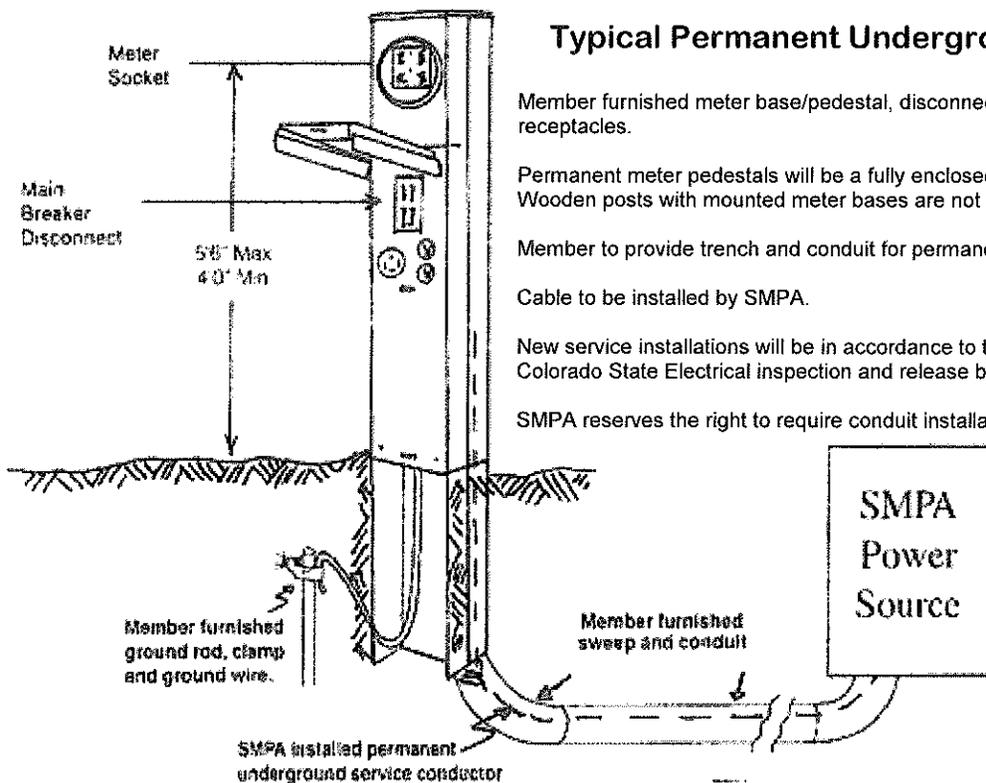
SMPA requires a minimum of 20' of conduit to be extended past the foundation.

Expansion joint required at riser.

Services less than 200 Amps will require 2/12" conduit.

New service installations will be in accordance to the current NEC and will require Colorado State Electrical inspection and release before connection by SMPA.

SMPA reserves the right to require conduit installations of any and all services.



Typical Permanent Underground Meter Pedestal

Member furnished meter base/pedestal, disconnect and protective devices and receptacles.

Permanent meter pedestals will be a fully enclosed, all-metal type enclosure. Wooden posts with mounted meter bases are not acceptable.

