Electric Service Guides

2019

Electric Service Guide

Residential

Modesto Irrigation District
The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

1 Abbreviations

The following abbreviations may be used throughout this Service Guide.

Amp	Amperes
CPUC	California Public Utilities Commission
EUSERC	Electric Utility Service Equipment Requirements Committee
GO	General Order
kW	Kilowatt
V	Volt
W	Watt

2 Frequently Asked Questions

I have a home construction project that involves upgrading or replacing my main electric panel. Where should I start?

Contact our Electric Engineering Department and request a meeting with an Engineering Technician. Refer to the Area Map (page 34) for the appropriate phone number. It's a simple process where we come out to your home and determine if your new main electric panel will be in a location that meets applicable MID standards and the State of California General Order (GO) 95 and 128. There is no charge for the site visit, and it's typically scheduled within 2-5 business days. It will typically take about 30-45 minutes of your time. At this site visit we will need load information as well as a site plan. After this visit the Engineering Technician will create a design and get you a requirements packet with all of the requirements for your new electric service. This packet will also outline any inspections required by MID (i.e. trench, transformer pad, conduit, etc.) and you will be required to have an inspection for the main electric panel by your local governing authority prior to MID energizing your electric service. The requirements packet will also identify any fees or deposits MID requires before scheduling your project with our construction departments. Once you have completed your project responsibilities, deposits and/or fees have been paid, and all inspections, by MID and any local governing authorities have been completed, MID will schedule your project with our construction departments.

Does MID replace my main electric panel?

MID does not replace customers' service panels. MID will schedule the disconnection of service and reconnection of service to allow you to replace your main electric panel (by a licensed contractor or electrician). A "rewire" fee will be required.

Where do I put my new main electric panel? Can I put it in the same place as my old panel?

You may be able to put the new panel in the same location as the old panel if that location meets our current standards. MID has the final say on the location of overhead and underground main electric service panels. In some instances you may have to relocate the panel when it is being replaced. Contact MID's Electric Engineering Department for specifics and schedule a site visit to go

over possible panel locations. Refer to the Area Map (page 34) for the appropriate phone number for your area.

Is there a fee to replace my main electric panel?

Yes, MID charges for replacing or upgrading a main electric panel. Fees can be found in MID's Electric Service Rules, Appendix A (www.mid.org/tariffs/).

What size wires and riser do I have to install?

When an overhead main electric panel is replaced MID does not dictate the size of the riser or the riser wires. This is inspected by your local governing authority (i.e., City of Modesto, Stanislaus County, etc.) MID does dictate height and location of the riser. Refer to Drawing RES-001.1. See a list of local governing authorities on page 17.

Why do I have to replace my underground conduit when I replace or upgrade my electric service?

If you replace a main electric panel which is served from an underground service, you will have to bring that electric service up to current MID standards. This may require you to replace the existing underground service wires and conduit to the underground service box. Contact MID's Electric Engineering Department for specific installation requirements or refer to Drawing RES-004.1 (page 22) and Drawing RES-005.1 (page 23).

My electric service wires cross over my pool, is that safe?

If done properly, it is safe to have your electric service wires over your pool provided that they satisfy height and wire type requirements. If you are constructing a new pool and you have an overhead electric service, contact MID's Electric Engineering Department. Refer to Drawing RES-003.0.

Can I convert the overhead service wires coming to my house to underground?

Yes, our Engineering Department can provide you the requirements and a cost estimate for you to convert your existing overhead service to an underground service.

Can I obtain three phase electric service at my residence?

Yes, provided you have met the minimum load requirements (see Rule 2, Section D, Item 2 of MID's Electric Service Rules) AND there is three phase service available. Contact MID's Electric Engineering Department for requirements and availability of Three Phase service.

Is a permit required to replace my main electric panel (panel upgrade)?

Yes, MID will not reconnect a main electric panel once the service has been disconnected until it has passed an electrical inspection by the local governing authority. See a list of local governing authorities on page 17.

How long is an inspection good for?

Typically an inspection is good for six (6) months from the date of the inspection.

Is a permit required to replace my main breaker (meter clips, and/or bus bar)?

No, if you are only replacing the main breaker, meter clips, and/or bus bar to a residential main electric panel, you do not need an electrical permit. You can contact MID's Trouble Department at 209-557-1522, and they will schedule a troubleshooter to disconnect your electric service and stand by while you replace the main breaker. Then they will reconnect your service.

3 Obtaining Overhead Electric Service

3.1 General Information

- Overhead electric service consists of electric wires running overhead from an MID pole to a customer's weatherhead and riser on a building.
- Riser material shall be galvanized rigid steel or intermediate metal conduit rigid steel. MID will not attach to risers made of PVC (except in the cases of service poles where the risers are PVC).
- New overhead services will be allowed provided the main electric panel is close to existing MID overhead facilities, or an overhead line extension can be built close to your panel, as long as overhead service is not prohibited by local jurisdiction.
- Normally residential overhead services will be limited to no greater than 400 Amps.

3.1.1 Apply for Electric Service

a) Contact MID to apply for service. Refer to the Area Map (page 34) for the appropriate phone number for your area. Provide the location of the proposed residence, Site Maps, proposed panel location, desired voltage, load information and the date service is requested. Refer to the Sample Load Form (page 31) and Sample Application (page 30). For a sample Site Map, refer to Drawing RES-007.0, page 27.

b) Schedule a site visit with an Engineering Technician to meet on site and go over details of the proposed new service, as well as service location and panel locations.

c) Line Extensions: When service will be more than the allowed distance from acceptable MID facilities, a line extension may be required (see Appendix B of MID Electric Service Rules). The line extension charge will be based on the total length of the extension to be determined by MID, less any free footage allowances. The total charge will be the calculated distance minus any free footage allowance, multiplied by the extension cost per foot (see Appendix A of MID Electric Service Rules for footage costs).

d) If easements will be required to bring service to the property, it is the customer's responsibility to provide, at no cost to MID, easements or right of ways needed to build the line extension.

3.1.2 Locate the Panel

Contact MID's Engineering Department to schedule a site visit to go over the panel location and any other requirements for the panel installation. MID has the final say on meter location, and some meter locations are prohibited by MID standards as well as the State of California GO 95. There are also requirements for meter height and access (see Section 3.4, Meters, and Drawing RES-001.1, page 18, for more information).

3.1.3 Proceed with Construction

Do not begin construction without an MID-approved design.

a) MID will field check the job site, prepare a design/job packet and forward the job to construction.

b) Proceed with installation of the service. Please notify MID if the installation will be completed earlier or later than originally estimated so we may update our scheduling with construction.

c) The panel must be inspected and tagged by the local governing authority (city or county). MID may perform some work in advance, but cannot make final service connections until the panel is tagged. See a list of local governing authorities on page 17.

d) When tagged and ready for electricity, notify MID so construction can be scheduled.

3.2 Locations of Overhead Service

3.2.1 Point of Attachment

a) In areas served from overhead lines, an overhead service drop will be installed from an MID distribution line to a riser with weatherhead on the customer's residence. The point of attachment shall be located such that it can be reached with a single span from MID facilities, and the span must maintain all required vertical clearances.

b) The service drop should not cross the building being served nor should it cross buildings on adjacent properties.

c) MID must be able to safely access the service riser and weatherhead to make final connection. The weatherhead must be within 24" of the edge of the roof line, not exceeding 6 feet in height above the roof, be securely braced, and be accessible with a 15-foot ladder with the base of the ladder on the ground.

d) Panels placed in unacceptable locations without consulting MID may result in customers having to relocate the panel or make modifications to the service at the customer's expense.

3.2.2 Two or More Buildings on One Lot

If two or more dwellings or buildings are located on the same lot, consult with MID to determine acceptable meter locations before proceeding with the wiring of the buildings.

For multi-dwelling buildings built at the rear of non-commercial lots, if practical, and at the customer's request, MID may install separate service facilities to the rear building. The meters for the rear building shall be grouped together at a suitable location at the rear building.

3.3 Clearances

All local, State, Federal and applicable Clearances shall apply.

On a customer's request an MID Engineering Technician will schedule a site visit with the customer (or contractor). At this site visit the Engineering Technician will provide an acceptable service drop attachment point (typically the service riser) which will ensure it meets all applicable required clearances from doors, windows, roofs, buildings and stairs.

The minimum clearances from ground, structures, and other objects for overhead service wires are outlined in California Public Utilities Commission's (CPUC) General Order 95. These clearances are shown in Drawing RES-002.0, page 20.

3.3.1 Minimum Vertical Clearances for Residential Overhead Services

a) Clearances of overhead conductors above thoroughfares in public areas:

- Above the center portion, 12 feet horizontal from the curbs: 18 feet
- At the curb line (from the level of the street, not the sidewalk): 16 feet

  (Where there is no curb, the curb shall be taken as the outer limit of possible vehicular traffic.)

b) Clearances over Residential Property:

- Private roads and other areas accessible to agricultural equipment: 16 feet
- Private driveways or other areas accessible to vehicles: 12 feet
- Areas accessible to pedestrians only: 12 feet

c) Clearances over pools:

- Consult MID's Engineering Technician for an acceptable point of connection to maintain all required clearances from pool surface, diving structures, or viewing platforms.
- Minimum clearances are shown on Drawing RES-003.0, page 21.

3.3.2 Minimum Clearances to Buildings

a) Minimum clearances from the service wires to the building being served:

- Generally, a minimum of 18 inches crossing no more than 4 feet of the roof. Allow a maximum of 6 feet above the roof to permit MID personnel access.

b) The riser shall be a minimum of 18 inches above the roof line for MID to make connection of the service wires.

- If the riser height is more than 30 inches above the roof line, the customer **must** brace the riser with a brace kit.
- If the riser must go under an eave, **contact an MID Engineering Technician**. A suitable dead-end insulator must be installed prior to the riser being attached to the wall. MID will not connect to screw-in, dead-end insulators.
- If there is limited access to the customer's panel, the maximum overall height of the riser is limited to 16 feet above ground level.

d) Other buildings on the same premises: 2 feet minimum

e) Buildings on other premises: 8 feet minimum.

f) Local governing authorities may have different requirements; consult them when applying for a permit.

g) Horizontal and vertical clearances from windows, doors, fire escapes: 3 feet minimum.

3.4 Meters

3.4.1 Meter Location-General

a) To ensure that a satisfactory meter location is selected and that adequate space is provided, MID should be consulted while the residence is in the preliminary planning stage. Installation of additional facilities or relocation of facilities can be prevented by early consultation with MID.

b) The following basic location requirements shall apply in all cases:

- All locations for meters and metering equipment are subject to MID approval.
- Meters shall be capable of being reached quickly and conveniently 24 hours a day for construction, operation, maintenance, inspection, testing or reading, without requiring those seeking access to climb over or remove obstacles; or to obtain special permission or security clearances. Truck access may be required.
- Meters and metering equipment installed on or recessed in the external surface of any building shall have a clear working and standing space entirely on the property of the customer being served.

3.4.2 Unacceptable Locations for Electric Meters

Meters and metering equipment shall not be installed:

a) In any location that is hazardous to equipment or persons or unsuitable for entry, such as:

- Any elevator shaft
- Any doorway or hatchway
- Directly over any stairways, ramps, or steps
- Any area accessible through a trapdoor, hatch way, or by means of a ladder.

b) In any place where vibration, moisture, excessive temperature, fumes, or dust may damage the meter or interfere with its operation.

c) On any portion of a building where future landscaping, fencing, or other building construction will make the meter inaccessible.

d) Within any enclosed area that contains or will contain gas meters.

e) Within any locked facility in which MID would be denied access at any time of the day.

f) Indoors.

g) Where they will interfere with traffic, sidewalks, driveways, or where they will obstruct the opening of doors, or windows, or in any location which may be considered hazardous.

3.4.3 Meter Height

The requirements for meter height, which is the vertical distance between the center line of the meter socket and ground level/standing surface shall be:

- 48” minimum – 75” maximum for single meter residential services and meter pedestals (see Drawing RES-001.1, page 18).

3.4.4 Meter Working Space

a) The width of clear and level working space shall be 36” minimum for a single meter installation, with a minimum of 10” from the center line of the meter socket to the closest wall or obstruction.

b) The depth of the clear and level working space in front of the electric meter must be a minimum of 36” for a residential electrical service.

3.4.5 Multiple Meter Panels

a) Where the installation requires more than one meter for service to the premises, each meter, main disconnect and sub-panel shall be permanently marked with an identification plaque (NOT PAINTED) by the customer to properly identify the portion of the premises being served (i.e. units, suites, buildings, etc.).

Each building, unit, or suite being served must also have a permanent address to identify the unit being served.

b) Identification plaques for meters, disconnects, and sub-panels shall be made of plastic, brass, aluminum, or other approved non-magnetic material, with the letters engraved or raised and being a minimum of ¼” tall. The engraving must be deep enough or raised enough as not to be obscured by painting of the tag.

c) The tag is to be attached to a non-removable section of the panel with a high strength 5-minute epoxy. Other types of adhesive WILL NOT be accepted. (Refer to the examples of properly installed placards above.)

3.4.6 Sealing of Meters and Metering Equipment

All meters and enclosures for meters, metering equipment, and service entrances (the area prior to the meter) will be sealed by MID. The MID seal shall not be broken or removed except by an authorized MID representative. No person is permitted to tamper with, remove, replace, or in any way interfere with a meter or its connection as placed by MID. Questions about electric service should be referred to MID's Engineering Department.

Fees may apply for tampering, removal, replacement, or for interfering with MID equipment.

3.4.7 Electric Utility Service Equipment Requirements Committee (EUSERC)

EUSERC is an organization whose purpose is to promote electric service requirements among the utilities. MID is a member of and supports EUSERC. As such, when a customer applies for service within MID's service area, the equipment chosen must meet EUSERC requirements.

4 Obtaining Underground Electric Service

4.1 General Information

- Underground electric service consists of electric service wires being run underneath the ground from MID secondary locations to the customer's main electric panel.
- Service conduit shall be Electrical Grade PVC Conduit, Schedule 40 PVC for all horizontal sections and Schedule 80 for all vertical sections.
- New underground electric service will be allowed in areas where existing underground MID facilities have already been installed, customer is willing to pay to MID the cost to convert from an overhead service to an underground, or there is an ordinance or District in place that prevents new overhead electric services.
- Normally residential underground services will be limited to no greater than 400 Amps.
- No combination current transformer cabinet and meter socket panels may be used for residential services.

4.1.1 Apply for Electric Service

a) Contact MID to apply for service (call (209) 526-7337 or visit 1231 Eleventh Street, Modesto, California). Provide the location of the proposed residence, Site Maps, proposed panel location, desired voltage, load information and the date service is requested.

b) Schedule a site visit with an Engineering Technician to meet on site and go over details of the proposed new service, as well as service location and panel locations.

c) Line Extensions: When service will be more than the allowed distance from acceptable MID facilities (see Appendix B of MID Electric Service Rules), a line extension may be required. The line extension charge will be based on the total length of the extension to be determined by MID, less any free footage allowances. The total charge will be the calculated distance minus any free footage allowance, multiplied by the extension cost per foot (see Appendix A of MID Electric Service Rules for footage costs).

d) If easements will be required to bring service to the property, it is the customer's responsibility to provide, at no cost to MID, easements or right of ways needed to build the line extension.

4.1.2 Locate the Panel

Contact MID's Engineering Department to schedule a site visit to go over the panel location and any other requirements for the panel installation. MID has the final say on meter location, and some meter locations are prohibited by MID standards as well as the State of California General Order 128. There are also requirements for meter height and access (see Section 4.2, Meters, and Drawing RES-004.1, Drawing RES-005.1, and Drawing RES-006.1, pages 22-25, for more information).

4.1.3 Proceed with Construction

Do not begin construction without an MID-approved design.

a) MID will field check the job site, prepare a design/job packet and forward the job to construction.

b) Proceed with installation of the service. Please notify MID if the installation will be completed earlier or later than originally estimated so we may update our scheduling with construction.

c) The panel must be inspected and tagged by the local governing authority (city or county). MID may perform some work in advance, but cannot make final service connections until the panel is tagged. See a list of local governing authorities on page 17.

d) When tagged and ready for electricity, notify MID so we can schedule completion of the work with construction.

4.2 Meters

4.2.1 Meter Location-General

a) To ensure that a satisfactory meter location is selected and that adequate space is provided, MID should be consulted while the residence is in the preliminary planning stage. Installation of additional facilities or relocation of facilities can be prevented by early consultation with MID.

b) The following basic location requirements shall apply in all cases:

- All locations for meters and metering equipment are subject to MID approval.

- Meters shall be capable of being reached quickly and conveniently 24 hours a day for construction, operation, maintenance, inspection, testing or reading, without requiring those seeking access to climb over or remove

obstacles; or to obtain special permission or security clearances. Truck access may be required.

- Meters and metering equipment installed on or recessed in the external surface of any building shall have a clear working and standing space entirely on the property of the customer being served.

4.2.2 Unacceptable Locations for Electric Meters

Meters and metering equipment shall not be installed:

a) In any location that is hazardous to equipment or persons or unsuitable for entry, such as:

- Any elevator shaft
- Any doorway or hatchway
- Directly over any stairways, ramps, or steps
- Any area accessible through a trapdoor, hatch way, or by means of a ladder.

b) In any place where vibration, moisture, excessive temperature, fumes, or dust may damage the meter or interfere with its operation.

c) On any portion of a building where future landscaping, fencing, or other building construction will make the meter inaccessible.

d) Within any enclosed area that contains or will contain gas meters.

e) Within any locked facility in which MID would be denied access at any time of the day.

f) Indoors.

g) Where they will interfere with traffic, sidewalks, driveways, or where they will obstruct the opening of doors, or windows, or in any location which may be considered hazardous.

4.2.3 Meter Height

The requirements for meter height, which is the vertical distance between the center line of the meter socket and ground level/standing surface shall be:

- 48” minimum – 75” maximum for single meter residential services and meter pedestals (see Drawing RES-004.1, Drawing RES-005.1, and Drawing RES-006.1, pages 22-25).

4.2.4 Meter Working Space

a) The width of clear and level working space shall be 36” minimum for a single meter installation, with a minimum of 10” from the center line of the meter socket to the closest wall or obstruction.

b) The depth of the clear and level working space in front of the electric meter must be a minimum of 36” for a residential electrical service.

4.2.5 Multiple Meter Panels

a) Where the installation requires more than one meter for service to the premises, each meter, main disconnect and sub-panel shall be permanently marked with an identification plaque (NOT PAINTED) by the customer to properly identify the portion of the premises being served (i.e. units, suites, buildings, etc.).

   Each building, unit, or suite being served must also have a permanent address to identify the unit being served.

b) Identification plaques for meters, disconnects, and sub-panels shall be made of plastic, brass, aluminum, or other approved non-magnetic material, with the letters engraved or raised and being a minimum of ¼” tall. The engraving must be deep enough or raised enough as not to be obscured by painting of the tag.

c) The tag is to be attached to a non-removable section of the panel with a high strength 5-minute epoxy. Other types of adhesive WILL NOT be accepted. (Refer to the examples of properly installed placards on pages 8 and 9.)

4.2.6 Sealing of Meters and Metering Equipment

All meters and enclosures for meters, metering equipment, and service entrances (the area prior to the meter) will be sealed by MID. The MID seal shall not be broken or removed except by an authorized MID representative. No person is permitted to tamper with, remove, replace, or in any way interfere with a meter or its connection as placed by MID. Questions about electric service should be referred to MID’s Engineering Department.

Fees may apply for tampering, removal, replacement, or for interfering with MID equipment.

4.2.7 Electric Utility Service Equipment Requirements Committee (EUSERC)

EUSERC is an organization whose purpose is to promote electric service requirements among the utilities. MID is a member of and supports EUSERC. As such, when a customer applies for service within MID’s service area, the equipment chosen must meet EUSERC requirements.

4.3 Panel Replacements

If relocating, replacing, or upgrading an electric meter for any reason, contact MID's Electric Engineering Department. A site visit will be scheduled at the residence to discuss project requirements, evaluate locations for the main electric panel, and ensure the technical aspects are appropriate and meet MID's current standards. MID will make sure the meter panel is located and sized to meet MID's current standards. There is no fee for this preliminary inspection. There is, however, at minimum a "rewire" fee for all panel replacements and upgrades within MID's service area (see Appendix A of MID's Electric Service Rules).

4.3.1 Information Required Before the Site Visit

- Customer name and phone number or email
- Project location address
- The plan (relocate, replace, or upgrade service).

4.3.2 The Site Visit

The Engineering Technician will meet the customer (or contractor) on site to go over acceptable main electric panel locations, project requirements and to ensure technical aspects are addressed. The customer will be provided with an Engineering Request Form outlining the service type and voltage of the service. A copy of this Engineering Request Form should be kept by the customer.

4.3.3 Applicable Charges

There is a "rewire" fee charged for all panel replacements, relocations, and upgrades inside of MID's Service Area (see MID's Electric Service Rules for current fee amounts). However if there are any extensive changes to MID facilities at the customer's request, or extensions beyond MID's free extension allowances, other customer charges may be included specific to the project. If this is the case, the Engineering Technician will prepare a package outlining requirements as well as a cost estimated.

4.3.4 Apply For A Permit

A permit is required from the local governing authority making sure the installation is in compliance with all applicable building codes as well as the National Electric Code. See a list of local governing authorities on page 17.

4.3.5 Construction and Inspection

Once all approvals have been obtained, construction can begin to have the main electrical panel installed. There are two (2) sets of inspections needed:

- The local governing authority must inspect and approve the panel installation. See a list of local governing authorities on page 17.
- After installation and approval by the local governing authority, MID's Engineering Technician must verify that the installation is ready, has been inspected and is safe to have the power turned on. A service crew will be notified and the panel will be energized in 7-10 business days. The Engineering Technician can schedule a specific date and time if preferred.

5 Inspections

Facilities constructed by either the customer or his/her builder/contractor must be constructed according to MID standards and all applicable building codes. If the MID Engineering Technician determines that any of the customer/contractor installed facilities do not meet MID standards, the customer/contractor will be responsible for making the necessary changes at his or her cost. MID cannot energize the electric service until ALL customer work has passed MID's inspection and has also passed an inspection from the local governing authority.

6 Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send final set of site plans to MID's Electrical Engineering Department for review and design.
2	MID	10 business days	Engineering Technician designs the electric layout and sends the installation agreement and one marked-up copy of site plan to the Customer.
3	Customer		Pay any charges, return a signed installation agreement, and return completed Residential Load Information Form with all relevant dates regarding construction and service requirements. Both must be returned to MID. Obtain all necessary permits from the local governing authority.
4	MID	10 business days	Engineering Technician designs engineering drawing(s), materializes and assembles the work order.
5	Customer		Call USA to locate underground utilities, install conduit and substructures, return Application for Electric Services to the Customer Service Department, request MID and local governing authority to inspect conduit, substructure, transformer pad, and electric facilities.
6	MID	3 business days	MID inspects trench, conduit, substructures, and transformer pad. This stage repeats itself until you satisfactorily pass inspection.
7	Customer		Close trench, pull service conductors to agreed location, connect conductors to panel. Local governing authority inspects electric facilities. Your facilities pass inspection and you request service.
8	MID	7 business days pending weather and scope of project	Meter Department wires instrument transformers, where required; MID construction installs transformer, primary cables and secondary cables where needed. MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, the meter is set and the panel is energized.

7 Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

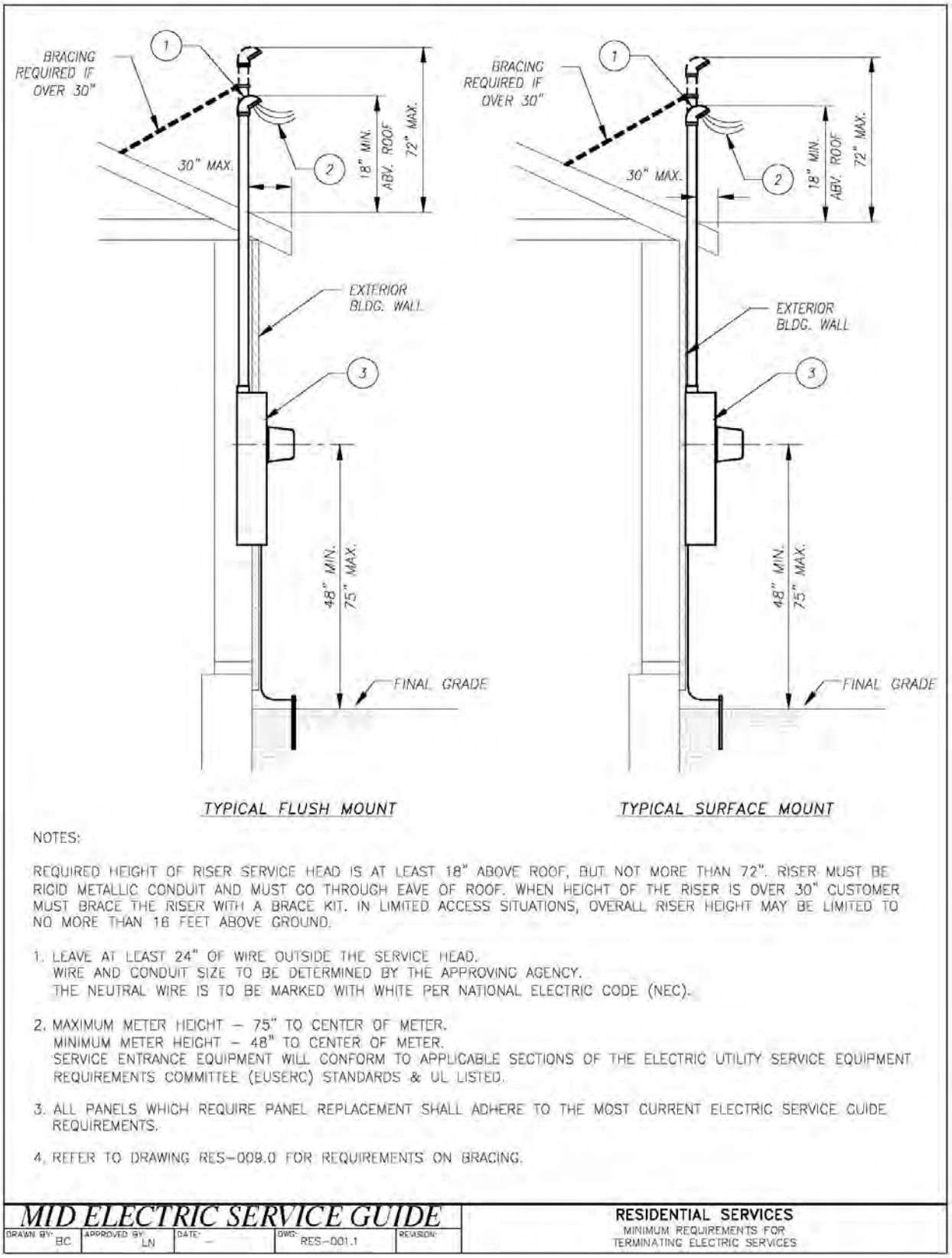
City Of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

8 MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 34).



NOTES:

REQUIRED HEIGHT OF RISER SERVICE HEAD IS AT LEAST 18" ABOVE ROOF, BUT NOT MORE THAN 72". RISER MUST BE RIGID METALLIC CONDUIT AND MUST GO THROUGH EAVE OF ROOF. WHEN HEIGHT OF THE RISER IS OVER 30" CUSTOMER MUST BRACE THE RISER WITH A BRACE KIT. IN LIMITED ACCESS SITUATIONS, OVERALL RISER HEIGHT MAY BE LIMITED TO NO MORE THAN 16 FEET ABOVE GROUND.

1. LEAVE AT LEAST 24" OF WIRE OUTSIDE THE SERVICE HEAD.
   WIRE AND CONDUIT SIZE TO BE DETERMINED BY THE APPROVING AGENCY.
   THE NEUTRAL WIRE IS TO BE MARKED WITH WHITE PER NATIONAL ELECTRIC CODE (NEC).

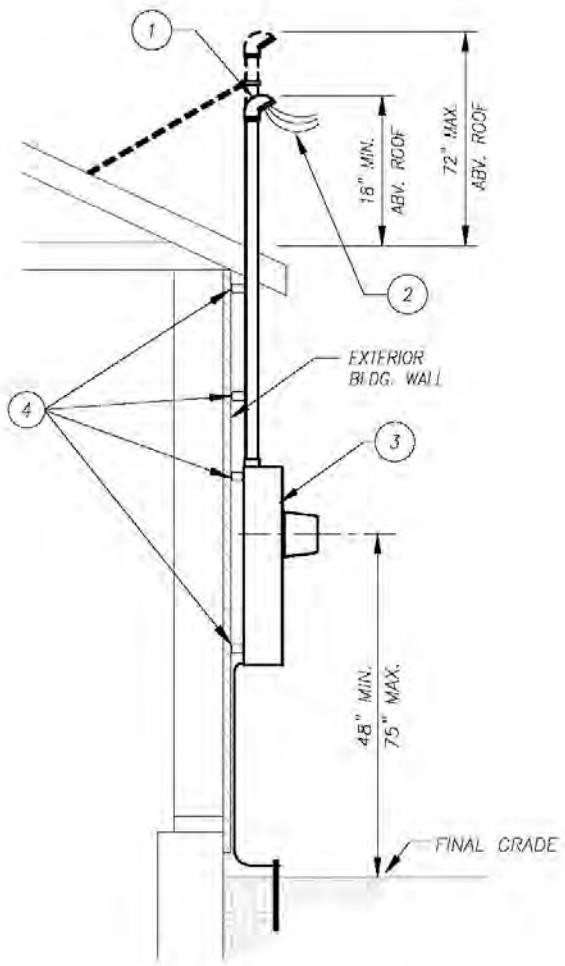
2. MAXIMUM METER HEIGHT – 75" TO CENTER OF METER.
   MINIMUM METER HEIGHT – 48" TO CENTER OF METER.
   SERVICE ENTRANCE EQUIPMENT WILL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & UL LISTED.

3. ALL PANELS WHICH REQUIRE PANEL REPLACEMENT SHALL ADHERE TO THE MOST CURRENT ELECTRIC SERVICE GUIDE REQUIREMENTS.

4. REFER TO DRAWING RES-009.0 FOR REQUIREMENTS ON BRACING.

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SERVICES MINIMUM REQUIREMENTS FOR TERMINATING ELECTRIC SERVICES
DRAWN BY: BC	APPROVED BY: LN	DATE: –	DWG: RES-001.1	REVISION:	

Drawing RES-001.1: Minimum Requirements for Terminating Electric Services



SURFACE MOUNT

NOTES:

1. REQUIRED HEIGHT OF RISER SERVICE HEAD IS AT LEAST 18" ABOVE ROOF, BUT NOT MORE THAN 72". RISER MUST BE RIGID METALLIC CONDUIT. WHEN HEIGHT OF THE RISER IS OVER 30" CUSTOMER MUST BRACE THE RISER WITH A BRACE KIT. IN LIMITED ACCESS SITUATIONS, OVERALL RISER HEIGHT MAY BE LIMITED TO NO MORE THAN 16 FEET ABOVE GROUND. IF THE RISER WEATHER HEAD MUST GO UNDER THE EAVE, CONTACT MID'S ELECTRICAL ENGINEERING DEPT. MID WILL NOT ATTACH TO SCREW KNOB INSULATORS.

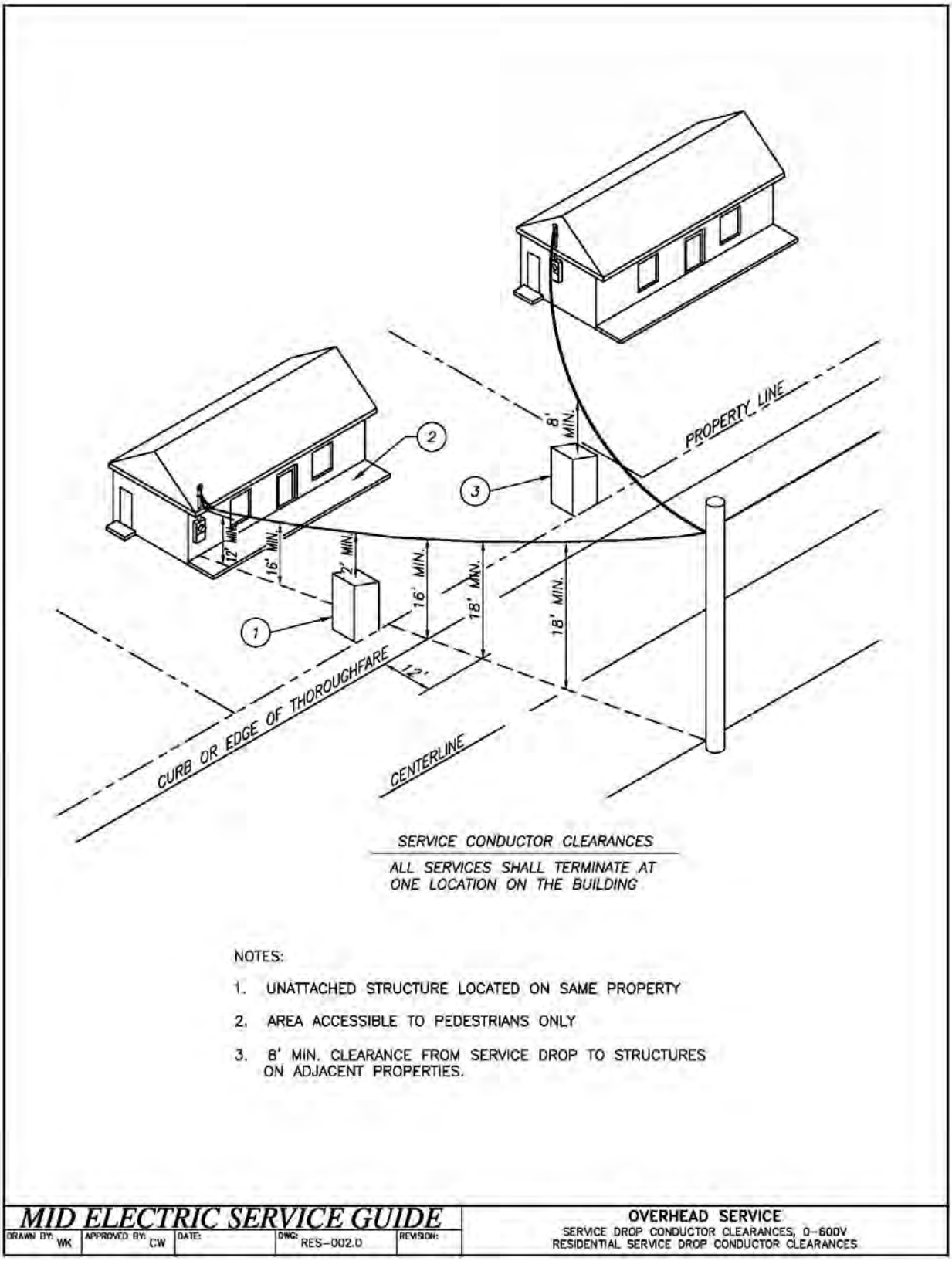
2. LEAVE AT LEAST 24" OF WIRE OUTSIDE THE SERVICE HEAD.
WIRE AND CONDUIT SIZE TO BE DETERMINED BY THE APPROVING AGENCY.
THE NEUTRAL WIRE IS TO BE MARKED WITH WHITE PER NATIONAL ELECTRIC CODE (NEC).

3. MAXIMUM METER HEIGHT – 75" TO CENTER OF METER.
MINIMUM METER HEIGHT – 48" TO CENTER OF METER.
SERVICE ENTRANCE EQUIPMENT WILL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & UL LISTED.

4. 1-1/2" STRUT CHANNEL TO BE INSTALLED BEHIND PANEL AND CONDUIT PROVIDING AN UNOBSTRUCTED VIEW BEHIND PANEL AND CONDUIT.

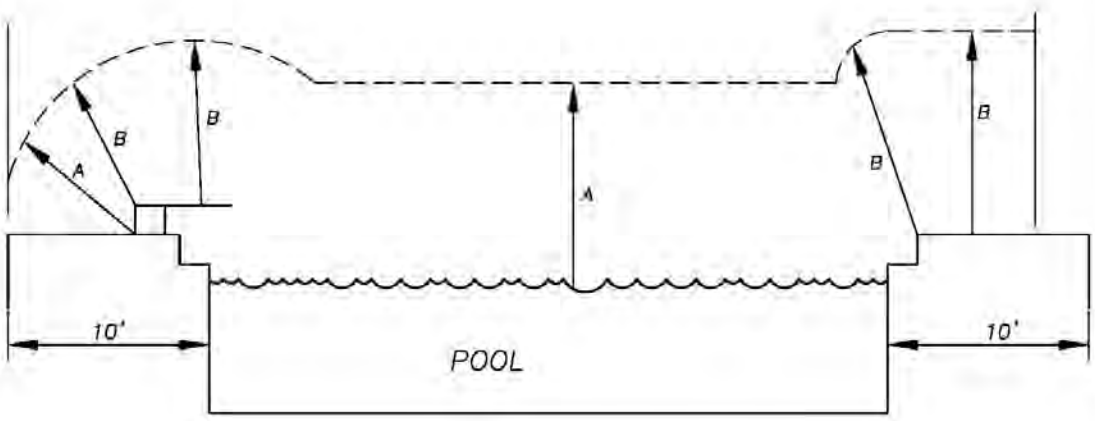
MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SERVICES MINIMUM REQUIREMENTS FOR TERMINATING ELECTRIC SERVICES DUE TO POWER DIVERSION
DRAWN BY: AA	APPROVED BY: LN	DATE: 09/27/2017	DWG: RES-001.2	REVISION:	

Drawing RES-001.2: Minimum Requirements for Terminating Electric Services Due to Power Diversion



Drawing RES-002.0: Service Drop Conductor Clearances

		Insulated supply or service drop cables 0-600v to ground, supported on and cabled together with an effectively grounded bare messenger	ALL OTHER SUPPLY OR SERVICE DROP CONDUCTORS	
			VOLTAGE TO GROUND	
			0-15KV	>15-50KV
A	Clearance in any direction to the water surface, base of diving platform or permanently anchored raft.	22.5 FEET	25 FEET	27 FEET
B	Clearance in any direction to the diving platform or tower.	14.5 FEET	17 FEET	18 FEET



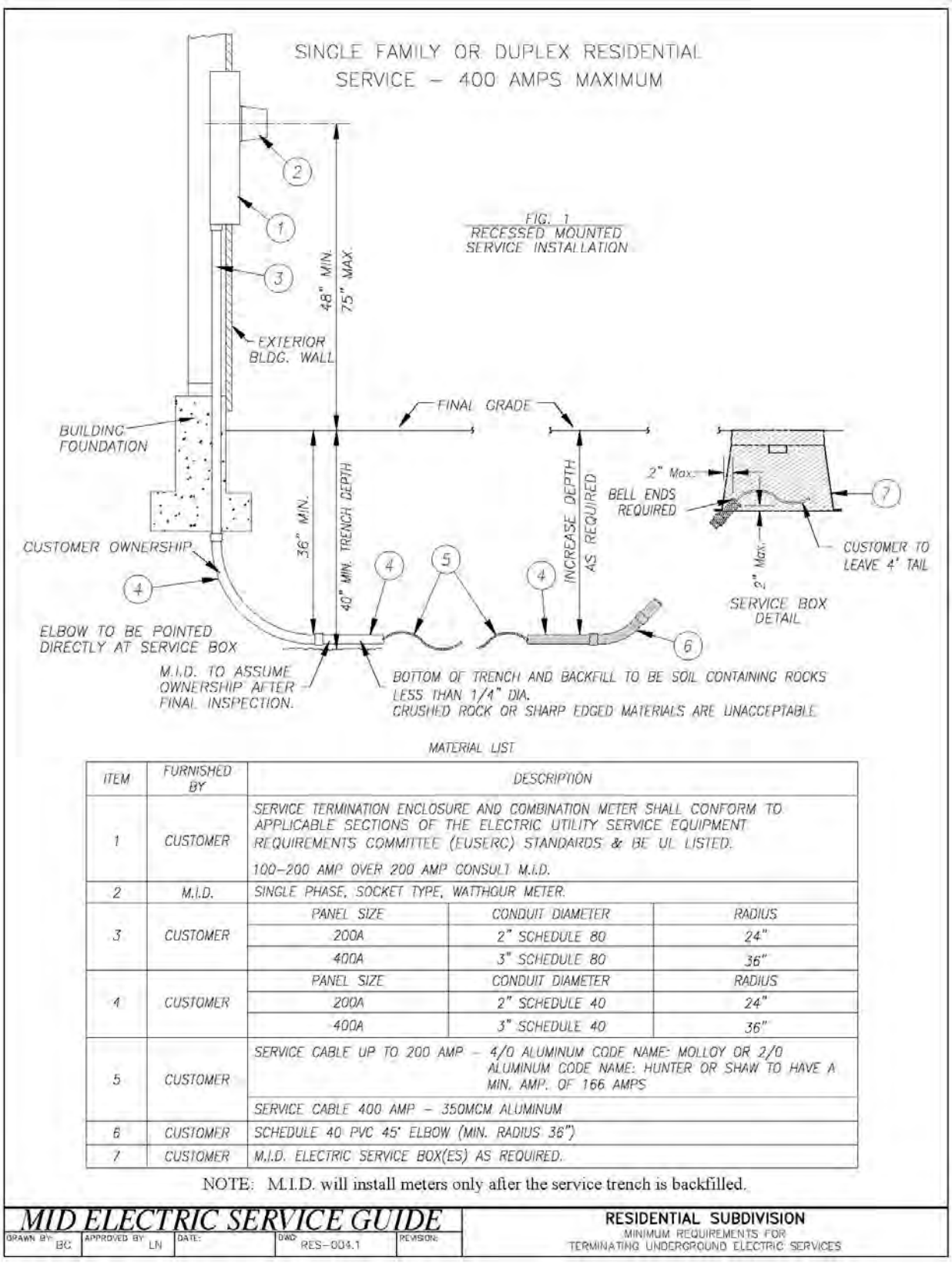
PREVIOUSLY GE-06-275.2

MID ELECTRIC SERVICE GUIDE

DRAWN BY: TE | APPROVED BY: E J | DATE: 09/20/95 | DWG: RES-003.0 | REVISION: 9/4/08-D

OVERHEAD SERVICE
SERVICE DROP CONDUCTOR CLEARANCES, 0-600V
CLEARANCE FROM SWIMMING POOLS AND DIVING BOARDS

Drawing RES-003.0: Clearance from Swimming Pools and Diving Boards



MATERIAL LIST

ITEM	FURNISHED BY	DESCRIPTION		
1	CUSTOMER	SERVICE TERMINATION ENCLOSURE AND COMBINATION METER SHALL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & BE UL LISTED. 100–200 AMP OVER 200 AMP CONSULT M.I.D.		
2	M.I.D.	SINGLE PHASE, SOCKET TYPE, WATTHOUR METER.		
3	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" SCHEDULE 80	24"
		400A	3" SCHEDULE 80	36"
4	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" SCHEDULE 40	24"
		400A	3" SCHEDULE 40	36"
5	CUSTOMER	SERVICE CABLE UP TO 200 AMP – 4/0 ALUMINUM CODE NAME: MOLLOY OR 2/0 ALUMINUM CODE NAME: HUNTER OR SHAW TO HAVE A MIN. AMP. OF 166 AMPS		
		SERVICE CABLE 400 AMP – 350MCM ALUMINUM		
6	CUSTOMER	SCHEDULE 40 PVC 45° ELBOW (MIN. RADIUS 36")		
7	CUSTOMER	M.I.D. ELECTRIC SERVICE BOX(ES) AS REQUIRED.		

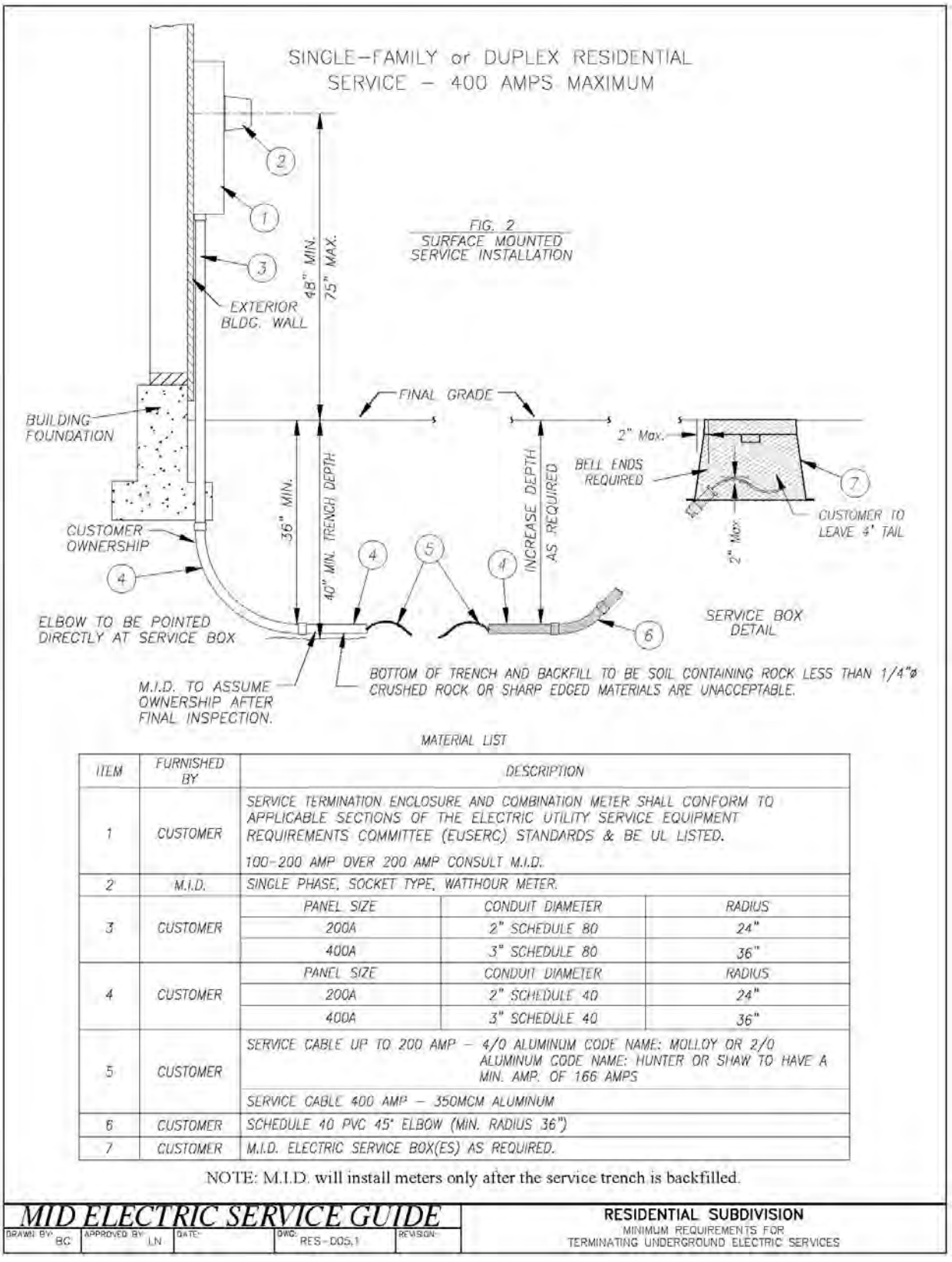
NOTE: M.I.D. will install meters only after the service trench is backfilled.

MID ELECTRIC SERVICE GUIDE

DRAWN BY: BC | APPROVED BY: LN | DATE: | DWG: RES-004.1 | REVISION:

RESIDENTIAL SUBDIVISION
MINIMUM REQUIREMENTS FOR
TERMINATING UNDERGROUND ELECTRIC SERVICES

Drawing RES-004.1: Single-Family Residential, Recessed Mounted Service Installation



MATERIAL LIST

ITEM	FURNISHED BY	DESCRIPTION		
1	CUSTOMER	SERVICE TERMINATION ENCLOSURE AND COMBINATION METER SHALL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & BE UL LISTED. 100–200 AMP OVER 200 AMP CONSULT M.I.D.		
2	M.I.D.	SINGLE PHASE, SOCKET TYPE, WATTHOUR METER.		
3	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" SCHEDULE 80	24"
		400A	3" SCHEDULE 80	36"
4	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" SCHEDULE 40	24"
		400A	3" SCHEDULE 40	36"
5	CUSTOMER	SERVICE CABLE UP TO 200 AMP – 4/0 ALUMINUM CODE NAME: MOLLOY OR 2/0 ALUMINUM CODE NAME: HUNTER OR SHAW TO HAVE A MIN. AMP. OF 166 AMPS		
		SERVICE CABLE 400 AMP – 350MCM ALUMINUM		
6	CUSTOMER	SCHEDULE 40 PVC 45° ELBOW (MIN. RADIUS 36")		
7	CUSTOMER	M.I.D. ELECTRIC SERVICE BOX(ES) AS REQUIRED.		