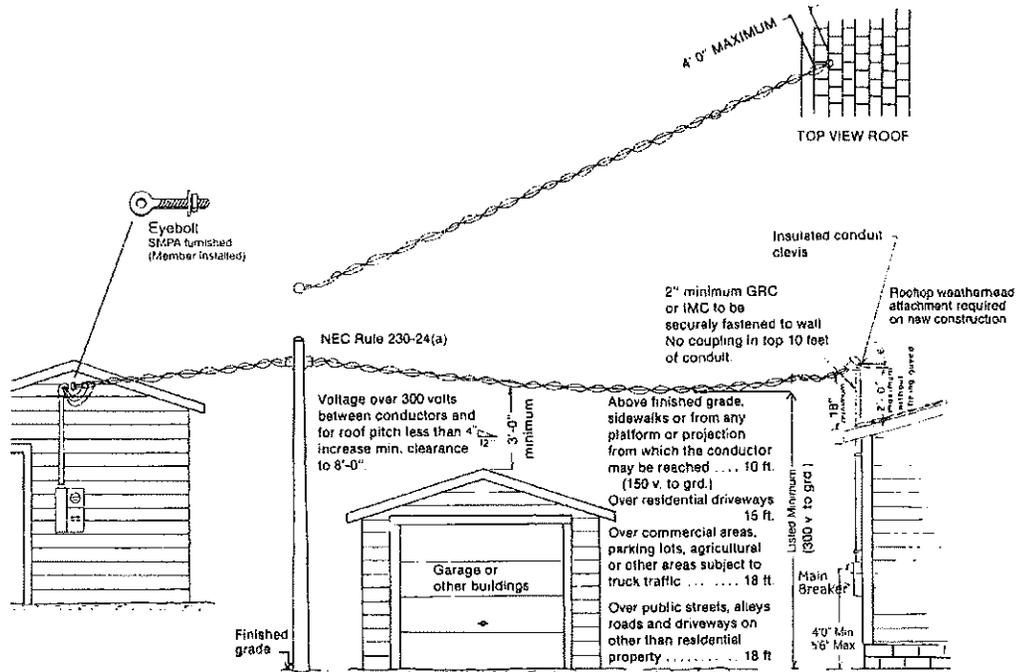
Member to provide trench and conduit for permanent underground service cable.

Cable to be installed by SMPA.

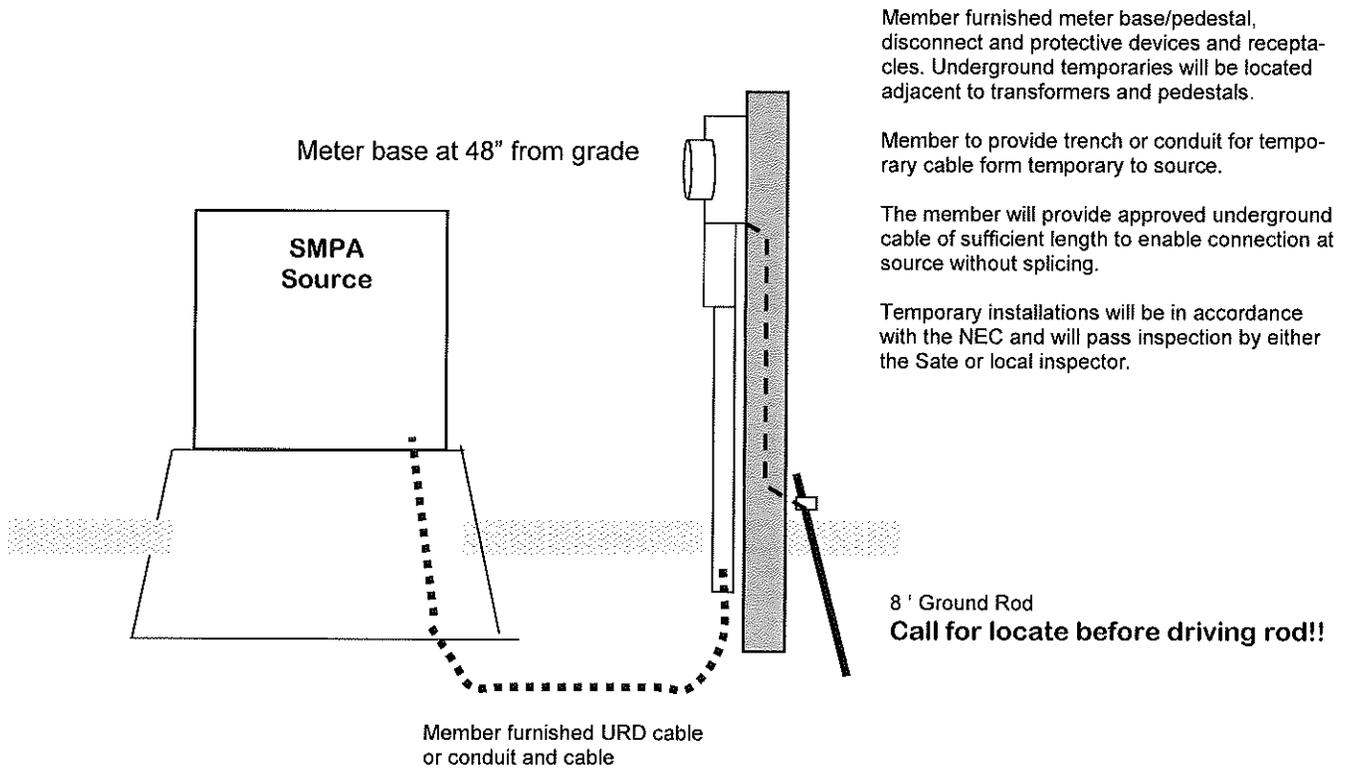
New service installations will be in accordance to the current NEC and will require Colorado State Electrical inspection and release before connection by SMPA.

SMPA reserves the right to require conduit installations of any and all services.

Typical Residential Overhead Service



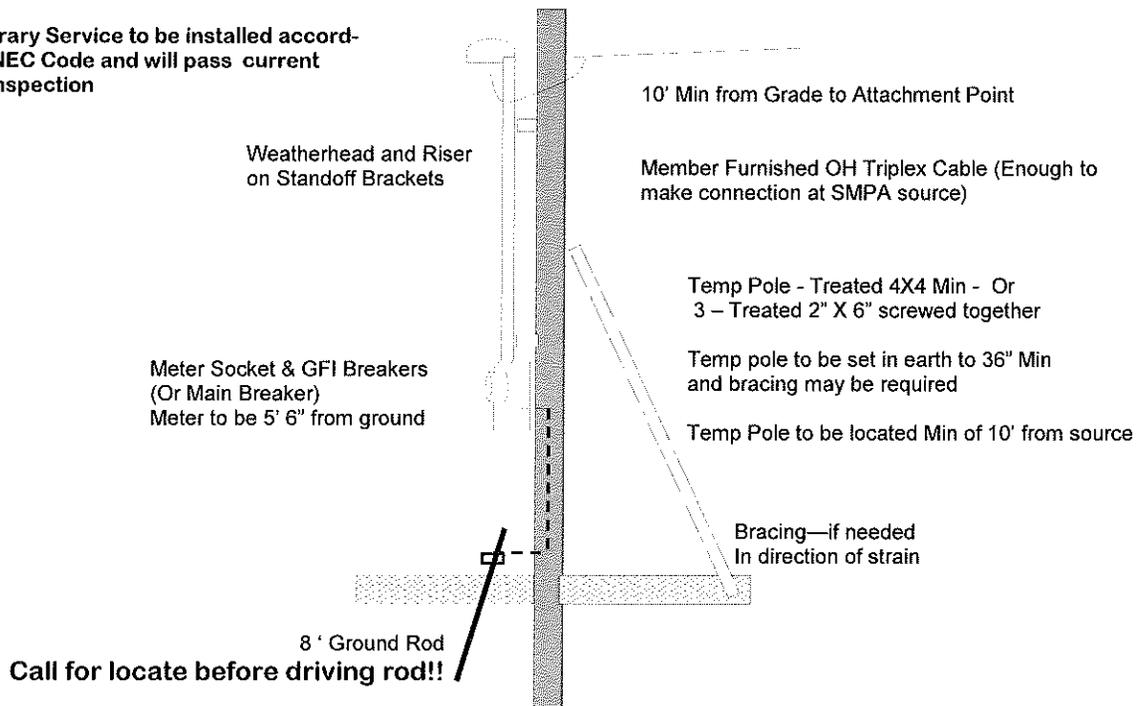
TYPICAL UNDERGROUND TEMPORARY SERVICE



Temporary meter pedestals can be mounted on wooden posts. The member/electrician will furnish the underground cable, enough cable being provided to reach the transformer/pedestal connection lugs. SMPA will not supply or splice additional cable for the temporary service. The temporary service will be located adjacent to the SMPA power source. See your planner or line supervisor for locating the temporary service.