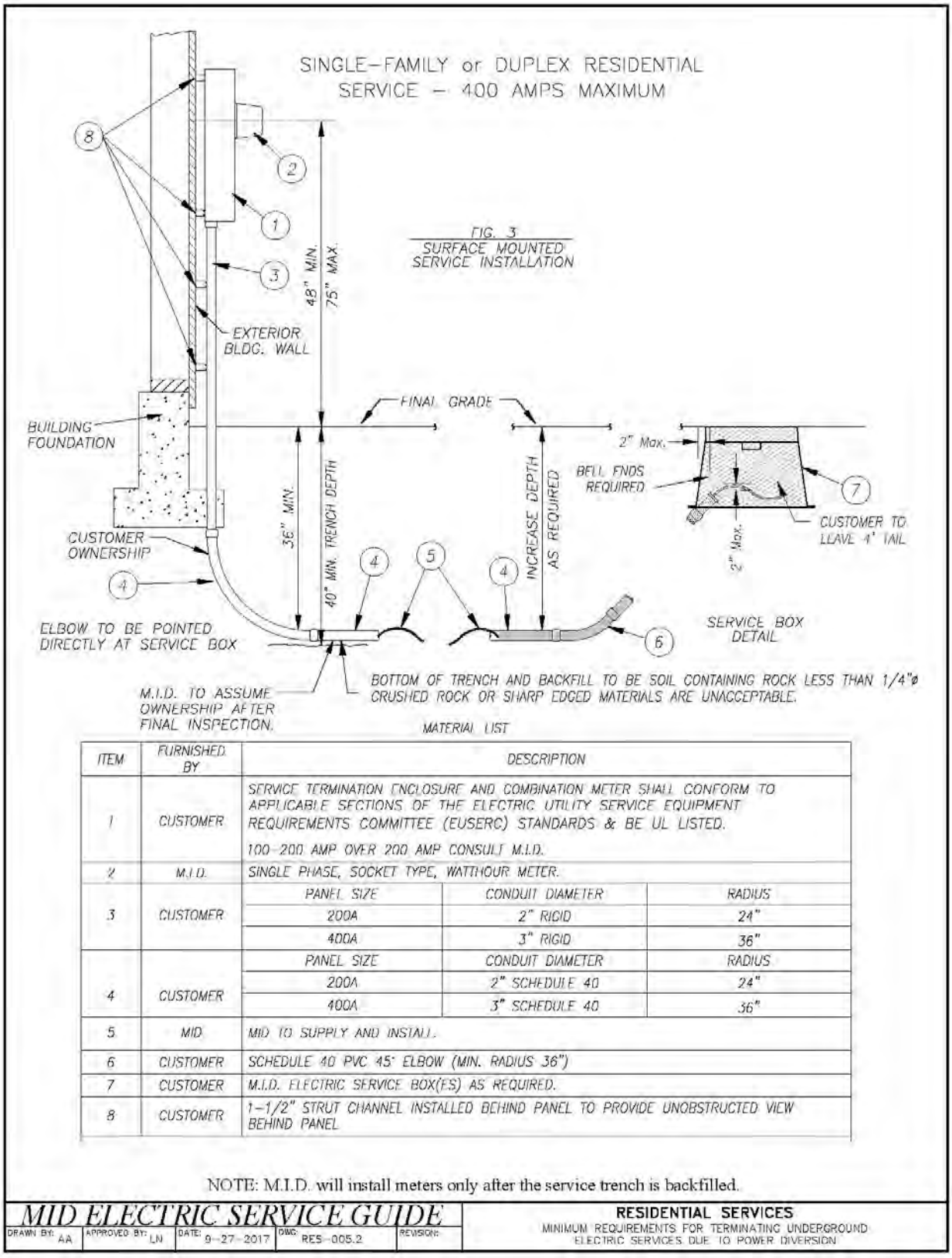
NOTE: M.I.D. will install meters only after the service trench is backfilled.

MID ELECTRIC SERVICE GUIDE

DRAWN BY: BC | APPROVED BY: LN | DATE: | DWG: RES-005.1 | REVISION:

RESIDENTIAL SUBDIVISION
MINIMUM REQUIREMENTS FOR
TERMINATING UNDERGROUND ELECTRIC SERVICES

Drawing RES-005.1: Single-Family Residential, Surface Mounted Service Installation



MATERIAL LIST

ITEM	FURNISHED BY	DESCRIPTION		
1	CUSTOMER	SERVICE TERMINATION ENCLOSURE AND COMBINATION METER SHALL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & BE UL LISTED. 100-200 AMP OVER 200 AMP CONSULT M.I.D.		
2	M.I.D.	SINGLE PHASE, SOCKET TYPE, WATTHOUR METER.		
3	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" RIGID	24"
		400A	3" RIGID	36"
4	CUSTOMER	PANEL SIZE	CONDUIT DIAMETER	RADIUS
		200A	2" SCHEDULE 40	24"
		400A	3" SCHEDULE 40	36"
5	MID	MID TO SUPPLY AND INSTALL.		
6	CUSTOMER	SCHEDULE 40 PVC 45° ELBOW (MIN. RADIUS 36")		
7	CUSTOMER	M.I.D. ELECTRIC SERVICE BOX(ES) AS REQUIRED.		
8	CUSTOMER	1-1/2" STRUT CHANNEL INSTALLED BEHIND PANEL TO PROVIDE UNOBSTRUCTED VIEW BEHIND PANEL		

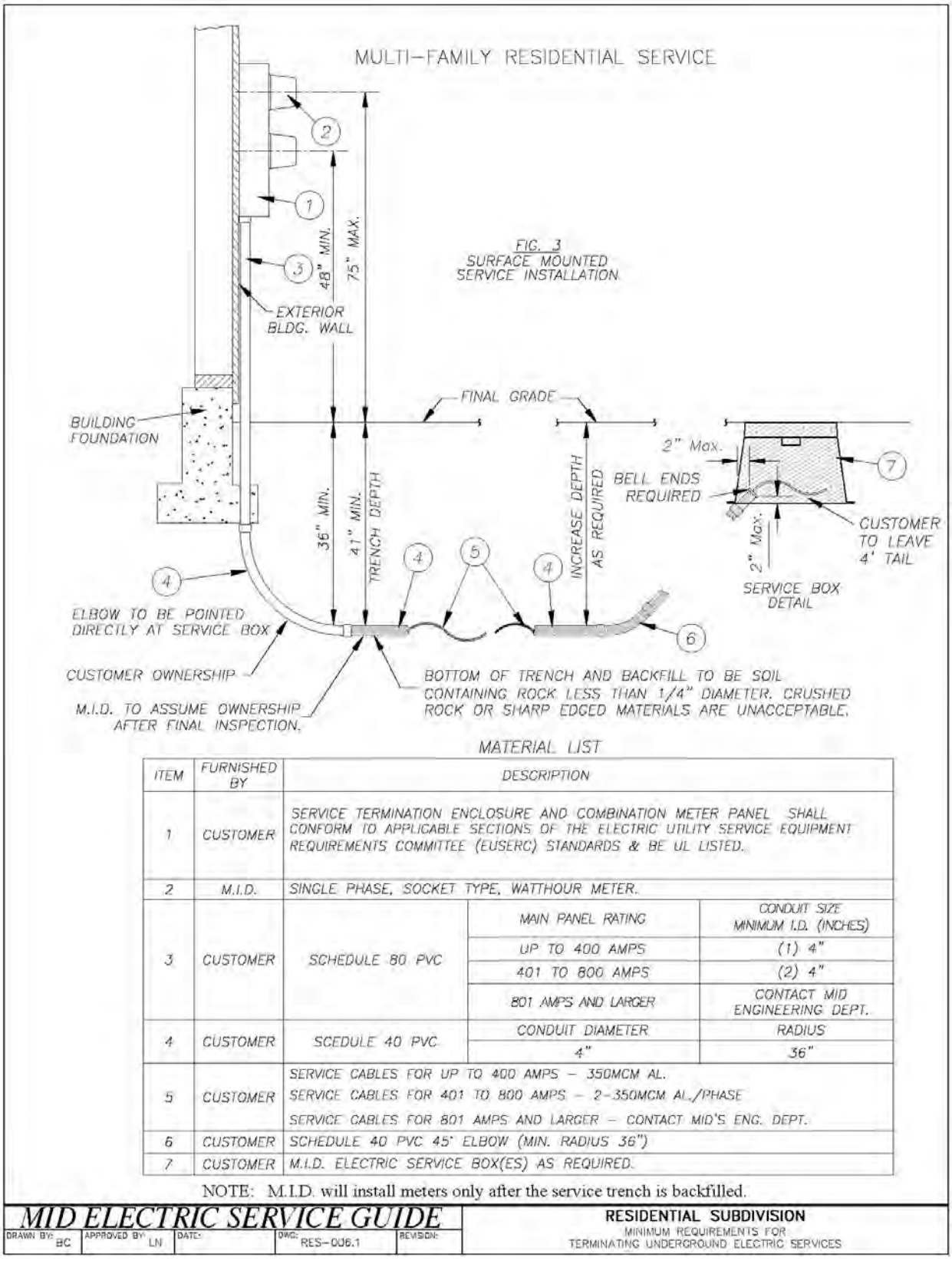
NOTE: M.I.D. will install meters only after the service trench is backfilled.

MID ELECTRIC SERVICE GUIDE

DRAWN BY:	APPROVED BY:	DATE:	DWG:	REVISION:
AA	LN	9-27-2017	RES-005.2	

RESIDENTIAL SERVICES
MINIMUM REQUIREMENTS FOR TERMINATING UNDERGROUND ELECTRIC SERVICES DUE TO POWER DIVERSION

Drawing RES-005.2: Single-Family Residential, Surface Mounted Service Installation Due to Power Diversion



MATERIAL LIST

ITEM	FURNISHED BY	DESCRIPTION		
1	CUSTOMER	SERVICE TERMINATION ENCLOSURE AND COMBINATION METER PANEL SHALL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & BE UL LISTED.		
2	M.I.D.	SINGLE PHASE, SOCKET TYPE, WATTHOUR METER.		
3	CUSTOMER	SCHEDULE 80 PVC	MAIN PANEL RATING	CONDUIT SIZE MINIMUM I.D. (INCHES)
			UP TO 400 AMPS	(1) 4"
			401 TO 800 AMPS	(2) 4"
			801 AMPS AND LARGER	CONTACT MID ENGINEERING DEPT.
4	CUSTOMER	SCEDULE 40 PVC	CONDUIT DIAMETER	RADIUS
			4"	36"
5	CUSTOMER	SERVICE CABLES FOR UP TO 400 AMPS – 350MCM AL. SERVICE CABLES FOR 401 TO 800 AMPS – 2-350MCM AL./PHASE SERVICE CABLES FOR 801 AMPS AND LARGER – CONTACT MID'S ENG. DEPT.		
6	CUSTOMER	SCHEDULE 40 PVC 45° ELBOW (MIN. RADIUS 36")		
7	CUSTOMER	M.I.D. ELECTRIC SERVICE BOX(ES) AS REQUIRED.		

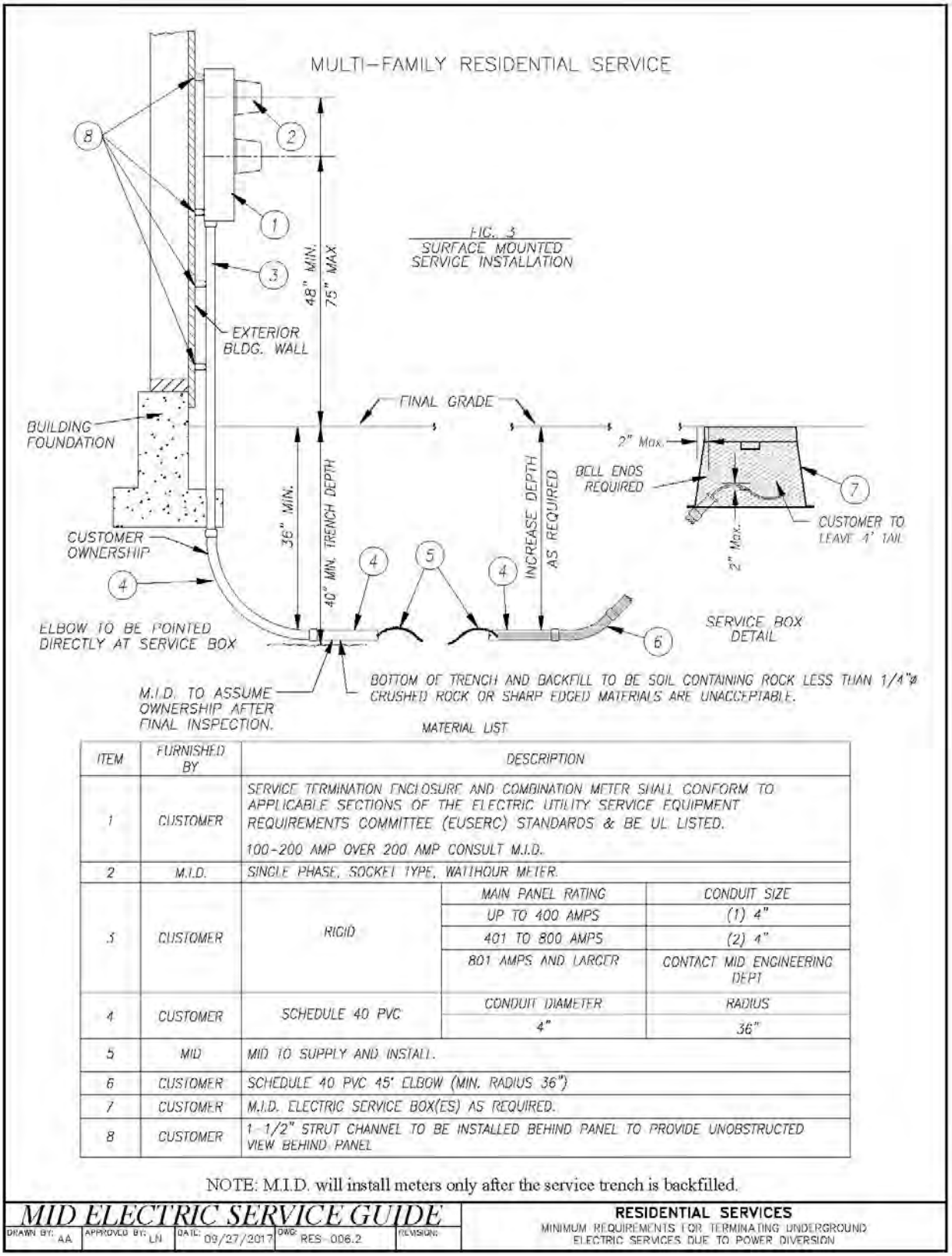
NOTE: M.I.D. will install meters only after the service trench is backfilled.

MID ELECTRIC SERVICE GUIDE

DRAWN BY: BC | APPROVED BY: LN | DATE: | DWG: RES-006.1 | REVISION:

RESIDENTIAL SUBDIVISION
MINIMUM REQUIREMENTS FOR
TERMINATING UNDERGROUND ELECTRIC SERVICES

Drawing RES-006.1: Multi-Family Residential, Surface Mounted Service Installation



MATERIAL LIST

ITEM	FURNISHED BY	DESCRIPTION		
1	CUSTOMER	SERVICE TERMINATION ENCLOSURE AND COMBINATION METER SHALL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & BE UL LISTED. 100-200 AMP OVER 200 AMP CONSULT M.I.D.		
2	M.I.D.	SINGLE PHASE, SOCKET TYPE, WATTHOUR METER.		
3	CUSTOMER	RIGID	MAIN PANEL RATING	CONDUIT SIZE
			UP TO 400 AMPS	(1) 4"
			401 TO 800 AMPS	(2) 4"
			801 AMPS AND LARGER	CONTACT MID ENGINEERING DEPT
4	CUSTOMER	SCHEDULE 40 PVC	CONDUIT DIAMETER	RADIUS
			4"	36"
5	MID	MID TO SUPPLY AND INSTALL.		
6	CUSTOMER	SCHEDULE 40 PVC 45° ELBOW (MIN. RADIUS 36")		
7	CUSTOMER	M.I.D. ELECTRIC SERVICE BOX(ES) AS REQUIRED.		
8	CUSTOMER	1-1/2" STRUT CHANNEL TO BE INSTALLED BEHIND PANEL TO PROVIDE UNOBSTRUCTED VIEW BEHIND PANEL		

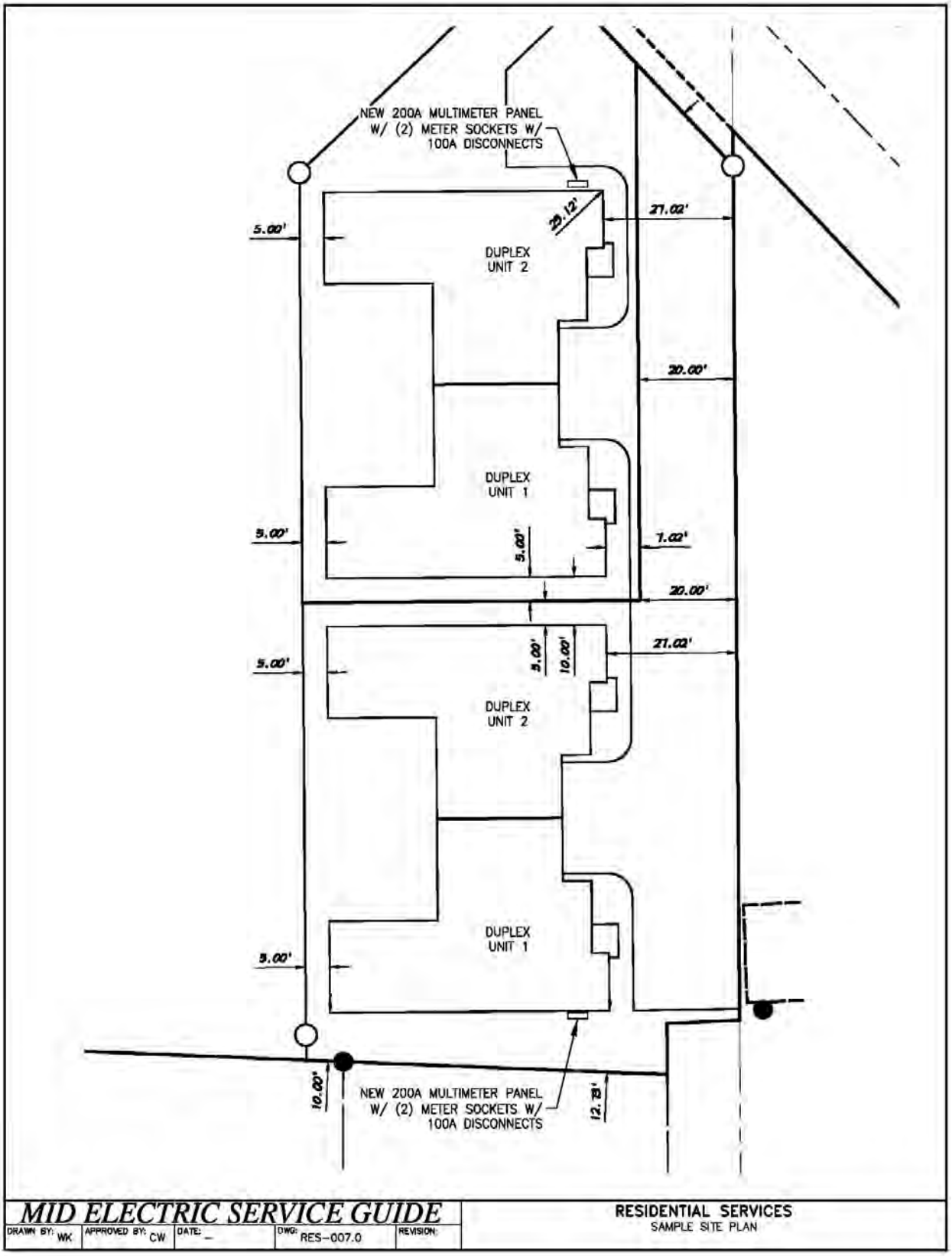
NOTE: M.I.D. will install meters only after the service trench is backfilled.

MID ELECTRIC SERVICE GUIDE

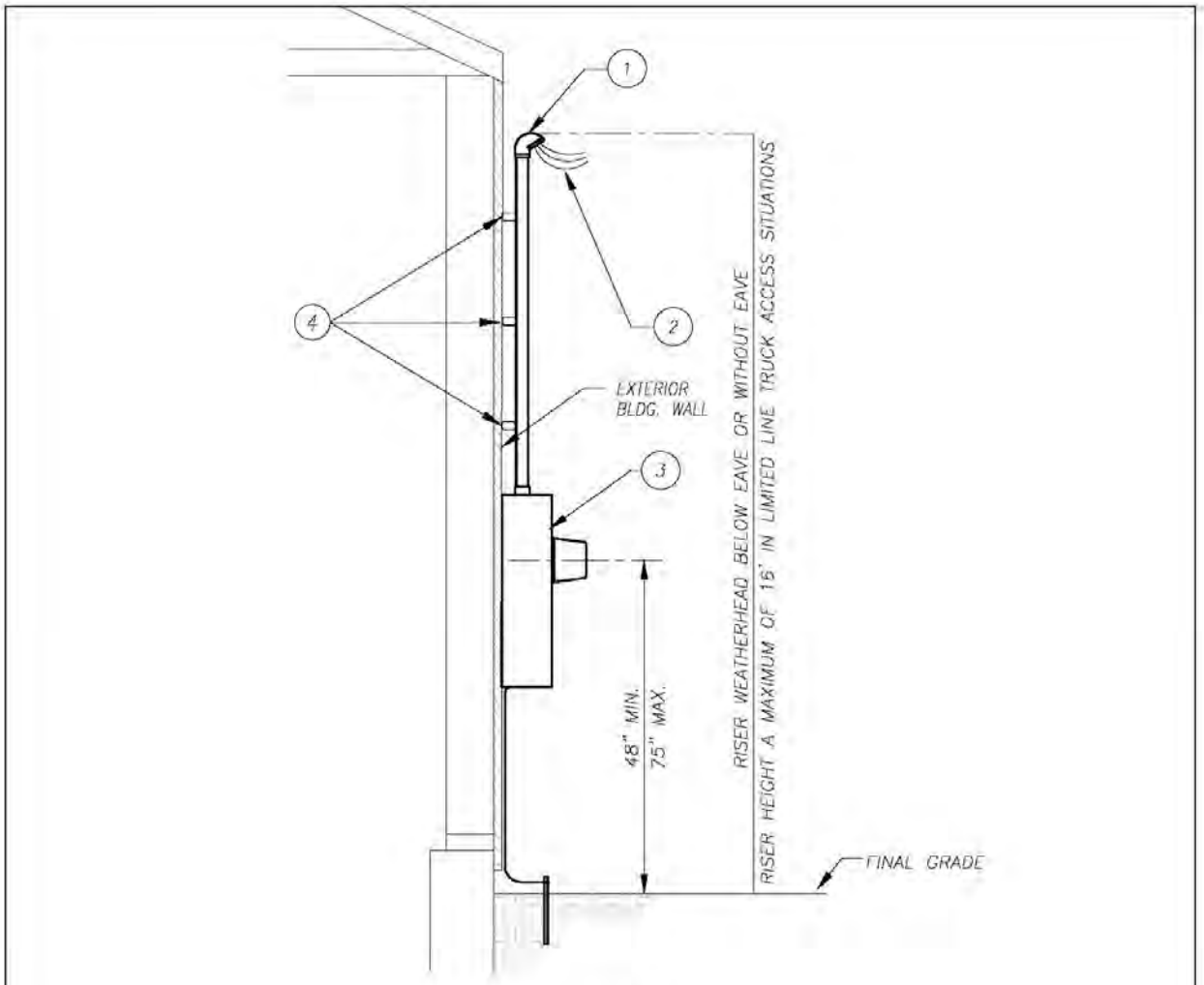
DRAWN BY: AA | APPROVED BY: LN | DATE: 09/27/2017 | DWG: RES-006.2 | REVISION:

RESIDENTIAL SERVICES
MINIMUM REQUIREMENTS FOR TERMINATING UNDERGROUND ELECTRIC SERVICES DUE TO POWER DIVERSION

Drawing RES-006.2: Multi-Family Residential, Surface Mounted Service Installation Due to Power Diversion



Drawing RES-007.0: Sample Site Plan



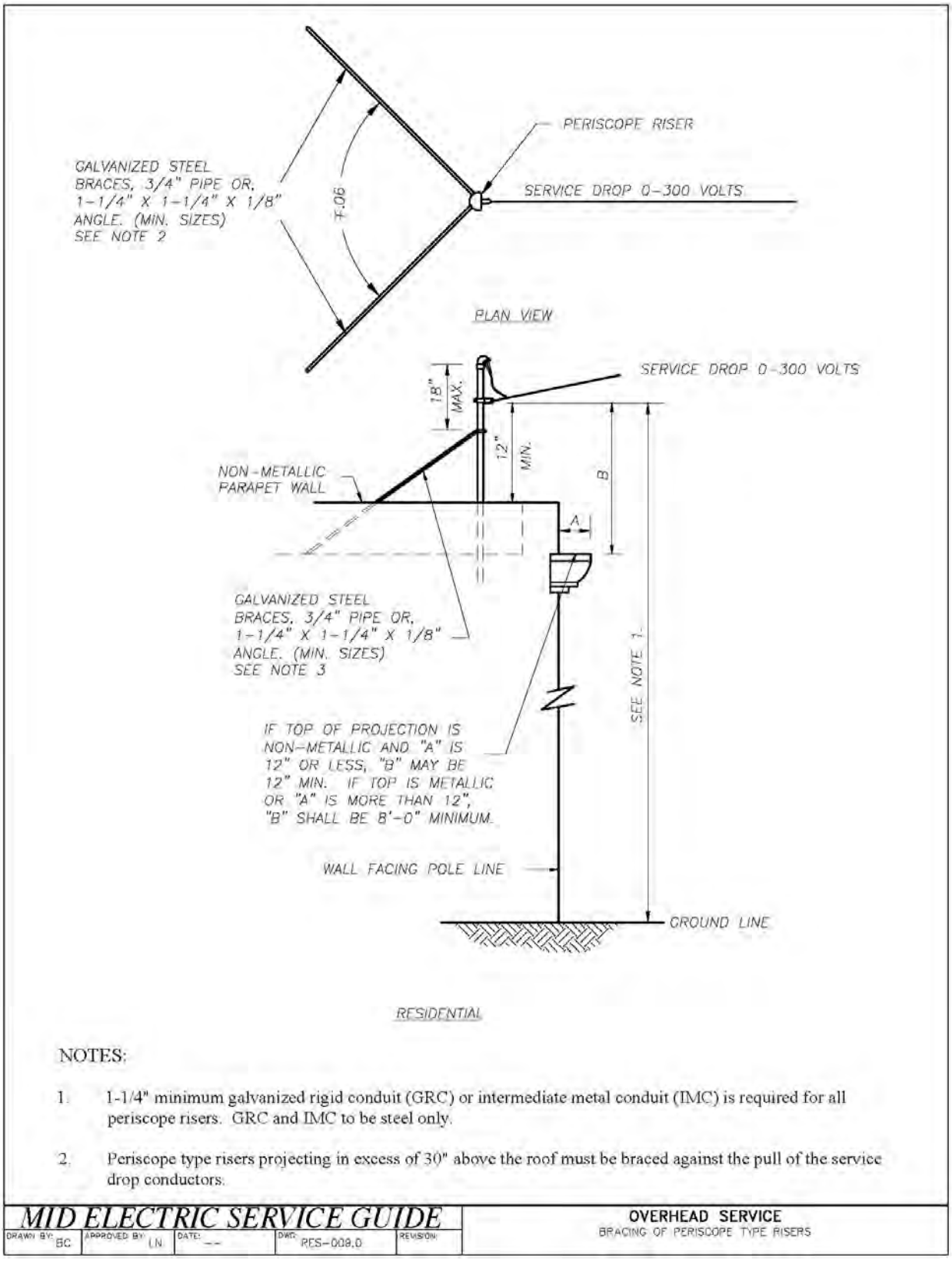
SURFACE MOUNT

NOTES:

1. IN LIMITED ACCESS SITUATIONS, OVERALL RISER HEIGHT MAY BE LIMITED TO NO MORE THAN 16 FEET ABOVE GROUND, BUT ALSO MUST BE A MINIMUM OF 8 FEET ABOVE GROUND. IF THE RISER WEATHER HEAD MUST GO UNDER THE EAVE, CONTACT MID'S ELECTRICAL ENGINEERING DEPT. MID WILL NOT ATTACH TO SCREW KNOB INSULATORS.
2. LEAVE AT LEAST 24" OF WIRE OUTSIDE THE SERVICE HEAD.
   WIRE AND CONDUIT SIZE TO BE DETERMINED BY THE APPROVING AGENCY.
   THE NEUTRAL WIRE IS TO BE MARKED WITH WHITE PER NATIONAL ELECTRIC CODE (NEC).
3. MAXIMUM METER HEIGHT – 75" TO CENTER OF METER.
   MINIMUM METER HEIGHT – 48" TO CENTER OF METER.
   SERVICE ENTRANCE EQUIPMENT WILL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & UL LISTED.
4. 1-1/2" STRUT CHANNEL TO BE INSTALLED BEHIND CONDUIT TO PROVIDE STABILITY FOR RISER. STRUT CHANNEL NEEDS TO BE MOUNTED TO STUDS.

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SERVICES MINIMUM REQUIREMENTS FOR TERMINATING ELECTRIC SERVICES
DRAWN BY: BC	APPROVED BY: LN	DATE:	DWG: RES-008.0	REVISION:	

Drawing RES-008.0: Riser Without or Below Eave



Drawing RES-009.0: Bracing of Periscope Type Risers

MID Modesto Irrigation District
Water and Power

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

RESIDENTIAL ELECTRIC SERVICE APPLICATION

---MID USE ONLY---		
CSR Name:	Deposit Amount:	NEW METER INSTALLATION
	Or reason for waiving:	Map grid seq #:
Account #:		Franchise Distr:
Svc Pt #:		# of light: Watts:
Rental Agreement:	Approved by: Date:	Tax District: Bill Code:

Please fill out application completely, sign and return to MID Customer Services Division. In accordance with MID Rules & Regulations, a deposit of $200 or two times the highest monthly bill may be required to activate

Today's date: 6-10-2014 **Service request date:** 12/31/2014

Type of Service: ■ **Electric Service** ☐ **Lighting** **Is the power currently on?** ☐ **Yes** ■ **No**

1. Applicant is: ■ Owner ☐ Agent ☐ Renter
2. Billing name: Sample Brown
   Legal Name of Responsible Party
3. Service address: 1234 Sample Street Modesto 95358
   Street *City* *Zip Code*
4. Mailing address: 1234 Sample Street Modesto 95358
   Street *City* *Zip Code*
5. Home phone: 209-526-5555 Cell: 209-555-0000 E-Mail:
6. Social security number: 123-45-6789 Date of birth: 01/01/1950
7. Driver's license number: D1234567 State: California
8. Employer: Brown Consulting Work phone: 209-555-0001
9. Name of co-applicant:
10. Relationship to applicant: Date of birth:
11. Co-applicant's social security number: Cell phone:
12. Co-applicant's driver's license number: Work phone:
13. If rental, name of landlord/property manager:
14. Landlord/property manager phone number:

Signature (required):
ID verification: Driver's License number & State (list if other)

Print Name

Go to www.mid.org/yourhome/ for the most current Application.

Note: In accordance with published MID regulations, supporting documents and/or ID may be required.

Sample 1: Residential Electric Service Application

Residential Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: 6/9/2015

Project: Sample

Location (Street): 1234 Sample Street

Owner (Name): Sample Brown Telephone: (209)-526-5555

Address: 1234 Sample Street

Engineer (Name): Engineer/Architect Telephone: (209) 529-0000

Address: 4321 Sample Ave.

Estimated Date Ready for Service: 12/31/2015 Pre-Construction Meeting Date: 6/31/2015

Begin Rough Grading Date: 8/31/2015

General Information

Approximate Square Footage: 2210

Electric Load Information

	Initial		Future			Initial		Future	
Stove/Oven	1.28	kW		kW	Water Heater	4	kW		kW
Refrigerator	11.8	Amps		Amps	HVAC	3.2	kW		kW
Clothes Dryer	1.8	kW		kW	Receptacles	40	Amps		Amps
Pool Pump	1.1	HP		HP	Lighting	1.2	kW		kW
Pool Heater	1.5	kW		kW	Misc. Motors		HP	2.0	HP
Welders		Amps	20	Amps	Electric Car Charger				

Total Initial Connected Electrical Load: 22.4 kW Size Main Fused Switch: 200 Amps

Total Future Connected Electrical Load: 24.0 kW Estimated Date of Future Load: TBD

Do you anticipate installation of a Solar Photovoltaic System? (circle one) Yes (No) Decline to State

Type of Service Desired: (circle one) Overhead (Underground)

Phase: _____ Voltage: 120/240 Wires: 3 Estimated Initial Date: 12/31/2015

Site Plan: (X) One site plan in dfx or Autocad format on a CD is provided with the application
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

Application Complete □ Yes □ No Checked By: _____ Date: _____
If no, explain: _____

9/2015

Sample 2: Residential Load Information Form

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

RESIDENTIAL ELECTRIC SERVICE APPLICATION

--- MID USE ONLY ---		
CSR Name:	Deposit Amount: Or reason for waiving:	**NEW METER INSTALLATION** Map grid seq #:
Account #:		Franchise District:
Svc Pt #:		# of lights: Watts:
Rental Agreement:	Approved by: Date:	Tax District: Bill Code:

Please fill out application completely, sign and return to MID Customer Services Division. In accordance with MID Rules & Regulations, a deposit of $200 or two times the highest monthly bill may be required to activate

Today's date: _____ **Service request date:** _____

Type of Service: ☐ **Electric Service** ☐ **Lighting** **Is the power currently on?** ☐ **Yes** ☐ **No**

1. Applicant is: ■ Owner ☐ Agent ☐ Renter
2. Billing name: _____
   Legal Name of Responsible Party
3. Service address: _____
   Street *City* *Zip Code*
4. Mailing address: _____
   Street *City* *Zip Code*
5. Home phone: _____ Cell: _____ E-Mail: _____
6. Social security number: _____ Date of birth: _____
7. Driver's license number: _____ State: _____
8. Employer: _____ Work phone: _____
9. Name of co-applicant: _____
10. Relationship to applicant: _____ Date of birth: _____
11. Co-applicant's social security number: _____ Cell phone: _____
12. Co-applicant's driver's license number: _____ Work phone: _____
13. If rental, name of landlord/property manager: _____
14. Landlord/property manager phone number: _____

Signature (required): _____
ID verification: Driver's License number & State (list if other)

_____
Print Name *Date*

Note: In accordance with published MID regulations, supporting documents and/or ID may be required.

Residential Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: _____

Electric Load Information

	Initial		Future			Initial		Future	
Stove/Oven		kW		kW	Water Heater		kW		kW
Refrigerator		Amps		Amps	HVAC		kW		kW
Clothes Dryer		kW		kW	Receptacles		Amps		Amps
Pool Pump		HP		HP	Lighting		kW		kW
Pool Heater		kW		kW	Misc. Motors		HP		HP
Welders		Amps		Amps	Electric Car Charger				

Total Initial Connected Electrical Load: _____kW Size Main Fused Switch: _____Amps

Total Future Connected Electrical Load: _____kW Estimated Date of Future Load: _____

Do you anticipate installation of a Solar Photovoltaic System? (circle one) Yes No Decline to State

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Site Plan: (X) One site plan in dfx or Autocad format on a CD is provided with the application
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

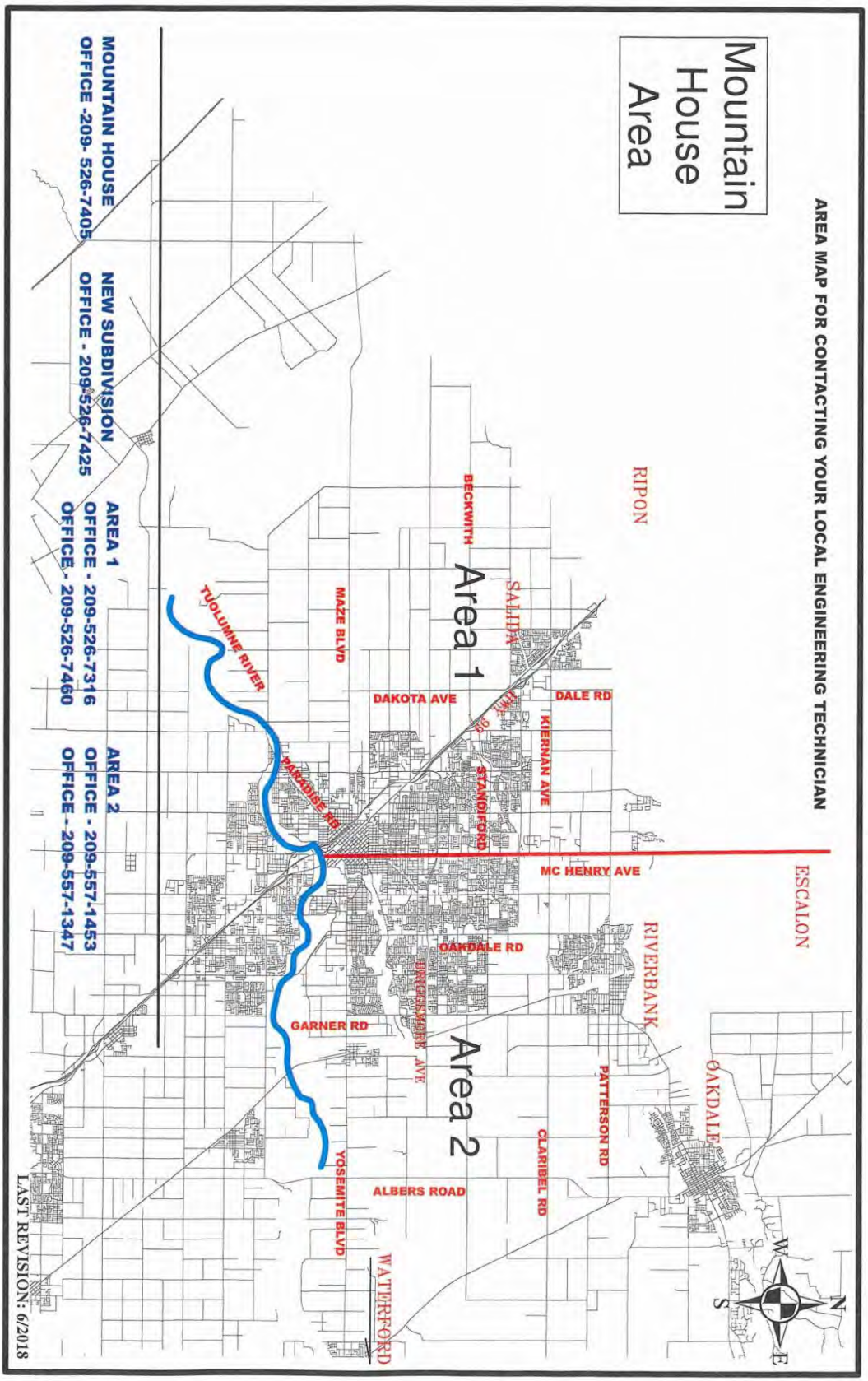
Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

_____

9/2015



Form 3: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Agricultural

Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

A. General Requirements for Service

1. This Guide is intended to inform customers and contractors of the minimum requirements for agricultural electric service installations, as specified in General Order 95, "Rules for Overhead Electric Line Construction," and General Order 128, "Construction of Underground Electric Supply and Communication Systems" of the Public Utilities Commission. These requirements have been established by the State in the interest of safety to the public and utility workers and are applicable to all agricultural electric service installations. The MID cannot establish service to facilities which do not meet these minimum requirements.

2. These requirements are applicable only for agricultural pump installations.

3. It is necessary that all written material (this Guide, as well as all of the notes on the Drawings) **be carefully read**.

4. It is important that satisfactory arrangements be made for the installation of electric lines and the location and setting of meters. Contact MID's Customer Service Department, 1231 11th Street, Modesto CA 95352, (209) 526-7337, for new or additional service. This must be completed as soon as initial planning is considered. Delays in supplying this required information could cause unnecessary inconvenience for the customer. Electric service will not be established until the service entrance facilities are satisfactorily completed by the customer.

   Note: "Customer service entrance facilities" is the term used to designate all the electrical components required to be furnished and installed by the customer. MID will furnish, install and maintain the service drop conductors, instrument transformers and meters (overhead service only).

5. The customer is required to supply and install all protective devices of any kind or character as per MID Rule No. 2F. The customer may be required to have motor starting current limitations as per MID Rule No. 2E4. Refer to www.mid.org/tariffs to find the MID Electric Service Rules.

6. All materials used and all work performed on a customer's premises, with the exception of the metering equipment and service conductor, must conform to local governing authority requirements (see a list of local governing authorities on page 10). No service can be connected unless passed by the proper authority. Only authorized MID employees are permitted to make connections to MID's facilities.

7. In addition to MID's requirements, the customer is responsible for complying with applicable provisions of City and County ordinances, the "National Electric Code," Electric Utility Service Equipment Requirements Committee (EUSERC) and all applicable orders, rules and regulations of the State of California.

8. The customer's service voltage and pole locations will be determined by MID's Engineering Department. The customer pole(s) shall be located within 100 feet of the MID source and shall be a minimum of 3 feet from all property lines. Pole locations other than that described above will not be allowed without advance written permission from the Engineering Department and are subject to additional charges, payable prior to meter installation. Any deviations will be made only for special requirements and must be approved by the Engineering Department.

9. Failure to comply with requirements 1-8 could be costly and cause unnecessary delays for the customer.

B. Abbreviations

The following abbreviations may be used throughout this Service Guide.

Amp	Amperes
ag	Agricultural
GO	General Order
OH	Overhead
UG	Underground
V	Volt

C. Frequently Asked Questions

1. What is an agricultural service?

An agricultural (ag) service is for landowners with the need to utilize pumps to irrigate crops. Special rates may apply. Refer to MID's Rates and MID's Electric Service Rules at www.mid.org/tariffs.

2. What are the steps to obtain an agricultural service?

a) Contact the MID Engineering Technician assigned to your area (see the Map on page 23).

b) Apply with the MID Electrical Engineering. Submit an application for service, an Agricultural Load Information Form, and include an irrigation layout showing the pump location (sample forms are located on pages 21 and 22). You can find the application for service and the Agricultural Load Information Form at the back of this Guide or you can download the form at www.mid.org. Contact the MID Electrical Engineering Department at (209) 526-7337.

c) An Engineering Technician will schedule an on-site appointment with you to discuss the project design and to complete and sign an Engineering Project Request Form.

d) A requirements package will be created for this project. The package normally includes a letter, site plan and standard/drawing details for your use. You should receive the package in approximately 3-4 weeks after the initial field visit.

e) You will need your panel inspected and tagged by the local governing authority (City, County, etc.)

f) Upon a passed inspection, you will need to notify the MID Engineering Technician to schedule a final MID inspection.

g) An Engineering Technician will coordinate with the MID Construction Department to schedule a date for energizing your service.

3. *Where can I put my main panel?*

Consult with an MID Engineering Technician prior to installation. You can find your area's Engineering Technician phone number on a map of MID's service area on page 23.

4. *What voltages are available?*

a) Single-Phase Service

1) Single-phase service will normally be 120/240 Volts (or three-wire 120/208 Volts at certain locations as now or hereafter established by MID) where any single motor does not exceed 7½ horsepower. For any single-phase service, the maximum demand as determined by MID is limited to the capacity of a 100 kVA transformer. If a load requires a transformer installation in excess of 100 kVA, the service normally will be three-phase.

2) In locations where MID maintains a 120/208 Volt secondary system, three-wire single-phase service will be limited to that which can be supplied by a main switch or service entrance rating of 200 amperes. Single-phase loads in these locations in excess of that which can be supplied by a 200 ampere main switch or service entrance rating will normally be supplied with a 208Y/120 Volt, three-phase, 4-wire service.

b) Three-Phase Service 480 Volts or Less

1) Secondary service normally available from overhead primary distribution systems:

Nominal Voltage Permitted	Minimum Load Requirements	Maximum Demand Load
208Y/120V	30 kVA, 3-Phase Demand	75 kVA
240V	5HP, 3-Phase Connected	75 kVA
240/120V	5HP, 3-Phase Connected	75 kVA
480Y/277V	30HP, 3-Phase Demand	112.5 kVA

2) Secondary service from underground primary distribution systems or from underground taps of overhead primary distribution systems (where MID maintains existing three-phase primary circuits):

Nominal Voltage	Minimum Load Requirements	Maximum Demand Load Permitted
208Y/120V	Demand load justifies a 75 kVA transformer	1000 kVA
480Y/277V	Demand load justifies a 75 kVA transformer	2500 kVA

3) Where three phase service is supplied, MID reserves the right to use single-phase transformers connected wye, open-delta, or closed delta, or use three-phase transformers.

4) Three-phase service will be supplied on request for installations aggregating less than the minimums listed above, but not less than 3 HP, three-phase, where existing transformer capacity is available. If three-phase service is not readily available, or for service to loads less than 3 HP, three-phase service will be provided only if the customer pays to MID the estimated difference between single-phase and three-phase construction costs at that location.

5. Will my agricultural service be underground or overhead?

Depending on your pump size, you may be required to install an underground system. Consult with an MID Engineering Technician.

6. Is there a fee for an agricultural service?

Fees depend on distance, size, and type of service. Refer to MID's Electric Service Rules No. 15 and 16 at www.mid.org for more detail.

7. What are the minimum requirements on the main panel?

a) Approved test bypass devices are required for all agricultural self-contained meter socket installation (see Drawing AG-003.0, Drawing AG-004.0 and Drawing AG-006.0, pages 13-15).

b) Standard switchboard service sections can be used on all services which require current transformers.

c) Submit panel drawings to MID Meter Department for review prior to fabricating.

8. What are the minimum requirements on a service pole that I own?

a) See Drawing AG-007.0 (page 16) for materials required. See Drawing AG-001.0 and Drawing AG-002.0 (pages 11 and 12) for minimum clearances and guying requirements.

b) The service pole shall be located at least 10 feet away from any well, and in such a position that overhead conductors or guys will not cross through or over the area within a radius of 10 feet from the well and will not interfere with work to be performed at any well.

c) The service pole shall be located at least 10 feet from any pole owned by MID. A minimum distance of 10 feet, measured at right angles to the centerline of MID's power line, must be maintained.

9. Who will be responsible for the overhead service drop conductors?

a) MID will furnish and install the overhead service drop conductors from its distribution system to your service pole and will furnish and install the electrical connections to your service entrance conductors.

b) The maximum length of an overhead service is not to exceed 100 feet. Additional length will result in an MID fee. See MID's Electric Service Rules No. 15, 16, and Appendix B at www.mid.org/tariffs for the requirements.

10. Who will be responsible for the underground conduit and conductors?

You, the customer, will be responsible. Conduit and conductors must be installed per National Electric Code. Consult with the local governing authorities for size and type of conduit and wires (see page 10 for a list of local governing authorities).

11. How can I restore power to an existing agricultural pump?

Contact MID Customer Service Department at (209) 526-7337.

D. Minimum Requirements for Agricultural Electric Service Installations

1. Metering

a) Approved test bypass devices are required for all agricultural self-contained meter socket installations (see Drawing AG-003.0, Drawing AG-004.0 and Drawing AG-006.0).

b) Standard switchboard service sections can be used on all services which require instrument transformers.

c) MID's Meter Department is to be contacted on jobs involving anything over 200 Amps or non-self-contained metering equipment.

d) All self-contained meter sockets for agricultural installations shall be UL rated for continuous duty as follows:

1) 100 Amps continuous duty rating required on:

- 120/240 Volt polyphase loads from 5HP to 29HP
- 277/480 Volt polyphase loads from 30HP to 60HP maximum

2) 200 Amps continuous duty rating required on:

- 120/240 Volt polyphase loads from 31HP to 60HP
- 277/480 Volt polyphase loads from 61HP to 100HP maximum

e) Meter sockets with extruded or cast aluminum jaws are not acceptable and will not be connected.

2. Application

a) The installations shown on the attached Drawings are **not** applicable when a suitable building or structure is available for the attachment of service drop conductors and metering equipment.

b) When a service pole is required to support service drop conductors and metering equipment supplying single phase and three phase energy under agricultural power

schedules, the installation shall be in accordance with these requirements and Drawing AG-003.0.

120/240 Volt, Self-Contained, Meter Socket Installations. This installation shall apply to 120/240 Volt polyphase agricultural loads from a minimum of 5HP to a maximum of 29HP

277/480 Volt, Self-Contained, Meter Socket Installations. This installation shall apply to 277/480 Volt polyphase agricultural loads from a minimum of 30HP up to a maximum of 100HP

277/480 Volt, CT-Rated, Meter Socket Installation With Instrument Transformers. This installation shall apply to 277/480 Volt polyphase agricultural loads from a minimum of 101HP and above.

c) Consult an MID Engineering Technician for the proper voltage of the proposed installation.

3. Test Bypass Devices for Self-Contained Meter Installations

Approved test bypass devices, illustrated on Drawing AG-003.0, Drawing AG-004.0 and Drawing AG-006.0, are required on all agricultural, self-contained meter installations.

4. Meter Enclosures

Meter enclosures shall be UL approved, Electric Utility Service Equipment Requirements Committee (EUSERC) approved, and approved by MID's Metering Department.

5. Customer Owned Service Pole

a) A wood pole shall be used to support conductors and metering equipment. The manufacturer brand date will be required on the pole. The pole shall be round and at least 25 feet in length and rated class 5 minimum. The top of the pole will need to have a minimum diameter of 6.05 inches. The pole shall be machine shaved and full length treated by pressure or another process which provides equivalent penetration and retention. Brush application of wood preservative is ineffective and, therefore, not acceptable.

b) The service pole shall be located at least 10 feet away from any well, and in such a position that overhead conductors or guys will not cross through or over the area within a radius of 10 feet from the well and will not interfere with work to be performed at any well.

c) The service pole shall be located at least 10 feet from any pole owned by MID. A minimum distance of 10 feet, measured at right angles to the centerline of MID's power line, must be maintained.

d) The service pole shall be set in the ground not less than 5 feet and shall be securely guyed against the pull of service drop conductors so as to maintain vertical position.

6. Service Pole Guy and Anchor

a) The guy wire shall be galvanized steel wire and shall be 3/8 inch or larger. The guy wire shall be attached to the service pole as shown on Drawing AG-001.0. A strain insulator (10,000 lb. minimum) shall be installed with the guy no less than 10 feet above the ground.

b) A suitable anchor shall be provided for property securing the guy wire. This arrangement is shown on Drawing AG-002.0.

7. Overhead Service Drop Conductors

MID will furnish and install the overhead service drop conductors from its distribution system to the customer's service pole and will furnish and install the electrical connections to the customer's service entrance conductors.

8. Service Entrance Conductors

a) The local governing authorities should be consulted for size and type of wire (see page 10 for a list of local governing authorities).

b) The service entrance conductors must be continuous and without splices. A minimum of 24 inches must be left outside the service head for connection to the service drop.

9. Service Conduit

a) The service conduit shall be sized in accordance with the requirements of local governing authorities.

b) All conduits must be in accordance with the requirements of local governing authorities.

10. Service Main Disconnect

a) The service main disconnect, or main breaker, must be installed on the load side of the MID meter.

b) If the service main disconnect is installed outside, it shall be of an approved rain tight type, UL listed and lockable.

c) If the meter socket and service main disconnect (main breaker) are in separate enclosures, the wiring between the two enclosures must be in RMT, IMT electrical conduit or approved sealable raceway per NEC.

d) All service disconnects shall have a provision for locking in the open/off position.

11. Customer's Control Equipment

a) The customer's motor control equipment shall include over current devices in all load conductors for the best possible protection of the motor.

b) The customer's service main disconnect and motor control equipment may be mounted on the service pole provided main disconnect meets all requirements as shows on Drawing AG-007.0 (page 16).

12. Grounding

The local governing authorities should be consulted for grounding requirements (see page 10 for a list of local governing authorities).

13. Requirements Prior to Energizing Service

a) The meters will not be installed until the customer has complied with all the requirements noted above.

b) If additional trips are required because customer-installed facilities are not properly installed, not ready for inspection, or do not pass inspection, MID will bill the customer for each additional inspection in the amount of the Inspection Fee listed in Appendix A of MID's Electric Service Rules (www.mid.org).

E. Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send final set of site plans to MID's Electrical Engineering Department for review and design.
2	MID	10 business days	Engineering Technician designs the electric layout and sends the installation agreement and one marked-up copy of site plan to the Customer.
3	Customer		Pay any charges, return a signed installation agreement, and return completed Agricultural Load Information Form with all relevant dates regarding construction and service requirements. Both must be returned to MID. Obtain all necessary permits from the local governing authority.
4	MID	10 business days	Engineering Technician designs engineering drawing(s), materializes and assembles the work order.
5	Customer		Call USA to locate underground utilities, install conduit and substructures, return Application for Electric Services to the Customer Service Department, request MID and local governing authority to inspect conduit, substructure, transformer pad, and electric facilities.
6	MID	3 business days	MID inspects trench, conduit, substructures, and transformer pad. This stage repeats itself until you satisfactorily pass inspection.
7	Customer		Close trench, pull service conductors to agreed location, connect conductors to panel. Local governing authority inspects electric facilities. Your facilities pass inspection and you request service.
8	MID	7 business days pending weather and scope of project	Meter Department wires instrument transformers, where required; MID construction installs transformer, primary cables and secondary cables where needed. MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, the meter is set and the panel is energized.

F. Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

City Of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

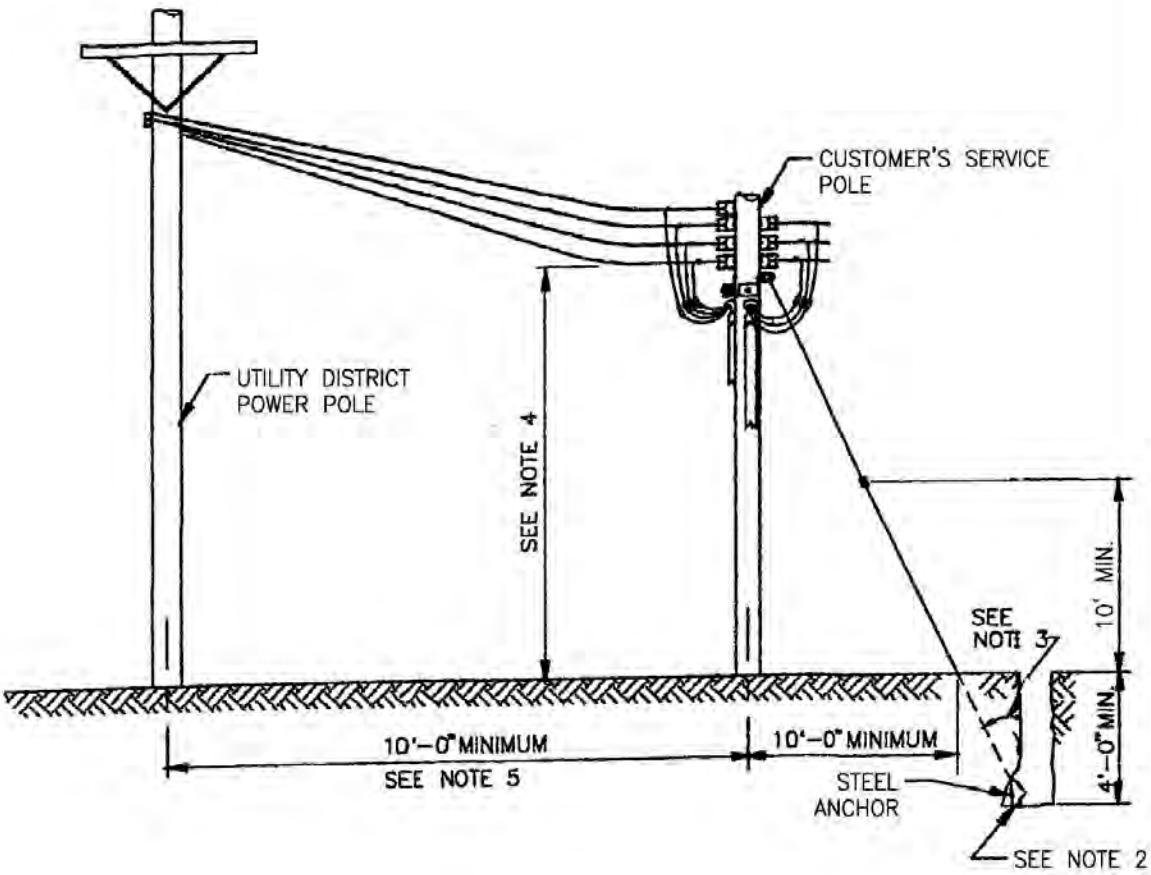
City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

G. MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 23).

RELATIONSHIP BETWEEN UTILITY DISTRICT'S POWER POLE AND CUSTOMER'S SERVICE POLE



METHOD OF INSTALLING ANCHORS

NOTES:

1. The following drawing is NOT applicable if a suitable building or structure is available for the attachment of the service drop conductors & metering equipment.
2. Cut narrow slot in soil to install guy wire at correct angle. Galvanized eye bolt is to be used.
3. Minimum conductor to ground clearance allowed is 16'-0". If conductor is over a public street or a road, then the minimum allowance clearance is 18'-0".
4. Do not construct in such a manner that a well is positioned in this area.

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE CUSTOMER SERVICE POLE CLEARANCES
DRAWN BY: WK	APPROVED BY: CW	DATE: –	DWG: AG-001.0	REVISION:	

Drawing AG-001.0: Overhead Service, Customer Service Pole Clearances

METHODS OF COVERING CONDUITS ON POLES, POLE TOP CONSTRUCTION, AND DETAILS OF ANCHORS

Covering Conduits on Poles

FIBER CONDUIT OR EXTRA SCHEDULE 80 PVC

Extra heavy wall PVC (schedule 80) or fiber conduit of 1/4" wall thickness over rigid conduit strapped to pole w/ galv. perforated plumber's tape spaced not over 3'-0" apart.

NOTES:
1 PVC Schedule 80 riser and service head do not require covering.

Details of Anchors and Bracing

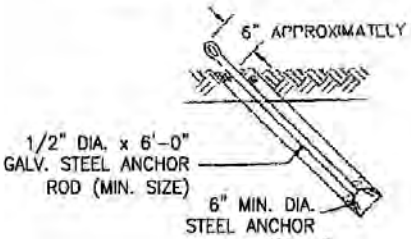


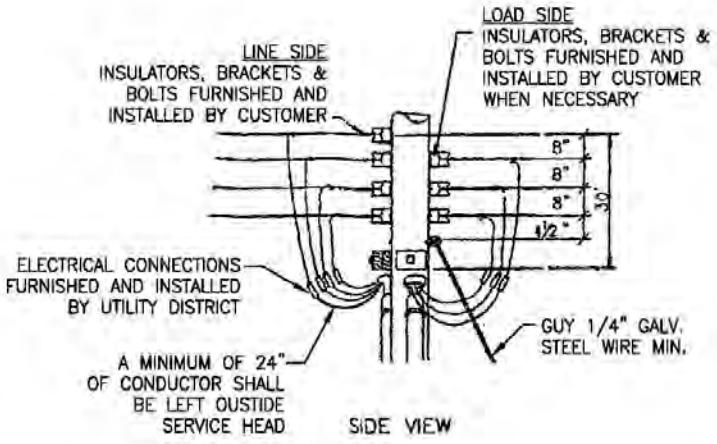
FIG 2
STEEL ANCHOR

NOTE:

1. The minimum anchor depth in the soil is 4 feet.

TABLE OF POLE SETTING DEPTHS

POLE LENGTH (FT.)	DEPTH (FT.) IN FIRM SOIL
25	4 1/2
30	5
35	5
40	5 1/2



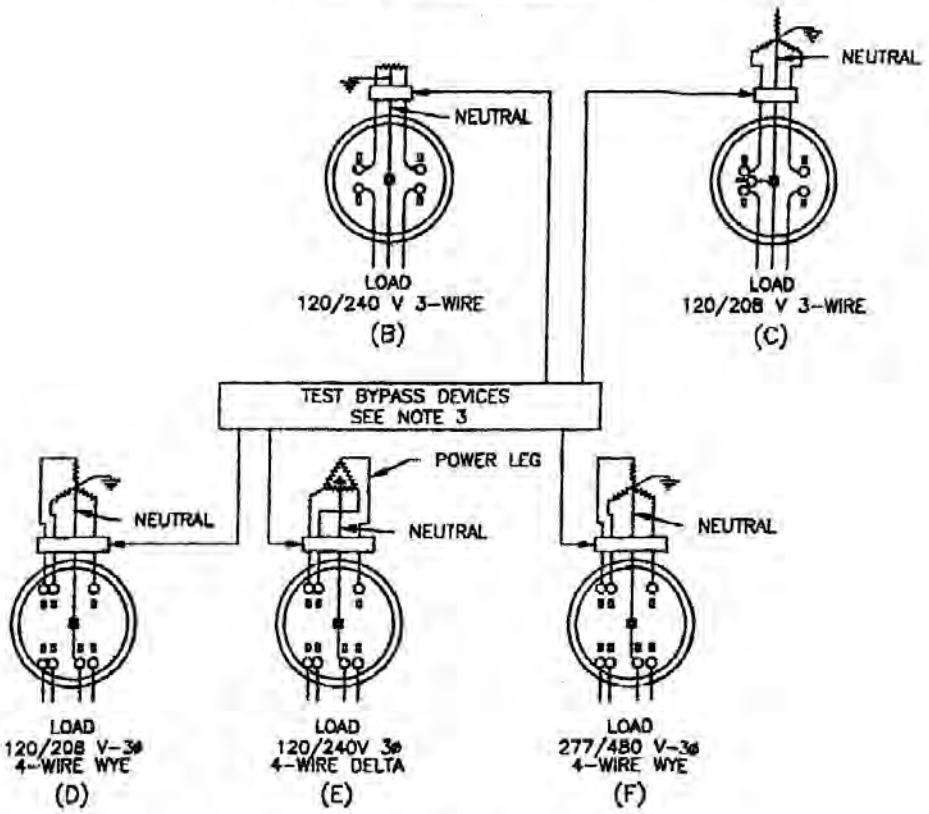
SIDE VIEW

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE METHODS OF COVERING CONDUITS
DRAWN BY: WK	APPROVED BY: CW	DATE: —	DWG: AG-002.0	REVISION:	

Drawing AG-002.0: Overhead Service, Methods of Covering Conduits

DIAGRAM OF CONNECTIONS

SINGLE PHASE SOCKETS



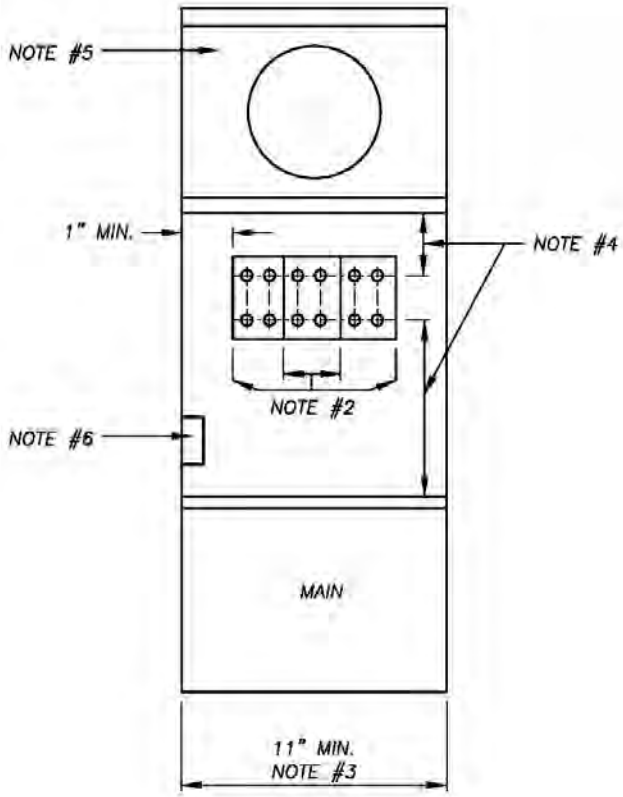
POLYPHASE SOCKETS

NOTES:

1. Commercial/industrial/AG, self-contained meter sockets shall be U/L approved and shall have a continuous duty current rating load equal to or greater than the current rating of the associated load service equipment.
2. Neutral taps shall be connected to the service neutral conductor and located behind sealed panels. Wire nuts are not permitted.
3. For test bypass devices, see AG-004.0 thru AG-006.0

MID ELECTRIC SERVICE GUIDE					METERED SERVICE METER SOCKETS FOR SELF CONTAINED-METERS
DRAWN BY: WK	APPROVED BY: CW	DATE: –	DWG: AG-003.0	REVISION:	

Drawing AG-003.0: Metered Service, Meter Sockets for Self-Contained Meters

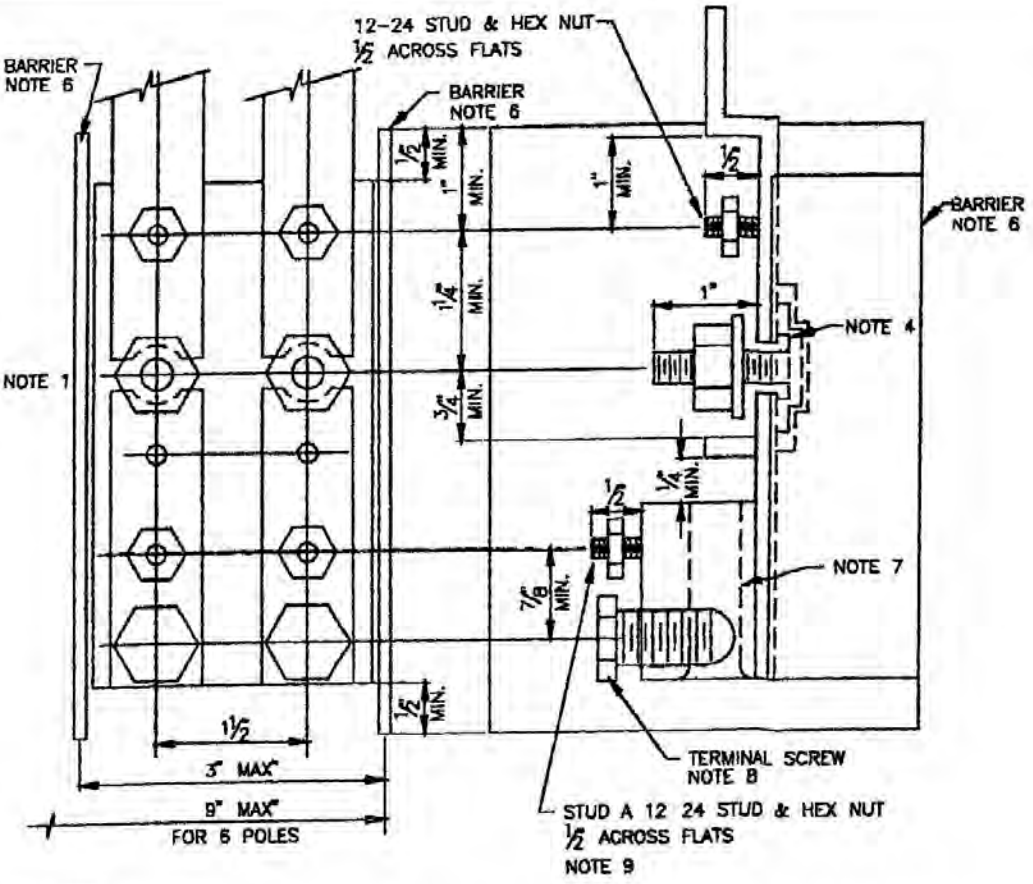


NOTES:

1. This device may be used for single or multiple commercial and industrial meter installations mounted in a ganged array.
2. Test-bypass blocks with rigid insulating barriers shall be installed and wired or bussed to a line raceway and also wired or bussed to the meter socket then to the main switch by the manufacturer. Connection sequence is line-load, line-load, line-load from left to right.
3. Minimum access opening to test-bypass blocks shall be 11" x 10".
4. Three inches minimum clearance required for utility test purposes.
5. All section covers shall be independently removable. Upper cover shall be non-removable when meter is in place. Meter socket shall be mounted on support and attached to panel. Test-bypass cover shall be sealable and permanently labeled: "DO NOT BREAK SEAL - NO FUSES INSIDE".
6. When a neutral is required for metering or testing, an insulated neutral terminal, mounted on either side, shall be provided behind each test-bypass cover panel. The terminal shall be readily accessible when the cover is removed and shall be individually connected to the neutral bus with a minimum of No. 8 copper wire.
7. For 3Ø, 4 wire, connect 7th jaw to body of neutral lug with No. 12 min. copper wire.
8. For 3Ø, 4 wire Delta, identify right hand test-bypass block (2 poles) as power leg.
9. For 1Ø, 3 wire, omit center test-bypass block.
10. For 1Ø, 3 wire, 120/208v, omit center test-bypass block. Connect 5th jaw to body of neutral lug with No. 12 min. copper wire.
11. Permanent line-load labels on inside back of enclosure in 3/4 inch (min.) high block letters.
12. Minimum depth shall be 4-1/2 inches for 0-100A and 6 inches for 101-200A.

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS SAFETY SOCKET BOX W/FACTORY INSTALLED TEST BYPASS FACILITIES F METERS 0-200A, 0-600V
DRAWN BY: TE	APPROVED BY: E J	DATE: 09/20/95	DWG: AG-004.0	REVISION: D	

Drawing AG-004.0: Metering Equipment Installations, Safety Socket Box w/Factory Installed Test Bypass Facilities

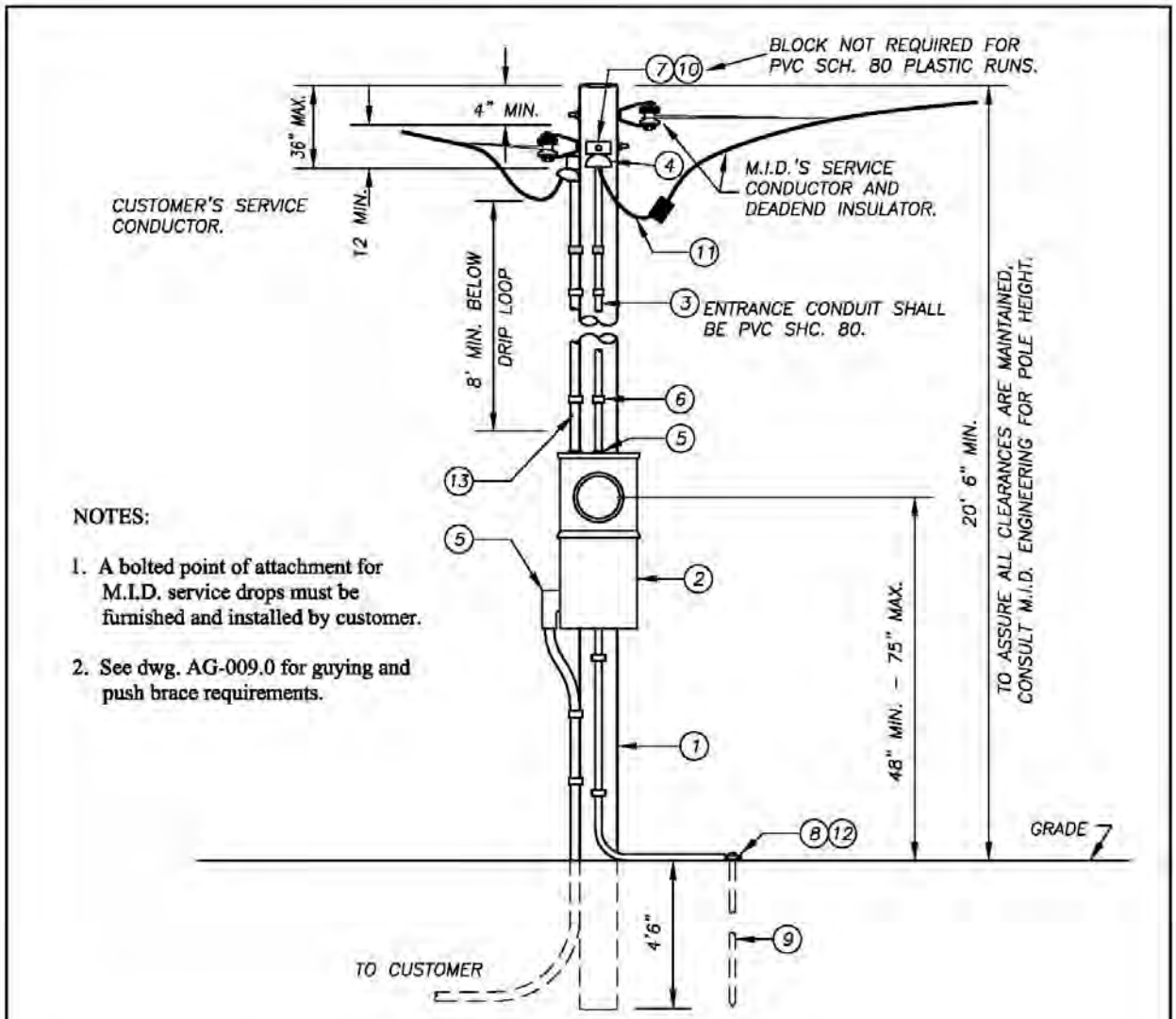


NOTES:

1. The strike distance between the upper and lower bus sections shall not be less than 1/4 inch when the shorting nut is backed off.
2. The circuit-closing nut shall be a hex nut 5/8 inch across flats with plated copper washer attached and have threads counter-bored at the bottom to facilitate reinstallation. The bolt head shall be secured in place to prevent turning and backout.
3. The circuit-closing nut and bolt assembly shall maintain the applied contact pressure between the plated copper washer and the bus members of the test bypass block.
4. The insulating washer shall be made from dimensionally stable, nontracking material and shall provide a minimum of 1/8 inch creep distance between the bolt and the bus sections. bus sections shall be plated.
5. Wire stops shall extend to the center of the terminal opening or beyond.
6. Rigid insulating barriers shall project at least 1/4 inch beyond any energized parts when the maximum wire size is installed.
7. Terminals shall be aluminum bodied. The opening shall extend through the terminal body and, if the wire hole is round, shall be chamferred as necessary to facilitate installation of the largest size wire.
8. The terminal screw may be of the Allen type (3/16 inch across flats for 100 amp or 5/16 across flats for 200 amp). If stud "A" is a part of the terminal screw, the terminal screw shall be 5/8 inch hex across flats.
9. Stud "A" shall be located in the clear area between the terminating lug and the circuit-closing nut and may be positioned on the terminal body, on the terminal screw, on the bus member, or incorporated as part of the wire stop.

MID ELECTRIC SERVICE GUIDE					METERED SERVICE TEST BYPASS BLOCKS FOR SAFETY SOCKET 0-200 AMPS
DRAWN BY: WK	APPROVED BY: CW	DATE: –	DWG: AG-006.0	REVISION:	

Drawing AG-006.0: Metered Service, Test Bypass Blocks for Safety Socket 0-200 Amps



NOTES:

1. A bolted point of attachment for M.I.D. service drops must be furnished and installed by customer.
2. See dwg. AG-009.0 for guying and push brace requirements.

MATERIALS BY CUSTOMER AS REQUIRED BY N.E.C.

ITEM	DESCRIPTION
1	Pole, wood round (25' Min.) Class 5, treated.
2	Meter socket, main service sw. (size as required)
3	MID owned, conduit riser; PVC Sch. 80
4	Service weather head(s)
5	Conduit fitting, threaded with cover and gasket
6	Strap, pipe, galvanized.
7	Bolt, mach. 5/8" x length as required with washers, galvanized.
8	Conduit, grounding hub, and clamp.
9	Ground, contact local inspection authority.
10	Wood block, 4" x 4" or two 2" x 4" nailed together.
11	Riser wire, insulated: size as required with 24" Min. tail
12	Ground wire as per N.E.C.
13	Customer owned, conduit riser; PVC Sch. 80

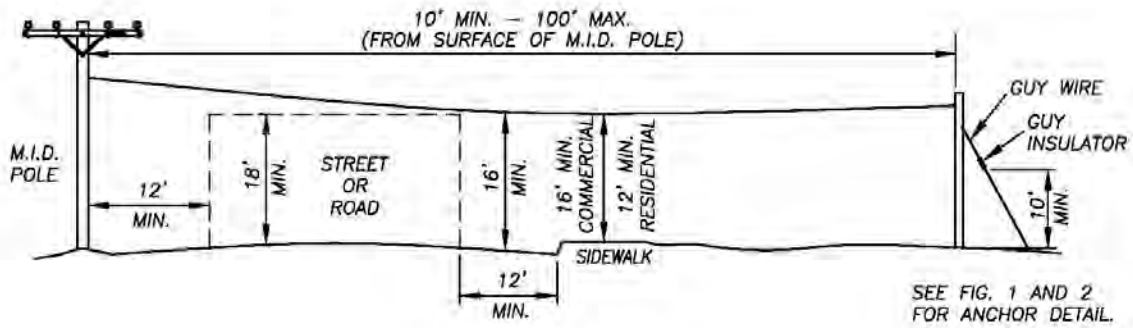
PREVIOUSLY GE-06-285.0

MID ELECTRIC SERVICE GUIDE

DRAWN BY: TE | APPROVED BY: E J | DATE: | DWG: AG-007.0 | REVISION:

OVERHEAD SERVICE
TYPICAL CUSTOMER OWNED SERVICE POLE
PERMANENT INSTALLATION, FOR OVERHEAD OR UNDERGROUND CUSTOMER FEED

Drawing AG-007.0: Overhead Service, Typical Customer-Owned Service Pole



POLE DEPTHS

POLE LENGTH (FT.)	DEPTH (FT.) IN FIRM SOIL
25	4 1/2
30	5
35	5
40	5 1/2

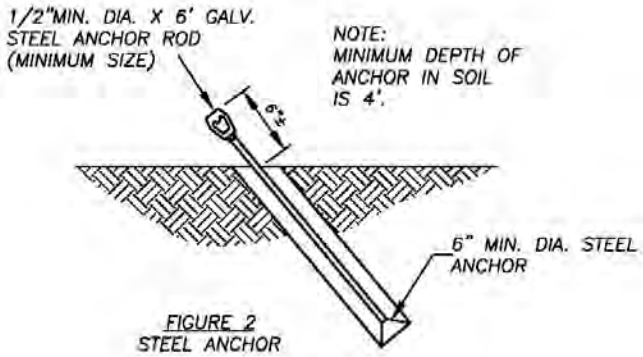
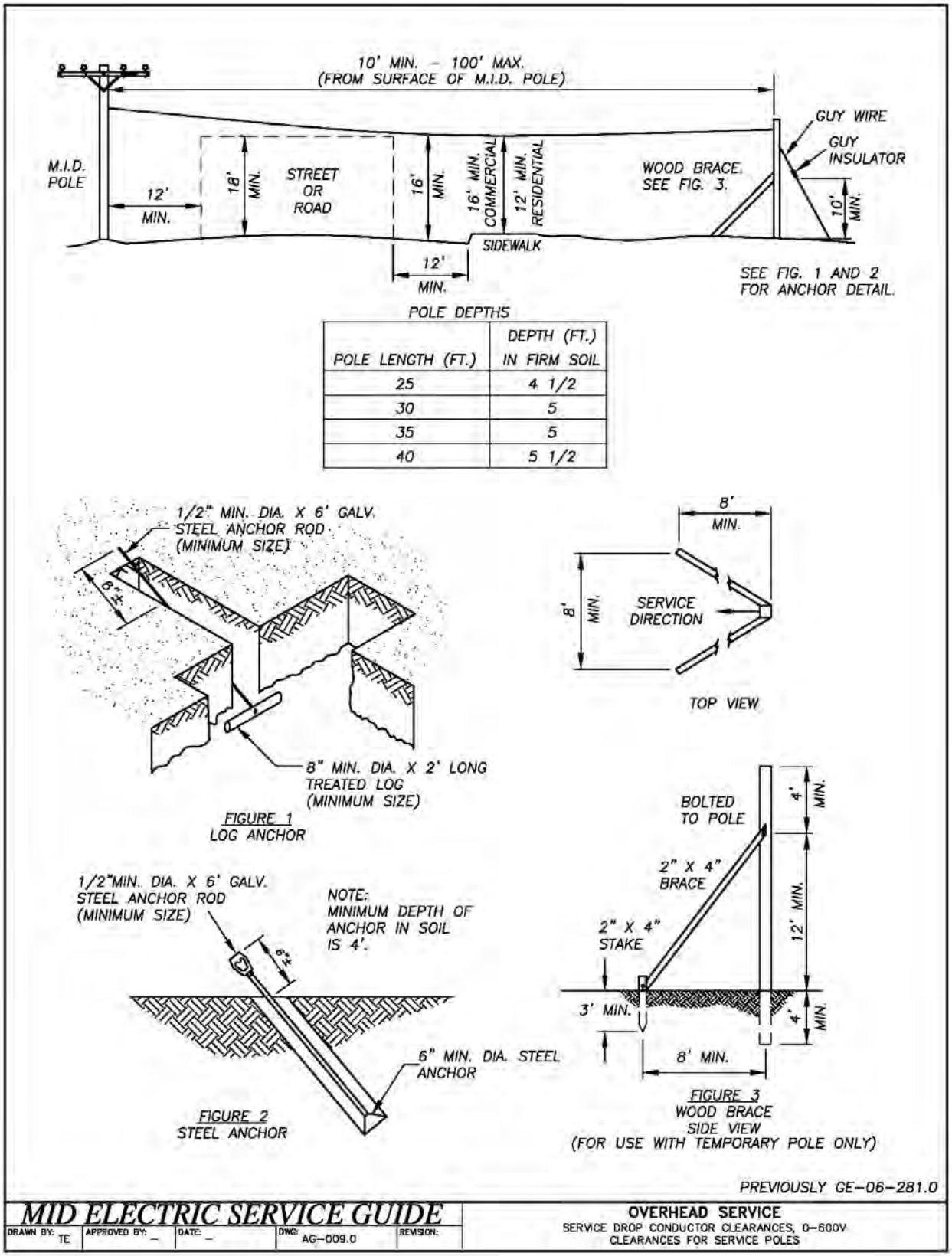


FIGURE 2
STEEL ANCHOR

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: AG-008.0	REVISION:	SERVICE DROP CONDUCTOR CLEARANCES, 0-600V CLEARANCES FOR SERVICE POLES

Drawing AG-008.0: Overhead Service, Service Drop Conductor Clearances



POLE DEPTHS

POLE LENGTH (FT.)	DEPTH (FT.) IN FIRM SOIL
25	4 1/2
30	5
35	5
40	5 1/2

FIGURE 1
LOG ANCHOR

TOP VIEW

FIGURE 2
STEEL ANCHOR

FIGURE 3
WOOD BRACE
SIDE VIEW
(FOR USE WITH TEMPORARY POLE ONLY)

PREVIOUSLY GE-06-281.0

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE SERVICE DROP CONDUCTOR CLEARANCES, 0-600V CLEARANCES FOR SERVICE POLES
DRAWN BY: TE	APPROVED BY: –	DATE: –	DWG: AG-009.0	REVISION:	

Drawing AG-009.0: Overhead Service, Service Drop Conductor Clearances

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

--MID USE ONLY--

CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date 9/10/2015 **Service start date:** 12/1/2015 **Power On?** ☐ Yes ☒ No

Type of Service: ☐ Commercial ☐ Industrial ☐ Lighting ☒ Ag Pump – horsepower: 50

New construction: ☐ Yes ☐ No Square footage of building or work area: _____

1. Legal billing name: John Doe
2. Doing business as (DBA): Business Name (Name of Organization or Entity)
3. Service address: 1234 Sample Drive (Street) Modesto (City) 95352 (Zip Code)
4. Mailing address: PO Box 1111 (Street) Modesto (City) 95352 (Zip Code)
5. Type of business: Almonds (Complete description of goods or services rendered) Franchisee? ☐ Yes ☒ No
6. Number of years in business: 10 Business phone: 209-123-4567 Fax number: 209-456-7890
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☒ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: California (Copy of documents required) Year filed: 2004
9. Taxpayer ID number (EIN or SSN): 123456789 Business License number: 1234567 (Copy of license required)
10. If business name is legal billing name, fictitious name file number: _____ Filing date: _____
11. Address of corporate office or residence address if sole proprietor: _____
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth
John Doe	President/CEO	209-123-4567	D1234567	1/18/75
Jane Doe	Vice President	209-456-0987	D9876543	5/30/76

13. Contact for billing inquiries: Jane Doe (Name) Vice President (Title) 209-456-0987 (Phone) janedoe@email.com (email address)
14. Name of person completing form: Jane Doe (Name) Vice President (Title)

Go to http://www.mid.org/forms/ for the most current Application.

Signature (required): _____
Owner or Corporate Officer **Driver's License number & State** **Date of Birth**
Jane Doe (Print Name) Vice President (Title) 9/10/2015 (Date)

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Sample 1: Application for Service

Agricultural Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: 5/15/2015

Project: Brown Dairy Expansion
Location (Street): 1234 Sample Drive
Owner (Name): John Doe Telephone: (209) 555-5555
Address: 1234 Sample Drive, Modesto CA 95352
Engineer/Contractor (Name): Telephone: (209) 444-4444
Address: 5678 Sample Drive, Modesto CA 95352
Estimated Date Ready for Service: 8/15/2015 Pre-Construction Meeting Date: 6/1/2015
Begin Rough Grading Date: 6/3/2015

General Information

Type of Business: Dairy

Electric Load Information

	Initial		Future	
3Ø Motors	50	HP	100	HP
Largest 3Ø Motor	30	HP	50	HP

Total Initial Connected Electrical Load: 15.0 kW Size Main Fused Switch: 20 Amps
Total Future Connected Electrical Load: 20.0 kW Estimated Date of Future Load:

Type of Service Desired: (circle one) Overhead Underground
Phase: 3 Voltage: 480 Wires: 4 Estimated Initial Date: 8/15/2015

Additional load information may be required if voltage flicker problems are anticipated.

Site Plan: (X) One site plan in dfx or Autocad format on a CD
( ) Emailed electronic file to electric.standards@mid.org

Signature of Applicant

Go to http://www.mid.org/forms/ for the most current Form.

Office Use Only

Application Complete □ Yes □ No Checked By: Date:
If no, explain:

9/2015

Sample 2: Agricultural Load Information Form

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

---MID USE ONLY---			
CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date _____ **Service start date:** _____ **Power On?** ☐ Yes ☐ No

Type of Service: ☐ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: _____

New construction: ☐ Yes ☐ No Square footage of building or work area: _____

1. Legal billing name: _____
2. Doing business as (DBA): _____
   Name of Organization or Entity
3. Service address: _____
   Street City Zip Code
4. Mailing address: _____
   Street City Zip Code
5. Type of business: _____ Franchisee? ☐ Yes ☐ No
   Complete description of goods or services rendered
6. Number of years in business: _____ Business phone: _____ Fax number: _____
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☐ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: _____ Year filed: _____
   Copy of documents required
9. Taxpayer ID number (EIN or SSN): _____ Business License number: _____
   Copy of license required
10. If business name is legal billing name, fictitious name file number: _____ Filing date: _____
11. Address of corporate office or residence address if sole proprietor:
    _____
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth

13. Contact for billing inquiries: _____
    Name Title Phone **email address**
14. Name of person completing form: _____
    Name Title Telephone

Signature (required): _____
Owner or Corporate Officer **Driver's License number & State** **Date of Birth**

Print Name Title Date

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Agricultural Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer/Contractor (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Type of Business: _____

Electric Load Information

	Initial		Future	
3Ø Motors	_____	HP	_____	HP
Largest 3Ø Motor	_____	HP	_____	HP

Total Initial Connected Electrical Load: _____kW Size Main Fused Switch: _____Amps

Total Future Connected Electrical Load: _____kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Additional load information may be required if voltage flicker problems are anticipated.

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

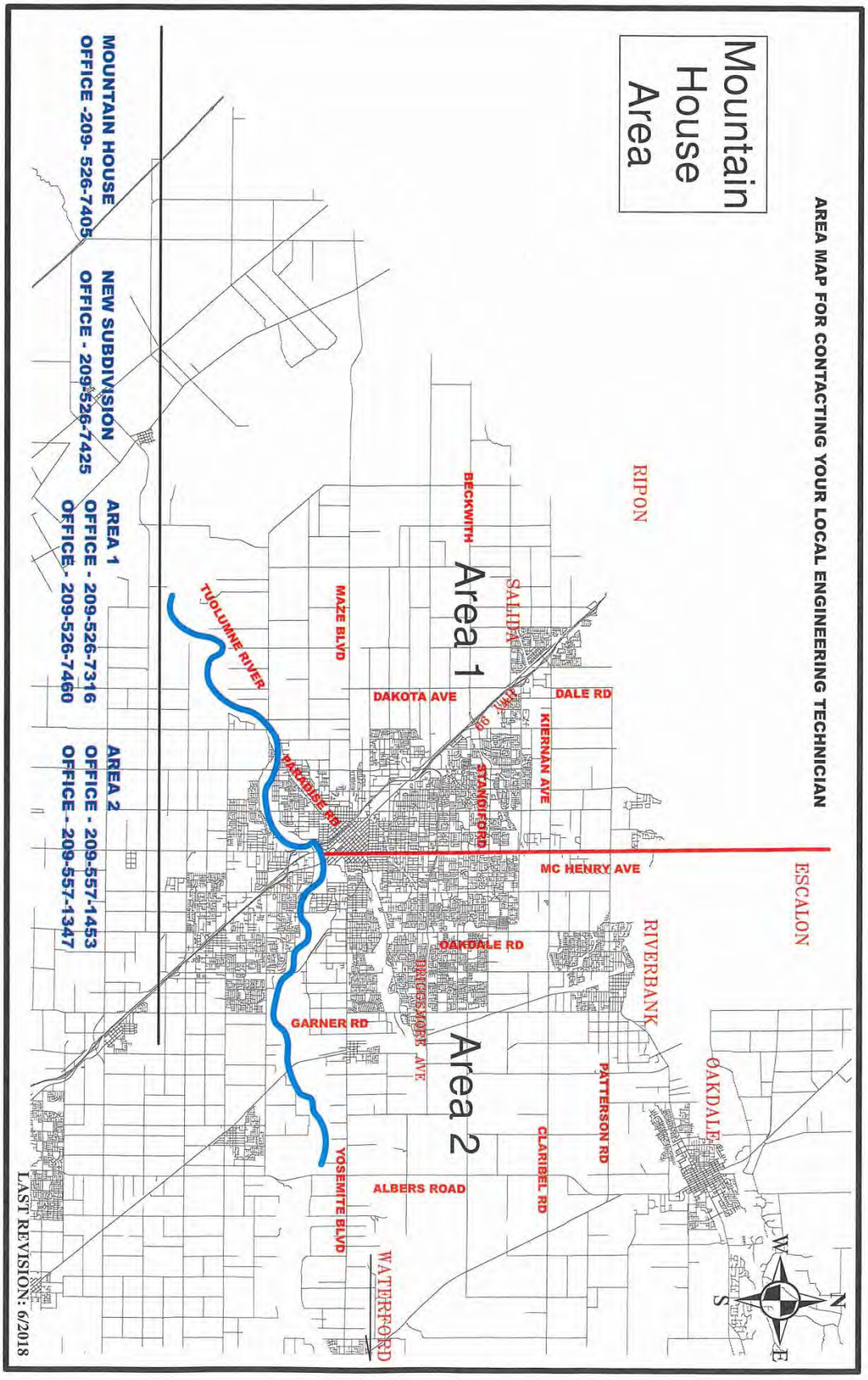
Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

_____

6/2014



Form 3: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Commercial & Industrial

Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

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List of Attachments

Table of Contents

1 General Requirements for Service

1.1 This Guide sets forth Modesto Irrigation District's (MID's) requirements for the establishment of electric service to new or re-wired commercial/industrial installations. The requirements presented here are necessary for MID to supply uniform, satisfactory, and safe service. It is necessary that all written material (this Guide, as well as all of the notes on the drawings) be carefully read and followed.

1.2 It is important that arrangements be made prior to the purchase and installation of electric service lines and the location and setting of meters. Contact MID's Customer Service Department at (209) 526-7337 for new or additional service. This must be completed as soon as initial planning is considered.

NOTE: customer "service entrance facilities" is the term used to designate all the electrical components required to be furnished and installed by the customer.

1.3 Where the operation of the customer's equipment will require unusually stable voltage regulation, refer to Rule 2 in MID's Electric Service Rules at www.mid.org.

1.4 In addition to MID's requirements, the customer is responsible for complying with applicable provisions of City and County ordinances, the NEC, EUSERC, UL listed, and State of California General Orders, rules and regulations of the State of California.

1.5 NO service can be connected until approved by the appropriate local governing authority and MID. **Only authorized MID employees** are permitted to make connections between MID wiring and customer wiring. (See a list of local governing authorities on page 18.)

1.6 The MID design, service letter and cost estimate are valid for six months.

1.7 Building plans and definite load information for commercial and industrial installations must be furnished to an MID Engineering Technician at P.O. Box 4060, 1231 11th Street, Modesto, CA 95354, as soon as possible. Delays in supplying this required information could cause unnecessary inconvenience for the customer.

1.8 The customer's service voltage will be determined by an MID Engineering Technician. Multiple service voltages to one building or parcel of property will only be granted upon approval of an MID Engineering Technician and local governing authorities.

1.9 Normally, only one service point will be granted to one building or one parcel of property. Multiple service points may be granted one building or multiple buildings on one parcel, provided they meet the requirements of the "National Electric Code" as well as the requirements of MID and local governing authorities.

1.10 All commercial meter installations with a service main disconnect greater than 200 Amps must be reviewed and approved by MID. These drawings shall show the customer's name and job address. Submit a copy to: MID Electrical Engineering Department, PO Box 4060, Modesto, CA 95352, prior to fabrication. A copy will be returned to the sender with approvals or required corrections.

1.11 Customer must submit panel manufacturer's specifications to an MID Engineering Technician. The Engineering Technician will submit the specifications to the Meter Department for approval.

2 Abbreviations

The following abbreviations may be used throughout this Service Guide.

Amp	Ampere
EUSERC	Electric Utility Service Equipment Requirements Committee
NEC	National Electric Code
CT	Current Transformer

3 Minimum Requirements for Commercial/Industrial Electric Service Installations

3.1 Underground Services

City or County inspects all underground services and determines panel size, conductor size (500 MCM Max), and number of conductors required.

The customer is to provide all conduit and conductor to a location designated by MID.

3.2 Overhead Service Drops

a) A "service drop" is the span of overhead conductors from MID's pole to the customer's building or structure and does not include the "drip loops." The drip loop is formed by connecting the ends of the customer's service entrance conductors to the service drop.

b) Unless special permission is granted by the MID Engineering Technician, the length of the service drop is not to exceed 100 feet (distance measured from the nearest MID pole to the point of attachment). In addition, the point of attachment shall be located on that part of the building nearest to and facing MID's pole.

c) The height of the point of support or attachment on the customer's building must be sufficient to provide the necessary ground clearances. (See Drawing COMM-014.1, page 31.)

d) In the area accessible to pedestrians only, where the 12-foot minimum clearance applies, clearances shall be measured from either the lowest point of the drip loops or the lowest point of sag of the service drop conductors, whichever is lower. Where the proper height cannot be maintained by going to the highest point on the face of the building, a periscope-type service riser will be necessary. (See Drawing COMM-017.0, page 34.)

e) In addition to the required ground clearances, the service drop must have a radial clearance (See Drawing Drawing COMM-015.0, page 32.)

f) Because of the necessity of meeting these clearances, it is imperative that the customer contact MID before deciding on a point of attachment for the service drop. An MID Engineering Technician will help select a point of attachment that will meet MID's requirements. Call (209) 521-7337 to request a meter location.

g) Eye bolts or securely bolted service racks are required for support of the service drop and must be installed by the customer through a minimum of 2X4 inch backing. Lag screws are not permissible.

h) The point of attachment shall be designated by an MID Engineering Technician.

i) The Engineering Technician must be consulted on all rewire jobs which involve proper service wire clearance over a swimming pool or metallic roof.

3.3 Weatherhead

An approved weatherhead shall be installed at a point suitable for connecting the service entrance conductors to the service drop.

3.4 Service Entrance Conductors

a) The local governing authorities must be consulted for size and wire type (see a list on page 18).

b) The service entrance conductors must be continuous and without splices. Neutral line wire (white) shall be continuous and without a splice from the weatherhead through the bonding lug to the neutral bar in the panel.

c) A minimum of 24 inches of conductor must remain outside of the service head and allow for a proper drip loop at the service connection.

3.5 Service Conduit

a) The local governing authorities must be consulted for size and type of conduit.

b) Conduit should be in one continuous length from the weatherhead to the meter socket. A limited number of approved type condulets with sealing devices will be permitted when building construction makes a continuous run impractical. If gutters are used, they shall be equipped with sealing devices.

c) RMT or IMT conduit of 1-½ inch inside diameter is the minimum service riser conduit acceptable for attaching MID's service conductors.

d) Conduit may be concealed in building walls and or attics on the MID (line) side of the meter under the following conditions:

   1) A semi-flush, mounted, combination meter socket main breaker is used.

   2) A 1-½ inch minimum inside diameter conduit is used.

3) Conduit is one continuous vertical run from the meter service entrance to a minimum of 6 inches above where the conduit leaves the concealed wall and/or attic. No condulets or sleeves are allowed in the concealed area.

3.6 Meter Location

a) A clear, unobstructed work space shall be left on all sides of the meter. (See Drawing COMM-009.0, Drawing COMM-010.0 and Drawing COMM-011.0 pages 26-28.)

b) The meter(s) shall be located on the exterior of the building and shall be at least 3 feet from a property line. When it is absolutely necessary to locate meters in dedicated meter rooms, cabinets, or fenced enclosures, consult the MID Engineering Technician. MID representatives shall have access to such areas by using an MID key. The customer is responsible for having the lock(s) keyed for an MID key.

c) Carports, breezeways, covered or screened porches, or any other area that might be enclosed at some future date should not be selected as a meter location. These areas may only be utilized with prior approval of an MID Engineering Technician.

d) Meters or metering equipment shall be approved by the MID Metering Department.

e) The area on either side of a door or swinging window, equal to the width of that door or swinging window is not acceptable as a meter location. (See Drawing COMM-009.0, page 26.)

f) A level standing and working surface shall be provided in front of each meter to permit ready access to the meter. This space must be at least 36 X 36 inches and contain no working obstructions. (See Drawing COMM-009.0, page 26.)

3.7 Meter Socket

a) The meter socket must be installed in a true vertical plane.

b) Commercial, self-contained meter sockets shall be UL listed and shall have a continuous duty current rating equal to or greater than the current rating of the associated load service equipment.

c) The neutral conductor shall be connected to the neutral lugs and shall be located behind sealed panels.

d) Meter sockets with extruded or cast aluminum jaws are not acceptable and will not be connected.

e) Standard switchboard service sections can be used on all services having a main size of 201 Amps or over. They shall be EUSERC compliant.

f) The customer's wiring for new service or rewiring shall include a grounded conductor or bus in the service entrance equipment. The grounded conductor or bus shall connect to the proper terminals in the service entrance meter compartment and service switch.

Sizing of this conductor or bus shall be in accordance with the requirements of local governing authorities.

3.8 Test Bypass Devices for Self-Contained Meter Installations

a) Approved test bypass devices are required on all MID designated commercial installations.

b) See Drawing COMM-018.0, Drawing COMM-019.0, Drawing COMM-020.0, Drawing COMM-021.0 and Drawing COMM-022.0 (pages 35-39).

3.9 Service Main Disconnect

a) The service main disconnect, or main breaker, must be installed on the load side of the MID meter.

b) If the service main disconnect is installed outside, it shall be of an approved rain tight type, UL listed and lockable.

c) If the meter socket and service main disconnect (main breaker) are in separate enclosures, the wiring between the two enclosures must be in RMT, IMT electrical conduit or approved sealable raceway per NEC.

d) All service disconnects shall have a provision for locking in the open/off position.

3.10 Grounding

a) An approved, concrete encased electrode (ufer ground) must be used for all new construction.

b) The local governing authorities must be consulted for the required ground conductor type and size and for other types of grounding.

3.11 Metering Arrangements

a) The metering arrangement shall be approved by the MID Meter Department.

b) Unmetered services wires and metered load wires shall not be combined in the same conduit, raceway, or gutter.

4 Meter Installations on Low Voltage Switchboards, 0-600 Volts, 0-4000 Amps

4.1 Metering Equipment Requirements

4.1.1 EUSERC - Electric Utility Service Equipment Requirements Committee

EUSERC is an organization comprised of utility representatives from the western section of the United States that work to promote the standardization of electric service requirements and the design and engineering of metering and service equipment.

All metering and service equipment approved for use in the areas served by MID shall be built to the requirements developed by EUSERC. Approved metering and service equipment is available to customers and contractors through electrical wholesale distributors.

4.1.2 Approval of Electric Service Panel Manufacturer's Drawings

All electric service panels shall meet EUSERC requirements. Purchase or installation of any equipment that does not conform to EUSERC requirements is done at the developer's risk. Any electrical service panels that do not comply with EUSERC will be required to have field modifications completed or be replaced at the developer's expense.

Electric service panel drawings are submitted for review prior to purchase and installation. The project developer can submit three (3) copies of the panel manufacturer's drawings to MID. Submitted drawings shall reflect correct EUSERC drawing numbers. One copy will be returned to the sender with approval or corrections as needed. Send submittals to:

Modesto Irrigation District
Attn: Electrical Engineering Department
PO Box 4060
Modesto, CA 95352
Telephone: (209) 526-7337

4.2 UL Listing Required

All meter sockets, boxes and enclosures shall be designed in accordance with the latest revision of AEIC-EEI-NEMA standard for watt-hour meter sockets, publication ANSI c12.7, UL standard for meter sockets UL414.

4.3 Safety Socket Boxes

All safety socket boxes with factory-installed test-bypass disconnect facilities shall be listed by ASTM and shall have a continuous-duty rating not less than the service equipment ampacity.

4.4 Meter Sequence

The metering arrangement must provide for the line current to enter first the meter and then the disconnecting means and overload protective devices (meter-switch-fuse sequence). For multiple meter installations, refer to the NEC.

4.5 Instrument Transformer vs Self-Contained Metering

a) Instrument transformer compartments will be required if the rated capacity of the service switch exceeds 200 Amps.

b) An instrument transformer enclosure with safety socket box will not be allowed for new construction.

4.6 Panel Inspection Required Prior to Establishment of Service

Electric service will not be established until the service entrance facilities are satisfactorily inspected by MID and passes inspection by the local governing authority. MID will charge a re-inspection fee if multiple trips are required due to improperly installed or unapproved service facilities. Requirements will be set forth by the Engineering and Metering Departments. See the Notice To Contractor for requirements on page 19.