TYPICAL OVERHEAD TEMPORARY SERVICE

Temporary Service to be installed according to NEC Code and will pass current State Inspection



Call or See your Planner or Line Supervisor about Locating the Temporary Service and Clearances

Net Metering Service Requirements

In order to qualify for a net metering rate as a customer-generator of SMPA the following safety and performance requirements are mandatory for interconnection.

Application and Compliance Form The SMPA interconnection application and compliance form must be completed, returned to SMPA and approved by SMPA.

Maximum Capacity A customer-generator must have a rated capacity of less than 25kW to qualify for Net Metering.

Safety and Performance Standards SMPA requires that a generating system used by a customer-generator meet all applicable safety and performance standards established by the National Electric Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), Underwriters Laboratory (UL), the National Electric Safety Code (NESC) and any other applicable regulations or standards.

Photovoltaic and Inverters When an inverter is used the customer-generator will use a "non-islanding" inverter that is listed with and in compliance with Underwriters Laboratory (UL) 1741 Standard. Photovoltaic systems must be installed in compliance with IEEE Standard 929-2000 and in compliance with the relevant NEC articles for Solar Photovoltaic Systems. An approved State inspection of the new service and/or PV system is required before SMPA will allow interconnection of the system.

Liability Insurance The customer-generator shall carry no less than three hundred thousand dollars (\$300,000) of liability insurance that provides for coverage of all risk liability for personal injuries (including death) and damage to property arising out of or caused by the customer-generator's system. Insurance may be in the form of an existing insurance policy or an endorsement on an existing insurance policy.

Interconnection Costs The Consumer shall reimburse the Association for costs resulting from interconnecting with the customer generator. The interconnection cost shall include all costs of connection, switching, metering, transmission, distribution, safety provisions and administrative costs incurred by the Association directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with the customer generator.

Interconnection is permitted only after all of the requirements of the Association are met, and only after written approval of the Application and Compliance form by the Association. This authorization cannot be issued until all interconnection costs are paid, and does not relieve the Consumer from the responsibility of installing, operating and maintaining the facilities in a responsible and safe manner. If in the opinion of the Association, the Consumer fails to meet the requirements of the Association including subsequent operation of the generating facilities in a non-qualifying manner, the Association will no longer be obligated to operate in parallel and purchase any capacity and energy made available and may notify the Consumer to disconnect the generating facilities from the Association's system. In the event the Consumer fails to immediately comply with a disconnect notice, the Association reserves the right to make such disconnection including the termination of electric service if necessary.

Association Access Employees and authorized representatives of the Association have the right to enter the Consumer's property at any reasonable time to insure continued compliance with the Association's safety and operating standards and the accuracy of its meters. Such inspection by the Association shall not relieve the Consumer from the responsibility of installing, operating and maintaining the facilities in a responsible and safe manner.

Disconnect Requirements In order to provide adequate safety to the Association's employees when performing certain operation and maintenance on the Association's system, the following two requirements will be met:

The customer generator shall be designed and operated to automatically disconnect or shut down during scheduled or unscheduled outages to insure that it will not back feed any part of the Association's distribution system.

That a means be available to positively disconnect the customer generator from the system such that there is no possibility that the generator could back feed through the service transformer and energize the primary system. This requirement shall be met with a Consumer furnished and installed Underwriter's Laboratory (UL) listed manual disconnect switch which shall be located between the Consumer's customer-generator and the Association's system. The location of the switch shall meet all code requirements and be approved by the Association and shall be housed in an approved enclosure which can be secured with a padlock or locking device.

Isolation of Qualifying Facility The Association reserves the right to open the disconnect switch (i.e., isolating the customer-generator) without prior notice for any of the following reasons:

System emergency and/or maintenance operations require such action.
A potentially hazardous condition relating to the customer-generator is discovered.

Single-Phase Limitations The rated capacity of the customer-generator to be connected in parallel with a low voltage service shall be no greater than 10 kW for single-phase installations unless, in the sole determination of the Association, a larger single-phase installation is acceptable.

Quality of Service Operation of the customer-generator must not cause any reduction in the quality of service to other consumers nor interfere with the operation of the Association's system. The Consumer shall be responsible for taking whatever corrective action may be required and/or reimbursing the Association for the cost of corrective action which it deems necessary to restore service to prescribed limits.