4.7 Type of Service

Since the type of service available may vary, it is important that the customer consult MID for information before proceeding with the purchase or equipment or installation of wiring. Equipment that is improperly installed or does not meet MID requirements will be rejected and must be replaced at the customer's expense before service will be established.

4.8 Service Entrance Facilities

a) The customer shall furnish, install and maintain the service entrance conductors and service equipment beyond the point of attachment to MID's overhead service drop or the underground service delivery point. All conductors between the overhead service outlet, underground splice box, or pull section and meter enclosure, shall be suitably enclosed and protected, and shall not be concealed except with expressed consent of MID.

b) The type and size of service entrance conductors shall conform to the ordinance and codes of the local governing authority, or where there is no ordinance requirement they shall conform to current standards of the NEC.

c) In general, a building will be supplied through only one set of service conductors of the same voltage classification.

4.9 Overhead Service Terminations

For overhead services, the customer/developer shall furnish lugs and connect the cable to line and load sides of the bus stubs in the current transformer compartment.

4.10 Underground Service Terminations

The customer will terminate all service conductors to the service pull section or switchgear. (See Drawing COMM-023.0, Fig 1.) The customer/developer will terminate its service conductors on lug landings in the pull section. On switchboards rated 201-800 Amps, the customer shall install conductors from the service termination lug landings to the line side of the current transformer bus stubs.

4.11 Pull Section Lug Landings and Busing Requirements

a) Single meter switchboard installation rated 201 through 800 Amps:

   Bus bars (or cable) shall extend from the landing lugs in the pull section to the CT bus stubs.

b) Single meter switchboard installation rated above 800 Amps:

   Bus bars shall extend from the service-terminating stubs in the pull section to the CT bus stubs.

4.12 Meter and Service Locations Require MID Approval

a) The location for the meter and service disconnect shall comply with applicable codes, laws and ordinances of the local governing authorities, and with the provisions of this Service Guide.

b) On new installations, it is necessary that the location for the meter be approved in writing by an MID Engineering Technician.

c) Whenever any addition or alteration on existing service conduits, service entrance conductors or metering equipment is contemplated, the customer or contractor shall contact the Engineering Technician.

d) For single-occupancy buildings, meters and metering equipment may be installed:

   1) Outdoors.

   2) In a room within a building, approved by MID for the location of electric meters, with provision for proper illumination and with access only by a door opening to the outside of the building. See item 4.14, Meter Rooms, and Drawing COMM-010.0 and Drawing COMM-011.0 (pages 27 and 28).

e) For multi-occupancy buildings not exceeding two floors, meters and metering equipment are to be grouped in one central location that is readily accessible 24 hours a day to MID in accordance with the conditions prescribed by Sections 4.11 and 4.12 above.

f) In large multi-occupancy buildings, extensive shopping centers or buildings exceeding two floors, MID may, at its option, establish more than one meter location for groups of

individual meter facilities. Consult the Engineering Technician whose area your project is located for approval of service plans in these cases.

g) Grouped meter locations for high-rise buildings, as defined in the uniform building code, may be permitted on one or more floors upon approval by MID.

h) MID may require the customer to relocate a metering installation, at the customer's expense, if an existing meter location becomes inaccessible.

i) For service stations, the utility underground service lateral conductors may not extend through a hazardous (classified) class 1 location (as defined by article 514 of the NEC). The underground pull can/section and metering would then be grouped and located outside (and prior to) the hazardous area at a location approved by MID.

4.13 Unacceptable Meter Locations

Contact an MID Engineering Technician for proper placement of Meter Equipment. See the Area Map on page 49 for contacting the appropriate Engineering Technician.

Meters or meter rooms shall not be located in or adjacent to a drive through.

4.14 Meter Rooms

An electric meter room is a weatherproof, illuminated room provided by the customer at his option and approved by MID for the location of the electric metering equipment. The following provisions will apply:

a) Access: Access must be through a door on the building exterior opening directly into the electric meter room that provides immediate 24 hour a day access. All meter rooms that are to be locked must be keyed to MID specifications. *Al's Certified Safe and Lock* or *Easy Locks* will provide the specifications to qualified locksmiths or can provide the work. The key way for the lock is Schlage "C". Meter rooms must not inhibit use of personal protective equipment gear, e.g., not in a biohazard area.

b) Communications equipment: Telephone, CATV, data processing equipment, etc., are not permitted in an electric meter room.

c) Doors: The entrance to the electric meter room shall be through a vertical doorway not less than 3'-0" wide and 6'-6" high, and should swing out whenever possible.

Local governing authorities may require the doors to open out and utilize "lever-operated" hardware. If the door swings into the room, it is to be located so that it will not open into the meters or working space. Roll-up doors are not acceptable.

d) Foreign equipment: Equipment foreign to the electrical equipment is not permitted within the electric meter room. **Only electric service equipment is permitted**.

Note: Sprinkler heads, when required in an electrical meter room by the local fire department or building official, are acceptable. Requirements for shielding will be determined by the local governing authority.

e) Meter clearances: All meter installations must provide minimum clearances as shown on Drawing COMM-009.0 and Drawing COMM-010.0 (pages 26 and 27).

f) Meter heights: The minimum height of the meter may be 3 feet and the maximum height may be 6 feet 3 inches as measured from the standing surface to the centerline of the meter.

g) Meter marking: See Section 4.15, Multi-Meter Identification (Labeling Requirements), for meter identification examples.

h) Pull sections: The position of a pull section in a meter room is subject to approval by MID.

1) Pull sections should be positioned either:

(a) Opposite the access door to allow use of the doorway as additional working space for cable-pulling equipment.

(b) On a wall perpendicular to the access door.

Note: Do not locate on the same wall as the access door.

2) Pull sections (to 600V equipment) must allow a minimum of 3 feet clear and level working space in front of the section. All 12kV pull sections require an unobstructed 8 feet clear area in front of any and all access doors for installation and removal of MID safety grounds.

3) Additional clearances may be required by the local governing authority for 480 volt services.

i) Readily accessible: Capable of being reached quickly and conveniently 24 hours a day for construction, operation, maintenance, inspection, testing or reading, without requiring those seeking access to climb over or remove obstacles; or to obtain special permission or security clearances. A stairway of normal rise (4" to 7") and run (11" minimum) conforming to building code requirements is acceptable. Shipboard ladders are unacceptable.

j) Room identification: The meter room must be permanently identified "electric meter room" or "meter room" or "electric room." Placards are to be purchased and installed by the customer. The identifying marking for rooms shall be engraved into or raised from a tag of plastic laminate, aluminum, brass or other approved non-ferrous metal with 2 inch minimum letters. The engraving shall be deep or raised enough to prevent it from being obscured by subsequent painting of the service sections. **The tag shall be attached to a non-removable area of the door with a high strength, 5-minute epoxy adhesive.** Other types of adhesives **WILL NOT** be acceptable. The tag shall not be able to be removed without the use of hand tools.

k) Vehicle access: Permanent vehicle access to the meter room is required for the installation and maintenance of metering equipment. Under some conditions, as determined by MID, the vehicle access requirement may be waived.

4.15 Multi-Meter Identification (Labeling Requirements)

a) Marking of all meters and disconnects shall be required as follows:

- Where the installation requires more than one meter for service to the premises, each meter panel shall be permanently marked (**NOT PAINTED**) by the customer to properly identify the portion of the premises being served.
- When adding a new meter to an existing service location, **ALL** meters shall be identified to properly indicate the portion of the premises being served.
- Each main service disconnect shall be permanently marked (**NOT PAINTED**) by the customer to properly identify the street address and the building number (if applicable).
- If there is more than one service disconnect for a building, each service disconnect needs to have a tag that clearly references the location of the service disconnect(s).

b) The identifying marking for meters and disconnects shall be engraved into or raised from a tag of plastic laminate, aluminum, brass or other approved non-ferrous metal with 1/4 inch minimum letters. The engraving shall be deep or raised enough to prevent it from being obscured by subsequent painting of the service sections. **The tag shall be attached to a non-removable area of the panel with a high strength, 5-minute epoxy adhesive.** Other types of adhesives **WILL NOT** be acceptable. The tag shall not be able to be removed without the use of hand tools. If the main breakers are **NOT** installed directly adjacent to the meters, **BOTH** the meter and the main breaker shall be identified with individual tags.

c) Additional markings are required when one tenant occupies two or more suites. In applications where the commercial suite/unit requires more than one meter to be used to feed into one location, each meter, each main breaker and each appropriate sub-panel shall be marked with the suite/unit number and individual panel location as well as a statement that the suite/unit is being fed by more than one meter and list the sockets/sub-panels that also feed into the suite/unit.

Examples:	A1	31-B
	This suite is also fed by A-2.	Unit 31 fed by 31-A & 31-B.

4.16 Multi-Metering Policy

Purpose: To establish specific policies and procedures for customers who wish to combine two or more areas for a single customer use without the requirement to remove multiple meters and install a single meter to serve a single customer facilities, where, in the sole opinion of MID, a non-residential premise has been designed to be subdivided in non-discrete sections after construction is complete to meet varying tenant requirements.

a) Customers requesting combination of suites or units, using more than one meter, must take out the appropriate building permits with the local governing authority. The review of plans will be the same as any other tenant improvement.

b) Identification of the meters and disconnect serving each suite or unit must be in accordance with the Multiple Meter Identification Policy as referenced previously.

4.17 Meter Access

All electric meters and main disconnects shall be accessible by MID 24 hours a day, 7 days a week. Fences, gates, alarms, security guards or the other means that prohibit direct accessibility are a violation of this requirement.

If the metering service panel is located behind a locked gate or door, the lock must be keyed to MID specifications. *Al's Certified Safe and Lock* or *Easy Locks* will provide the specifications to qualified locksmiths or can provide the work. The key way for the lock is Schlage "C". Another option is double hasp padlock hardware with a padlock keyed to MID specifications. These requirements apply to any situation where access is restricted.

4.18 Working Space in the Area of Meter Installation

A level standing and working surface shall be provided and maintained in front of each metering installation. A clear and unobstructed working space shall be provided above this surface. The width of the working space shall be sufficient to permit ready access to the metering equipment in no case less than 3 feet. The height of the working space shall be equal to the overall height of the metering installation and in no case less than 6 feet 6 inches. The working space shall extend at least 3 feet in front of the metering enclosure. See Drawing COMM-009.0 (page 26).

4.19 Meter Heights

Meters shall be located not more than 75 inches and not less than 48 inches above the ground or standing surface when installed outdoors. When installed in a cabinet or indoors in a meter room the minimum height may be reduced to 36 inches. The meter height shall be measured to the meter axis.

4.20 Meter Sockets

Sockets for self-contained meters shall be furnished, installed and wired by the customer. Sockets for instrument transformer installations shall be furnished and installed by the customer.

4.21 Meter Socket Connections

a) For self-contained meters, the customer shall terminate his/her wiring. The socket shall be equipped with terminals of sufficient size to install the conductors without removing any strands of wire. See Drawing COMM-002.0 (page 20) for connection diagrams.

b) For instrument transformer-rated meters, MID will furnish and install the normal secondary wiring from the metering transformers to the meter socket.

4.22 Grounding

Lugs for terminating the user's ground wire (or other grounding conductors) shall be located outside of the sealable section, and shall be designed to readily permit the user's neutral system to be isolated, when necessary, from MID's neutral.

4.23 Instrument Transformer Enclosure-General

a) No connections shall be made in the instrument transformer enclosure to supply any other meter, or more than one load circuit.

b) When the neutral conductor is a part of the service, it shall pass through the instrument transformer box, be continuous, and be capable of being bondable to the box.

4.24 Metered and Unmetered Conductors

Line side (unmetered) and load side (metered) conductors are prohibited from occupying the same raceway or enclosure by both MID policy and the NEC. Conductors from the customer's distribution section shall not pass through MID's sealable sections.

4.25 Sealing of Meters and Metering Equipment

a) All meters and enclosures for meters, metering equipment and service entrance equipment on the line side of the meter, except as approved for access to replace fuses used for over-current protection, will be sealed by MID. The MID seal shall not be broken except by an authorized representative of MID, or with MID's permission granted in response to a request warranting approval. No person is permitted to tamper, or in any way interfere, with a meter or its connections as placed by MID.

b) All removable panels and covers (tops, sides, front, and rear) to compartments used for terminating or routing unmetered conductors shall be sealable.

c) Sealable latches, stud and wing-nut assembly, or sealing screws shall be used for sealing covers or sections.

d) When a latch is used, it shall be designed to permit positive locking and made of a durable material that is non-corrosive.

e) When a stud and wing-nut assembly is used for sealing, the stud shall be 1/4" x 20" (minimum). The stud and wing-nut shall each be drilled .0635" minimum for sealing purposes.

f) Screws or bolts requiring special tools for installation or removal are not acceptable. Sealing methods, other than those mentioned, require MID approval.

g) All service disconnects shall have a provision for locking in the open/off position.

h) All compartments containing unmetered conductors shall be sealable. When a raceway or conduit for meter secondary wiring is necessary, such raceway or conduit shall be sealable.

4.26 Meter Socket Sealing Rings

Meter sockets shall be equipped with approved sealing rings as a part of the meter socket installation.

4.27 Switchboards-General

a) Contact MID Metering Department for approval of switchgear specifications prior to manufacture of the switchgear to determine the type of metering, size of current and/or voltage transformers, and any special arrangement necessary for mounting instrument transformers, and compliance with EUSERC standards. Submit three (3) copies to: MID Meter Department, P.O. Box 4060, Modesto, CA 95352, prior to manufacturing.

b) The rating of the instrument transformers will not necessarily be the same as the service switch.

c) All compartments containing unmetered conductors shall be sealable. When a raceway or conduit for meter secondary wiring is necessary, such raceway or conduit shall be sealable.

d) The meter current and potential transformers supplied by MID shall not be utilized for any other purpose.

4.28 Switchboard Service Section

a) In cases where more than one meter is to be installed, there will ordinarily be a separate service section for each meter installation and its associated service switch.

b) For services with self-contained meters (not using current transformers) it may be practicable to put two or more meters and switches in the service section.

c) When two or more switchboard service sections are supplied from one set of service conductors, the supply conductors serving these switchboards shall be terminated ahead of and outside of, the metering transformer compartments in a separate sealable enclosure. The supply conductors are to be arranged so they are readily accessible without disturbing the metering transformers and associated secondary wiring.

d) Additional service connections may be made in the main service termination and pull section where more than one metering installation is necessary, or where more than one rate schedule is desired. Contact MID Metering Department for approval.

4.29 Specially Engineered Service Section

All specially engineered service sections require MID approval. A switchboard design which does not conform to the standard switchboard herein, is considered specially engineered, and includes installations:

a) Rated over 3000 Amps or 600 Volts.

b) Where the service breaker ampacity rating exceeds that of the standard service section.

c) When multiple metering sections are used.

d) When recessed meter panels are used.

4.30 Service Limitations

Single-phase service is limited to 400 Amps maximum. Individual three-phase service is limited to 3200 Amps maximum.

4.31 Metering Emergency Alarm Systems

MID policy typically does not allow connections to a customer's service preceding the electric meter. In those cases when it is impractical to install an emergency alarm system on the load side of the service meter, a separate house meter for the emergency system will be required.

4.32 Inspection Tag

MID inspects all new meter installations prior to electrically energizing the customer's panel. Figure 1 on Drawing COMM-001.1 (page 19) shows a copy of an orange colored tag that the MID service representative leaves when the MID inspection does not pass. The tag lists the most common installation infractions that prevent MID from setting electric meters.

5 Requirements for Commercial Multiple Meter Installations

5.1 Meter Cabinets and Enclosures

a) The cabinet shall be designed so that no obstruction such as door jams, vertical posts, etc., is allowed within the cabinet opening. With the cabinet door open, a clear working space of 36 inches is required directly in front of the socket for installing the meter.

b) Shallow cabinets, with holes cut in the doors for meters to protrude through, will not be permitted.

c) Clearances between the sealing flange of the meter socket and the inside of the closed cabinet door shall be a minimum of 11 inches, but not more than 15 inches for commercial and industrial meter installations.

d) Hinged doors shall not exceed 4 X 4 feet and shall be provided with a device to hold them in the open position safely.

e) All doors shall be fitted properly to insure positive opening and closing and shall be equipped with adequate pulls, hinges, and latches.

f) Cabinets shall be rain tight and constructed of weather resistant materials. All top openings (conduit entering and leaving) shall be flashed and sealed.

g) When cabinets are to be locked with the customer's lock, a double lock arrangement shall be provided to accommodate an MID padlock.

h) If the socket is installed for future use, plastic meter covers will be used to cover energized sockets. Where extra meter sockets have been installed in multi-meter installations and have no probable future use, the internal bus must be removed from the socket and the socket opening closed.

i) For multiple-meter installations in a multi-meter enclosure, the meter sockets shall have a minimum horizontal clearance of 7-½ inches, center to center, and a minimum vertical clearance of 8-½ inches, center to center.

5.2 Totalized Metering

Totalized metering may be available for certain larger commercial/industrial services. Contact MID Energy Services Department.

5.3 Non-Installation of Meters

The meters will not be installed until:

a) The customer has complied with all the requirements listed above.

b) The work has been inspected and passed by the local governing authorities.

c) Each service switch and meter position, in a multiple meter installation, has been clearly labeled (see Section 4.15, Multi-Meter Identification (Labeling Requirements)). Street address and suite, apartment number, etc. are permanently applied to the building.

d) All required fees are paid.

6 Swimming Pool Clearances for Supply Service Drops (Includes Hot Tubs)

6.1 The installation and maintenance of service drops over swimming pools is to be avoided where practical.

6.2 The customer must contact an MID Engineering Technician to determine MID service requirements.

6.3 The clearances shown on Drawing COMM-016.0 (page 33) are required in MID's Service Area.

7 Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send final set of site plans to MID's Electrical Engineering Department for review and design.
2	MID	10 business days	Engineering Technician designs the electric layout and sends the installation agreement and one marked-up copy of site plan to the Customer.
3	Customer		Pay any charges, return a signed installation agreement, and return completed Commercial Load Information Form with all relevant dates regarding construction and service requirements. Both must be returned to MID. Obtain all necessary permits from the local governing authority.
4	MID	10 business days	Engineering Technician designs engineering drawing(s), materializes and assembles the work order.
5	Customer		Call USA to locate underground utilities, install conduit and substructures, return Application for Electric Services to the Customer Service Department, request MID and local governing authority to inspect conduit, substructure, transformer pad, and electric facilities.
6	MID	3 business days	MID inspects trench, conduit, substructures, and transformer pad. This stage repeats itself until you satisfactorily pass inspection.
7	Customer		Close trench, pull service conductors to agreed location, connect conductors to panel. Local governing authority inspects electric facilities. Your facilities pass inspection and you request service.
8	MID	7 business days pending weather and scope of project	Meter Department wires instrument transformers, where required; MID construction installs transformer, primary cables and secondary cables where needed. MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, the meter is set and the panel is energized.

8 Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

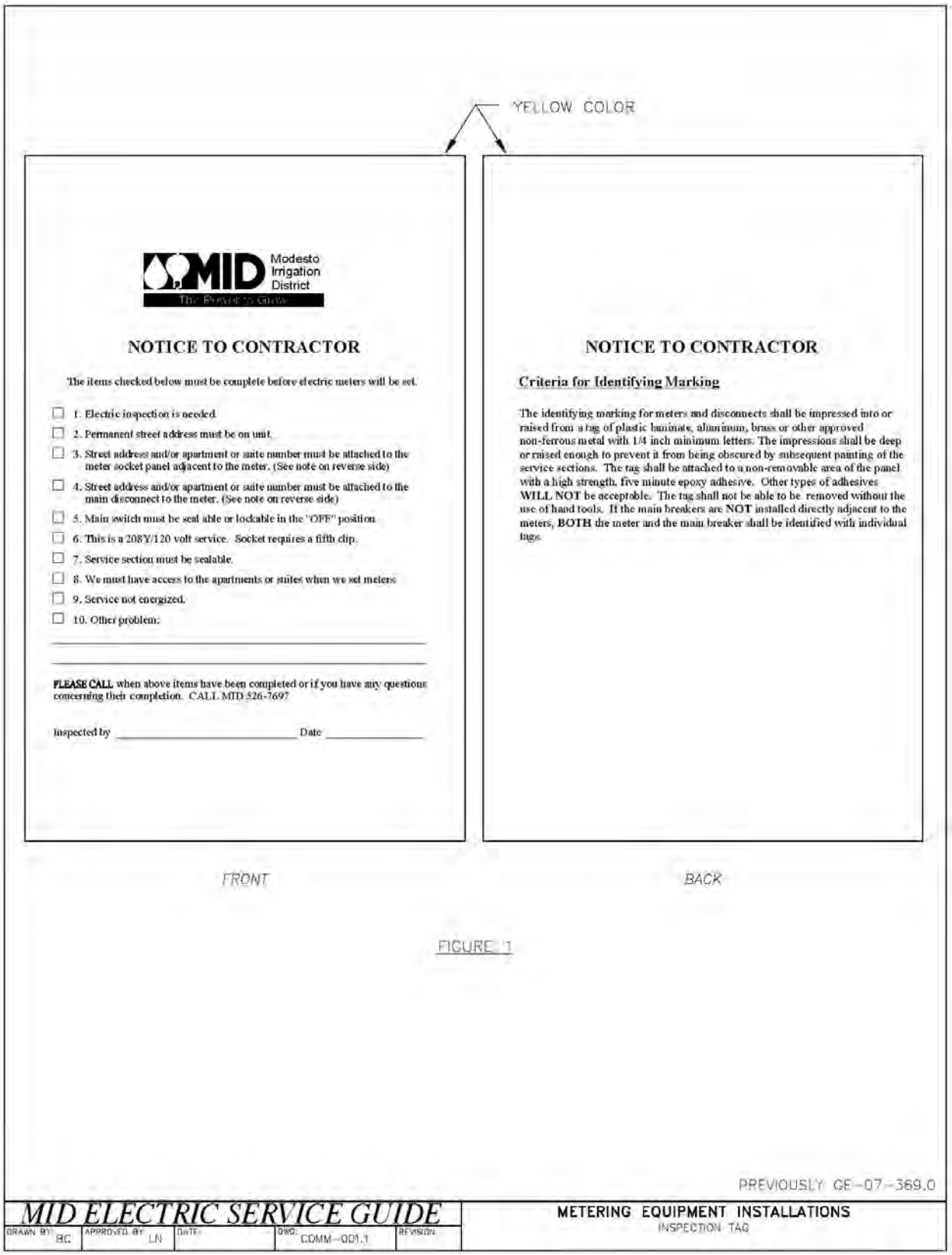
City of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

9 MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 49).

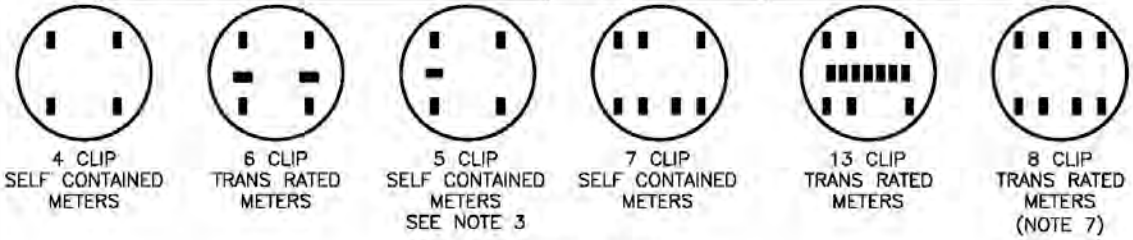


Drawing COMM-001.1: Inspection Tag

METER SOCKET CLIP ARRANGEMENT

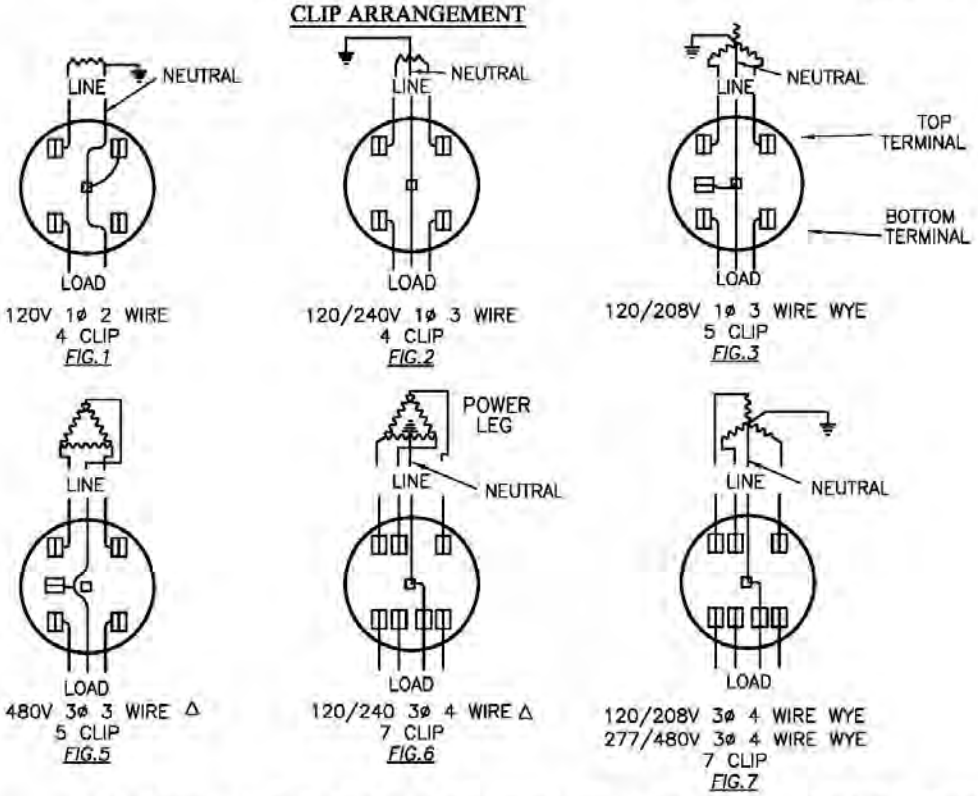
The number of socket clips and their arrangement varies with type of service supplied to the customer. The following table lists this requirement:

TYPE OF SERVICE	NUMBER OF CLIPS SELF CONTAINED	NUMBER OF CLIPS TRANSFORMER RATED SOCKETS SEE NOTE 1
1 PHASE, 2 WIRE, 120 VOLT	4	---
1 PHASE, 3 WIRE, 120/240 VOLT	4	6 (NOTE 7)
1 PHASE, 3 WIRE, 120/208 VOLT	5	---
3 PHASE, 4 WIRE, 120/208 VOLT WYE	7	13
3 PHASE, 4 WIRE, 120/240 VOLT DELTA	7	13
3 PHASE, 4 WIRE, 277/480 VOLT WYE	7	13
3 PHASE, 3 WIRE, 480 VOLT	5	8 (NOTE 7)



4 CLIP SELF CONTAINED METERS | 6 CLIP TRANS RATED METERS | 5 CLIP SELF CONTAINED METERS SEE NOTE 3 | 7 CLIP SELF CONTAINED METERS | 13 CLIP TRANS RATED METERS | 8 CLIP TRANS RATED METERS (NOTE 7)

CLIP ARRANGEMENT



120V 1ø 2 WIRE 4 CLIP *FIG.1*

120/240V 1ø 3 WIRE 4 CLIP *FIG.2*

120/208V 1ø 3 WIRE WYE 5 CLIP *FIG.3*

480V 3ø 3 WIRE Δ 5 CLIP *FIG.5*

120/240 3ø 4 WIRE Δ 7 CLIP *FIG.6*

120/208V 3ø 4 WIRE WYE
277/480V 3ø 4 WIRE WYE
7 CLIP *FIG.7*

(CONTINUED) **ALL FRONT VIEWS SHOWN ARE FOR SELF CONTAINED METERS** PREVIOUSLY GE-07-385.1

MID ELECTRIC SERVICE GUIDE

DRAWN BY: TE	APPROVED BY:	DATE:	DWG: COMM-002.0	REVISION:

METERING EQUIPMENT INSTALLATIONS
CONNECTION DIAGRAMS FOR SELF CONTAINED METER SOCKETS

Drawing COMM-002.0: Connection Diagrams for Self-Contained Meter Sockets

(CONTINUED)

NOTES:

1. Sockets for non-residential installations shall be equipped with test bypass facilities.
2. Line conductors shall be connected to the top terminals of socket and load conductors connected to the bottom terminals of the socket. An exception to this rule is for photovoltaic production meters. (Refer to Section 9)
3. Potential taps, including the neutral tap, shall be located behind sealed panels.
4. All meter socket terminal clips must be back connected.
5. 4th wire (redundant grounding conductor only - not a neutral), Delta connected with B phase, is required by G.O. 95, G.O. 128 and the NEC.
6. The correct position of the fifth clip for self-contained meter sockets is 9 o'clock.
7. Existing installations only. Does not apply to new installations. All new 480 volt services shall be four wire (277/480V, 3Ø, 4 wire wye connected)

PREVIOUSLY GE–07–385.2

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS CONNECTION DIAGRAMS FOR SELF CONTAINED METER SOCKETS
DRAWN BY: TE	APPROVED BY:	DATE:	DWG: COMM–003.0	REVISION:	

Drawing COMM-003.0: Connection Diagrams for Self-Contained Meter Sockets, continued

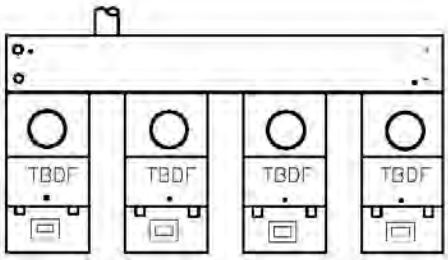


FIG. 1
COMMERCIAL
OVERHEAD INSTALLATION

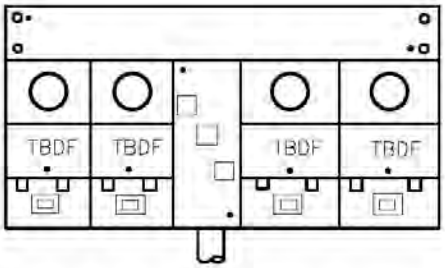


FIG. 2
COMMERCIAL
UNDERGROUND INSTALLATION

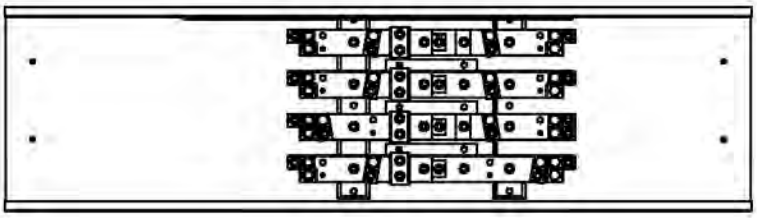


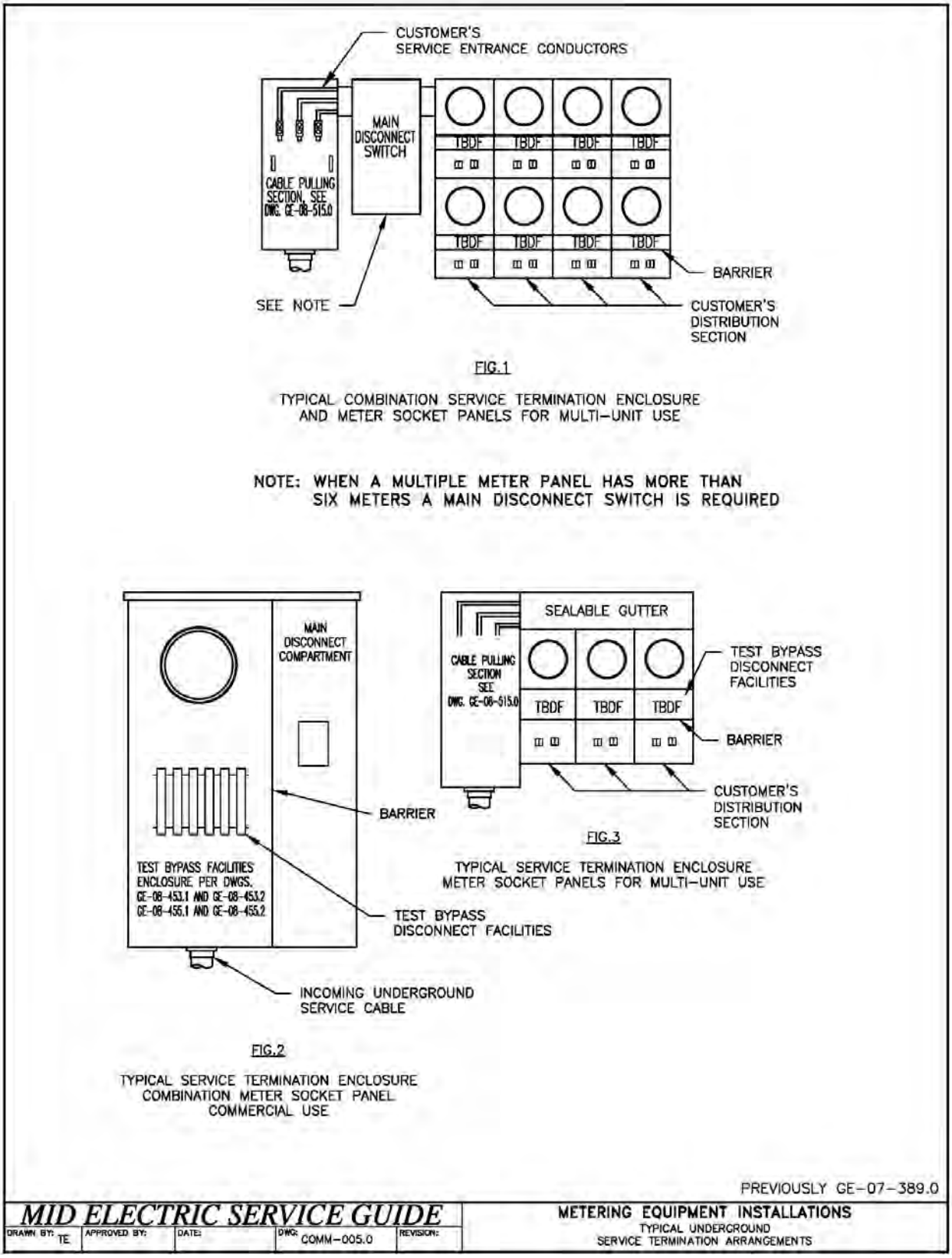
FIG. 3
EXAMPLE OF GUTTER SYSTEM

NOTE: GUTTER MUST HAVE THE ABILITY TO ISOLATE EACH METER PANEL WITHOUT AFFECTING OTHER CUSTOMERS.

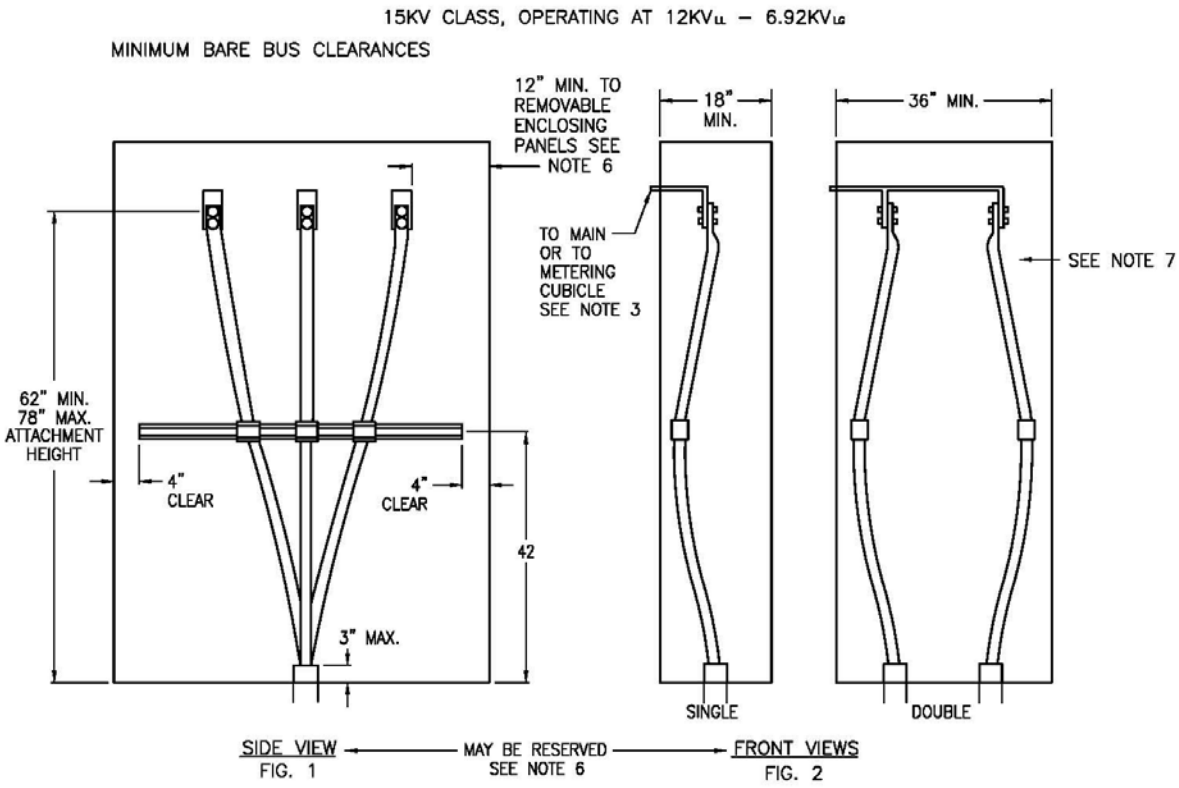
TBDF - TEST BYPASS DISCONNECT FACILITIES

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS
DRAWN BY: AA	APPROVED BY: LN	DATE: 09/27/2017	DWG: COMM-004.0	REVISION:	TYPICAL MULTIPLE METERING ARRANGEMENTS

Drawing COMM-004.0: Typical Multiple Metering Arrangements



Drawing COMM-005.0: Typical Underground Service Termination Arrangements



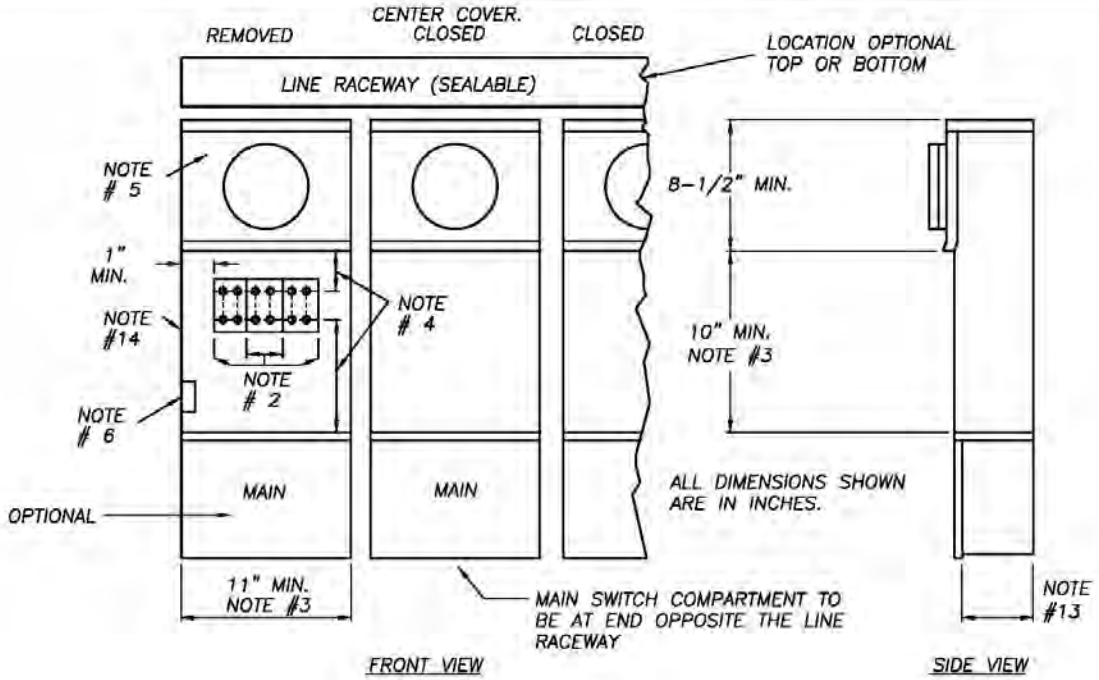
NOTES:

1. Contact Engieering Technician **for meter cubicle requirements.**
2. **Consult a M.I.D. Engineer for number of service cables; number, size, and location of service conduits; type of pull section and type of termination required.**
3. **Consult a M.I.D. Engineer to determine if an insulated neutral landing is required.**
4. **Eight feet of clear working space in front of the removable enclosing panels is required.**
5. **The removable enclosing panels shall normally be front or back.**
6. **The removable enclosing panels shall each be scalable, provided with two lifting handles, and limited to a maximum size of 9 square feet.**
7. **Furnish and install one piece of Unistrut P. 1000 (or equivalent) channel as shown, for each set of service cables.**
8. **B.I.L. for the pull section shall be not less than 125KV.**

PREVIOUSLY GE–07–391.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS UNDERGROUND SERVICE TERMINATING PULL SECTION – 12,000V, 3 AND 4 WIRE
DRAWN BY: TE	APPROVED BY:	DATE:	DWG: COMM–006.0	REVISION:	

Drawing COMM-006.0: Underground Service Terminating Pull Section, 12,000V, 3 & 4 Wire



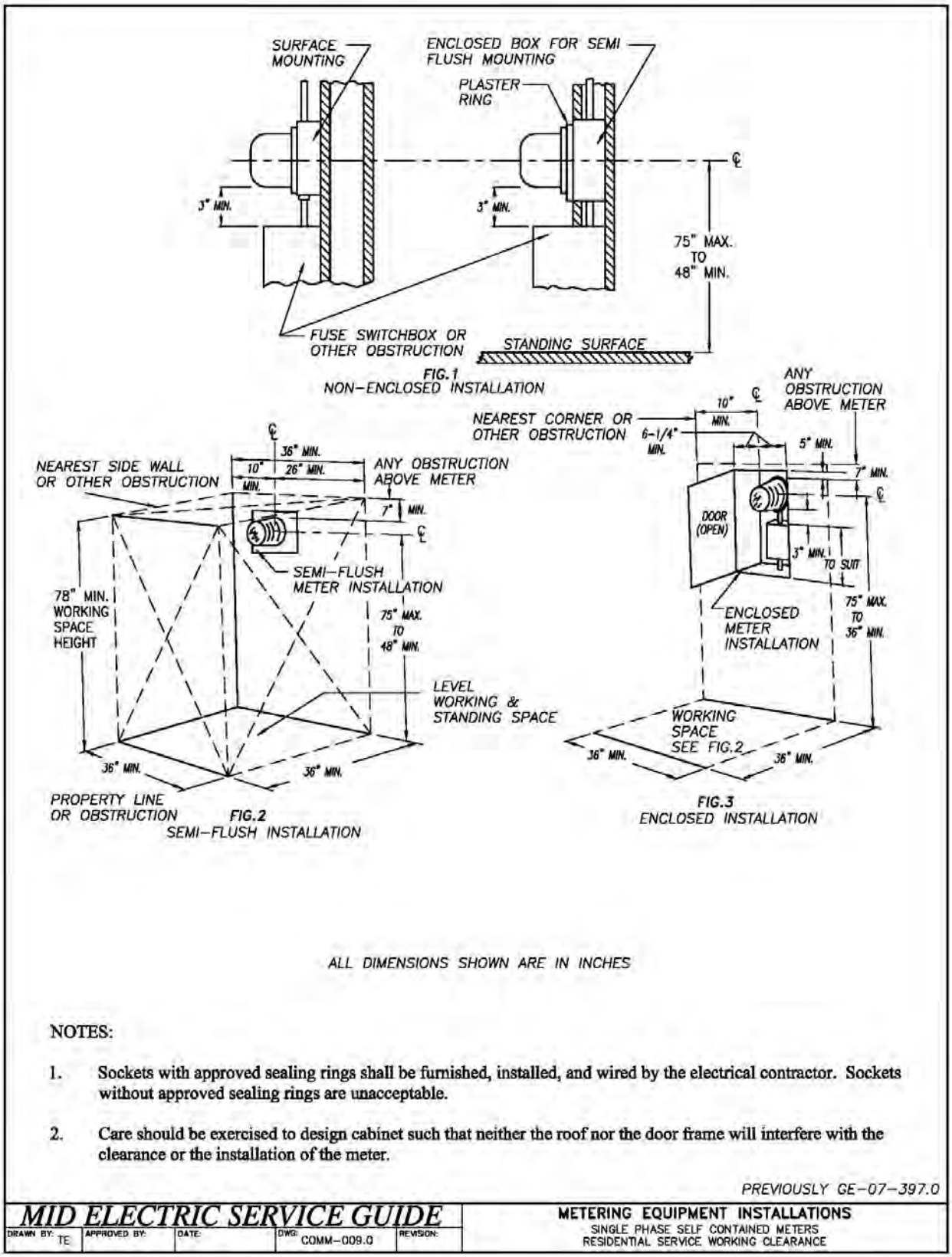
NOTES:

1. This device may be used for multiple commercial and industrial meter installations mounted in a ganged array.
2. Test-bypass blocks with rigid insulating barriers shall be installed and wired or bussed to a line raceway and also wired or bussed to the meter socket then to the main switch by the manufacturer. Blocks and barriers shall conform to dwg. GE-08-465.0 requirements with physical arrangement conforming to dwgs. GE-08-453.1, GE-08-453.2, GE-08-455.1, and GE-08-455.2. Connection sequence is line-load, line-load, line-load from left to right.
3. Minimum access opening to test-bypass blocks shall be 11" x 10".
4. Three inches minimum clearance required for utility test purposes.
5. All section covers shall be independently removable. Upper cover shall be non-removable when meter is in place. Meter socket shall be mounted on support and attached to panel. Test-bypass cover shall be sealable and permanently labeled: "DO NOT BREAK SEAL - NO FUSES INSIDE".
6. When a neutral is required for metering or testing, an insulated neutral terminal, mounted on either side, shall be provided behind each test-bypass cover panel. The terminal shall be readily accessible when the cover is removed and shall be individually connected to the neutral bus with a minimum of No. 8 copper wire.
7. For 3Ø, 4 wire, connect 7th jaw to body of neutral lug with No. 12 min. copper wire.
8. For 3Ø, 4 wire Delta, identify right hand test-bypass block (2 poles) as power leg.
9. For 3Ø, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw to this bus using No. 12 min. copper wire.
10. For 1Ø, 3 wire, omit center test-bypass block.
11. For 1Ø, 3 wire, 120/208v, omit center test-bypass block. Connect 5th jaw to body of neutral lug with No. 12 min. copper wire.
12. Permanent line-load labels on inside back of enclosure in 3/4 inch (min.) high block letters.
13. Minimum depth shall be 4-1/2 inches for 0-100A and 6 inches for 101-200A.
14. See dwg. GE-08-515.0 for pull box details when used on underground service.

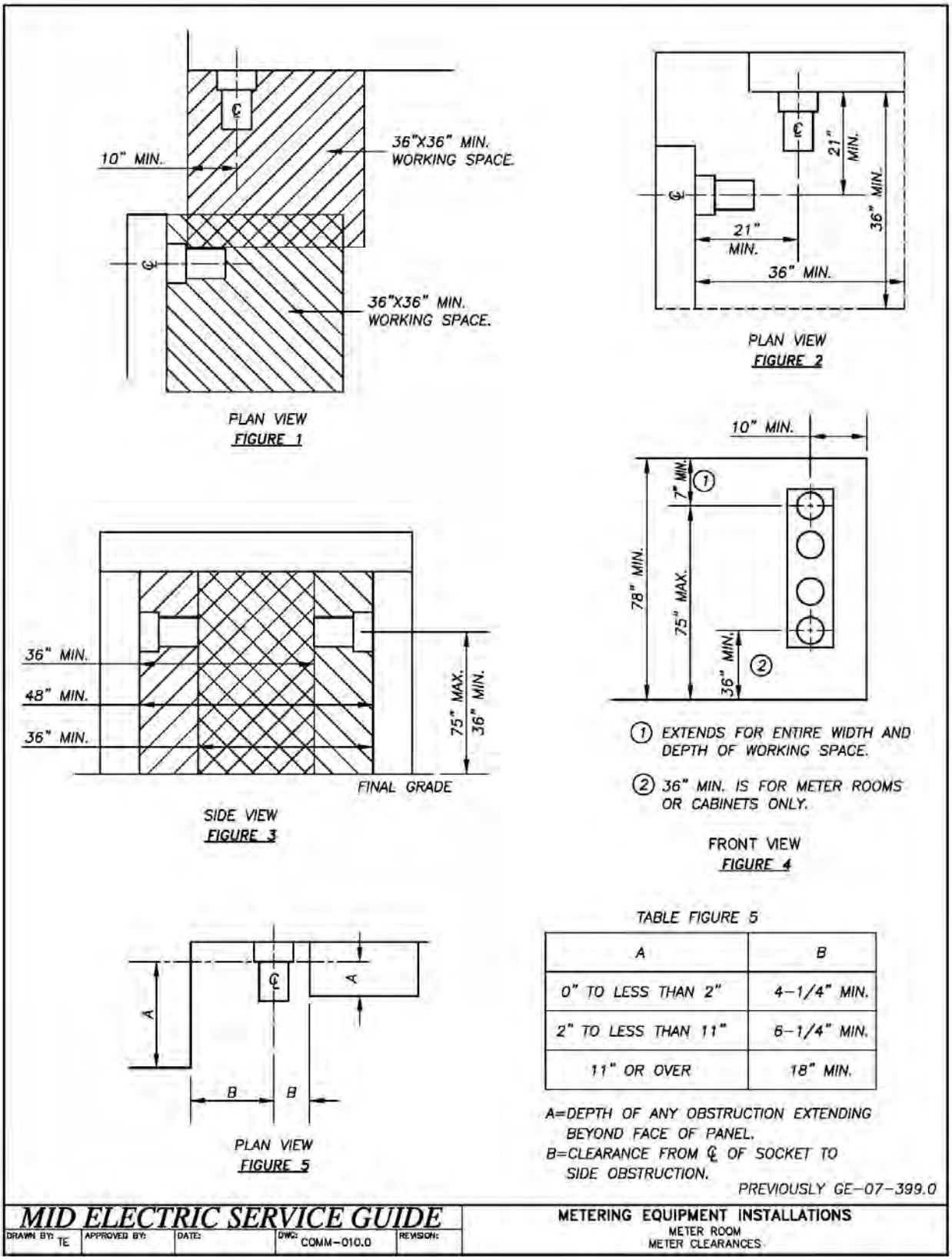
PREVIOUSLY GE-07-393.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS
DRAWN BY: TE	APPROVED BY:	DATE:	DWG. COMM-007.0	REVISION:	SAFETY SOCKET BOX W/FACTORY INSTALLED TEST BYPASS FACILITIES F/MULTI SELF-CONTAINED METERS 0-200A, 0-600V

Drawing COMM-007.0: Safety Socket Box w/Factory Installed Test Bypass Facilities



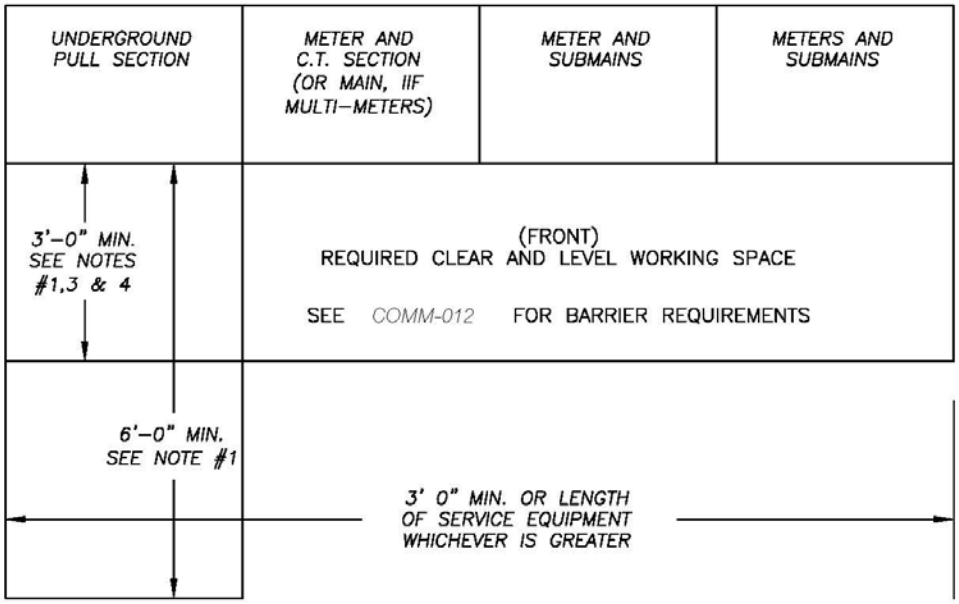
Drawing COMM-009.0: Single Phase Self-Contained Meters, Residential Service Working Clearance



A	B
0" TO LESS THAN 2"	4-1/4" MIN.
2" TO LESS THAN 11"	6-1/4" MIN.
11" OR OVER	18" MIN.

Drawing COMM-010.0: Meter Room, Meter Clearances

WORKING SPACE AND CLEARANCE REQUIREMENTS 0–600 VOLTS
(TOP VIEW OF SERVICE EQUIPMENT)



1. A minimum of 3 feet clear and level work space is REQUIRED for underground pull sections, C.T. or V.T. sections, and metering equipment. Pull sections requiring 4" conduits must allow a minimum of 6 feet clear and level working space in front of the pull section. Verify location of pull sections with a M.I.D. Engineering Technician prior to installation.

2. See COMM-010 for meter mounting height requirements. Meter height will be measured from the standing and work space to the centerline of the meter.

3. When non-raintight service equipment is installed on an elevated portion of the floor, or "HOUSEKEEPING PAD", The pad MUST be flush with or extend a minimum of 3' in front of the service equipment.

4. When outdoor raintight service equipment is installed on a housekeeping pad, the housekeeping pad must be level and extend a minimum of 3' measured from the FACE OF THE METER PANEL.

5. To maintain a safe, clear and level working area in front of new or existing meter and service equipment, a concrete slab or other suitable surface, acceptable to the utility, may be required.

PREVIOUSLY GE–07–401.0

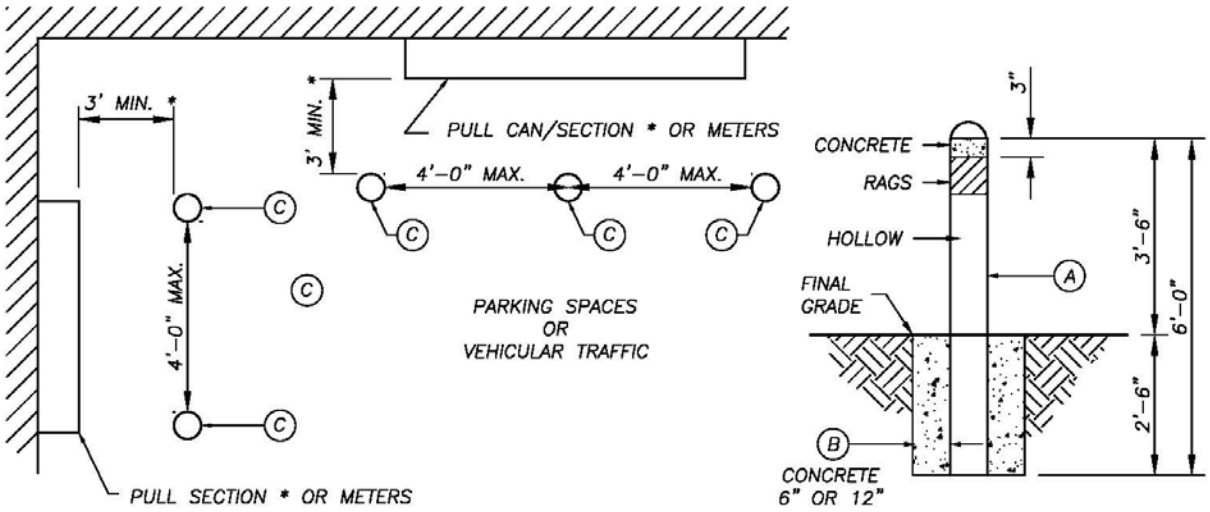
MID ELECTRIC SERVICE GUIDE					**METERING EQUIPMENT INSTALLATIONS** WORKING SPACE AND CLEARANCE REQUIREMENTS – 0–600 VOLTS
DRAWN BY: TE	APPROVED BY:	DATE:	DWG: COMM–011.0	REVISION:	

Drawing COMM-011.0: Working Space and Clearance Requirements, 0-600 Volts

BARRIERS

Customer will provide and install "NON-REMOVABLE" barriers to provide the clearances where working space is exposed to vehicle or hazardous conditions. Service and metering equipment located in franchise position must be installed a minimum of 5'-0" back from face of curb or it is considered subject to vehicular contact and requires barriers. Meters will not be set until the barriers are installed.

Barrier posts are used to protect meter and service equipment and personnel from vehicular contact and to prohibit encroachment into the working space. For example: loading zones, driveways, congested areas, alleys, off street parking, etc.



NON-REMOVABLE
BARRIER POST DETAIL

*(SEE NOTE 1 ON DWG. COMM-011)

NOTE:

Meters located on a wall adjacent to any parking area or area accessible to vehicular traffic, must be protected by non-removable barriers. Wheel stops and removable barriers are not acceptable substitutes. Maintain a minimum of 3'-0" clear and level working space in front of the cabinets or enclosures. Barriers must be so positioned to allow the doors to be opened 90°.

INSTALLATION

A Use 4 inch steel pipe with a minimum wall thickness of 0.188 inches.

B The concrete encasement shall be a minimum of 6 inches thick in stable soil and 12 inches thick in sandy or unstable soil.

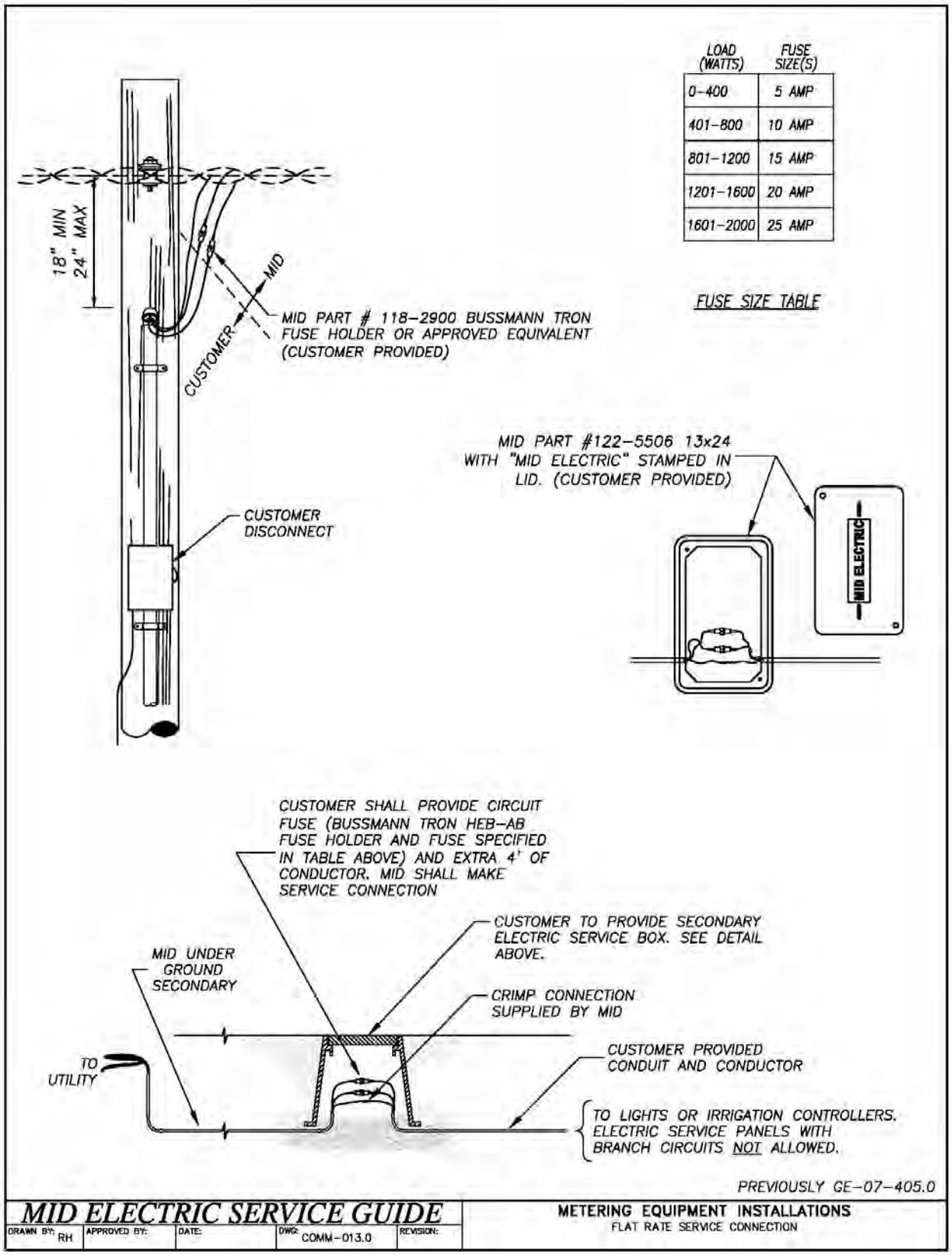
C Barriers must be installed in line with each end of service equipment to prevent vehicle contact. Distance between barriers may not exceed 4'-0".

D Before barriers are installed, call underground service alert at 1-800-642-2444 at least 48 hours prior to excavating.

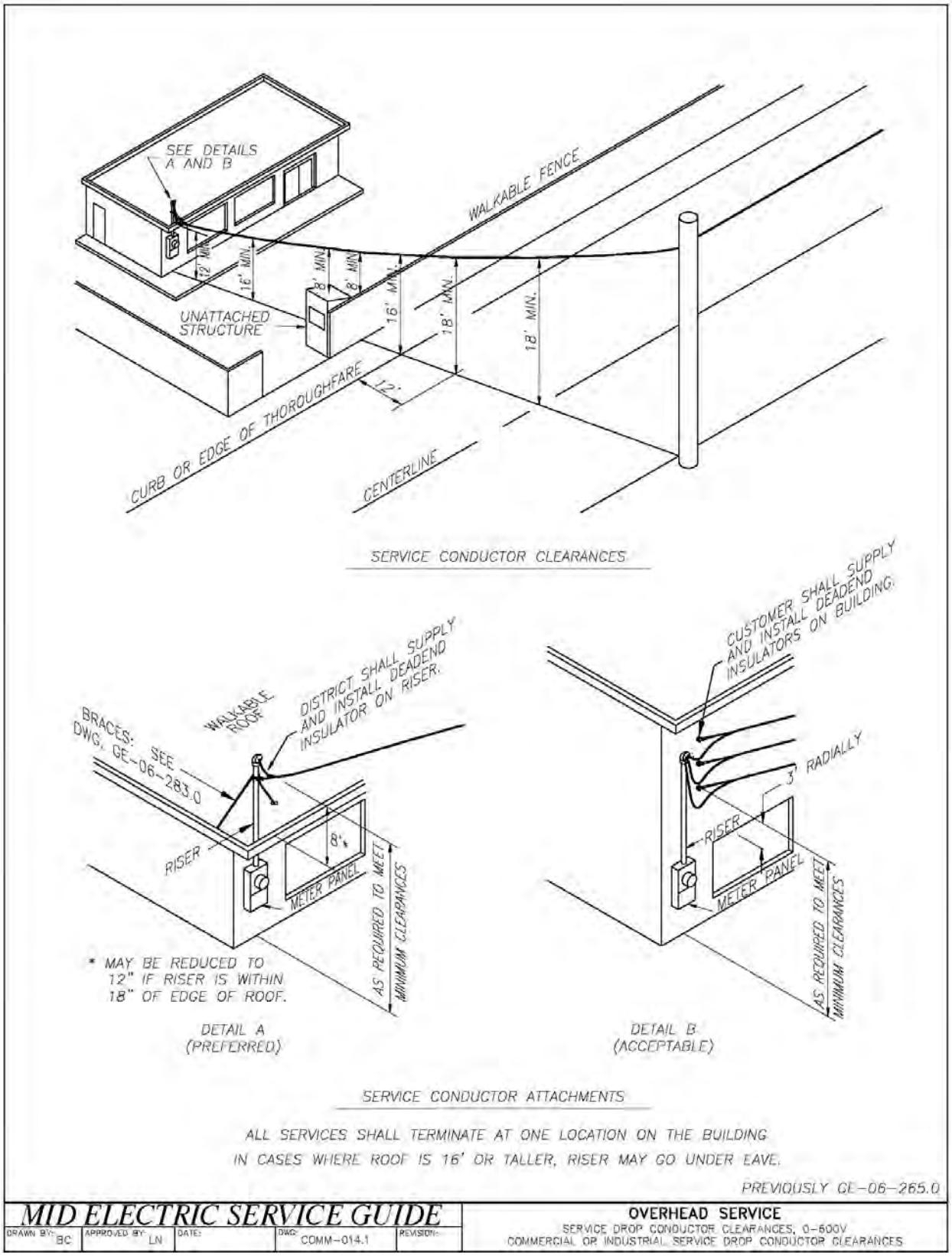
PREVIOUSLY GE-07-403.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS BARRIER REQUIREMENTS
DRAWN BY: TE	APPROVED BY:	DATE:	DWG: COMM-012.0	REVISION:	

Drawing COMM-012.0: Barrier Requirements



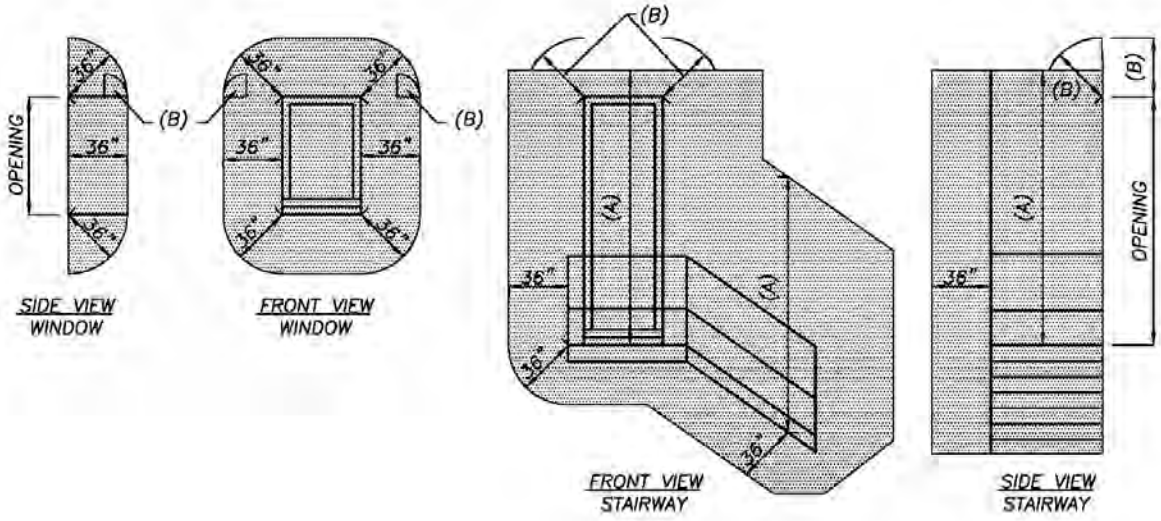
Drawing COMM-013.0: Flat Rate Service Connection



Drawing COMM-014.1: Service Drop Conductor Clearances, 0-600V, Commercial or Industrial

The vertical, horizontal, and radial service drop conductor (including the drip loop) clearances:

		MINIMUM CLEARANCE
(A)	Vertically above sidewalk surfaces of fire escapes, balconies, stairways, and walkways	10 FEET
(B)	Horizontally and radially from fire escapes, exits, openable windows, doors and other points at which human contact might be expected	3 FEET



NO SUPPLY SERVICE WIRES PERMITTED WITHIN SHADED ZONE
CLEARANCE OF 0–750V SERVICES FROM DOORS, EXITS, WINDOWS, FIRE ESCAPES, ETC.

NOTES:

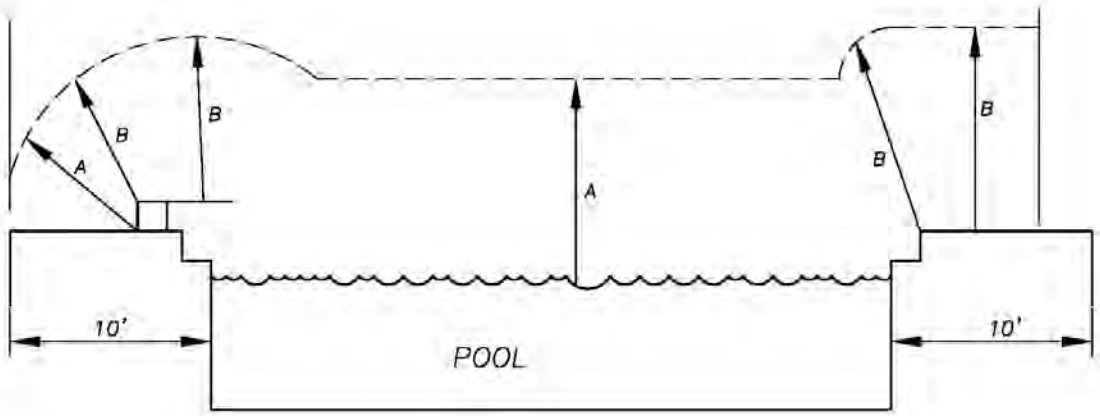
1. Service drop conductors not permitted within shaded zones.
2. The porch rail illustrated is not considered a walkable surface. The clearance will be measured from the porch deck.

PREVIOUSLY GE–06–267.0

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM–015.0	REVISION:	SERVICE DROP CONDUCTOR CLEARANCES, 0–600V CLEARANCE FROM DOORS, EXITS, WINDOWS, FIRE ESCAPES, AND BALCONIES

Drawing COMM-015.0: Service Drop Conductor Clearances, 0-600V, Clearance from Doors, Exits, etc.

		Insulated supply or service drop cables 0-600v to ground, supported on and cabled together with an effectively grounded bare messenger	ALL OTHER SUPPLY OR SERVICE DROP CONDUCTORS	
			VOLTAGE TO GROUND	
			0-15KV	>15-50KV
A	Clearance in any direction to the water surface, base of diving platform or permanently anchored raft.	22.5 FEET	25 FEET	27 FEET
B	Clearance in any direction to the diving platform or tower.	14.5 FEET	17 FEET	18 FEET



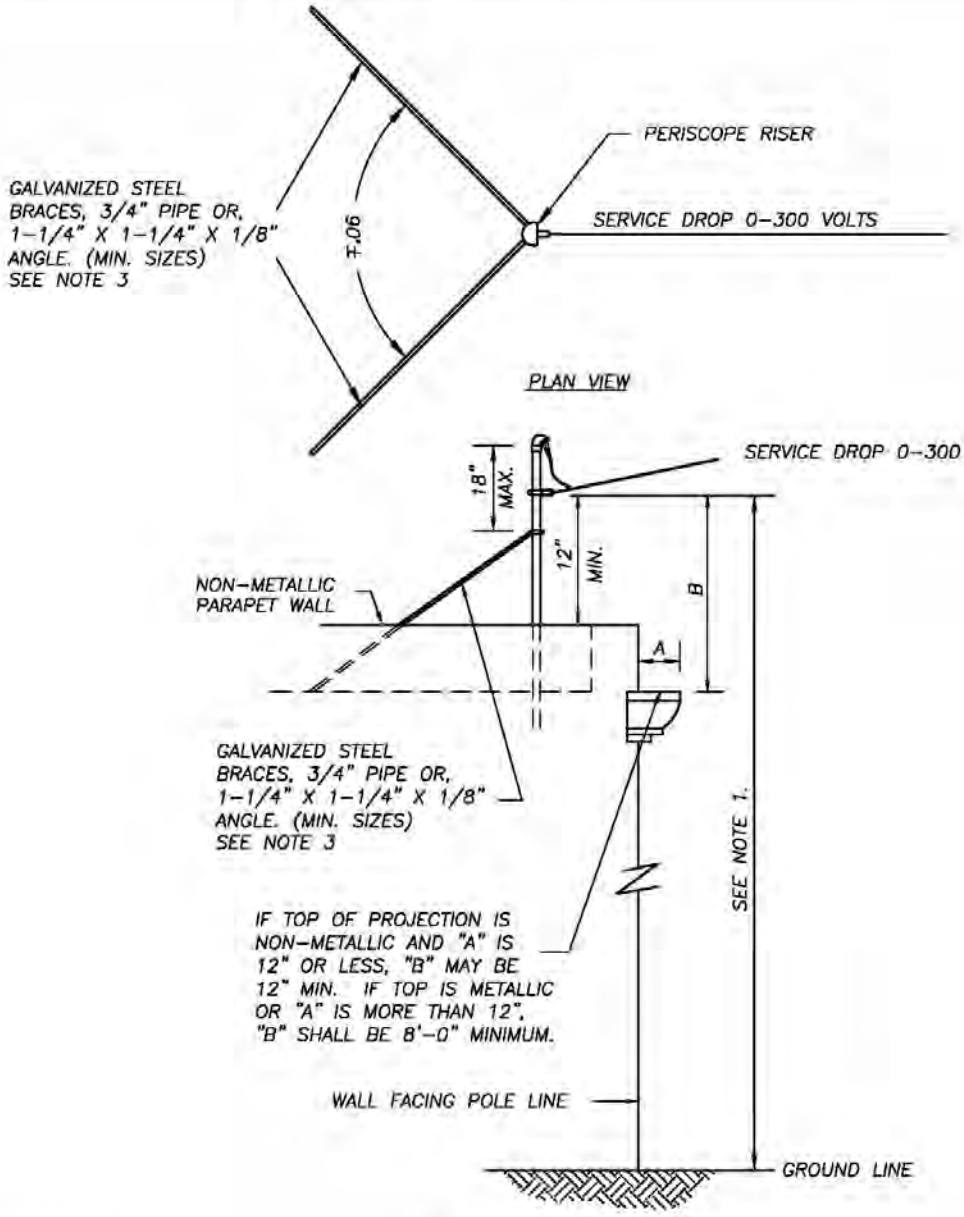
PREVIOUSLY GE-06-275.2

MID ELECTRIC SERVICE GUIDE

DRAWN BY: TE | APPROVED BY: E J | DATE: | DWG: COMM-016.0 | REVISION:

OVERHEAD SERVICE
SERVICE DROP CONDUCTOR CLEARANCES, 0-600V
CLEARANCE FROM SWIMMING POOLS AND DIVING BOARDS

Drawing COMM-016.0: Service Drop Conductor Clearances, 0-600V, Clearance from Swimming Pools & Diving Boards



NOTES: COMMERCIAL/INDUSTRIAL

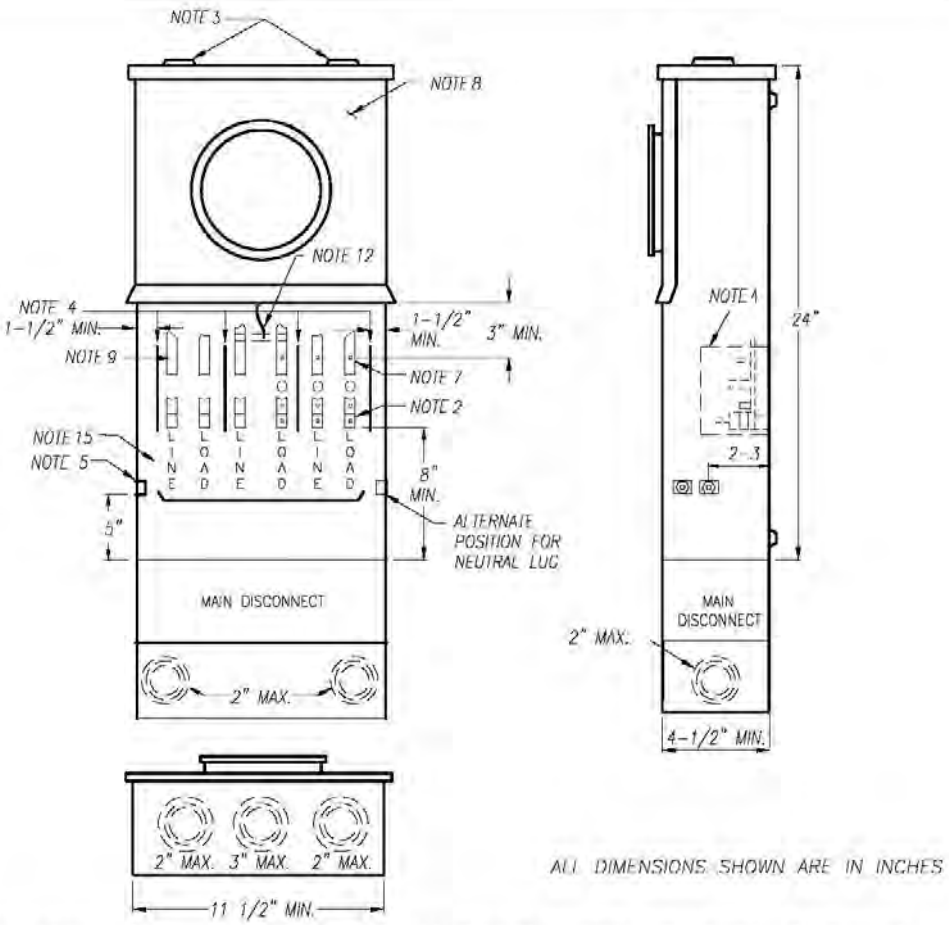
1. Minimum ground clearance for non-residential is 12'-0".
2. 1-1/4" minimum galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) is required for all periscope risers. GRC and IMC to be steel only.
3. Periscope type risers projecting in excess of 30" above the roof must be braced against the pull of the service drop conductors.

PREVIOUSLY GE-06-283.0

MID ELECTRIC SERVICE GUIDE				
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM-017.0	REVISION:

OVERHEAD SERVICE
BRACING OF PERISCOPE TYPE RISERS

Drawing COMM-017.0: Bracing of Periscope Type Risers

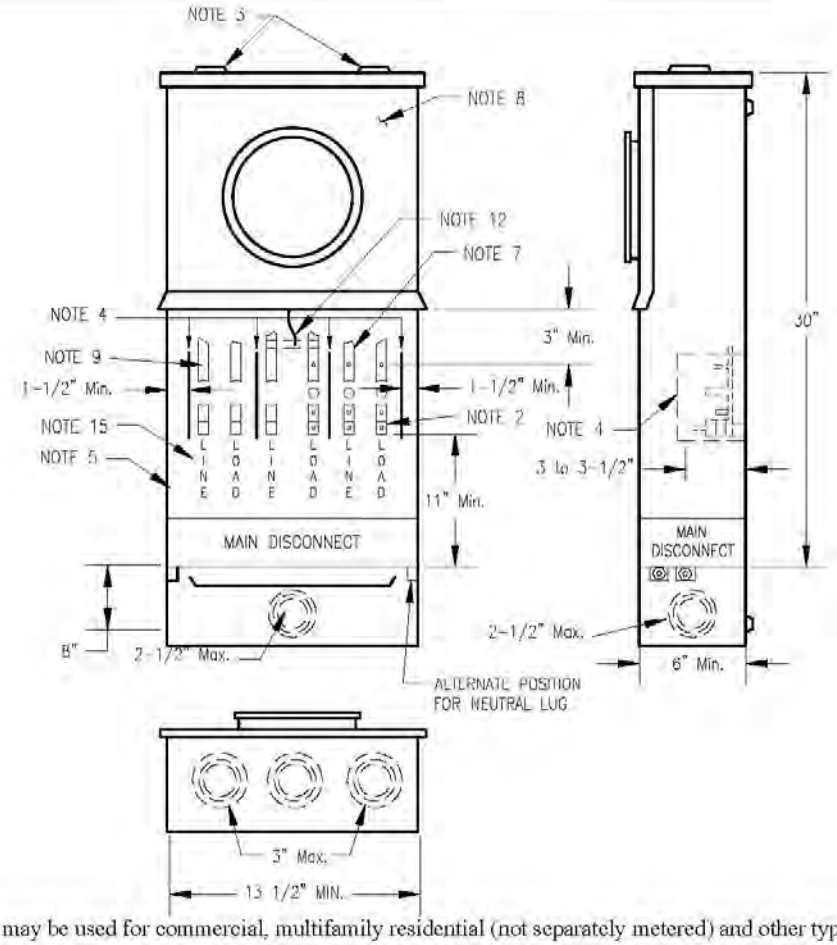


NOTES:

1. This device may be used for commercial, multifamily residential (not separately metered) and other types of occupancies.
2. Aluminum bodied terminals for No. 6 through No. 1/0 wire.
3. Hubs capped off if used for underground feed.
4. Rigid insulating barriers.
5. Insulated bondable vertical lay-in, double neutral lug with No. 1/0 wire capacity, mounted on either sidewall.
6. Test-bypass blocks shall be bussed or wired to socket jaws or terminals.
7. Upper test connector studs.
8. All section panels shall be independently removable. Upper panel shall be non-removable when meter is in place. meter socket shall be mounted on support and attached to upper panel. Lower panel shall be sealable and permanently labeled: "DO NOT BREAK SEALS. NO FUSES INSIDE"
9. Test-bypass blocks with rigid insulating barriers shall be furnished, installed, and wired or bussed to the meter socket by the manufacturer. Connection sequence is line-load from left to right.
10. For 3Ø, 4 wire, connect 7th jaw to body neutral lug with #12 min. copper wire, white in color.
11. For 3Ø, 4 wire delta, identify right hand test-bypass block (2 poles) as powerleg. Identification to be orange in color.
12. For 3Ø, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw to this bus, using #12 min. copper wire. Color shall be other than white, gray, green or orange.
13. For 1Ø, 3 wire, provide two test-bypass blocks mounted in the outer positions and four jaw socket.
14. For 1Ø, 3 wire, 120/208 volt, provide two test-bypass blocks mounted in the outer positions and a five jaw socket. Connect 5th jaw of meter socket to body of neutral lug with a #12 min. copper wire, white in color.
15. Decals on inside back of enclosure in 3/4 inch minimum block letter labeling, LINE, LOAD.
16. For required meter identification & labeling requirements, See Section XVII.

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS
DRAWN BY: AA	APPROVED BY: LN	DATE: 09/27/17	DWG: COMM-018.0	REVISION:	SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST-BYPASS FACILITIES, 100 AMPERE, 0-600V

Drawing COMM-018.0: Safety Socket Box with Factory Installed Test-Bypass Facilities, 100 Amp, 0-600V



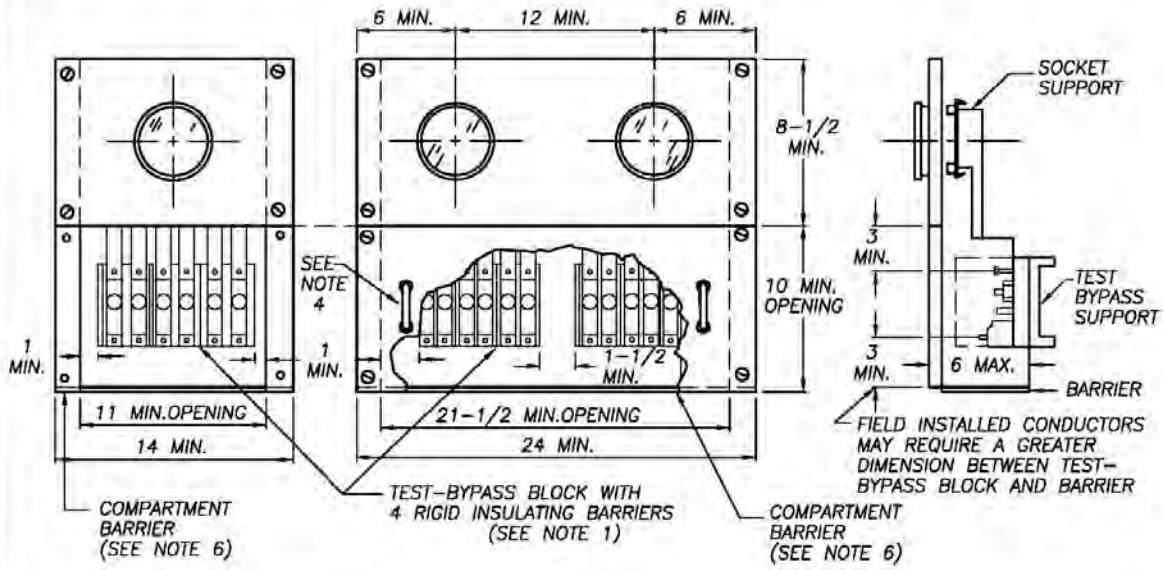
NOTES:

1. This device may be used for commercial, multifamily residential (not separately metered) and other types of occupancies.
2. Aluminum bodied terminals for No. 1/0 through 250 KCML wire.
3. Hubs capped off if used for underground feed.
4. Rigid insulating barriers.
5. Insulated bondable vertical lay-in, double neutral lug with No. 250 kcml wire capacity, mounted on either sidewall.
6. Test-bypass blocks shall be bussed or wired to socket jaws or terminals.
7. Upper test connector studs.
8. All section panels shall be independently removable. Upper panel shall be non-removable when meter is in place. Meter socket shall be mounted on support and attached to upper panel. Lower panel shall be sealable and permanently labeled: "DO NOT BREAK SEALS - NO FUSES INSIDE"
9. Test-bypass blocks with rigid insulating barriers shall be furnished, installed, and wired or bussed to the meter socket by the manufacturer. Connection sequence is line-load from left to right..
10. For 3Ø, 4 wire, connect 7th jaw to body neutral lug with no. 12 min. copper wire, white in color.
11. For 3Ø, 4 wire delta, identify right hand test-bypass block (2 poles) as powerleg. Identification to be orange in color.
12. For 3Ø, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw to this bus, using No. 12 min. copper wire. Color shall be other than white, gray, green or orange.
13. For 1Ø, 3 wire, provide two test-bypass blocks mounted in the outer positions and a four jaw socket.
14. For 1Ø, 3 wire, 120/208 volt, provide two test-bypass blocks mounted in the outer positions and a five jaw socket. Connect 5th jaw of meter socket to body of neutral lug with a No. 12 min. copper wire, white in color.
15. Decals on inside back of enclosure in 3/4 inch minimum block letter labeling, LINE, LOAD.
16. For required meter identification & labeling requirements, See Section XVII.

PREVIOUSLY GE-08-455.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST-BYPASS FACILITIES, 200 AMPERE, 0-600V
DRAWN BY: AA	APPROVED BY: LN	DATE: 9-27-2017	DWG: COMM-019.0	REVISION:	

Drawing COMM-019.0: Safety Socket Box with Factory Installed Test-Bypass Facilities, 200 Amp, 0-600V



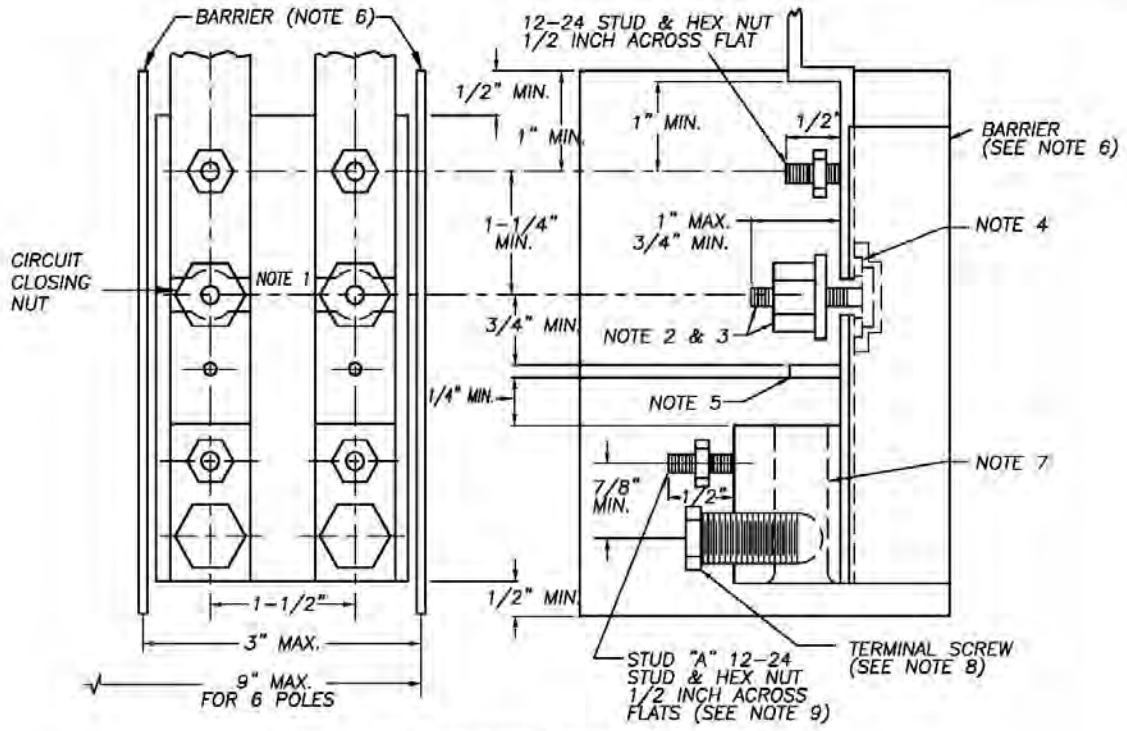
NOTES: ALL DIMENSIONS SHOWN ARE IN INCHES

1. Test-bypass blocks with rigid insulating barriers shall be furnished, installed, and wired or bussed to the meter socket by the manufacturer. Connection sequence is line-load from left to right.
2. Metered conductors shall not pass through adjacent metering compartments except in enclosed wireways. to insure proper identification of cables in factory cabled equipment, metered cables (except in the test-bypass area), shall be either physically barriered or bundled so as to separate them from unmetered cable or permanently marked and isolated from unmetered cables. Physical barriers will not be required if the unmetered conductors are bus.
3. Meter panels shall be removable with a maximum of two meters per panel. Panels shall be nonremovable when the meter is in place. Meter socket is to be supported independent of, and attached to, the meter panel.
4. Test-bypass block cover panel shall be sealable and fitted with a lifting handle. All panels exceeding 16 inches in width shall require two lifting handles.
5. When a neutral is required for metering or testing, an insulated neutral terminal shall be provided behind each test-bypass cover panel. The terminal shall be readily accessible when the cover panel is removed and shall be individually connected to the neutral bus with a minimum size No. 8 awg copper wire.
6. A factory-installed, full-width insulating barrier shall be located at the bottom of each test-bypass compartment. In addition, a full width and depth isolating barrier shall be located below the bottom test-bypass compartments and above the load terminals of the meter disconnect devices. If a factory-installed rear load wireway is provided, the isolating barrier shall extend back to that wireway. ventilation openings, when provided, shall not exceed a maximum diameter of 3/8 inch. A slot in the isolating barrier provided for the load conductors supplied from the test-bypass blocks shall be a maximum of 1-1/2 inches in depth and may extend to the width of the meter disconnect devices. The slot may not be located in the front 6 inches of the test-bypass compartment insulating barrier.
7. For 3Ø, 4 wire, connect 7th jaw of meter socket to body of neutral lug with a white #12 awg copper wire.
8. For 3Ø, 4 wire delta, identify right hand test-bypass block (2 poles) as power leg. Identification to be orange in color.
9. For 3Ø, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw of meter socket to this bus using minimum #12 awg copper wire. Color used to identify the wire shall not be white, grey, green or orange.
10. For 1Ø, 3 wire, omit center test-bypass block.
11. For 1Ø, 3 wire, 208y/120 volts, omit center test-bypass block and connect 5th jaw of meter socket to body of neutral lug with white #12 awg copper wire.
12. Separate line and load conductors shall be installed by the contractor or manufacturer for each meter socket.
13. Each line and load position shall be clearly identified by 3/4 inch minimum block letter labelling.
14. All securing screws shall be captive. All panels shall be sealable.
15. For required meter identification & labeling requirements, See Section XVII.

PREVIOUSLY GE-08-457.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS SELF CONTAINED METERS INSTALLED IN SWITCHBOARDS – 0-200A, 0-600V
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM-020.0	REVISION:	

Drawing COMM-020.0: Self-Contained Meters Installed in Switchboards, 0-200A, 0-600V



ALL DIMENSIONS SHOWN ARE IN INCHES

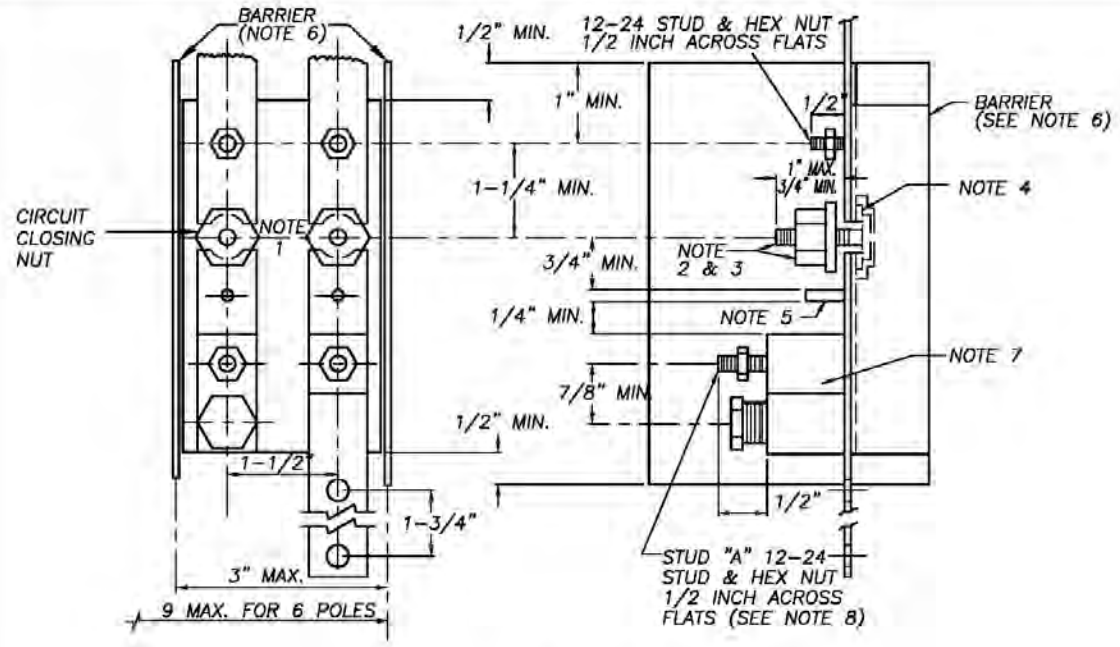
NOTES:

1. Strike distance between upper and lower bus sections shall not be less than 1/4 inch when shorting nut is backed off.
2. Circuit-closing nut shall be a hex nut 5/8 inch across flats with plated copper washer attached and have threads counter-bore at bottom to facilitate re-installation. Bolt head shall be secured in place to prevent turning and backout.
3. The circuit-closing nut and bolt assembly shall maintain the applied contact pressure between the plated copper washer and the bus members of the test-bypass block.
4. Insulating washer shall be made from dimensionally stable, nontracking material and shall provide minimum of 1/8 inch creep distance between the bolt and the bus sections. Bus sections shall be plated.
5. Wire stops shall extend to center of terminal opening or beyond.
6. Rigid insulating barriers shall project at least 1/4 inch beyond any energized parts when the maximum wire size is installed.
7. Terminals shall be aluminum bodied. The opening shall extend through the terminal body and, if wire hole is round, shall be chamfered as necessary to facilitate installation of the largest size wire.
8. The terminal screw may be of the allen type (3/16 inch across flats for 100 amp, 5/16 inch across flats for 200 amp). If stud "A" is a part of the terminal screw, the terminal screw shall be 5/8 inch hex across flats.
9. Stud "A" shall be located in the clear area between the terminating lug and the circuit-closing nut, and may be positioned on the terminal body, on the terminal screw, on the bus member, or incorporated as part of the wire stop.

PREVIOUSLY GE-08-463.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM-021.0	REVISION:	TEST-BYPASS/DISCONNECT BLOCK FOR SAFETY SOCKETS - 100 AND 200 AMPERE 0-600V

Drawing COMM-021.0: Test-Bypass/Disconnect Block for Safety Sockets, 100 & 200 A, 0-600V



ALL DIMENSIONS SHOWN ARE IN INCHES

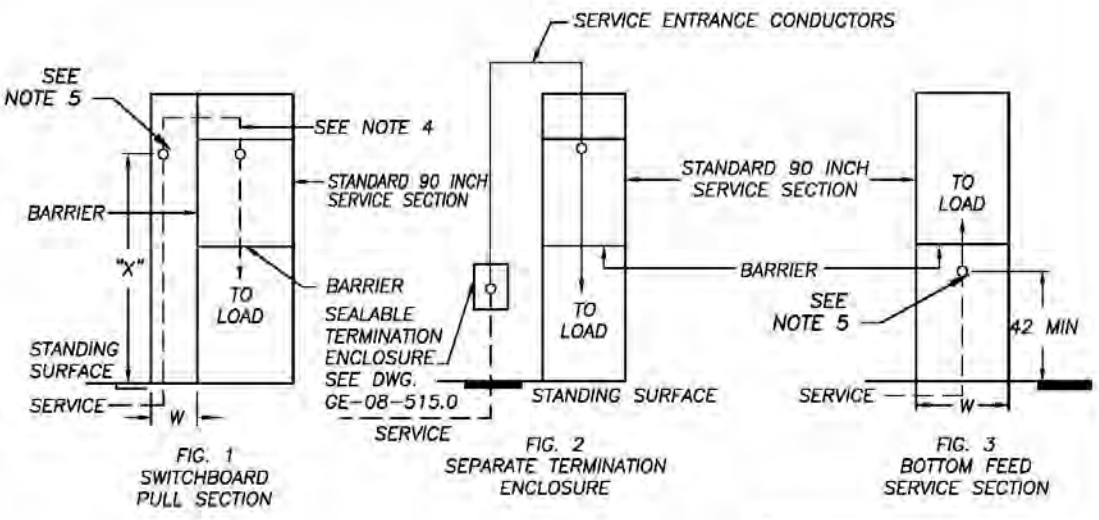
NOTES:

1. Strike distance between upper and lower bus sections shall not be less than 1/4 inch when shorting nut is backed off.
2. Circuit-closing nut shall be a hex nut 5/8 inch across flats with plated copper washer attached and have threads counter-bore at bottom to facilitate re-installation. Bolt head shall be secured in place to prevent turning and backout.
3. The circuit-closing nut and bolt assembly shall maintain the applied contact pressure between the plated copper washer and the bus members of the test-bypass block.
4. Insulating washer shall be made from dimensionally stable, nontracking material and shall provide a minimum of 1/8 inch creep distance between the bolt and the bus sections. Bus sections shall be plated.
5. Wire stops are not required if line and/or load is connected with bus bar. If cable terminals are used, dwg. COMM-021 construction requirements shall apply.
6. Rigid insulating barriers shall project at least 1/4 inch beyond any energized parts when the maximum wire size is installed.
7. Termination of bus bar and cable line or load conductors may be cable. If bus and cable terminations are used together, proper locations and alignment of stud "A" must be maintained to facilitate the installation of bypass jumper.
8. Stud "A" shall be located in the clear area between the terminating lug and the circuit closing nut, and may be positioned on the terminal body, or the terminal screw, on the bus member, or incorporated as part of the wire stop.
9. Serviceability - the LINE and/or LOAD bus is to be connected to the bus block member in a manner which will allow ready replacement of the test-bypass block assembly.

PREVIOUSLY GE-08-465.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS TEST-BYPASS/DISCONNECT BLOCK FOR SAFETY SOCKETS 100 AND 200 AMP 0-600V (BUSSED AND/OR CABLE TERMINATIONS)
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM-022.0	REVISION:	

Drawing COMM-022.0: Test-Bypass/Disconnect Block for Safety Sockets, 100 & 200 A, 0-600V (Bussed and/or Cable Terminations)



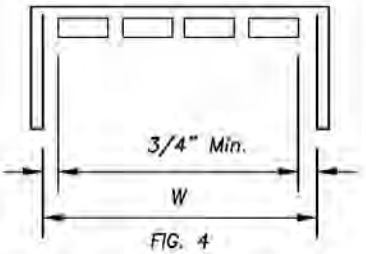


FIG. 4

SWITCHBOARD RATING–AMPS	MINIMUM WIDTH "W"		"X" MINIMUM DIMENSION
	3–WIRE	4–WIRE	
BELOW 400	CONSULT M.I.D. METERING DEPARTMENT		
400–800	24"	24"	42"
801–1200	24"	30"	42"
1201–2000	30"	35"	42"
ABOVE 2000	CONSULT M.I.D. METERING DEPARTMENT		

NOTES:

1. A switchboard pull section (Figure 1), a termination enclosure (Figure 2), or a bottom-feed service section (Figure 3) shall be provided for underground service.
2. When the service section is served from a pull section, the bus or cable conductors shall enter through the side or back of the sealable section above the current transformer compartment as shown in Fig. 1, or shall enter by means of horizontal cross bussing in back of metering compartment.
3. Bus bars, with provisions for termination lugs are required from the pull section into the service section, when the main switch is rated above 800 amperes, or when multiple metering is to be supplied.
4. Bus bars or cables may extend from the pull section landing lugs into the service section of switchboards rated up to 800 amperes.