Electrical Characteristics The electrical characteristics of the customer-generator shall conform with standards established by the Association. The standards include voltage, current, frequency, harmonics, and automatic synchronization, etc. Wherever possible the Association will base its standards on industry standards.

SERVICE CONNECTION AND LINE EXTENSION POLICY

1.PURPOSE: The purpose of this policy is to set forth the service connection and distribution line extension requirements to be observed by the Association in a manner which fairly allocates the cost of system growth and minimizes the effect of growth upon rates.

2.DEFINITIONS: As used in this Policy, the following definitions shall apply:

Applicant: Any person or other legal entity applying to the Association for new or upgraded service or for extension of the Existing System.

Application for Electric Service and Membership or Service Agreement: The agreement between the Association and the Member which is required before service to a given premises is energized. This agreement will normally be on a standard Association form titled Application for Electric Service and Membership but may be specific to a given service, if appropriate.

The Association: San Miguel Power Association, Inc.

Construction Standards: Standards required by the Rural Utilities Service for construction of electric facilities, or any more stringent standards required by applicable governing agency or the Association. In no case shall such standards be less stringent than the latest available edition of the National Electric Safety Code.

Customer Class: The Customer Classes as set forth and defined in the existing rate tariffs of the Association.

Developer: An individual, or group of individuals, making application for Subdivision Services.

Easements: Any easements or rights-of-way required by the Association in order to construct or maintain new service or extensions of the Existing System: All easements and rights-of-way must be in locations, and of such dimensions, acceptable to the Association in its sole discretion, must be on forms provided by or acceptable to the Association and executed and acknowledged by the record owners and encumbrance holders of the underlying property. Required Easements may, at the discretion of the Association, include easements which will permit a given facility to be used for the benefit of other members.

Existing System: The electrical transmission and distribution system of the Association as it exists at the time an application for new service or extension of service is made.

Facility Reinforcement Fee: The necessary reinforcement of the Existing System to meet additional load requirements.

Indeterminate Service: Service to ventures of such uncertain speculative character that their permanency is questionable, such as coal and metal mining or oil and gas production operations, and to other service where the amount and permanency of service cannot be reasonably assured.

Minimum Facility: The lowest capacity facility acceptable to the Association for a particular new service or extension making use of materials approved by and normally available to the Association

New Service: Electric service at a location not previously connected to the Existing System.

Overhead Distribution Extension: The overhead portion of an extension leading from the Existing System to and including its live transformer or transformers.

Permanent Service: Service to any Member when the use of service, both as to amount and permanency, can be reasonably assured.

Service Connection: The secondary voltage conductor, including supporting structures and associated electric facilities, connecting the existing secondary systems to the meter, but not including the line transformer or the meter itself.

Subdivider: An individual, or group of individuals, making application for Subdivision Services.

Subdivision Service: An extension of the Existing System designed for serving multiple members.

Tap Fee: The fee that is paid to tap a segment of line that is eligible under past line extension policy for reimbursement from new beneficiary's who did not participate in paying for it's original construction.

Temporary Service: Any service required for less than eighteen (18) months, including service to circuses, bazaars, fairs, concessions and similar enterprises, construction works of a temporary nature or heavy construction projects, such as dams or tunnels, without regard to the duration of service.

Underground Distribution Extension: The underground portion of an extension leading from the Existing System to and including the line transformer or transformers.

Upgraded Service: An increase in electric service that requires additional investment at a location currently or previously connected to the Existing System.

3. SERVICE CONNECTIONS

A. Each Applicant for New Service, Upgraded Service or Subdivision Service shall pay the actual costs of the Service Connection required by the Applicant, plus any applicable Tap Fee and Facility Reinforcement Fees.

B. An application for Service Connection shall be made on a form provided by the Association and shall include all information requested on the form or by Association personnel.

C. Within a reasonable time after receipt of a completed application, the Association shall provide a good faith estimate of the costs for New, Upgraded, Subdivision or modified Service Connection. This estimate may be based on standard unit costs determined by the Association. Because of wide variations in actual costs, especially in the case of underground service, it is not anticipated that it will be possible, in all cases, to establish minimum costs in advance.

D. Overhead service connections shall not be available in those areas where the Association has installed, or is required, by law, ordinance, regulation, covenant or Association policy to install underground distribution or service facilities.

E. If the Association determines that the service connection requires a line extension or will connect to a line extension that was completed under a past line extension policy requiring reimbursement, then the Tap Fee provisions of the line extension policy shall also apply.

F. The Applicant shall provide all required Easements prior to service installation.

G. The Applicant shall, prior to construction scheduling, pay a deposit in the amount of the Association's estimated cost of the project.

H. If, at any time, it is determined by the Association that the deposit is inadequate to cover the entire cost of the installation, the Applicant shall deposit any additional amount required by the Association. If the deposit exceeds the required expenditures, the excess shall be refunded to the Applicant.

I. In no case shall a service be energized until the Association has been paid the entire cost of installation, plus any applicable Tap Fee and Facility Reinforcement Fee, and the appropriate Service Agreement has been executed.

J. All new or modified Service Connections shall be in accordance with the Construction Standards.

4. LINE EXTENSIONS

A. When an Applicant requests a New Service or an Upgraded Service, the Applicant shall pay the actual costs of any required line extension.

B. Application for line extensions shall be made on forms supplied by the Association and shall include all information requested on the form or by Association personnel. The application shall be accompanied by a non-refundable deposit, in an amount determined by the Association, for engineering and design.

C. The Association shall provide to the Applicant a good faith estimate of the cost of the project which shall be based upon the actual necessary cost of constructing and installing the line extension and facilities necessary to adequately supply the service requested by the Applicant. The estimate shall include all costs necessary for the extension, such as additional engineering, legal costs, primary and secondary distribution facilities, easements, tree trimming, special housing, special supports, lightning arrestors and other protective equipment. The estimate will also include loop-feeding capabilities for service reliability and/or three-phasing for load balancing, when deemed necessary by the Association. The estimate shall not include the cost of capacity in excess of the Minimum Facility required to meet the needs of the Applicant unless it is agreed by the Applicant and the Association that the estimate will include additional capacity. The estimate shall not include the cost of meters which shall be supplied by the Association unless specialized equipment or metering is required.

D. If the Association receives applications for New Service or Upgraded Service that result in a line extension that would be used to serve more than one Applicant prior to start of construction of the line extension, then estimates shall be calculated such that the costs of the line extension are appropriately shared.

E. The extension shall be constructed by the Association or, by agreement, by the Applicant or through private contractors. All necessary materials shall, however, be supplied by the Association at its cost, including an overhead allowance. If it is to be constructed by the Association, the Applicant shall, prior to commencement of construction, deposit with the Association the amount of the estimated costs as determined under Section 4(C&D) above, plus any applicable Tap Fee. If it is to be constructed by the Applicant, the Applicant shall, prior to commencement of construction, deposit with the Association the estimated costs of all materials and all inspections to be conducted by the Association, plus any applicable Facility Reinforcement Fee or Tap Fee. The deposit shall bear no interest and shall be used by the Association to construct or inspect the new facilities, as appropriate, and to refund any Tap Fees due other members according to previous line extension policies. If, at any time, it is determined by the Association that the deposit is insufficient to complete the construction or the inspection, an additional deposit as requested by the Association shall be made before construction proceeds. If the deposit exceeds the required expenditures, the excess shall be refunded to the Applicant.

F. All facilities shall be located and designated in accordance with the Construction Standards.

G. Unless otherwise agreed, the Applicant shall provide all necessary Easements and permits prior to commencement of construction.

H. The Applicant shall be responsible for all environmental compliance.

I. Should it be determined by the Association that a line extension project could benefit other consumers and that the extension should, therefore, be in excess of the Minimum Facility, a portion of the project may, at its absolute discretion, be financed by the Association. The contribution by the Association will be based on the least expensive method of construction consistent with the Construction Standards. Any additional costs for the convenience of the Applicant will be borne by such Applicant requesting the extension. If, for example, it is determined that overhead construction is the least expensive, but the Applicant requests underground facilities, the contribution by the Association will be based on estimated overhead construction costs.