(Continued)

PREVIOUSLY GE–08–517.1

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM–023.0	REVISION:	UNDERGROUND SERVICE TERMINATION – STANDARD SWITCHBOARD SERVICE SECTION – 400–2000A, 0–600V

Drawing COMM-023.0: Underground Service Termination, Standard Switchboard Service Section, 400-2000A, 0-600V

NOTES: (continued)

5. Side or rear entry of the service cable into the pull section may require a greater dimension than that shown in Table 1, consult the M.I.D. Metering Department.

6. Consult a M.I.D. Engineering Technician for the type and size of terminating lugs.

7. All pull and terminating sections shall have full front access. Cover panels shall be removable, sealable, provided with two lifting handles, and limited to a maximum size of 9 square feet in area.

8. Access cover panel to bus clearances:

   A. A minimum of 4 inches of clearance is required from any energized part to any removable access cover or the clearance may be reduced to 1-1/2 inches when a safety barrier of insulating material with a minimum 1/8 inch thickness is provided by the manufacturer.

   B. Barrier must extend a minimum of 10 inches below terminating buss and extend upward to cover all energized parts that infringe into the 4 inch minimum clearance dimension.

   C. Barrier shall be removable.

   D. Barrier shall have a caution sign affixed to it reading "WARNING: THIS BARRIER MUST BE INSTALLED BEFORE REPLACING PULL SECTION COVERS".

   E. Additional caution signs shall be affixed to exterior of all pull section access covers reading "DO NOT REPLACE PULL SECTION COVERS UNTIL SAFETY BARRIER IS IN PLACE".

   F. Brackets and associated hardware used to mount the safety barrier shall not extend into the provided access opening.

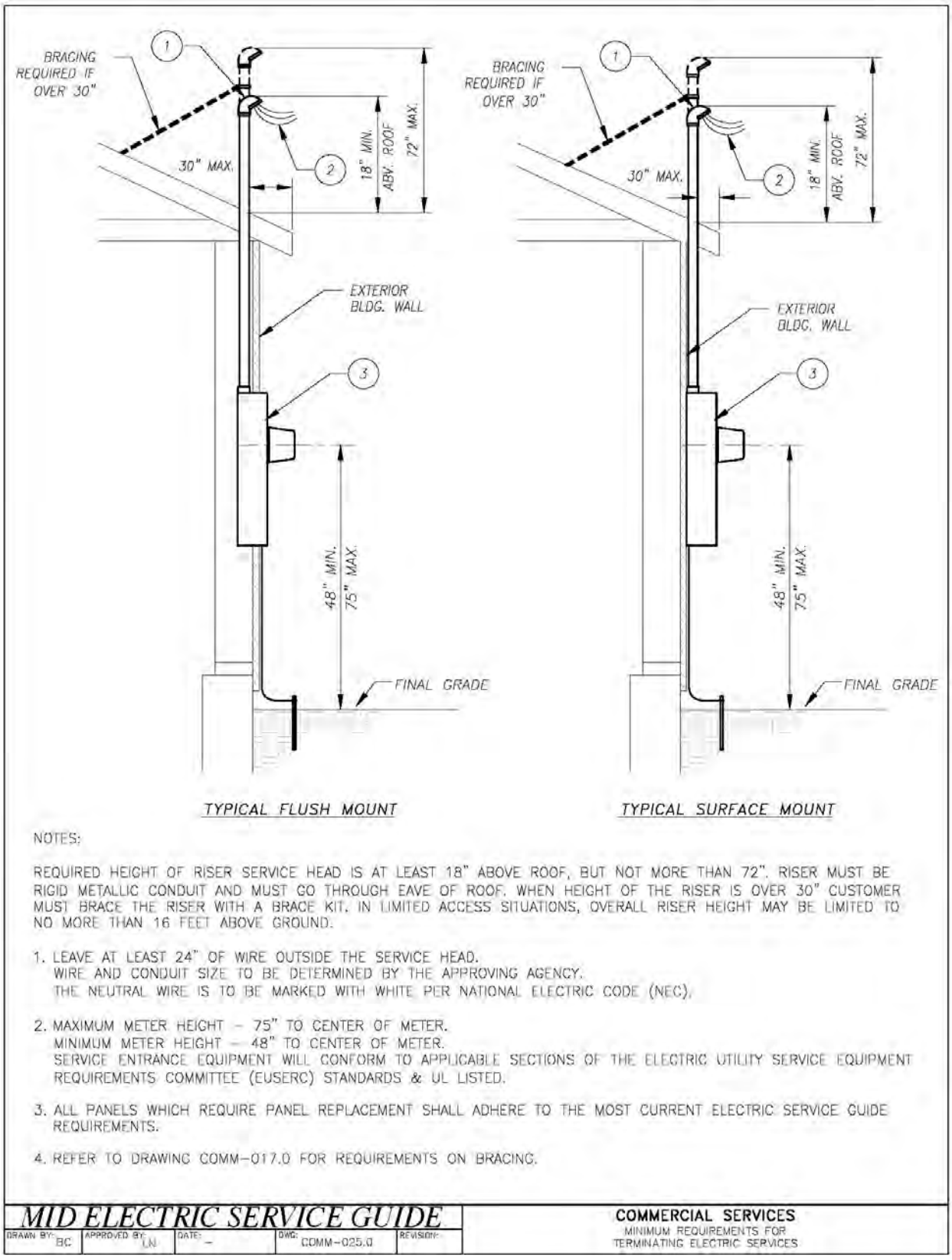
9. Sealing provisions shall consist of two drilled stud and wing-nut assemblies on opposite sides of the panels.

10. Ground bus, when provided shall be located at the rear of the terminating enclosure.

PREVIOUSLY GE-08-517.2

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS UNDERGROUND SERVICE TERMINATION – STANDARD SWITCHBOARD SERVICE SECTION – 400-2000A, 0-600V
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: COMM-024.0	REVISION:	

Drawing COMM-024.0: Underground Service Termination, Standard Switchboard Service Section, continued



NOTES:

REQUIRED HEIGHT OF RISER SERVICE HEAD IS AT LEAST 18" ABOVE ROOF, BUT NOT MORE THAN 72". RISER MUST BE RIGID METALLIC CONDUIT AND MUST GO THROUGH EAVE OF ROOF. WHEN HEIGHT OF THE RISER IS OVER 30" CUSTOMER MUST BRACE THE RISER WITH A BRACE KIT. IN LIMITED ACCESS SITUATIONS, OVERALL RISER HEIGHT MAY BE LIMITED TO NO MORE THAN 16 FEET ABOVE GROUND.

1. LEAVE AT LEAST 24" OF WIRE OUTSIDE THE SERVICE HEAD.
   WIRE AND CONDUIT SIZE TO BE DETERMINED BY THE APPROVING AGENCY.
   THE NEUTRAL WIRE IS TO BE MARKED WITH WHITE PER NATIONAL ELECTRIC CODE (NEC).

2. MAXIMUM METER HEIGHT – 75" TO CENTER OF METER.
   MINIMUM METER HEIGHT – 48" TO CENTER OF METER.
   SERVICE ENTRANCE EQUIPMENT WILL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & UL LISTED.

3. ALL PANELS WHICH REQUIRE PANEL REPLACEMENT SHALL ADHERE TO THE MOST CURRENT ELECTRIC SERVICE GUIDE REQUIREMENTS.

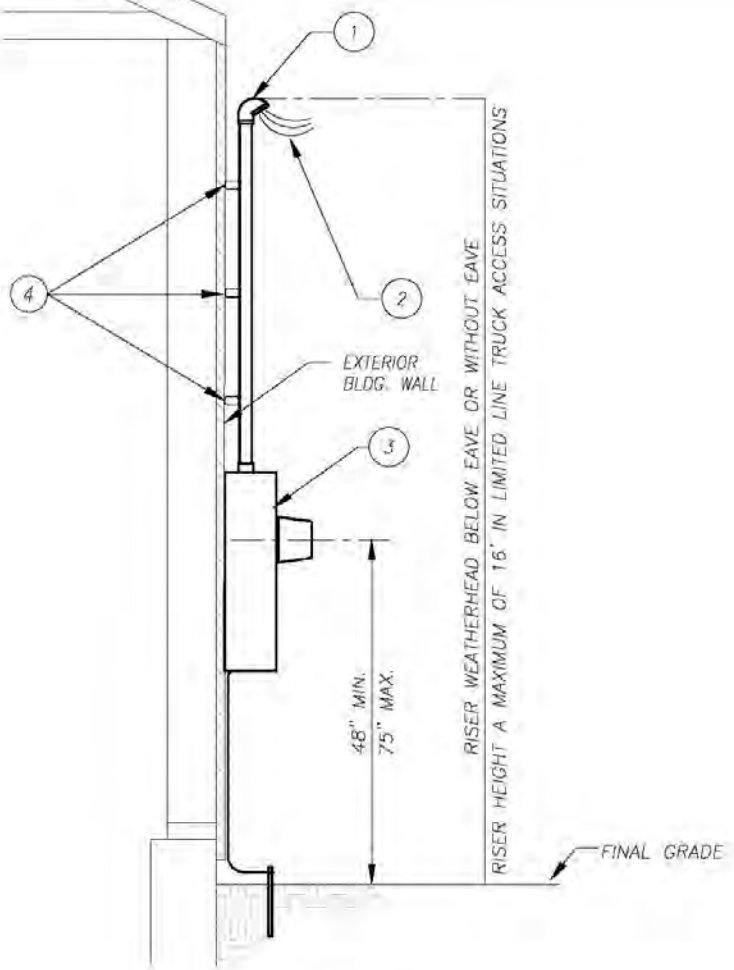
4. REFER TO DRAWING COMM-017.0 FOR REQUIREMENTS ON BRACING.

MID ELECTRIC SERVICE GUIDE

DRAWN BY: BC	APPROVED BY: LN	DATE: –	DWG: COMM-025.0	REVISION:

COMMERCIAL SERVICES
MINIMUM REQUIREMENTS FOR TERMINATING ELECTRIC SERVICES

Drawing COMM-025.0: Minimum Requirements for Terminating Electrical Services, Typical



SURFACE MOUNT

NOTES:

1. IN LIMITED ACCESS SITUATIONS, OVERALL RISER HEIGHT MAY BE LIMITED TO NO MORE THAN 16 FEET ABOVE GROUND, BUT ALSO MUST BE A MINIMUM OF 8 FEET ABOVE GROUND. IF THE RISER WEATHER HEAD MUST GO UNDER THE EAVE, CONTACT MID'S ELECTRICAL ENGINEERING DEPT. MID WILL NOT ATTACH TO SCREW KNOB INSULATORS.

2. LEAVE AT LEAST 24" OF WIRE OUTSIDE THE SERVICE HEAD.
   WIRE AND CONDUIT SIZE TO BE DETERMINED BY THE APPROVING AGENCY.
   THE NEUTRAL WIRE IS TO BE MARKED WITH WHITE PER NATIONAL ELECTRIC CODE (NEC).

3. MAXIMUM METER HEIGHT – 75" TO CENTER OF METER.
   MINIMUM METER HEIGHT – 48" TO CENTER OF METER.
   SERVICE ENTRANCE EQUIPMENT WILL CONFORM TO APPLICABLE SECTIONS OF THE ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE (EUSERC) STANDARDS & UL LISTED.

4. 1–1/2" STRUT CHANNEL TO BE INSTALLED BEHIND CONDUIT TO PROVIDE STABILITY FOR RISER. STRUT CHANNEL NEEDS TO BE MOUNTED TO STUDS.

MID ELECTRIC SERVICE GUIDE					COMMERCIAL SERVICES MINIMUM REQUIREMENTS FOR TERMINATING ELECTRIC SERVICES
DRAWN BY: BC	APPROVED BY: LN	DATE: –	DWG: COMM-026.0	REVISION:	

Drawing COMM-026.0: Minimum Requirements for Terminating Electric Services, Riser Without or Below Eave

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

--MID USE ONLY--

CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date 9/10/2015 **Service start date:** 12/1/2015 **Power On?** ☐ Yes ☒ No

Type of Service: ☒ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: 50

New construction: ☐ Yes ☐ No Square footage of building or work area:

1. Legal billing name: John Doe
2. Doing business as (DBA): Business Name (Name of Organization or Entity)
3. Service address: 1234 Sample Drive (Street) Modesto (City) 95352 (Zip Code)
4. Mailing address: PO Box 1111 (Street) Modesto (City) 95352 (Zip Code)
5. Type of business: Distribution/Trucking Company (Complete description of goods or services rendered) Franchisee? ☐ Yes ☒ No
6. Number of years in business: 10 Business phone: 209-123-4567 Fax number: 209-456-7890
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☒ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: California (Copy of documents required) Year filed: 2004
9. Taxpayer ID number (EIN or SSN): 123456789 Business License number: 1234567 (Copy of license required)
10. If business name is legal billing name, fictitious name file number: 11-2345 Filing date: 9/8/2010
11. Address of corporate office or residence address if sole proprietor:
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth
John Doe	President/CEO	209-123-4567	D1234567	1/18/75
Jane Doe	Vice President	209-456-0987	D9876543	5/30/76

13. Contact for billing inquiries: Jane Doe (Name) Vice President (Title) 209-456-0987 (Phone) janedoe@email.com (email address)
14. Name of person completing form: Jane Doe (Name) Vice Pr... (Title)

Signature (required):

Owner or Corporate Officer	Driver's License number & State	Date of Birth
Jane Doe (Print Name)	Vice President (Title)	9/10/2015 (Date)

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Go to http://www.mid.org/forms/ for the most current Application.

Sample 1: Application for Non-Residential Electric Services

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: Sample Warehouse Expansion
Location (Street): 1234 Sample Way, Modesto, CA 95353
Owner (Name): John Doe Telephone: (209) 555-4444
Address: 5687 Data Drive, Modesto, CA 95353
Engineer (Name): David Doe Telephone: (209) 566-5664
Address: 7896 Sample Ct., Modesto, CA 95352
Estimated Date Ready for Service: 9-15-2015 Pre-Construction Meeting Date: _____
Begin Rough Grading Date: _____

General Information

Approximate Square Footage: 8528 Type of Business: Warehouse

Electric Load Information

	Initial		Future			Initial		Future	
Lighting	3.4	kW		kW	Receptacles	1.0	kW		kW
Water Heater	1.5	kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners	20	HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: 65 kW Size Main Fused Switch: 600 Amps
Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____
Type of Service Desired: (circle one) (Overhead) Underground
Phase: 3 Voltage: 208/120 Wires: 4 Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
(X) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Go to http://www.mid.org/forms/ for the most current Form.

Office Use Only

Application Complete ☐ Yes ☐ No Checked By: _____ Date: _____
If no, explain: _____

9/2015

Sample 2: Commercial Load Information Form

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

---MID USE ONLY---			
CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date _____ **Service start date:** _____ **Power On?** ☐ Yes ☐ No

Type of Service: ☐ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: _____

New construction: ☐ Yes ☐ No Square footage of building or work area: _____

1. Legal billing name: _____
2. Doing business as (DBA): _____
   Name of Organization or Entity
3. Service address: _____
   Street City Zip Code
4. Mailing address: _____
   Street City Zip Code
5. Type of business: _____ Franchisee? ☐ Yes ☐ No
   Complete description of goods or services rendered
6. Number of years in business: _____ Business phone: _____ Fax number: _____
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☐ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: _____ Year filed: _____
   Copy of documents required
9. Taxpayer ID number (EIN or SSN): _____ Business License number: _____
   Copy of license required
10. If business name is legal billing name, fictitious name file number: _____ Filing date: _____
11. Address of corporate office or residence address if sole proprietor:
    _____
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth

13. Contact for billing inquiries: _____
    Name Title Phone **email address**
14. Name of person completing form: _____
    Name Title Telephone

Signature (required): _____
Owner or Corporate Officer **Driver's License number & State** **Date of Birth**

Print Name Title Date

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: _____ Type of Business: _____

Electric Load Information

	Initial		Future			Initial		Future	
Lighting		kW		kW	Receptacles		kW		kW
Water Heater		kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners		HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: _____ kW Size Main Fused Switch: _____ Amps

Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

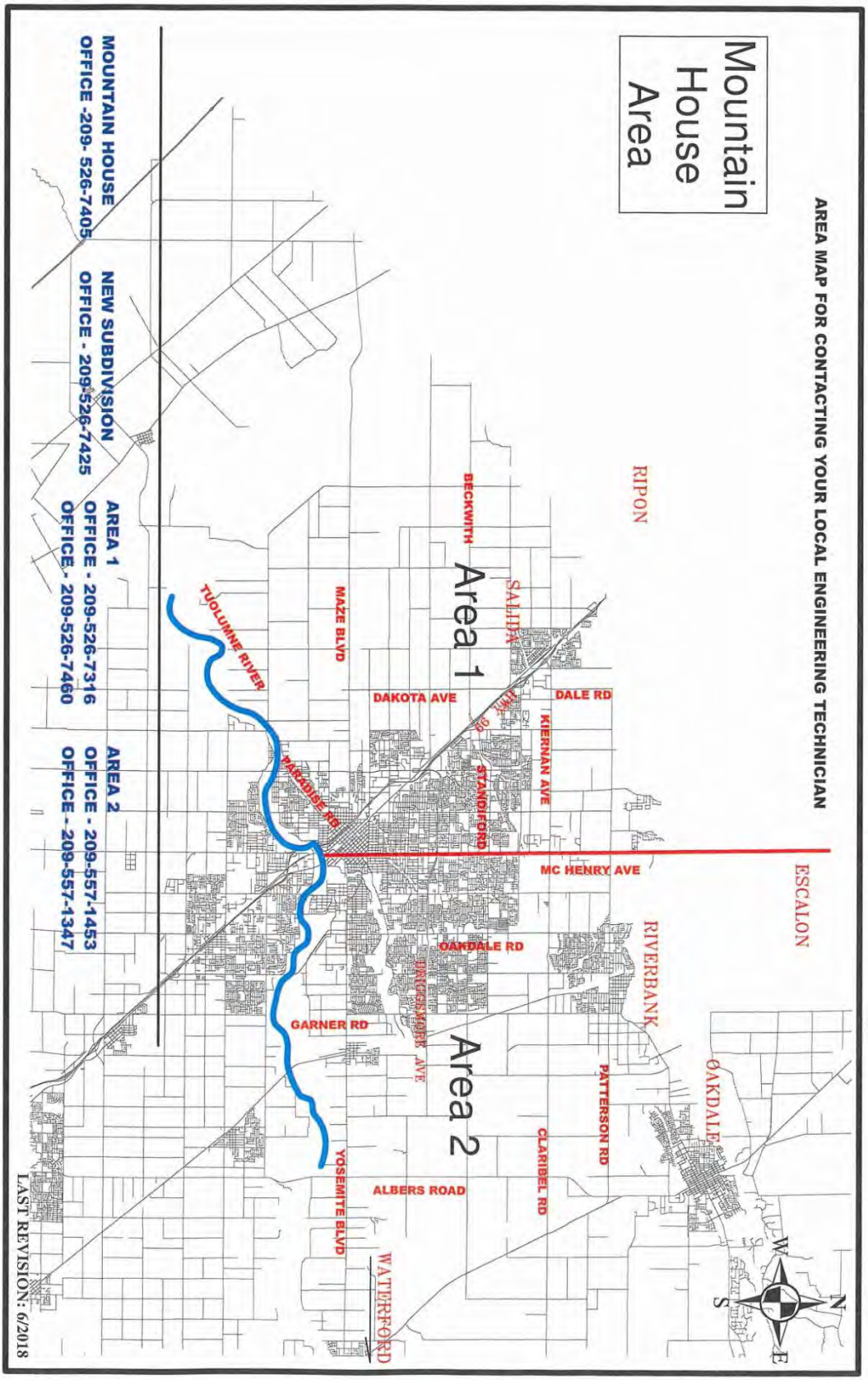
Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

_____

9/2015



Form 3: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Temporary

Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

A. Frequently Asked Questions

1. What is a temporary service and why would I need it?

A temporary service is a non- permanent electric service limited to 36 months. Temporary service may be established during development of a property prior to permanent service installation, or when electric service desired is intended for short term use only. Temporary service shall be removed or converted to permanent service at the end of the temporary service duration.

2. How do I know what temporary service is right for me, and what are the steps needed?

Contact an MID Engineering Technician who handles the area you intend to install temporary electric service (a map showing the areas is on page 13). The MID Engineering Technician can meet with you at the site of your new temporary electric service and discuss which temporary electric service option will be right for you.

3. Can I still get a temporary service if there are no existing MID facilities nearby and what are my fees?

Where MID is required to alter transformers, existing service conductors, or extend facilities to accommodate customer temporary electric service, the full cost of the installation and removal of the temporary electric service plus an administrative fee shall be paid by you in advance of the installation. MID standard temporary electric service fees in the MID Electric Service Rules, Appendix A, will apply only when existing MID facilities are available to the requested temporary electric service site without additional modification for electric service connection.

4. What are my requirements to get temporary service?

You must provide an electric service panel either placed on a 6" x 6" x 20'- 6" minimum post, or a 25' class 5 pole placed within 100' of existing MID overhead electric service facilities, and be MID truck accessible (refer to Drawing TMP SRVC-002.0 and Drawing TMP SRVC-004.0, pages 6 and 8), or an electric service panel placed on a 6" x 6" x 11'-0 post with conduit, and cable provided to an MID service point in an existing MID pull box, or an MID transformer adjacent to the property (refer to Drawing TMP SRVC-001.0, Drawing TMP SRVC-002.0, Drawing TMP SRVC-003.0, or Drawing TMP SRVC-004.0 on pages 5 through 8).

B. Requirements for Temporary Electric Service

1. The customer must contact the MID Engineering Technician assigned the area (see the Map on page 13).

2. The MID Engineering Technician will arrange a site visit with the customer and provide the necessary information including the application and other forms.

3. The MID Electric Engineering department will design the temporary electric service and provide a requirements letter with appropriate fees estimated, as necessary.

4. The customer must respond to the MID requirements letter and deposit the fee. The customer must prepare the site with temporary electric service, and have the electric work inspected by the appropriate local governing authority (a list those local authorities are on page 4). The customer should notify MID when the temporary electric service has been inspected and approved.

C. Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send final set of site plans to MID's Electrical Engineering Department for review and design.
2	MID	7 business days	Engineering Technician designs the electric layout and sends the installation agreement and one marked-up copy of site plan to the Customer.
3	Customer		Pay any charges, return a signed installation agreement, and return completed Commercial Load Information Form with all relevant dates regarding construction and service requirements. Both must be returned to MID. Obtain all necessary permits from the local governing authority.
4	MID	7 business days	Engineering Technician designs engineering drawing(s), materializes and assembles the work order.
5	Customer		Call USA to locate underground utilities, install conduit and substructures, return Application for Electric Services to the Customer Service Department, request MID and local governing authority to inspect conduit, substructure, transformer pad, and electric facilities.
6	MID	3 business days	MID inspects trench, conduit, substructures, and transformer pad. This stage repeats itself until you satisfactorily pass inspection.
7	Customer		Close trench, pull service conductors to agreed location, connect conductors to panel. Local governing authority inspects electric facilities. Your facilities pass inspection and you request service.
8	MID	7 business days pending weather and scope of project	Meter Department wires instrument transformers, where required; MID construction installs transformer, primary cables and secondary cables where needed. MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, the meter is set and the panel is energized.

D. Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

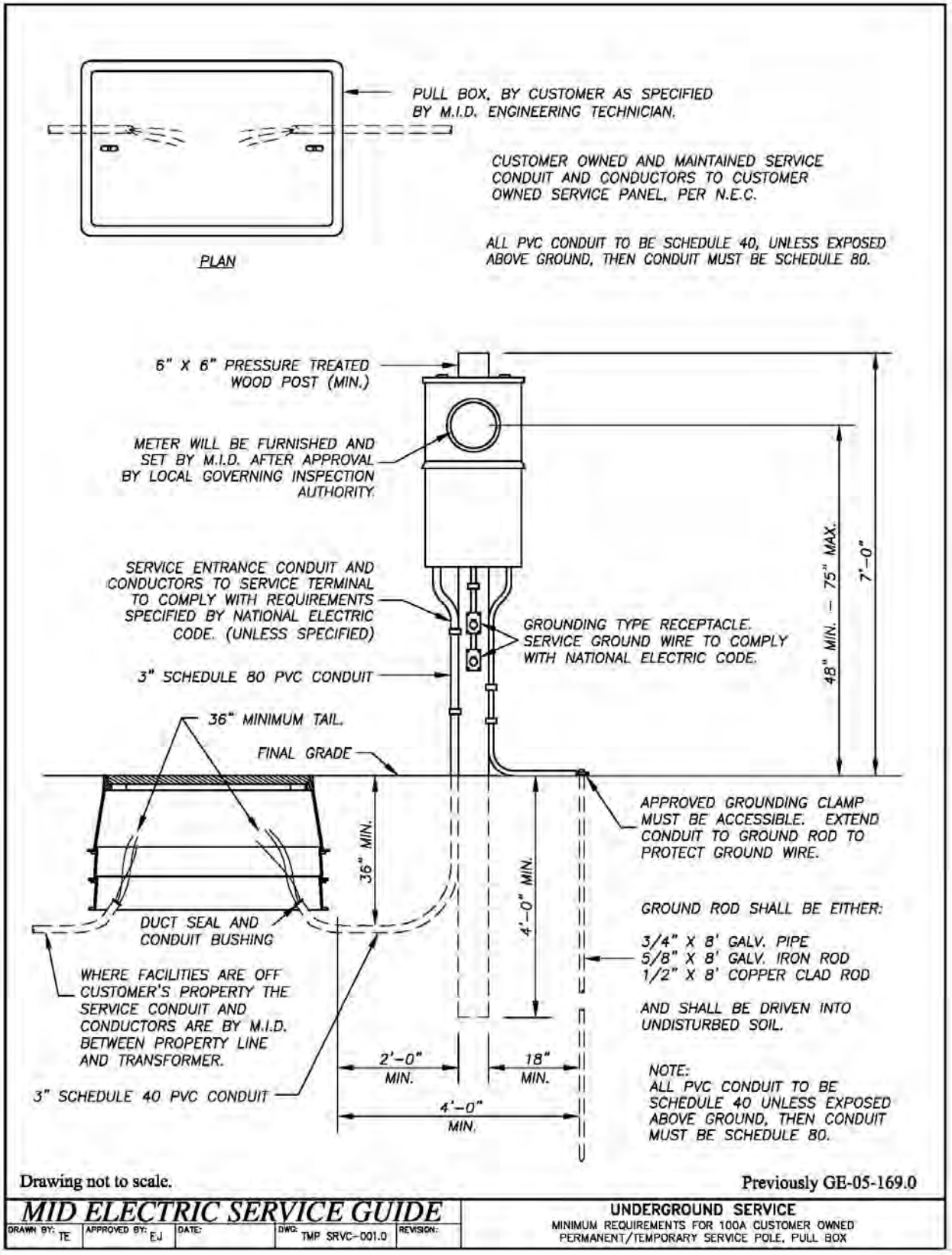
City Of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

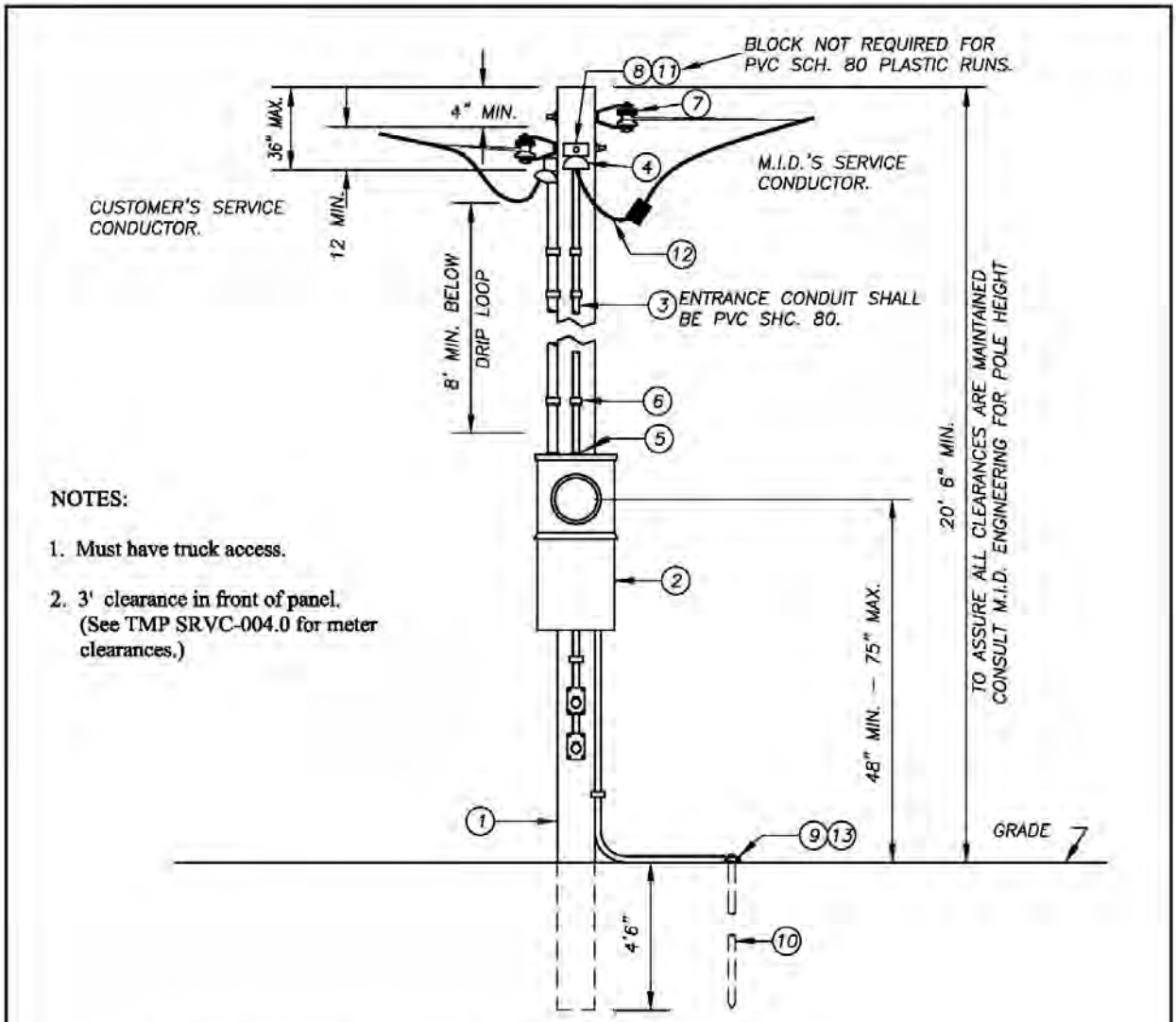
E. MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 13).



Drawing TMP SRVC-001.0: Typical Temporary Underground Service, Service Pole, Pull Box



NOTES:

1. Must have truck access.
2. 3' clearance in front of panel. (See TMP SRVC-004.0 for meter clearances.)

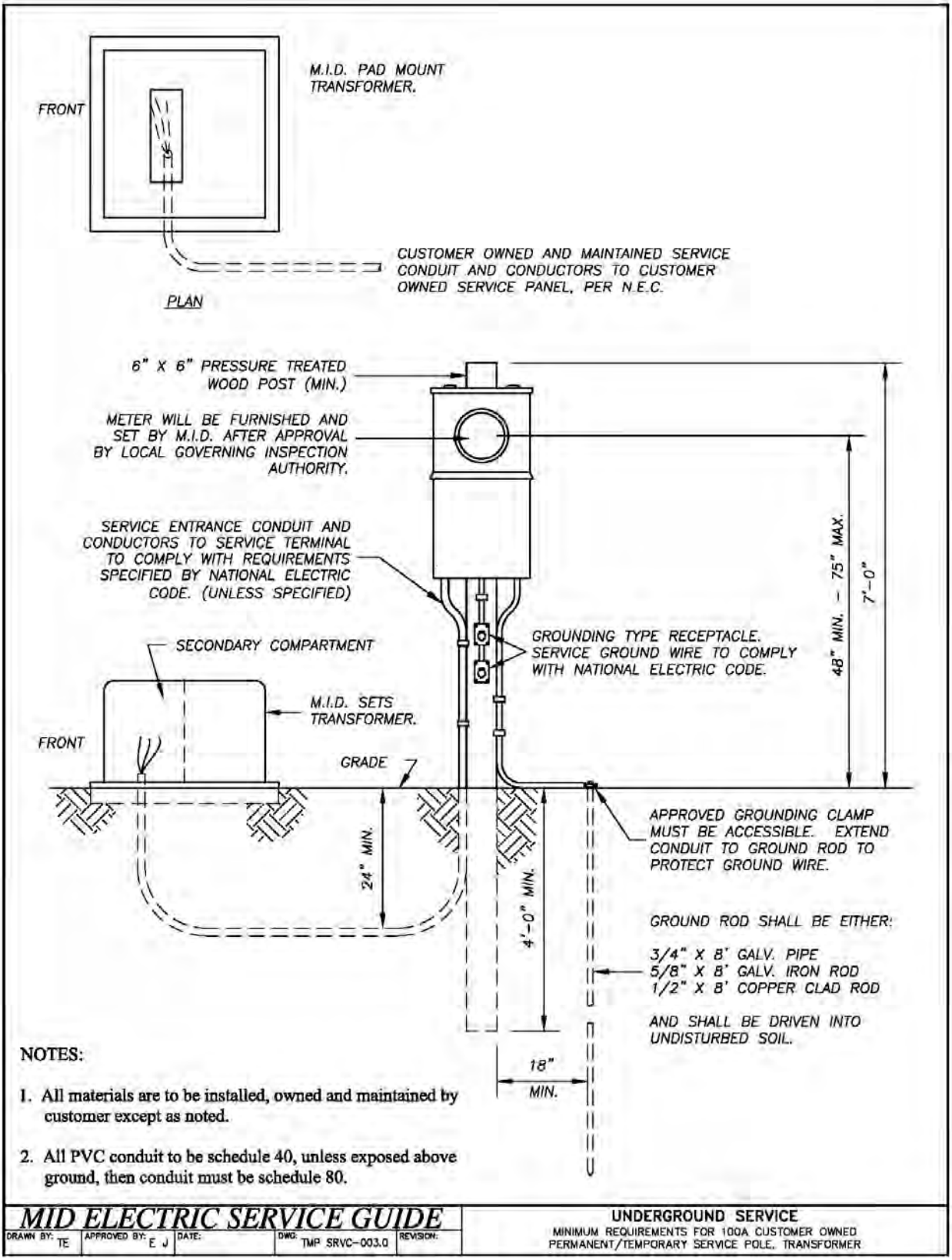
MATERIALS TO BE FURNISHED & INSTALLED BY CUSTOMER

ITEM	DESCRIPTION
1	Pole, wood 6" x 6" (20' Min. length) or 25' class 5 round pole, treated.
2	Meter socket, main service sw. (size as required)
3	Conduit riser; PVC Sch. 80
4	Service weather head(s)
5	Conduit fitting, threaded with cover and gasket
6	Strap, pipe, galvanized.
7	Insulators, clevis type (with bolts, washers) bolted through pole.
8	Bolt, mach. 5/8" x length as required with washers, galvanized.
9	Conduit, grounding hub, and clamp.
10	Ground, contact local inspection authority.
11	Wood block, 4" x 4" or two 2" x 4" nailed together.
12	Riser wire, insulated: size as required with 24" Min. tail
13	Ground wire as per N.E.C.

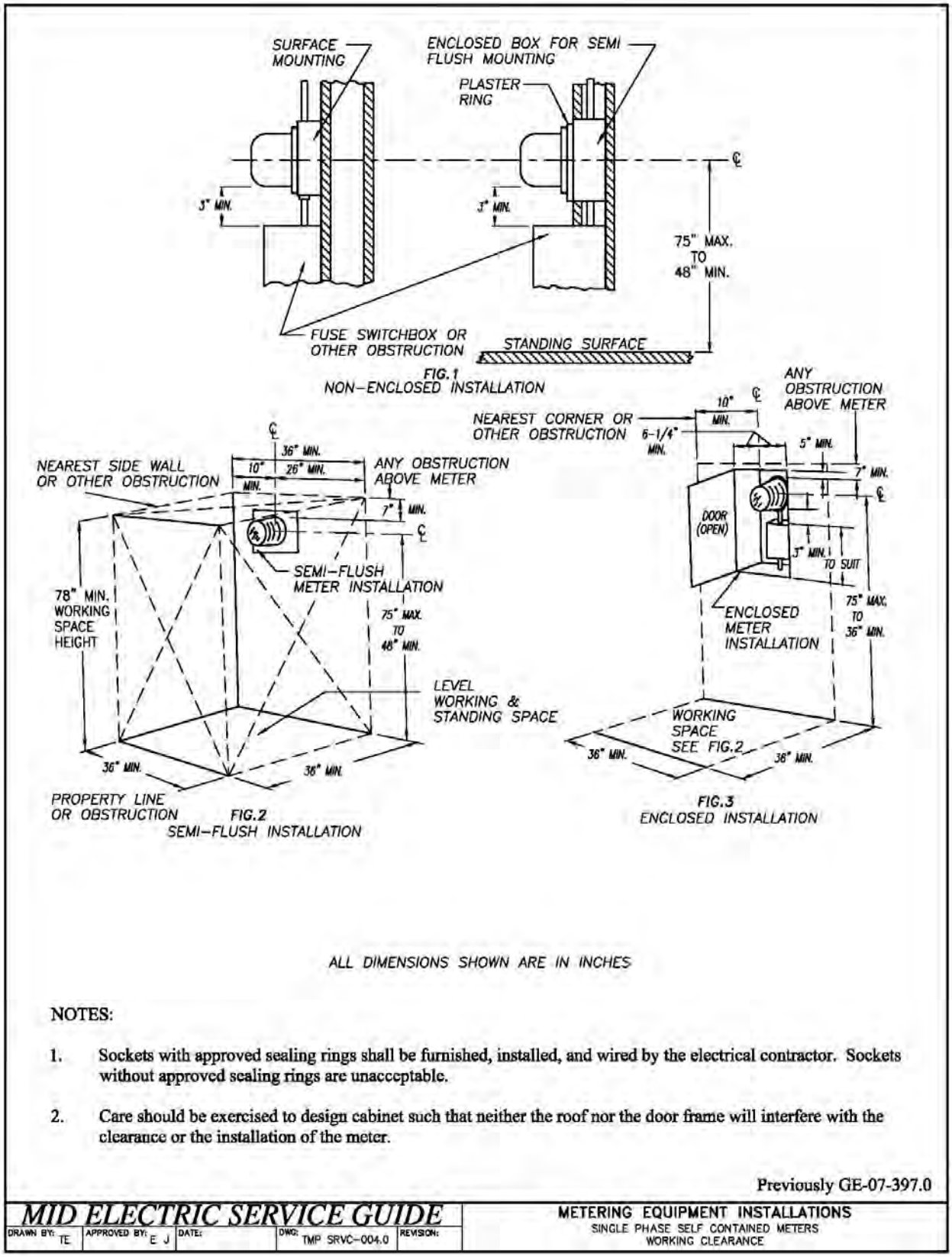
Previously GE-06-287.0

MID ELECTRIC SERVICE GUIDE					OVERHEAD SERVICE
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: TMP SRVC-002.0	REVISION:	TYPICAL CUSTOMER OWNED SERVICE POLE TEMPORARY INSTALLATION, FOR OVERHEAD CUSTOMER FEED OR RECEPTACLES

Drawing TMP SRVC-002.0: Typical Temporary Overhead Service



Drawing TMP SRVC-003.0: Typical Temporary Underground Service, Service Pole, Transformer



ALL DIMENSIONS SHOWN ARE IN INCHES

NOTES:

1. Sockets with approved sealing rings shall be furnished, installed, and wired by the electrical contractor. Sockets without approved sealing rings are unacceptable.

2. Care should be exercised to design cabinet such that neither the roof nor the door frame will interfere with the clearance or the installation of the meter.

Previously GE-07-397.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS SINGLE PHASE SELF CONTAINED METERS WORKING CLEARANCE
DRAWN BY: TE	APPROVED BY: E J	DATE:	DWG: TMP SRVC-004.0	REVISION:	

Drawing TMP SRVC-004.0: Metering Equipment Installations

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

APPLICATION FOR NEW SET AND TEMPORARY SERVICE

CSR Name:	Receipt #:	Fee Amount:	Re-Inspection Fee:
Billing Department Use Only	Date Received	Date Completed	Completed By:

Today's date: 10/18/2014

Type of Service: New Set Temporary Service Trench Underground Overhead

Account name: Brown Land Companies

Mailing address: 1234 Sample Way (Street) Modesto (City) CA (State) 95353 (Zip Code)

Telephone Number: (209) 555-5555

1. Address: 2954 West Sample Circle Account #: Loc #:
   Lot #: 3 Block #: Subdivision: West Point
2. Address: 2956 Account #: Loc #:
   Lot #: 4 Block #: Subdivision: West Point
3. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:
4. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:
5. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:
6. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:
7. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:
8. Address: Account #: Loc #:
   Lot #: Block #: Subdivision:

Signature (required for Temp Serv): (Contact Person)

Print Name Title Phone # Date

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

P:\CUST_SRV\New Set & Temp Serv App FORM.doc Revised 04/04

SAMPLE

Go to http://www.mid.org/forms/ for the most current Application.

Sample 1: Temporary Service Application

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: Sample Warehouse Expansion

Location (Street): 1234 Sample Way, Modesto, CA 95353

Owner (Name): John Doe Telephone: (209) 555-4444

Address: 5687 Data Drive, Modesto, CA 95353

Engineer (Name): David Doe Telephone: (209) 566-5664

Address: 7896 Sample Ct., Modesto, CA 95352

Estimated Date Ready for Service: 9-15-2015 Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: 8528 Type of Business: Warehouse

Electric Load Information

	Initial		Future			Initial		Future	
Lighting	3.4	kW		kW	Receptacles	1.0	kW		kW
Water Heater	1.5	kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners	20	HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: 85 kW Size Main Fused Switch: 600 Amps

Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) (Overhead) Underground

Phase: 3 Voltage: 208/120 Wires: 4 Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
(X) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Go to http://www.mid.org/forms/ for the most current Form.

Office Use Only

Application Complete ☐ Yes ☐ No Checked By: _____ Date: _____
If no, explain: _____

9/2015

Sample 2: Commercial Load Information Form

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

APPLICATION FOR NEW SET AND TEMPORARY SERVICE

CSR Name:	Receipt #:	Fee Amount:	Re-Inspection Fee:
Billing Department Use Only	Date Received	Date Completed	Completed By:

Today's date: _____

Type of Service: New Set Temporary Service Trench Underground Overhead

Account name: _____

Mailing address: _____
Street *City* *State* *Zip Code*

Telephone Number: _____

1. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
2. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
3. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
4. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
5. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
6. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
7. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____
8. Address: _____ Account #: _____ Loc #_____
   Lot #: _____ Block #: _____ Subdivision: _____

Signature (required for Temp Serv): _____
Contact Person *ID verification: Driver's License number & State (list if other)*

_____
Print Name *Title* *Phone #* *Date*

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: _____ Type of Business: _____

Electric Load Information

	Initial		Future			Initial		Future	
Lighting		kW		kW	Receptacles		kW		kW
Water Heater		kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners		HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: _____ kW Size Main Fused Switch: _____ Amps

Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

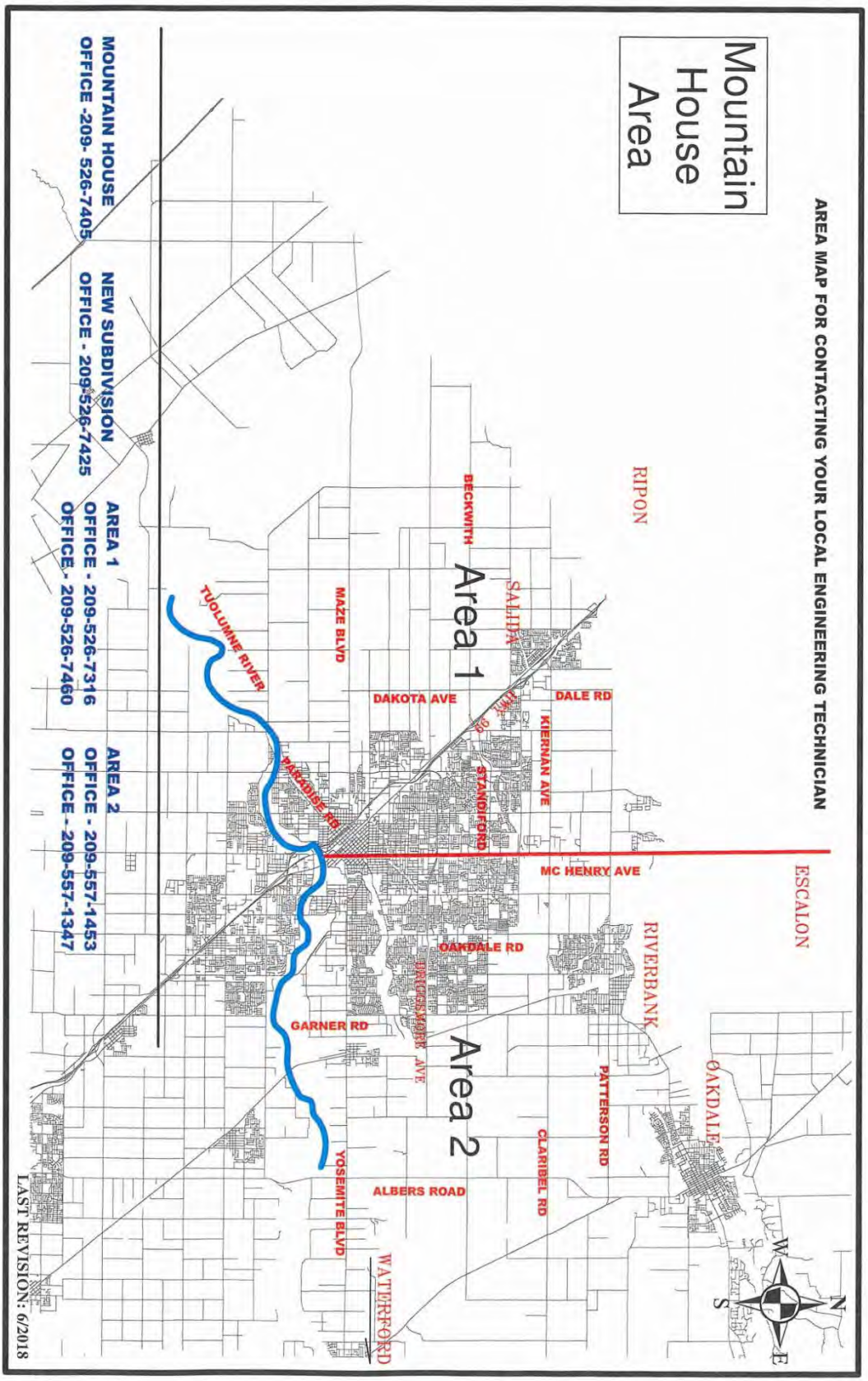
Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

_____

9/2015



Form 3: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Solar Photovoltaic

With Optional Energy Storage Systems

Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

A. Requirements for Solar Photovoltaic Systems

1. General

The Solar PV Handbook is available online at MID's website https://www.mid.org/solar. Information can also be obtained by emailing MID at pv@mid.org.

All solar photovoltaic systems and energy storage systems interconnected to MID's electric distribution system shall comply with the requirements, terms and conditions pursuant to the MID Solar Photovoltaic Program Handbook, MID's Electric Service Guide "Solar Photovoltaic" along with any local and state governing authority's requirements (see list of local governing authorities on page 10).

2. Equipment Certification

A nationally recognized testing laboratory must certify all flat plate solar electric modules and inverters. The modules must meet the requirements of the Underwriters Laboratories Standard 1703. The inverters must meet the requirements of the Underwriters Laboratory Standard 1741. The solar electric photovoltaic generation systems must use components that are listed on the California Energy Commission's (CEC) list of "Eligible Equipment" as found on the CEC's website.

3. AC Disconnect Devices

All solar electric generation systems are required to have an alternating current, full load break disconnect switches with a lockable handle. The handle shall be capable of locking in the open position and the switch contacts must provide a "visible open." This requirement assures that no electricity can back feed into the service panel which could result in personal injury or damage to the equipment. MID must be able to isolate the electric meter(s) to perform maintenance in a safe manner.

B. Abbreviations

The following abbreviations may be used throughout this Service Guide.

AC	Alternating Current
Amp	Amperes
DC	Direct Current
DG	Distributed Generation
ESS	Energy Storage System
GO	General Order
kW	Kilowatt
PV	Photovoltaic
SB1	Senate Bill 1
SLD	Single Line Diagram
V	Volt
W	Watt

C. Frequently Asked Questions

1. What is a photovoltaic system?

Photovoltaic (PV) systems are an arrangement of components designed to supply usable electric power using the Sun as the power source.

2. How do solar panels work?

Solar panels are composed of many PV cells, which are comprised of a semiconductor material such as silicon. Added to the silicon are the elements phosphorous and boron, which create conductivity within the cell and activate the movement of electrons. The electrons move across the cell when activated by the sunlight's energy into the electrical circuit hooked up to the solar panel.

3. How do I wire a Production Meter?

Please refer to Drawing PV-004.0 (page 17).

4. How much maintenance do solar energy panels require?

Consult the manufacturer for recommended maintenance.

D. Definitions

1. PV System

PV power systems convert sunlight directly into electricity. Since the electricity produced is Direct Current (DC), an inverter is used to convert the DC to Alternating Current (AC). The customer can then use the generated electricity to serve some or all of the energy demands and sell the excess energy to the electric utility via a bi directional meter also known as net metering. PV system must comply with MID's Rule 21.

2. Energy Storage System (ESS)

Energy Storage System (ESS) is a system that uses either chemical means or mechanical means to store energy for later use. The system will include all equipment necessary to convert the stored energy into useable energy.

3. Smart Contactor

A Smart Contactor is a device that will automatically disconnect an ESS from the host electric utility upon detection of voltage or frequency abnormality. It will reconnect to the system once the abnormality has passed. Refer to Rule 21 section F for operating limits and tripping parameters. A Smart Inverter's operating limits apply to a Smart Contactor.

E. Grid Interconnection

All grid-connected PV system and ESS must comply with all applicable local and national electrical codes as well as MID interconnection requirements stated in Rule 21 and Electric Service Rules.

The PV system must offset the customer's energy use by supplying electricity otherwise supplied by MID. MID requires the installation of a Meter Socket on the AC side of the inverter. MID will install a utility grade production meter that will allow MID to measure the generation output of the PV system (see Sample 3: Generation Socket).

MID also requires the installation of two visible, lockable AC disconnect switches to be installed between the PV system and the MID Distribution System. The switches must be visible and clearly labeled. The first AC disconnect should be located between the electric panel and the production meter socket. Refer to Drawing PV-011.0 for strictly solar solutions. For PV with an ESS refer to Drawing PV-012.0 through Drawing PV-016.0.

The AC disconnect directly adjacent to the main electric panel and the production meter socket must be installed within 12 feet and within line of site of the main electric panel in a readily accessible location. The production meter on PV systems is intended to be in place for the duration of its useful life.

All ESS solutions shall be configured to provide backup power for the customer in case of an outage or peak shaving only. ESS shall not be configured to export power back onto MID's system.

Line side connections, the connection between the meter and the main disconnect (breaker), will be allowed as long as the installation meets the requirements of the National Electric Code, does not void the warranty of the service panel, does not void the listing of the service panel by a Nationally Recognized Testing Laboratory (NRTL), and does not prevent the standard operation of the service panel (see Drawing PV-001.0, page 11).

Any installations that involve field modifications to the service panel, not designed by the manufacturer, may void the NRTL listing on the service panel. This will require the service panel to be re-listed by a NRTL (e.g., UL, E.T.C., etc.). If the service panel has to be re-listed, contact MID Energy Services at MIDPhotovoltaicProgramDropboxMail@mid.org or call (209) 526-7582.

Please contact your local Engineering Technician for approval before purchasing or installing any equipment. See the Area Map (page 34) for your local Engineering Technician's contact information.

Systems must be secured to a permanent surface. Any indication of system portability may deem the system ineligible for program incentives and connection to the MID system.

Electrical Interconnection Agreement and Net Metering Agreement

Customers installing a solar PV system and customers requesting service at an existing service with a solar PV system are required to submit an Electrical Interconnection Agreement (see www.mid.org/tariffs/) and the appropriate Net Metering Agreement (see www.mid.org/tariffs/). Customers modifying an existing solar PV system are required to submit new Interconnection and Net Metering Agreements for approval prior to interconnection with MID.

The Electrical Interconnection Agreement allows the customer to interconnect their generating system with the MID electric system. MID reserves the right to inspect and verify all interconnected systems at any time.

F. Solar Project and or ESS Approval and Installation Procedure

1. The contractor (or customer) submits a completed application package to MID's Energy Services Department. A list of the required documents can be found on the "Handbook" link on the MID solar webpage on MID's website (www.mid.org).

2. MID will review the submitted application package to insure that all required documents are enclosed and complete. Of particular importance is the submitted single-line and plan view drawings (see page 9 for important details that must be included in these documents). It can take up to 30 days for the review to be completed.

3. The contractor and/or customer will be sent either:

   a) An approval letter indicating that the project has been approved and authorizing the customer to start construction; or

   b) An email requesting the necessary revisions, corrections and/or documentation to meet MID's requirements.

4. If main panel replacement (referred to as a "rewire") is necessary, contact an MID Engineering Technician (phone numbers are listed on the Area Map on page 34).

5. Once the project has been completed and inspected by the local governing authority (see list on page 10), MID's receipt of the final, signed-off permit initiates the necessary MID Interconnection Inspection. This should be emailed to the pv@mid.org email address with the customer name and address in the subject line. Interconnection inspections are conducted by the MID Meter Department. In order to conduct the inspection, MID must have access to the customer Main Service Panel and required MID PV devices (AC disconnects and generation meter socket). Typically, the customer need not be home for this inspection. However, if an appointment is necessary with the customer to allow access to equipment, this must be requested at the time when the final permit is submitted to MID. A customer or contractor phone number should be provided so that an appointment can be arranged. Interconnection inspection can take up to 10 business days. Customers with both PV and ESS will need to schedule an appointment for the inspection.

6. If the PV installation meets MID requirements and is "passed," a generation meter will be set. At this point the PV system may be energized. NOTE: MID will NOT energize PV systems. If issues are found and the inspection is "failed," an email will be sent to the contractor and customer indicating the issues found and corrections necessary. Once the issues are corrected, he contractor/customer must reply to the failed inspection notice requesting an interconnection re-inspection. Note that re-inspection fees will apply for all failed inspections. Refer to Appendix A of the MID Electric Service Rules for more information.

7. Once a PV system interconnection inspection has "passed," MID will send a formal PTO (Permission To Operate) letter to the customer. The contractor will be emailed a copy. This typically occurs within about a week of a passed inspection.

G. Solar Placarding Requirement

The identifying markings for **all required PV and ESS equipment** shall be impressed into or raised from a tag of Plastic Laminate, aluminum, brass or other non-ferrous metal with a minimum of ¼" letters.

The impressions shall be deep or raised enough to prevent it from being obscured by subsequent painting of the service sections.

The tags shall be attached to a non-removable area of the panel, with a high strength, 5-minute epoxy adhesive. Other types of adhesives (such as rivets, screws) will not be acceptable. The tag shall not be able to be removed without the use of hand tools. Refer to Drawing PV-011.0 through Drawing PV-016.0 for required text and placement.

H. Gate/Fence Accessibility Issues

MID requires PV devices (the AC disconnects and generation meter) to be located in proximity to the customer's main panel - generally all within about a 12' span and in line of sight. On homes where the customer's Main Service Panel (MSP) is on the side of the home, it is important and required that a side gate or fence does not separate the MSP, AC Disconnect, and Generation Meter Socket. In other words, ALL devices should be on the same side of the gate/fence.

However there are situations, often due to the location of a PG&E gas meter or where limited space is available, where the MSP and the required PV devices must be separated and located on the opposite side of a fence or gate. In such cases, an exception may be granted and MID must be informed PRIOR to the installation. This should be noted on the submitted Plan View drawing so MID can review the situation and confirm that an exception is necessary. If MID approves of the separation of devices and MSP, an additional placard will be required indicating the location of the MSP relative to the AC disconnection and generation meter socket. Most often a simple placard must be installed on the MSP indicating "required MID PV devices are located on the opposite side of adjacent gate."

MID requires reasonable access to the MSP as well as the required AC disconnects and generation meter not only at the time of the Interconnection Inspection, but on an ongoing basis. If any of these items are located behind a gate that is normally locked, the customer or contractor must provide either a dual lock hasp or the installation of an MID keyed lock at the time of the inspection. Note that dual lock hasps are available at many electrical supply outlets. Hoffman makes a Dual-Access Safety Lockout which is manufactured from 10 gauge steel with .38-inch (10mm) diameter padlock holes. The padlocks are not included. Such device would accept a customer lock as well as an MID-supplied and keyed lock. Alternately, a single MID keyed lock can be purchased and installed. These locks have a unique key to which MID has the master. These locks can be procured from Al's Certified Safe and Lock (209) 524-9181 located at 4900 Elm Street, Salida, or from Easy Locks (209) 380-8255.

MID can arrange an appointment with either the customer or the contractor for the Interconnection Inspection if necessary due to pets or simply an interest to observe the process. The PV contractor must advise MID of this request at the time the final permit is submitted to MID. The full name and contact phone number of the individual requesting the appointment with MID must be included in the email that submits the final, signed-off permit to MID. MID will call to arrange the inspection at a mutually agreeable date and time.

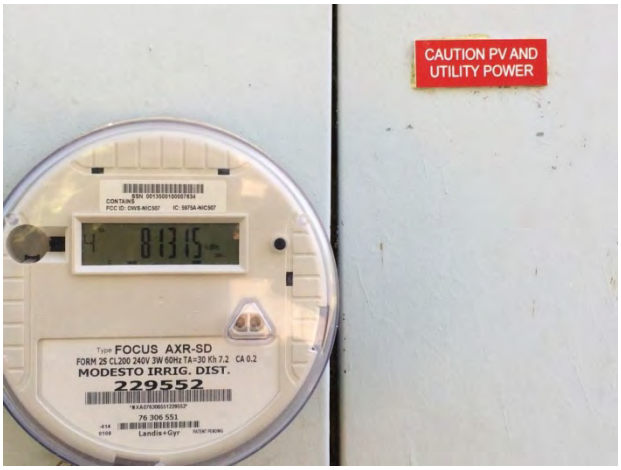


Figure 1: Caution PV and Utility Power Placard

Figure 2: Solar Array AC Disconnect Placard

NOTE:
All sources of power must be clearly placarded.

Figure 3: Utility Use Only AC Disconnect Placard

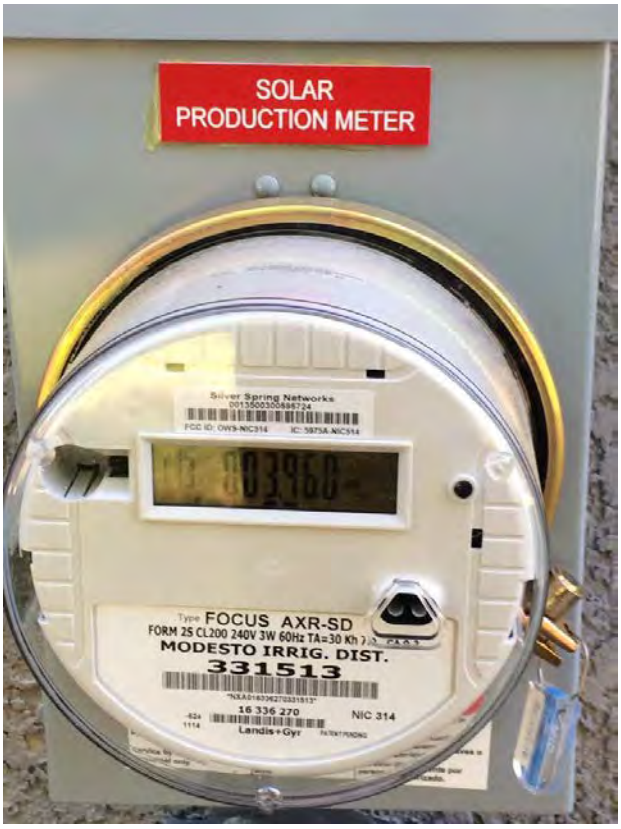


Figure 4: Solar Production Placard

Figure 5: Solar Breaker Placard

I. Required Documentation

1. Single Line Diagram must include: (see Drawing PV-007.0, page 20)
    a) Main panel with Bus and Main breaker ratings indicated (see sample Main Panel, page 31).
    b) Interconnection breaker rating (breaker to be located at opposite end of bus bar from main breaker).
    c) Both AC Lockable Knife Blade Disconnects.
    d) Generation Socket with Listed Ratings (minimum NEMA 3R and UL414 listed).
    e) Inverter(s) either Central or Micro-Inverters.
    f) Inverter must be noted as "Grid Supported Utility Interactive Inverter."
    g) Smart Contactor with ratings if applicable.
2. Site Plan must include: (see Drawing PV-006.0, page 19)
    a) Property Lines and Street Names including Full Addresses
    b) Solar Panel Layout
    c) Location of Main Service Panel
    d) Locations of Both AC Disconnects
    e) Location of Production Meter Socket
    f) Location of Central Inverter (if applicable)
    g) Location of any Locked, Unlocked Gates or Fences.
    h) Locations and verbiage of placards (see placarding samples on page 7).
    i) Site plan must be a drawing and not a photo.
3. AC Disconnect Cut Sheets (see sample Disconnect, page 32).
4. Production Meter Socket Cut Sheets (see sample Generation Socket, page 33).
5. Line Side Connection Detail (if applicable, contact MID's Engineering Department).
6. For CT-rated projects, include proper EUSERC drawings and cutsheets at time of submittal.
7. Inverter Cut Sheets
8. Smart Contactor Cut Sheets

J. Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

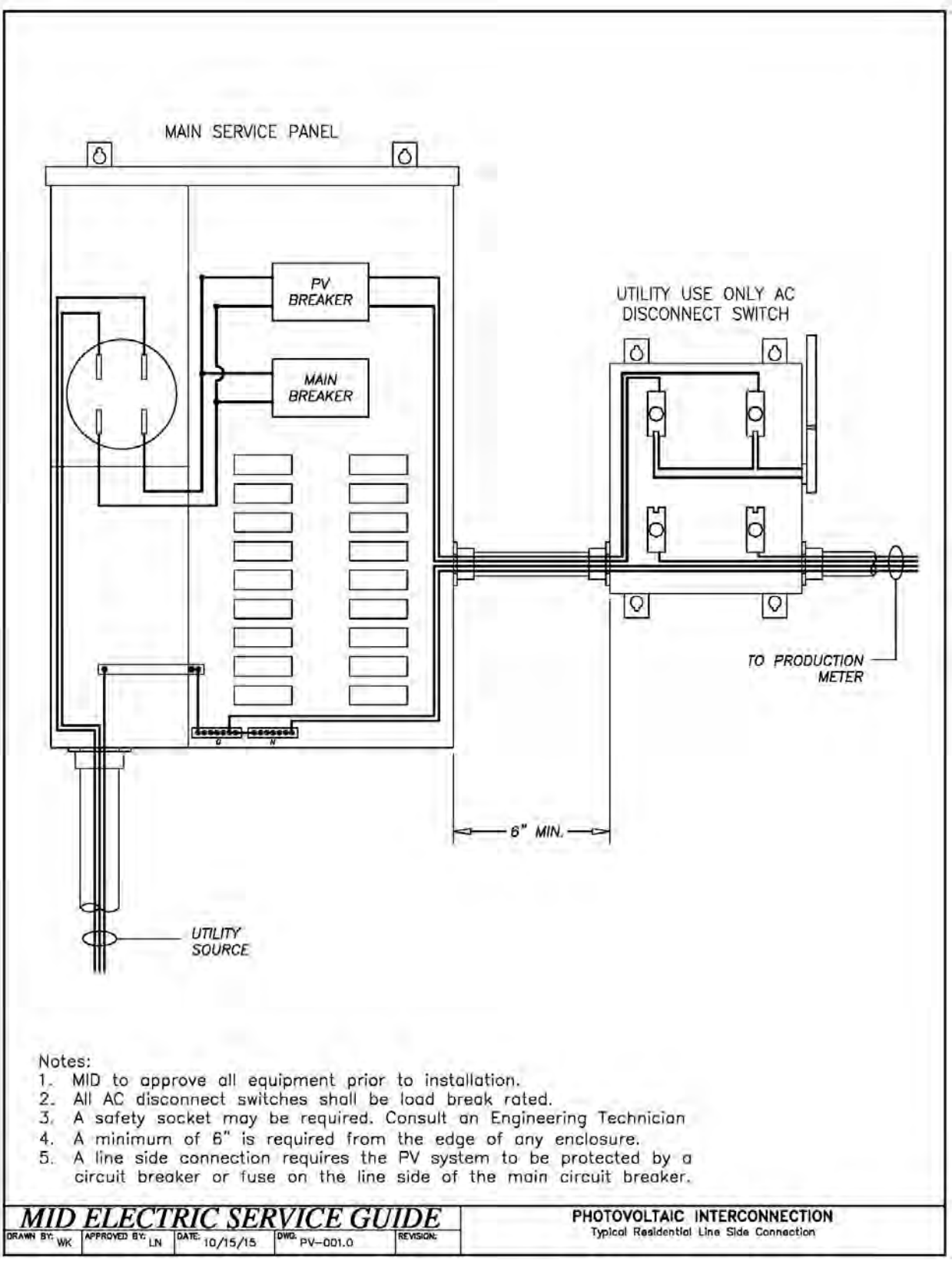
City Of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

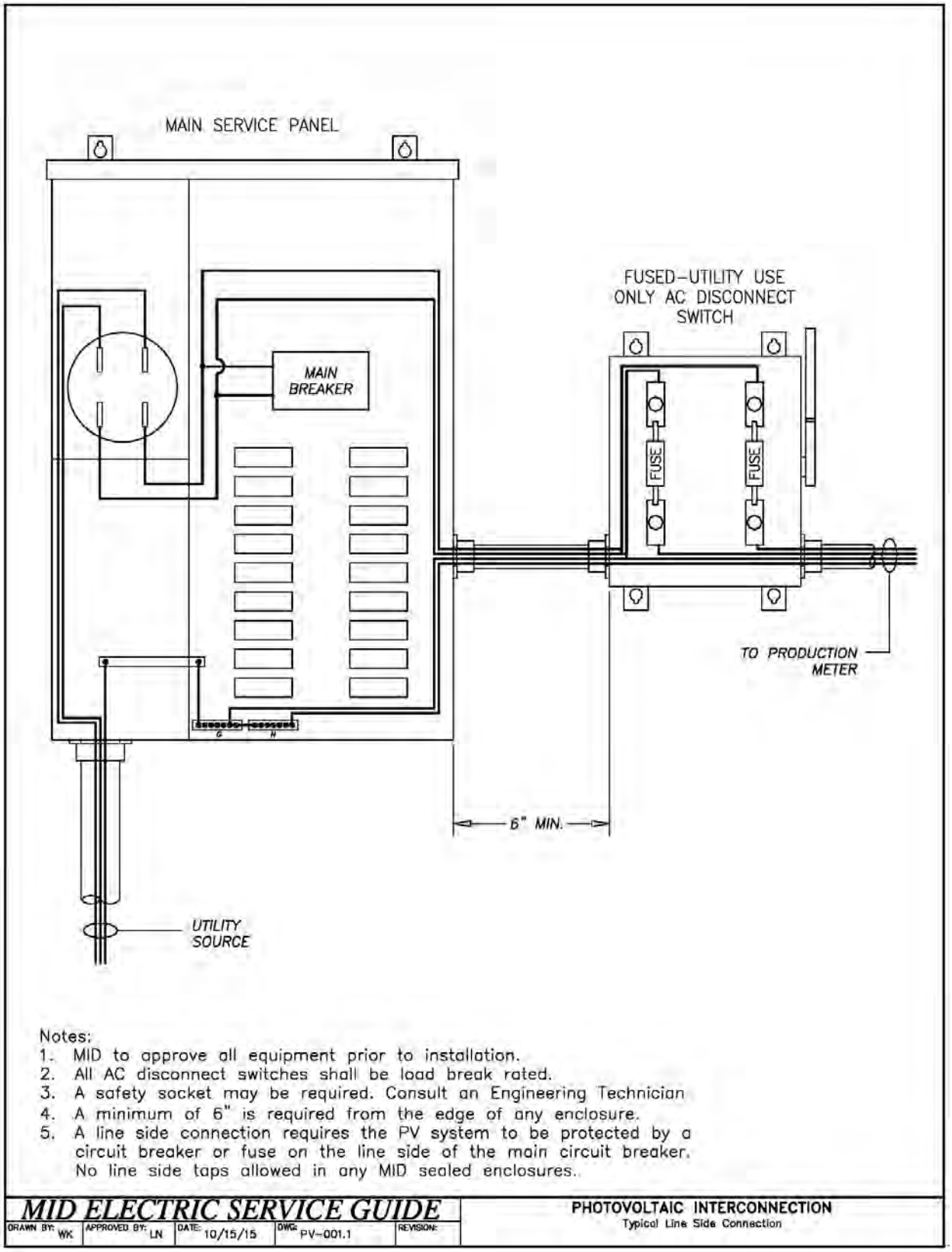
K. MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

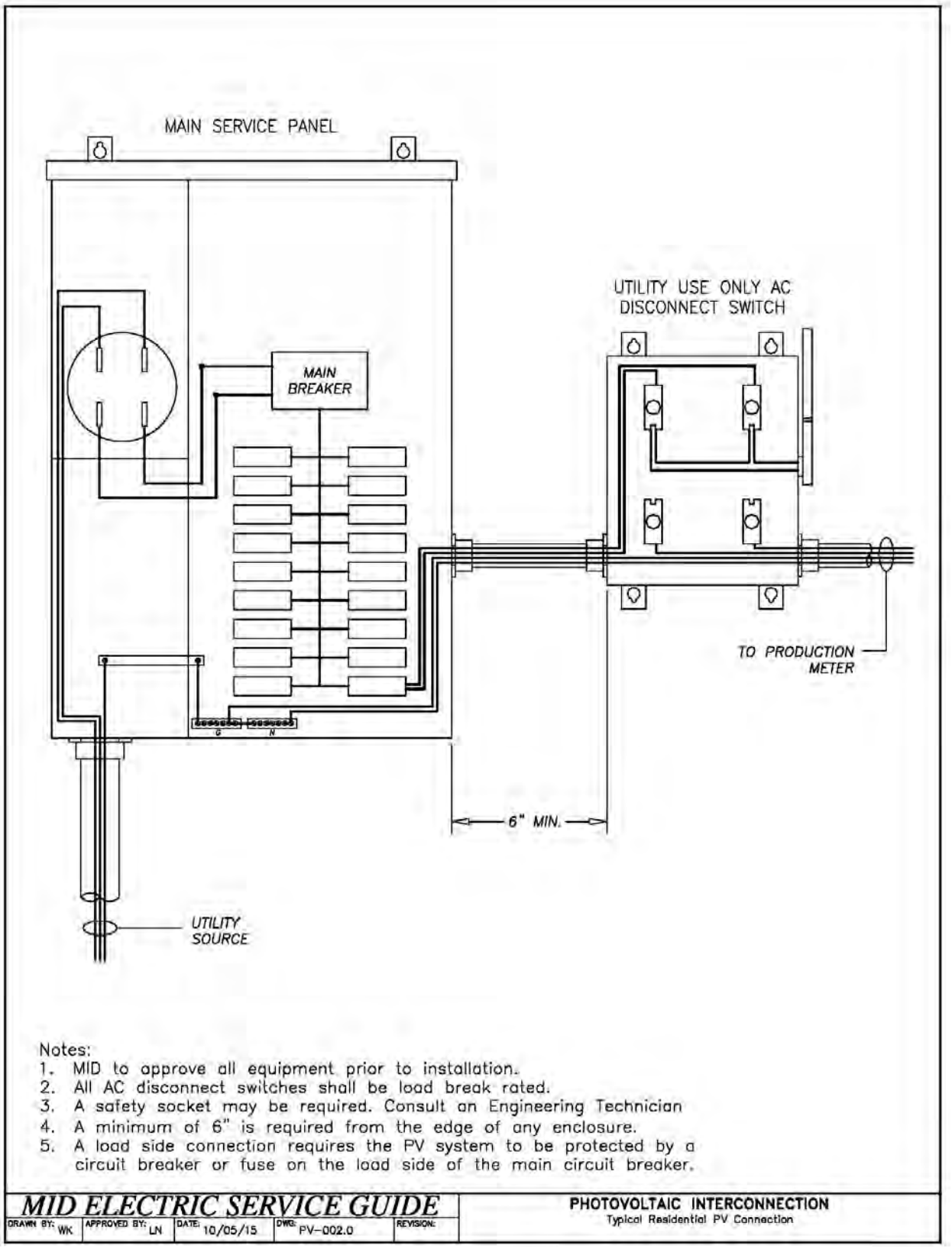
[1] Contact the MID Engineering Technician assigned to the area (see map on page 34).



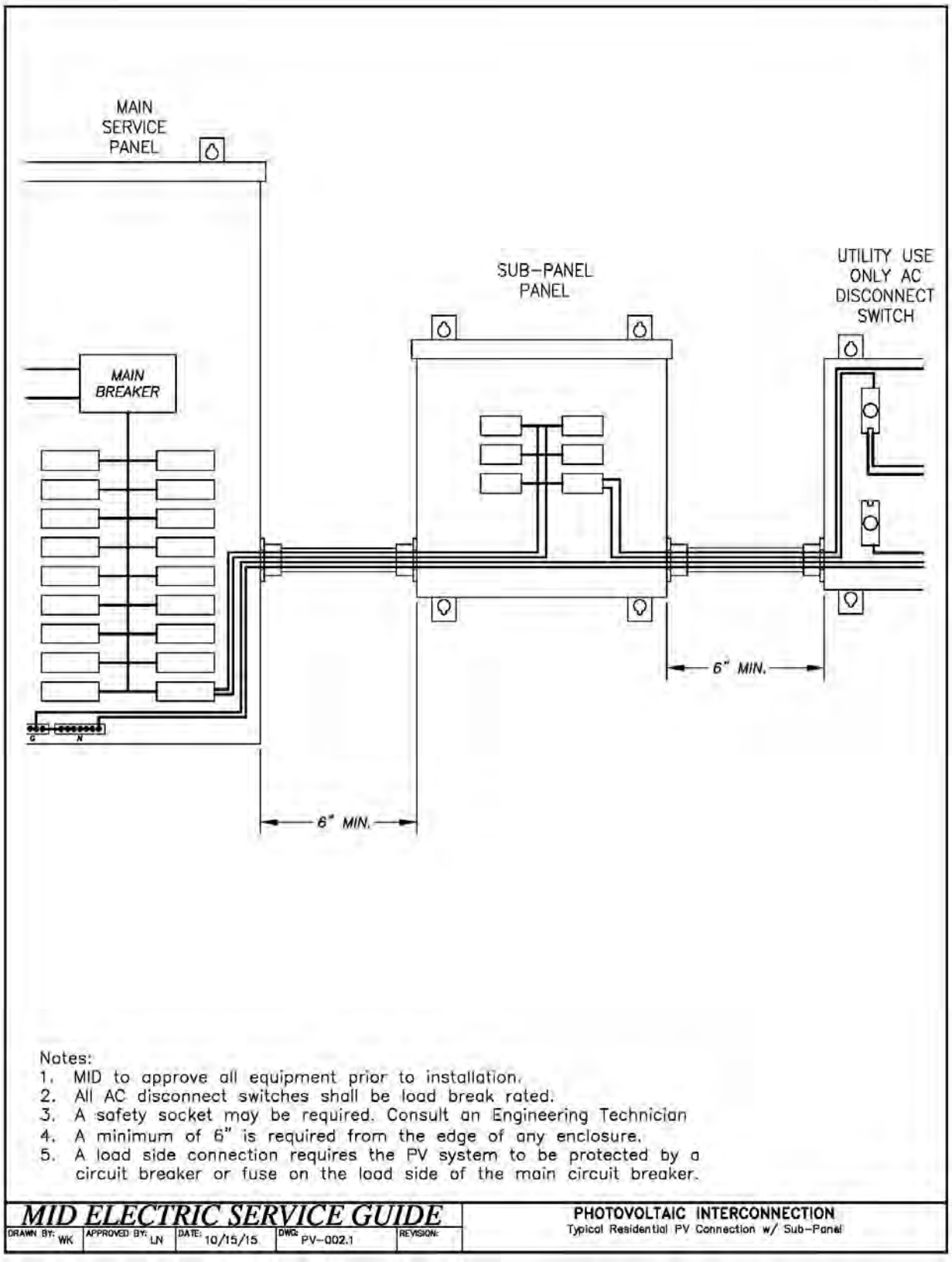
Drawing PV-001.0: Typical Residential Line Side Connection



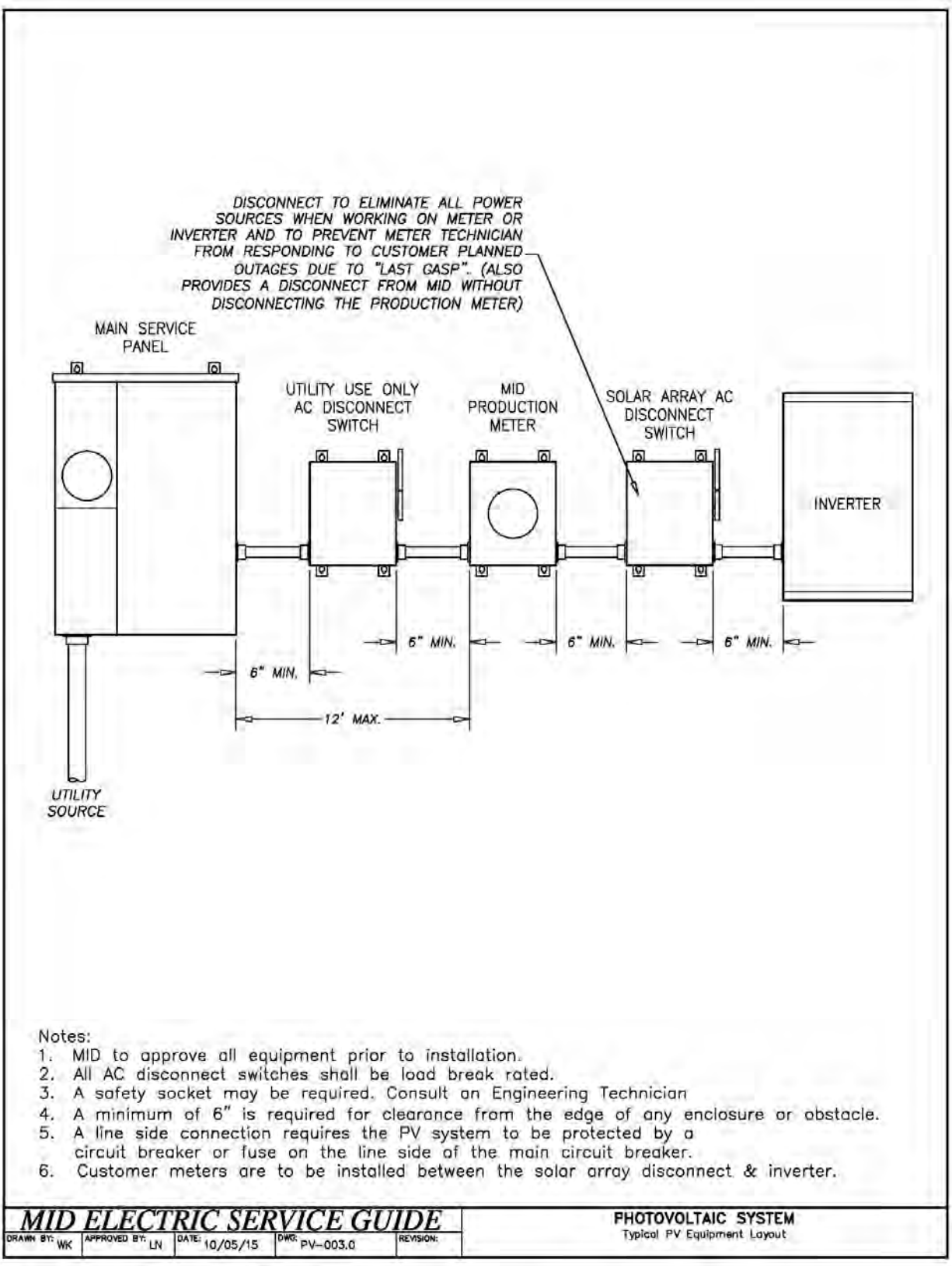
Drawing PV-001.1: Typical Line Side Connection



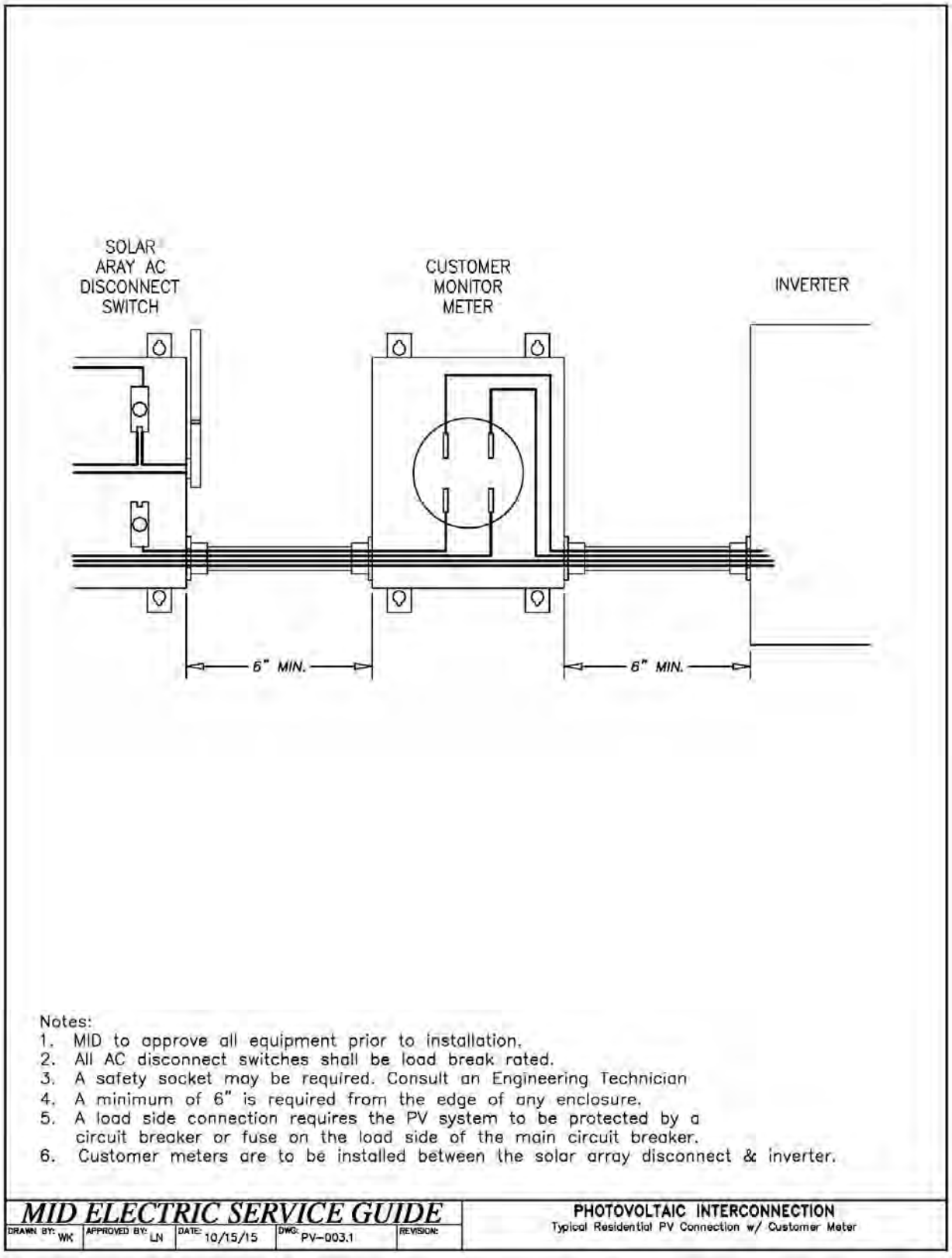
Drawing PV-002.0: Typical Residential PV Connection



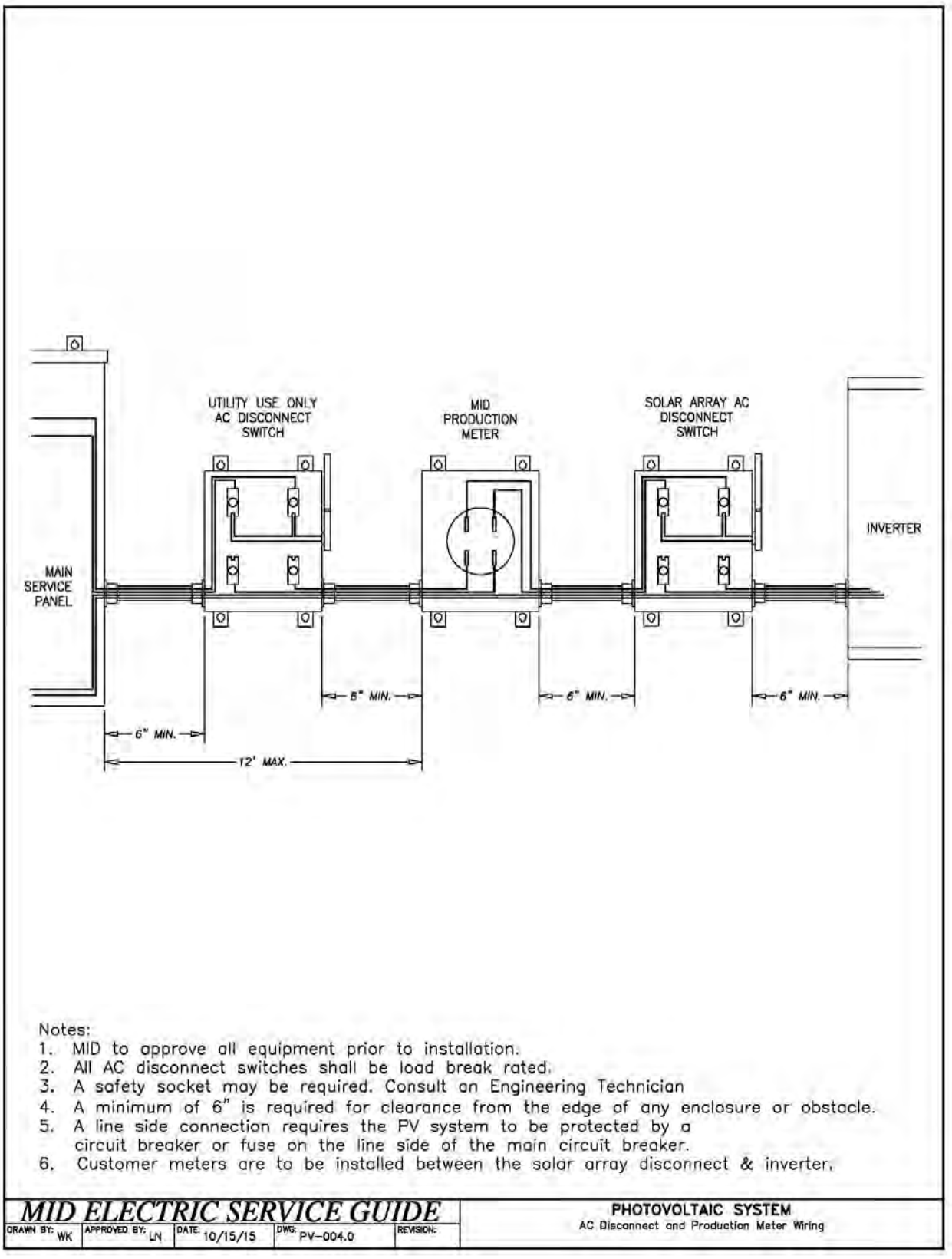
Drawing PV-002.1: Typical Residential PV Connection with Sub-Panel



Drawing PV-003.0: Typical PV Equipment Layout



Drawing PV-003.1: Typical Residential PV Connection with Customer Meter



Drawing PV-004.0: AC Disconnect and Production Meter Wiring

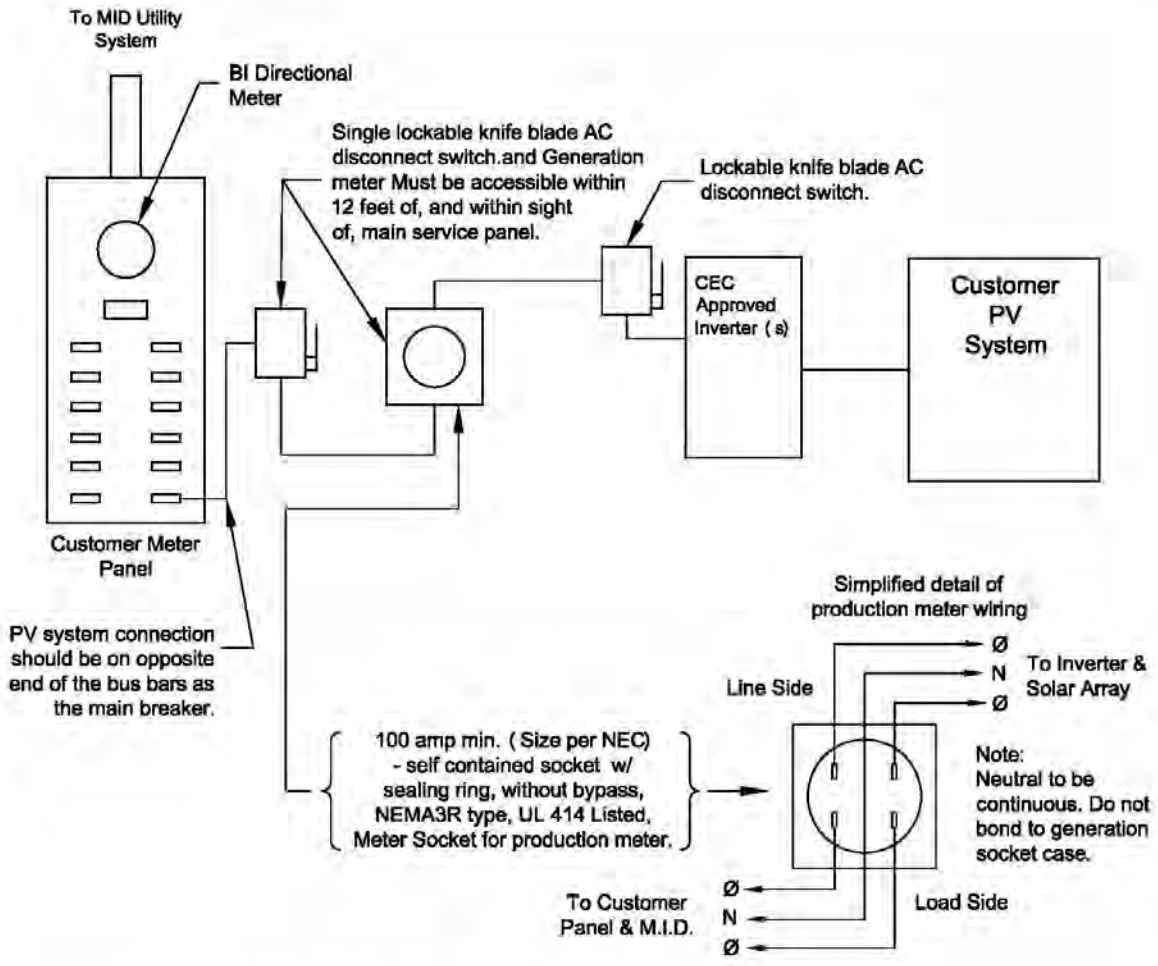
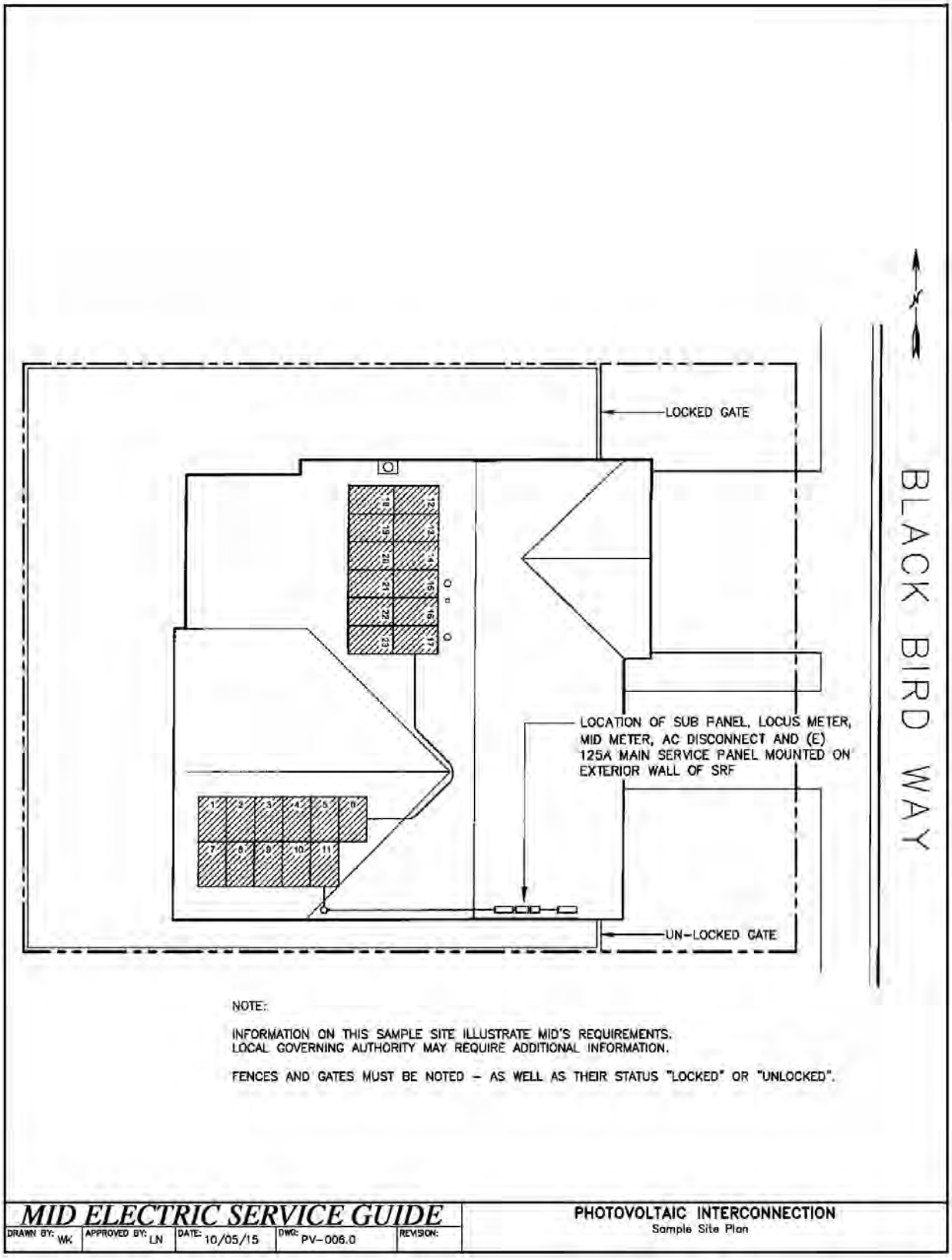


Figure 1-Simplified Block Diagram of Net Metering Installation

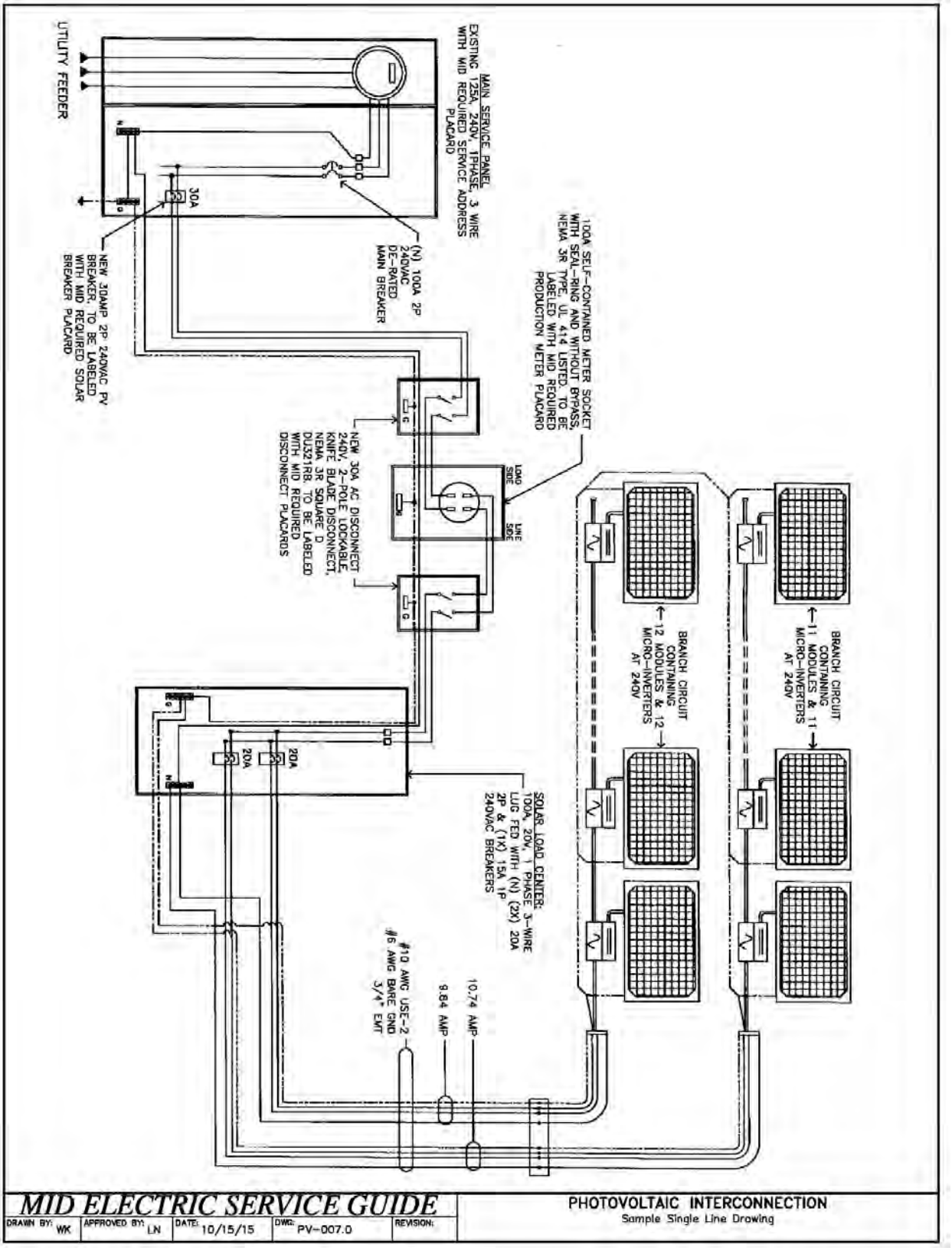
1. Installation shall meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories, and where applicable, rules of the Public Utilities Commission regarding safety and reliability, as well as meet all MID requirements.
2. Applicant shall make provision for installation of a MID production meter dedicated to measuring the output of the generation (provide and install wiring and MID-specified meter socket and wiring). MID will provide the meter at no cost to the applicant/customer.
3. Arrangements utilizing transfer switches or alternatives to the arrangement shown above may be considered upon submission of a diagram and explanation of the proposed deviation(s). MID engineering approval of equipment should be obtained prior to purchasing or installing any equipment.
4. AC disconnect switch shall be lockable, visible & accessible without obstructions such as gates, fences or walls.