J. In no case shall a system extension be placed into service until the entire cost of the Minimum Facility has been paid by the Applicant, the system has been inspected by the Association and is determined to be in compliance with the Construction Standards.

K. All extensions of the Existing System shall, upon completion and approval by the Association, become Association property except for a facility which is, by agreement with the Association, owned, operated and maintained by the member.

L. Upon completion, all facilities and related rights-of-way and easements shall, unless otherwise agreed, be conveyed to the Association.

5. EXTENSIONS TO SUBDIVISION SERVICE

In addition to the other applicable terms of these Policies, the following shall apply to extension to Subdivision Service:

A. The Developer will provide to the Association an accurate plat of the subdivision tract, duly approved, when required by law or regulation, by the County Commissioners, or any other authority having jurisdiction, showing the location of lots, streets, alleys, buildings, utilities, any underground installations or obstructions existing or planned and any Easements for future line extensions as required by the Association.

B. The Association shall inspect all aspects of work during construction.

C. The Association will own, maintain and operate the electric distribution system to and within the subdivision, following final approval. The Association shall determine the layout, general design and capacity of the subdivision system. The subdivision system shall include the primary cables, transformers, switching equipment, secondary cables and pedestals, as applicable.

D. The Developer will establish the permanent rough grade and locate on site such property corners and boundary lines as required by the Association prior to the installation of facilities.

E. The Subdivider will reimburse the Association for any relocation of facilities required by changes in the Easement and/or established grade.

6. CONVERSION, RELOCATION, OR REMOVAL OF EXISTING SYSTEM.

A. Conversion of existing overhead facilities to underground shall be treated as new construction and shall be governed by the applicable provisions of these Policies relating to service connections or line extensions. The following additional provisions shall apply:

1. The applicable deposit or fee shall include the cost of removing existing facilities less any salvage value to the Association.

2. Underground conversions shall be permitted unless the Association, in its sole discretion, considers it not in the best interests of the Association.

B. Requests to move facilities shall be considered by the Association if, in its sole discretion, the requested move does not adversely affect the Association's Existing System. To avoid unreasonable interruptions of service to existing members the Association may require the construction of temporary Overhead and/or Underground Distribution Extensions. The Applicant shall pay all the actual costs associated with moving existing facilities.

C. Requests for retirement of existing facilities shall be considered by the Association and, in its sole discretion, if such retirement does not adversely affect the Association's Existing System then the Applicant will pay the actual cost of the retirement.

7. USE OF DESIGN CONSULTANTS AND CONSTRUCTION CONTRACTORS

Use of design consultants or construction contractors for line extensions, conversions, relocations or removal of the Association's Existing System may be utilized by the Association when necessary at its sole discretion. Resulting additional costs, if any, shall be the responsibility of the Applicant.

8.FACILITY REINFORCEMENT FEES

A. Facility Reinforcement Fees shall be paid to the Association by Applicants for New Service, Upgraded Service or Subdivision Service appropriate to the member installed service equipment size as follows:
 [Upgrading an existing service to a larger service requires a facility reinforcement fee equal to the difference between the fees charged for the two service sizes.

Example, upgrading to a 400 Amp service from a 200 Amp service requires payment of a \$1200 facility reinforcement fee.]

Service Size	Fee	Service Size	Fee
Up to 50 Amp	No Fee	800 Amp	\$4800
150 Amp	\$900	1000 Amp	\$6000
200 Amp	\$1200	1200 Amp	\$7200
400 Amp	\$2400	1600 Amp	\$8400
600 Amp	\$3600	2000 Amp	\$9600

(Service Equipment other than 120/240 volt will have Facility Reinforcement Fee(s) calculated at \$6/amp @ 120/240 volt equivalency. Examples: at 480 volts a 200 amp service has the equivalency of a 400 Amp service at 120/240v [i.e.: \$2400]. A metered 25 kV primary service at 2 amps has the equivalency of a 300 amp at 120/240v [i.e.: \$1800].)

B. Facility Reinforcement Fees shall be used to reinforce the Existing System. The Association may change the Facility Reinforcement Fee Schedule from time to time to reflect costs of providing service to its members.

C. Facility Reinforcement Fees shall not be paid by Applicants who request service for a lot within a subdivision where the Developer has paid a Facility Reinforcement Fee or for a new meter connection at existing multi-meter service equipment unless the service equipment has to be upgraded to a large amperage rating.

D. Facility Reinforcement Fees shall be paid prior to permanent connection.

9. EXCEPTIONS

The Association may make exceptions to the rules set forth in these Policies for any or all of the following reasons:

- A. Rates for service to existing members would otherwise be adversely affected.
- B. The Association's investment in its Existing System would not be adequately protected.
- C. The Association cannot, in its sole discretion, provide adequate service to the requested facility.
- D. Resale or wholesale consumers are involved.

10. EFFECTIVE DATE

This Policy shall apply to all extensions or connections effective April 1, 2006, unless a completed application with all required fees and costs has been received prior to the effective date.

11. INFORMATION PROVIDED TO APPLICANTS

A. All service connections information necessary to allow the Applicant's facility or facilities to be connected to the Existing System.

B. A good faith estimate of the anticipated costs of connection or extension, provided that, if a cost estimate requires engineering analysis by the Association, an engineering deposit may be required in accordance with Section 4 of these Policies.

C. Applicants, when requesting of the Association a cost estimate of a distribution line extension, shall receive a photovoltaic system cost comparison, upon meeting the following conditions:

- 1. The Applicant provides the Association with load data (estimated monthly kilowatt-hour usage) as requested by the Association to conduct the comparison; and
- 2. The Applicant's peak demand is estimated to be less than 25 kW.

In performing the comparison analysis, the Association will consider line extension distance, overhead/underground construction, terrain, other variable construction costs, and the probability of additions to the line extension within the life of the open extension period.

For Applicants whose ratio of estimated monthly kilowatt-hour usage divided by line extension mileage is less than or equal to one thousand (1,000), i.e. kWh/Mileage is <=1,000, the Association will provide or arrange for the provisions of a photovoltaic system cost comparison at no cost to the Applicant. Above a ratio of 1,000 the Applicant shall bear the cost for the cost comparison, if requested by the Applicant, not the Association.

HARMONIC LIMITATION REQUIREMENT

Each member requesting electric service from SMPA is responsible for limiting the harmonic current distortion levels at their at their delivery point to the levels prescribed in IEEE Standard 519-1992. The member will limit harmonic current injection to the levels shown in the table below, taken from IEEE Standard 519-1992. SMPA will work with members to provide information on limiting harmonic distortion. SMPA reserves the right to measure harmonic distortion at the delivery point and to require remediation, of harmonic distortion to acceptable levels as described above. (See below)

SCR	H<11	11-17	18-23	24-35	H>34	TDD(%)
SCR<20	4.0%	2.0%	1.5%	0.6%	0.3%	5.0%
20<SCR<50	7.0%	3.5%	2.5%	1.0%	0.5%	8.0%
50<SCR<100	10.0%	4.5%	4.0%	1.5%	0.7%	12.0%
100<SCR<1000	12.0%	5.5%	5.0%	2.0%	1.0%	15.0%
SCR>100	15.0%	7.0%	6.0%	2.5%	1.4%	20.0%

Note:
 SCR = Ratio of the short circuit current to the maximum member load current.
 TDD = Total Demand distortion, total current distortion in % of maximum member load current.

MOTOR SOFT STARTING REQUIREMENT

"Soft Starting" equipment is required for all single-phase motors 10 horsepower (10 hp.) or greater in size, "Soft Starting" equipment is required for all three-phase motors 30 horsepower (30 hp.) or greater in size. This is required to prevent new motor loads from introducing "start-up flicker" into SMPA's system. Variable frequency drives will be evaluated for the amount of harmonics they introduce into SMPA's system. If the amount of introduced harmonic levels exceed the limit standards SMPA will require the member to correct the problem.

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