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATION NET METERING WIRING & METER INSTALLATION
DRAWN BY: WK	APPROVED BY: LN	DATE: 10/05/15	DWG: PV-005.0	REVISION:	

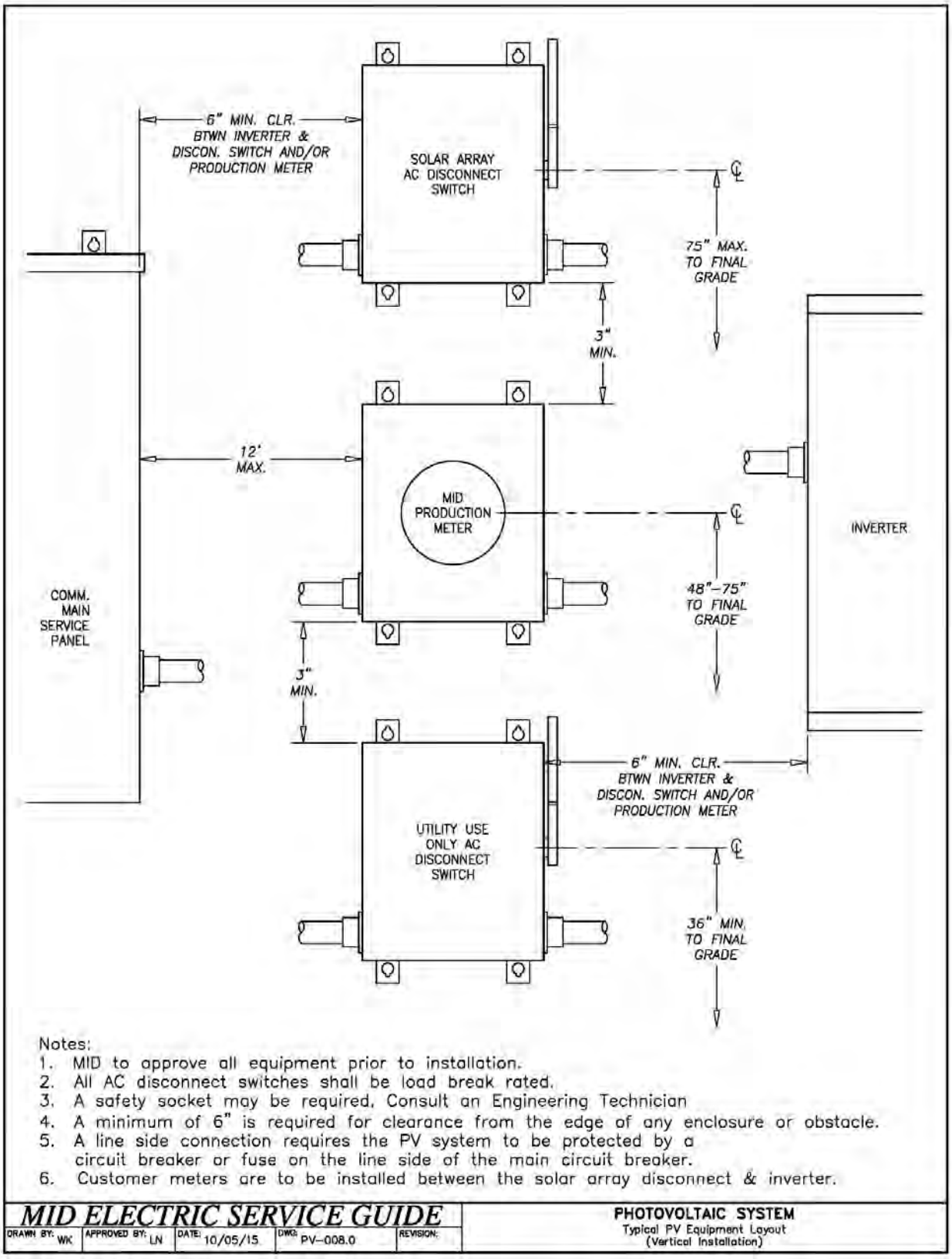
Drawing PV-005.0: Net Metering Wiring & Meter Installation



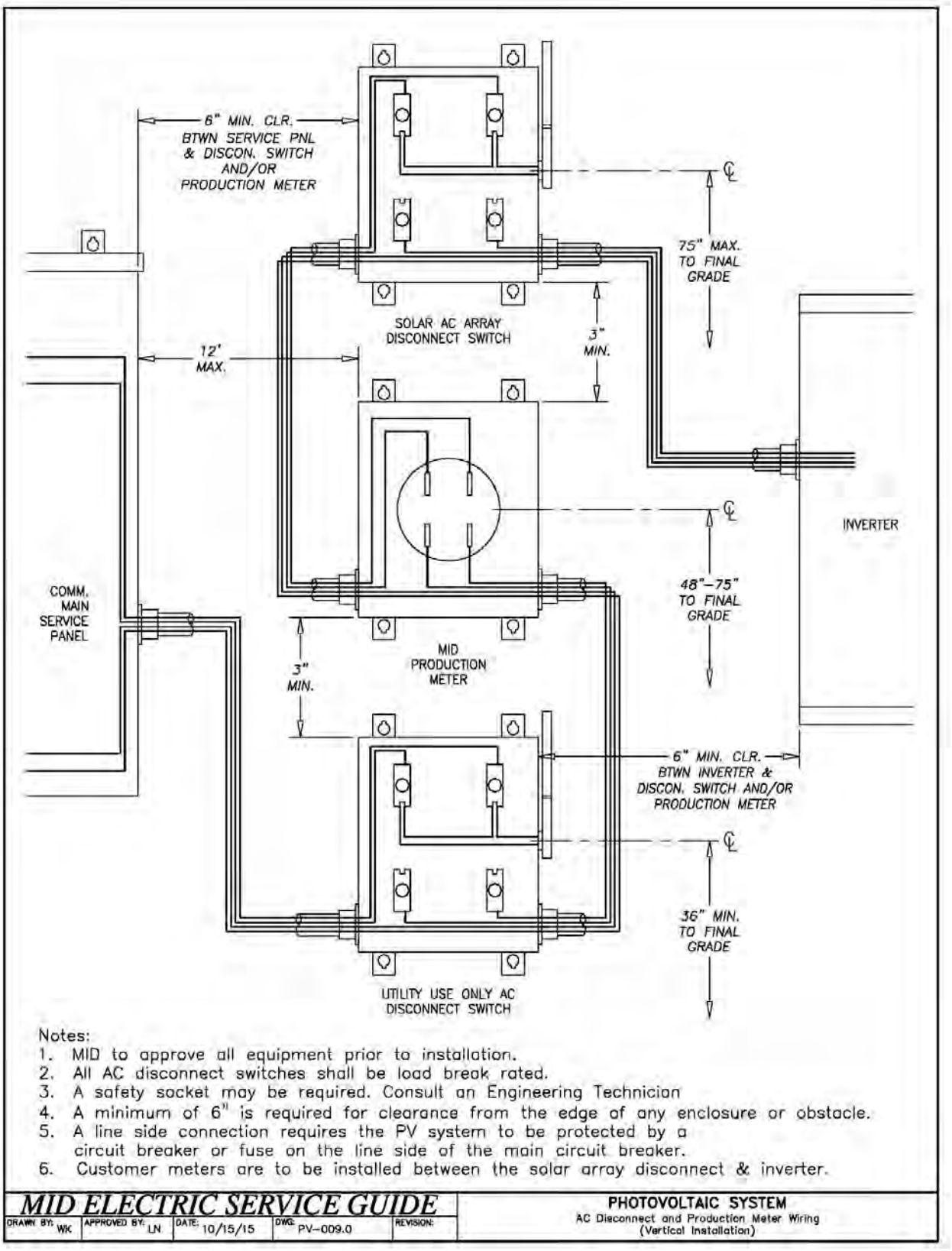
Drawing PV-006.0: Sample Site Plan



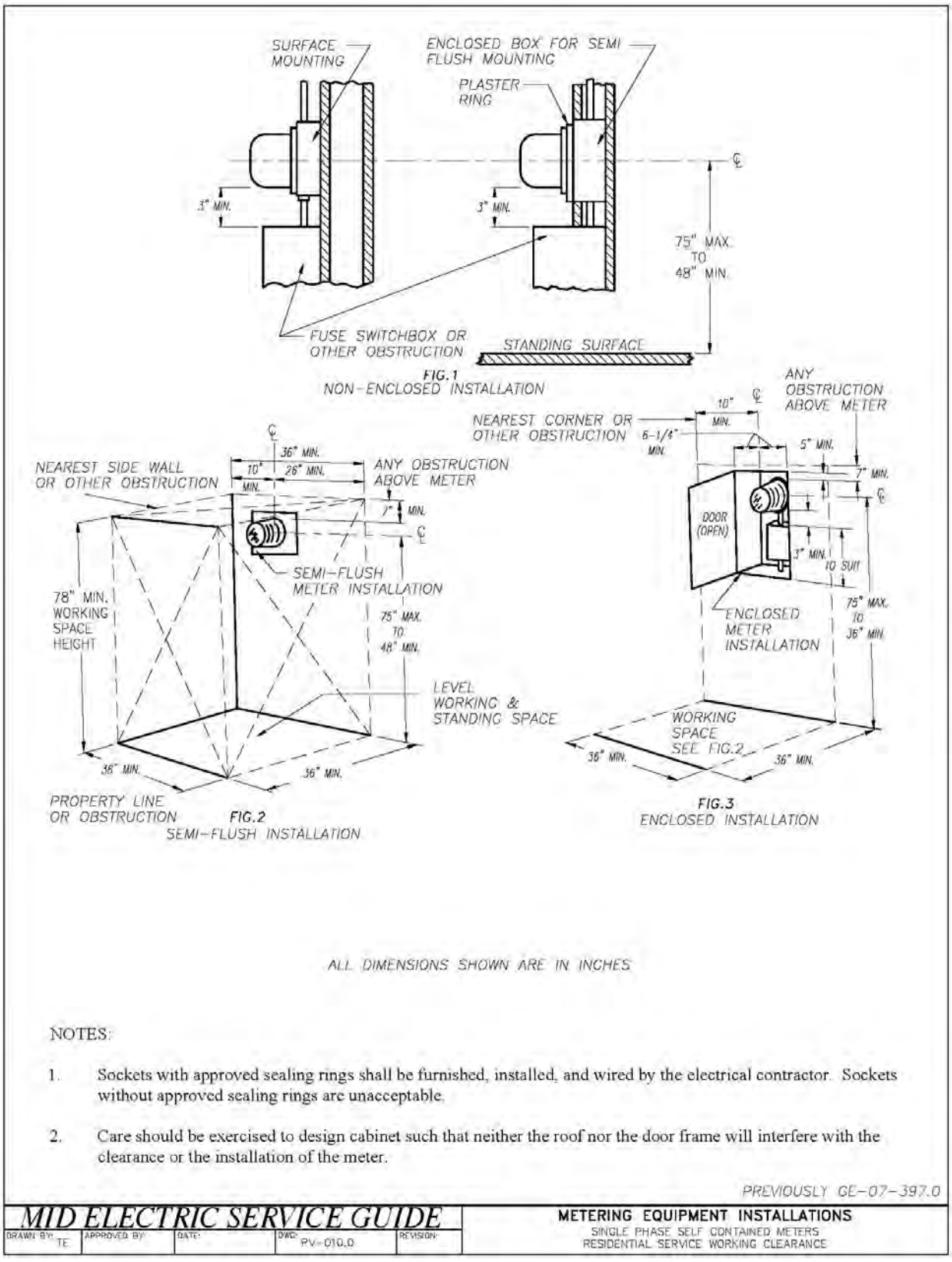
Drawing PV-007.0: Sample Single Line Drawing



Drawing PV-008.0: Typical PV Equipment Layout (Vertical Installation)



Drawing PV-009.0: AC Disconnect and Production Meter Wiring (Vertical Installation)



ALL DIMENSIONS SHOWN ARE IN INCHES

NOTES:

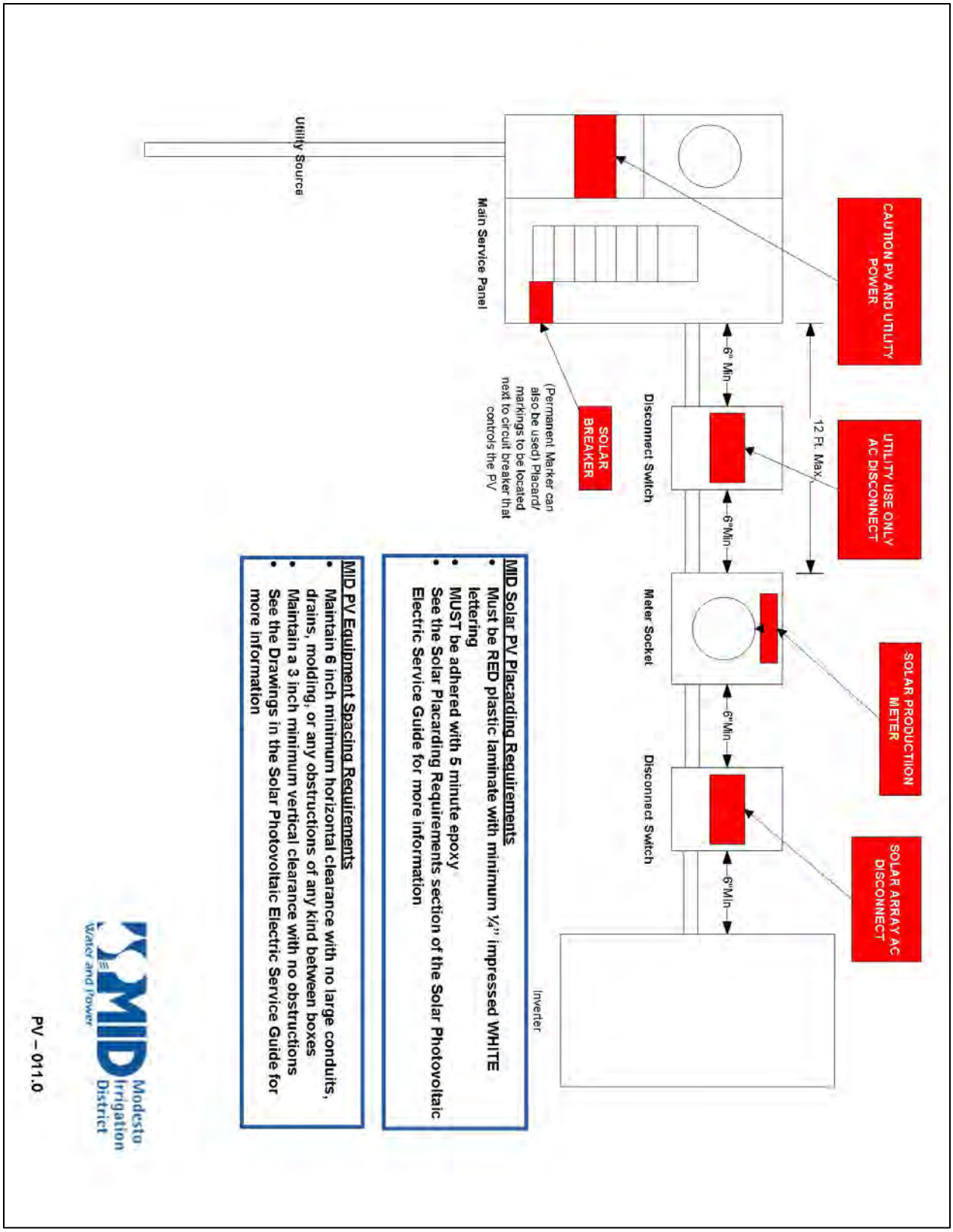
1. Sockets with approved sealing rings shall be furnished, installed, and wired by the electrical contractor. Sockets without approved sealing rings are unacceptable.

2. Care should be exercised to design cabinet such that neither the roof nor the door frame will interfere with the clearance or the installation of the meter.

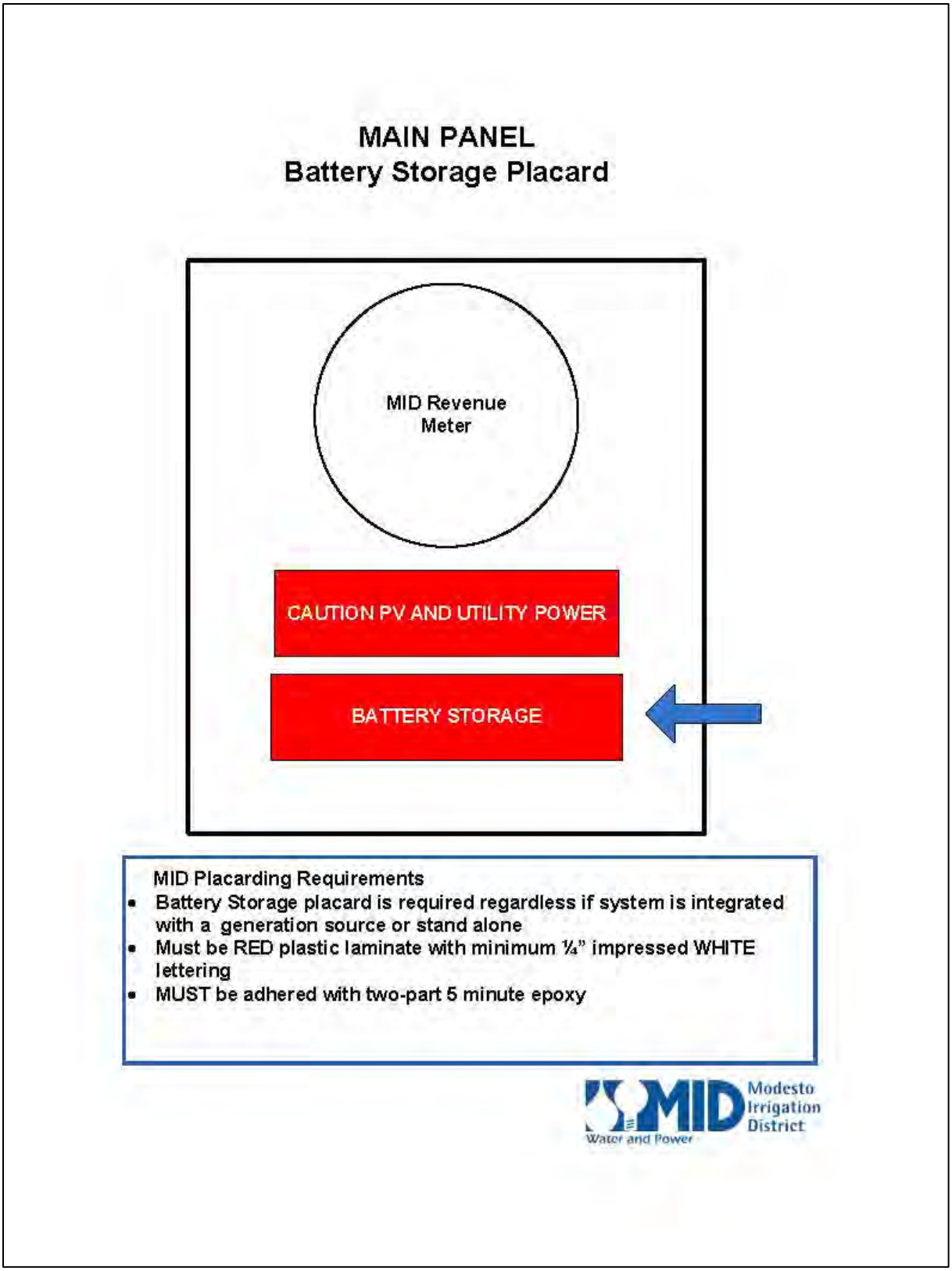
PREVIOUSLY GE-07-397.0

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT INSTALLATIONS SINGLE PHASE SELF CONTAINED METERS RESIDENTIAL SERVICE WORKING CLEARANCE
DRAWN BY: TE	APPROVED BY:	DATE:	DWG: PV-010.0	REVISION:	

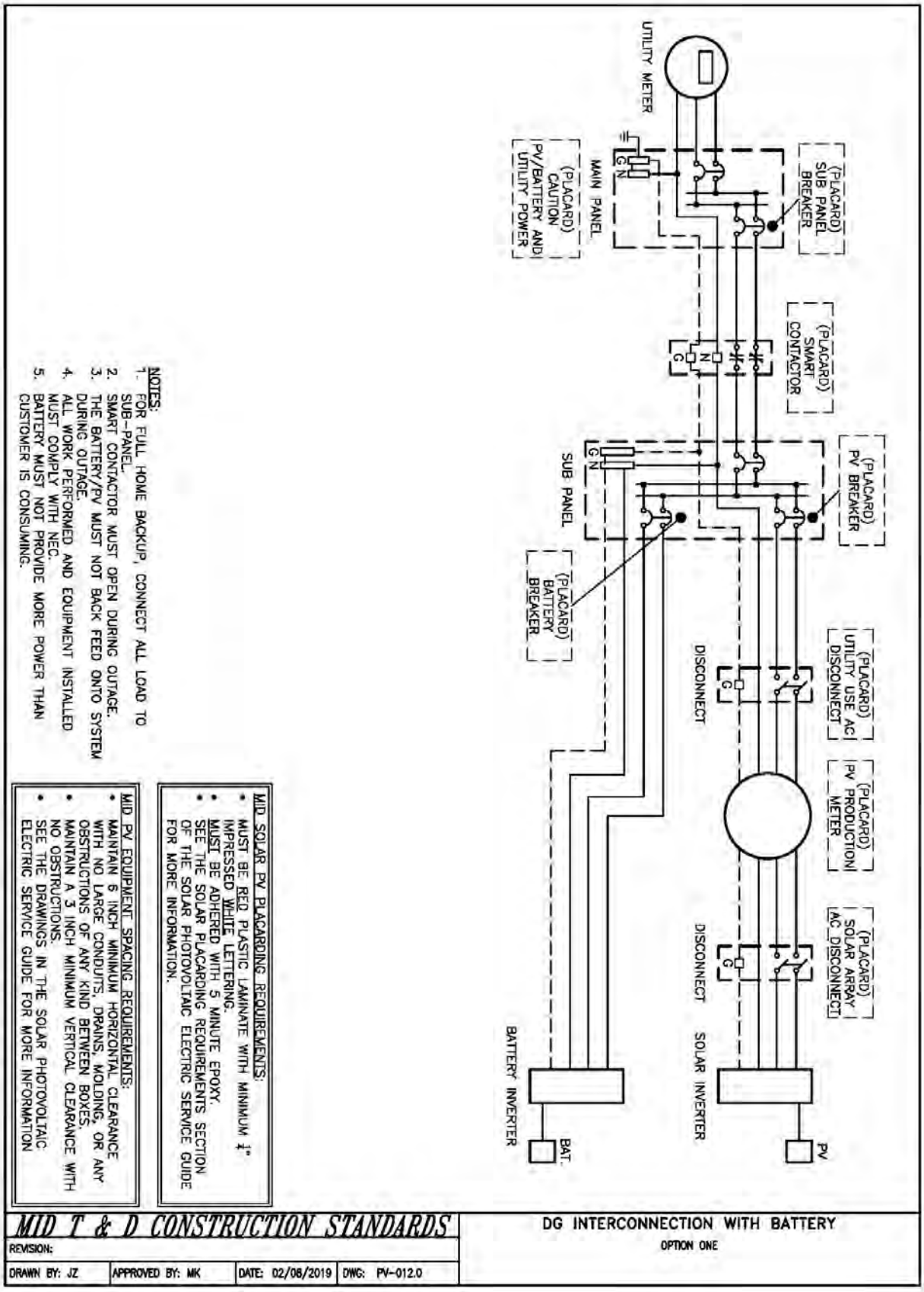
Drawing PV-010.0: Single Phase Self-Contained Meters, Residential Service Working Clearance



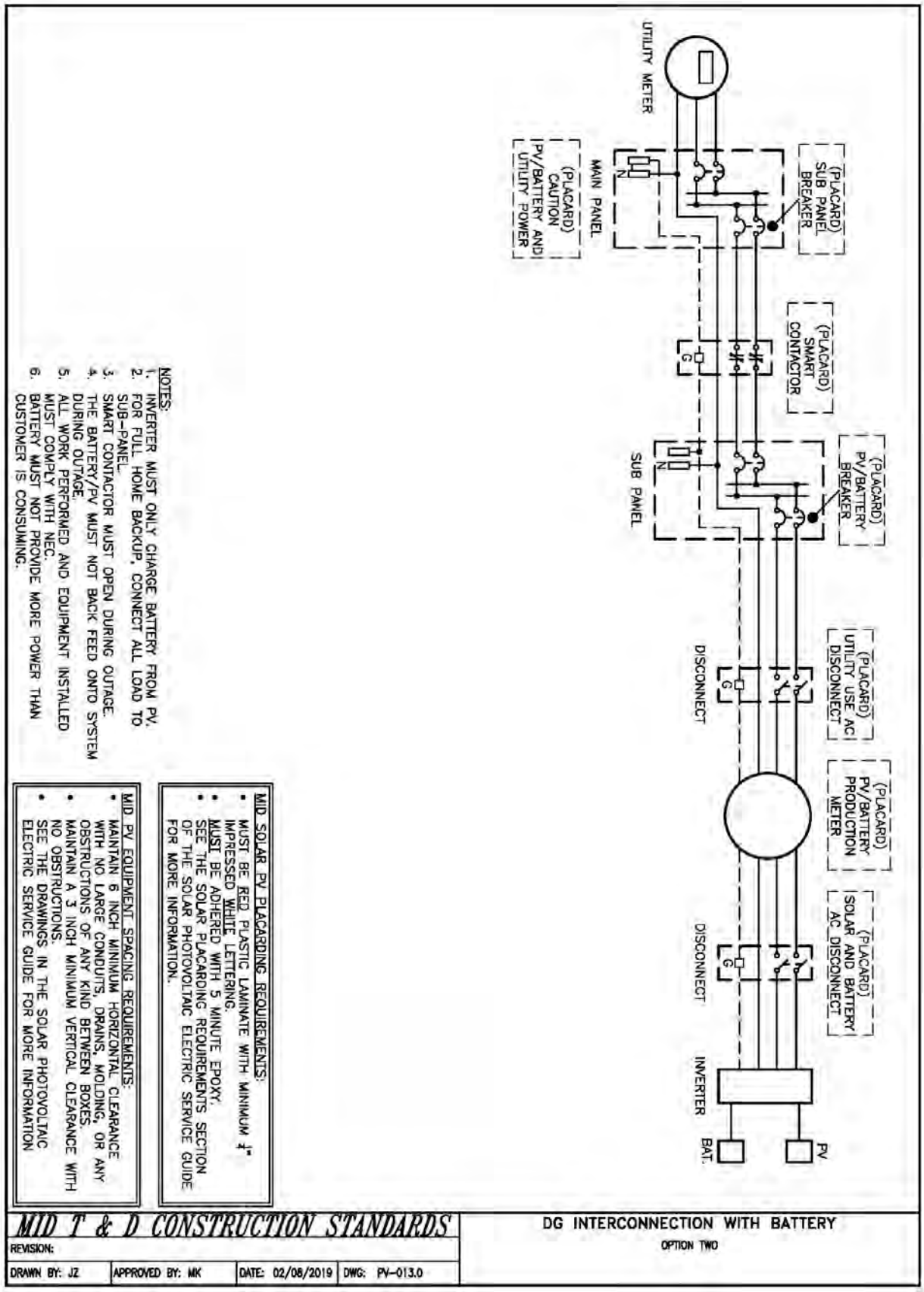
Drawing PV-011.0: Solar PV Placarding Requirements



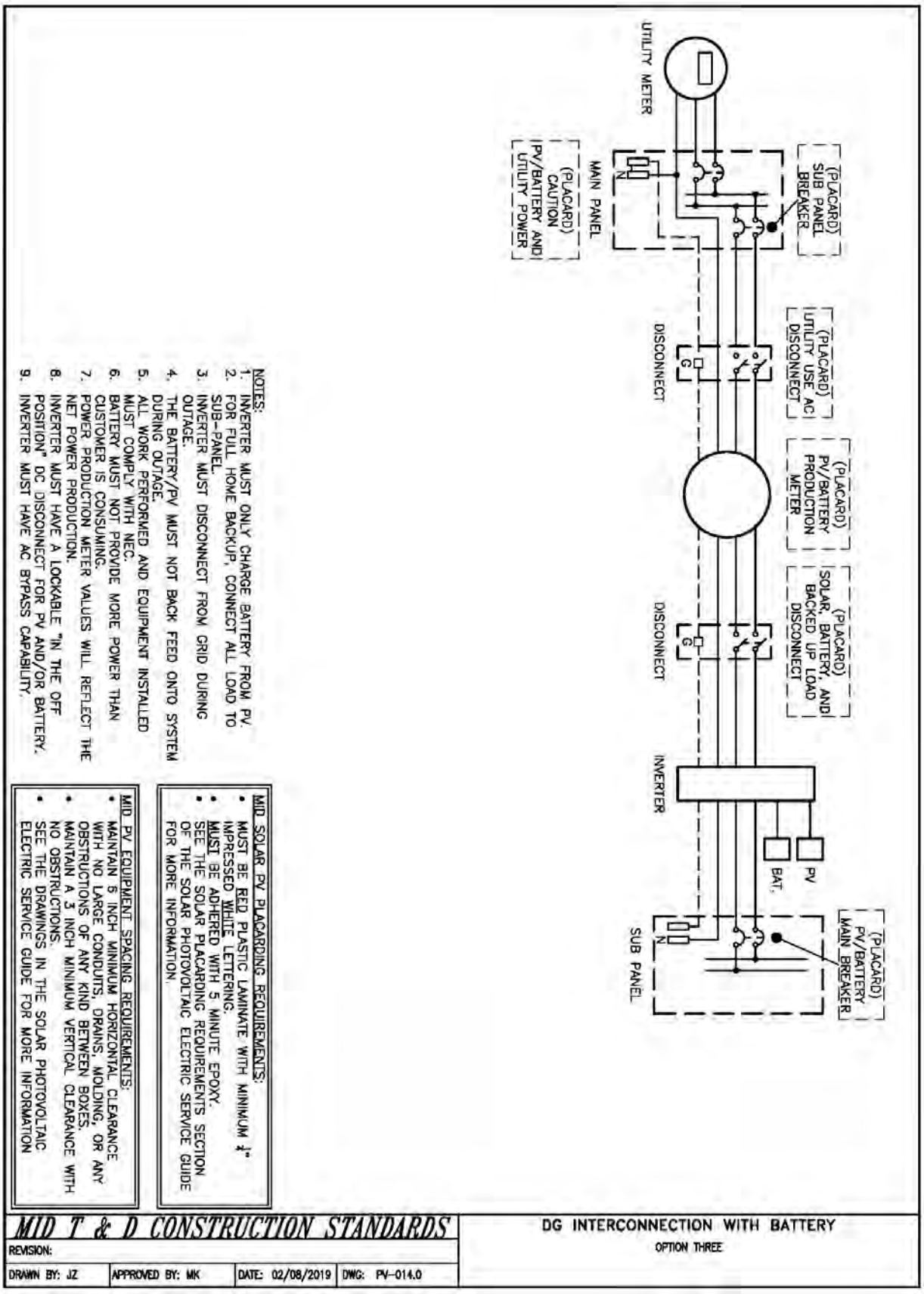
Drawing PV-011.1: Battery Storage Placard



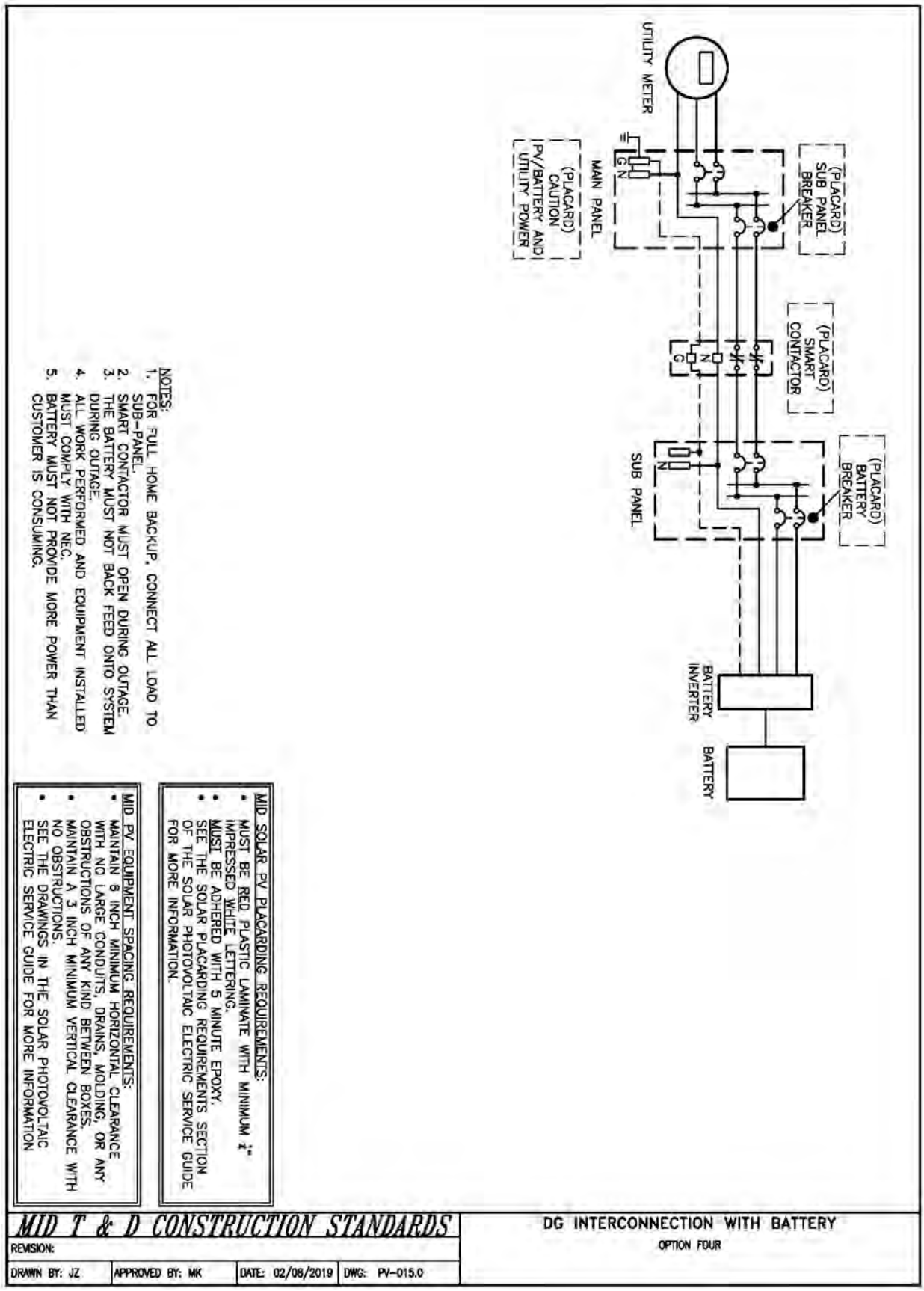
Drawing PV-012.0: DG Interconnection with Battery (Option One)



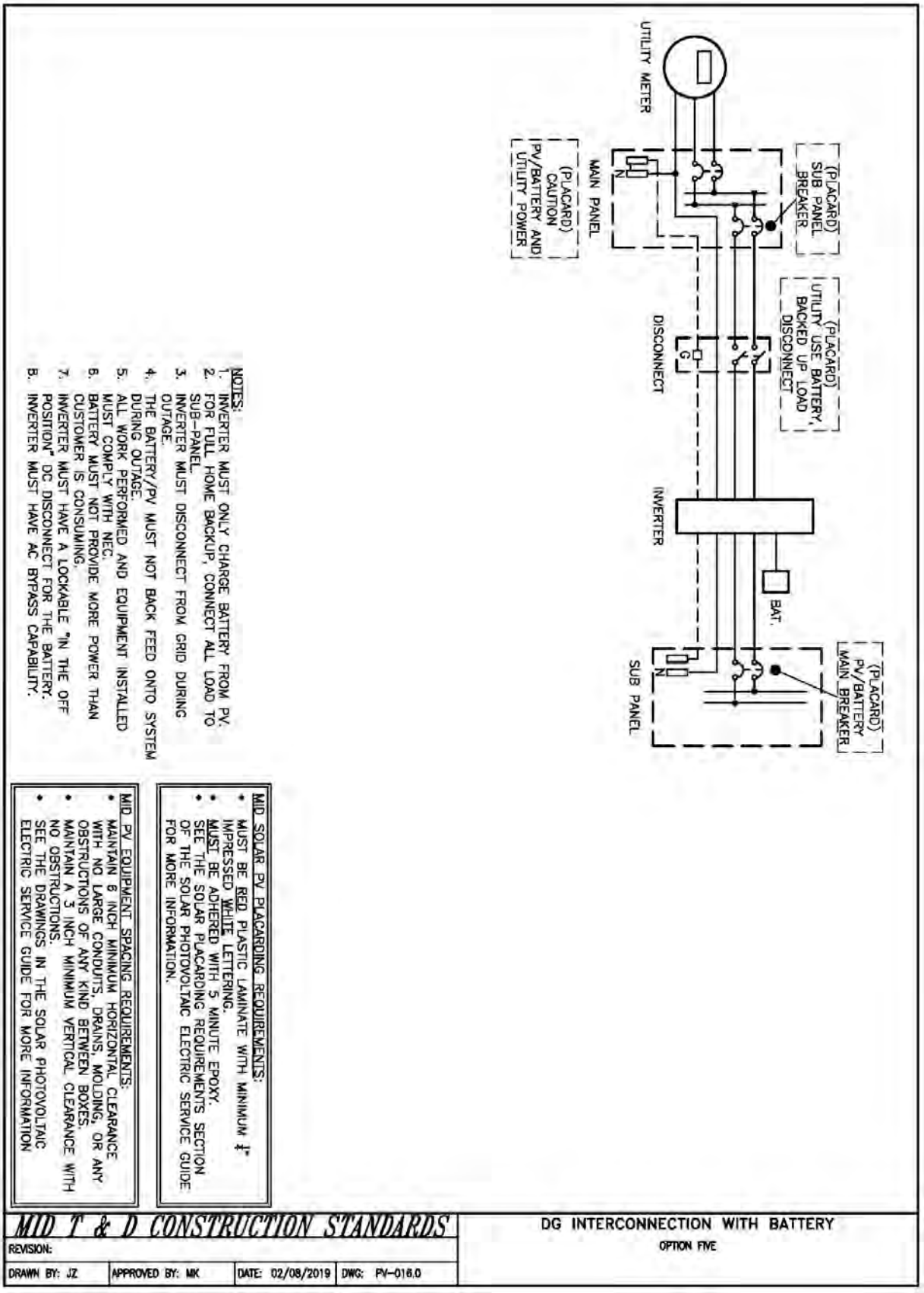
Drawing PV-013.0: DG Interconnection with Battery (Option Two)



Drawing PV-014.0: DG Interconnection with Battery (Option Three)



Drawing PV-015.0: DG Interconnection with Battery (Option Four)



Drawing PV-016.0: DG Interconnection with Battery (Option Five)

Test Block Bypass | TB Series

200 Amp/600 Volt Self-Contained Socket Only

4 Test Block Bypass

124TB

Application

- Single meter position
- Designed to receive watthour meters that meet ANSI C12.10
- Overhead/underground feed
- Surface mount

Construction

- Type 3R construction
- Safety socket with factory installed test/bypass facilities†
- Snap type sealing ring included
- 5th jaw provision at nine o'clock – 124TB only
- Provisions for 2 AW base caps or hub kits on top
- Padlock provision
- Ring style

Standards

- UL 414 listed, complies with ANSI C12.7

Finish

- ANSI 61 gray acrylic electrocoat finish

Accessories

- Fifth jaw kit — catalog #50371
- Center and offset pole mounting brackets
- Bussed gutters, see page 75
- AW hubs
- Screw type sealing ring — catalog #25016D
- Steel or clear lexan covers for socket opening

SAMPLE

Overhead or Underground–Surface Mount

Catalog Number	Main Disconnect	Branch Circuits	A.C. Rating	Amperage Max. Cont.	Voltage	Sealing Type	Number of Jaws	Hub Provs.	Conductor Line Range: Phase Conductor Line/Load	Conductor Line Range: Neutral Conductor	Figure Number	Dimensions (Inches): Height (H)	Width (W)	Depth (D)
124TB	NONE	NONE	†	..	200	600	ring	4	AW	#6 AWG - 250 kcmil	#6 AWG - 1/0 AWG	Fig. 1	30	14	6
125TB	NONE	NONE	†	..	200	600	ring	5	AW	#6 AWG - 250 kcmil	#6 AWG - 1/0 AWG	Fig. 1	30	14	6
127TB	NONE	NONE	†	..	200	600	ring	7	AW	#6 AWG - 250 kcmil	#6 AWG - 1/0 AWG	Fig. 1	30	14	6

1 = 60-in. lbs. torque recommended for circuit closing nut

† = Meter sockets on this page have certain short circuit current ratings when used in conformance with the tables on page 62

Note: For 208Y/120V, 3Ø 4W systems, order 4 jaw unit and a 5th jaw kit

For Safety Socket Bypass instructions see page 74.

Sample 1: Main Panel

EATON

February 2007

Product Selection

600 Vac Heavy-Duty, Fusible, Single Throw

Specifications

- 30 – 1200 amperes.
- Horsepower rated.
- Suitable for service entrance use, except 1200 ampere on 480Y/277 or 600Y/347 grounded wye systems, per NEC 215-10 and 230-95, and 4-pole switches.
- UL listed File No. E5239.
- For factory modifications, refer to **Pages 8-8** through **8-11**.

DH362NRK

8

Table 8-44. Fusible 277/480 – 600 Volts

System	Ampere Rating	Fuse Class Provision	Maximum Horsepower Ratings with Time Delay Fuses						NEMA 1 Enclosure Indoor		NEMA 3R Enclosure Raintight	
			Single-Phase ac		3-Phase ac		dc		Catalog Number	Price U.S. $	Catalog Number	Price U.S. $
			480 Volt	600 Volt	480 Volt	600 Volt	250 Volt	600 Volt				
2-Pole — 480 Vac — 600 Vac or dc ① (Suitable for Service Entrance Use with a Neutral Kit Installed)												
	30	H	7-1/2	10	—	—	—	15	DH261FGK		DH261FRK	
	60	H	20	25	—	—	—	25	DH262FGK		DH262FRK	
	100	H	30	40	—	—	20	—	DH263FGK		DH263FRK	
	200	H	50	50	—	—	—	50	DH264FGK		DH264FRK	
	400	H	—	—	—	—	50	—	DH265FGK		DH265FRK	
	600	H	—	—	—	—	—	—	DH266FGK		DH266FRK	
	800	L	—	—	—	—	—	—	DH267FGK		DH267FRK	
	1200	L	—	—	—	—	—	—	②		—	
3-Pole — 480 Vac — 600 Vac, 250 Vdc (Suitable for Service Entrance Use with a Neutral Kit Installed)												
	30	H	7-1/2	10	15	20	—	—	DH361FGK		DH361FRK	
	60	H	20	25	30	50	—	—	DH362FGK		DH362FRK	
	100	H	30	40	60	75	—	—	DH363FGK		DH363FRK	
	200	H	50	50	125	150	—	—	DH364FGK		DH364FRK	
	400	H	—	—	250	350	—	—	DH365FGK		DH365FRK	
	600	H	—	—	400	500	—	—	DH366FGK		DH366FRK	
	800	L	—	—	500	500	—	—	DH367FGK		DH367FRK	
	1200	L	—	—	500	500	—	—	DH368FGK		DH368FRK	
4-Wire (Three Blades, 3-Fuses, S/N) 480 Vac — 600 Vac, 250 Vdc												
S/N	30	H	7-1/2	10	15	20	—	—	DH361NGK		DH361NRK	
	60	H	20	25	30	50	—	—	DH362NGK		DH362NRK	
	100	H	30	40	60	75	—	—	DH363NGK		DH363NRK	
	200	H	50	50	125	150	—	—	DH364NGK		DH364NRK	
	400	H	—	—	250	350	—	—	DH365NGK		DH365NRK	
	600	H	—	—	400	500	—	—	DH366NGK		DH366NRK	
	800	L	—	—	500	500	—	—	DH367NGK		DH367NRK	
	1200	L	—	—	500	500	—	—	DH368NGK		DH368NRK	
4-Pole — 480 Vac — 600 Vac, 250 Vdc			2-Phase ac		3-Phase ac							
	30	H	20	25	15	20	—	—	DH461FGK		③	
	60	H	40	50	30	50	—	—	DH462FGK		③	
	100	H	50	50	60	75	—	—	DH463FGK		③	
	200	H	—	—	125	150	40	—	DH464FGK		③	
	400	H	—	—	250	350	50	—	DH465FGK		②③	
	600	H	—	—	400	500	—	—	DH466FGK		②③	
	800	L	—	—	—	—	—	—	②		②③	

① dc rating for 400 – 800 ampere switches is 250 volts.
② Contact the Safety Switch Flex Center (**1-888-329-9272**) for availability of this product.
③ NEMA 12 enclosures (30 – 1200 amperes) can be field modified to meet NEMA 3R rainproof requirements when a factory provided drain hole is opened.
Note: 30 ampere heavy-duty switches with Type J fuse provisions are available from the factory only. See **Table 8-15** on **Page 8-10** for catalog numbers.

Discount Symbol 22CD

Sample 2: Disconnect

Single Meter Sockets - Without Bypass

Single Meter Sockets Without Bypass

125 & 200 Amp

UG204 (closed)

UG204 (open)

Application
- Dedicated straight wire line section
- Receive ANSI C12.10 watthour meters
- Surface or flush mount (see chart)

Construction
- Ring type
- NEMA Type 3R
- ANSI 61 gray E-coat finish
- Aluminum snap ring included

Standards
- UL 414 Listed
- ANSI C12.7
- EUSERC 301A

Accessories
- 5th Jaw Kit - 50365
- AW Hub

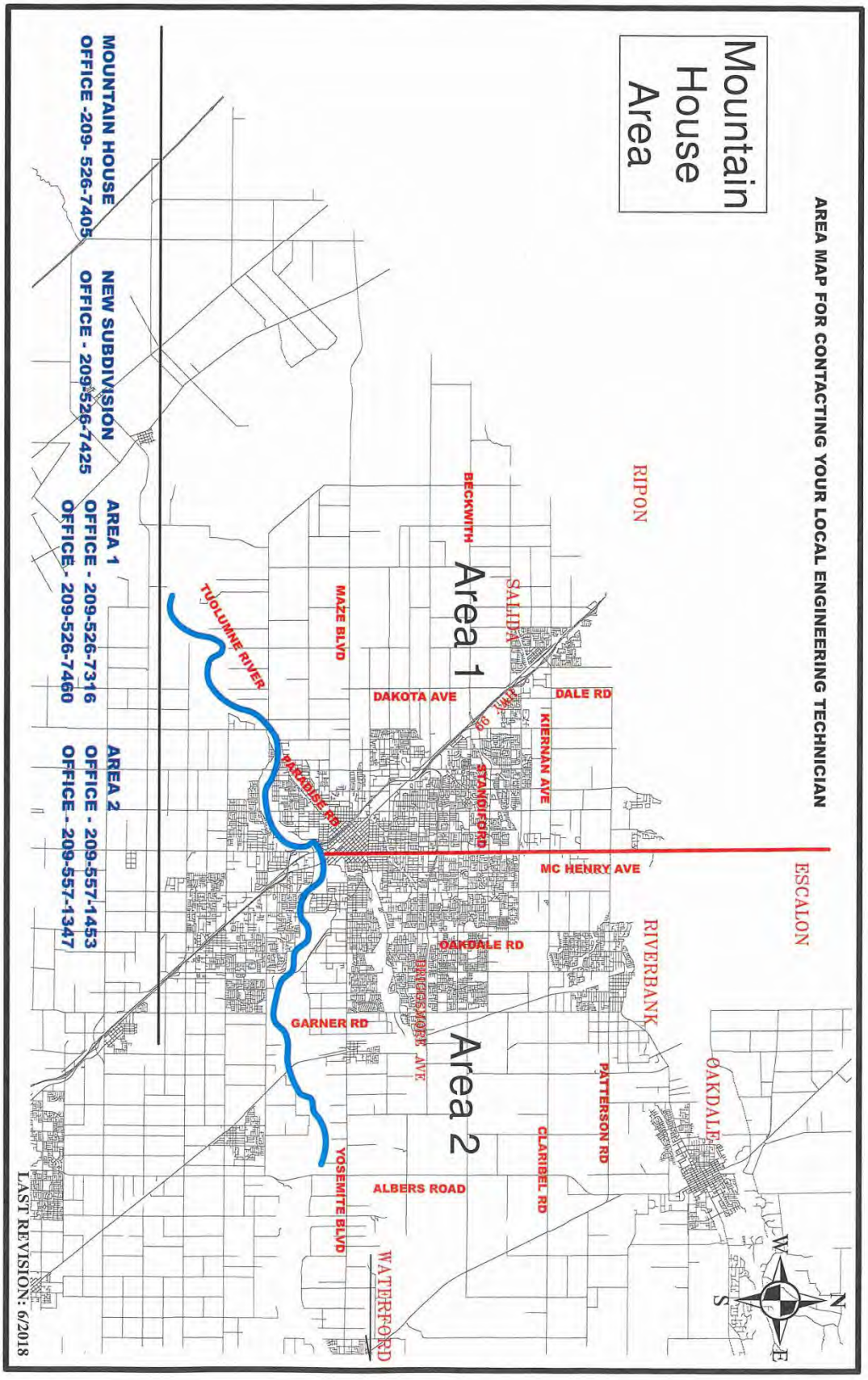
Part/UPC Number	Catalog Number	Amp Rating	Jaws	Service Type	Access	Connections Line	Connections Load	Connections Neutral
78205142030	**U011** *	125	4	1Ø/3W	UG	#14 - 2/0	#14 - 2/0	#14 - 2/0
78205156200	**UG204**	200	4	1Ø/3W	UG	#6 - 350 MCM	#6 - 250 MCM	#6 - 250 MCM
78205156205	**UG204 F**	200	4	1Ø/3W	UG	#6 - 350 MCM	#6 - 250 MCM	#6 - 250 MCM
78205126000	**UG204 F SS**	200	4	1Ø/3W	UG	#6 - 350 MCM	#6 - 250 MCM	#6 - 250 MCM
78205126005	**UG204 SS**	200	4	1Ø/3W	UG	#6 - 350 MCM	#6 - 250 MCM	#6 - 250 MCM

Part/UPC Number	Catalog Number	Overall Dimensions Height	Overall Dimensions Width	Overall Dimensions Depth	Top Provision	Knockout Layout
78205142030	**U011** *	12"	12"	4⅝"	None	Fig. 1
78205156200	**UG204**	17"	14"	4⅝"	None	Fig. 2
78205156205	**UG204 F**	17"	14"	6"	2" max KO	Fig. 3
78205126000	**UG204 F SS**	17"	14"	6"	2" max KO	Fig. 3
78205126005	**UG204 SS**	17"	14"	4⅝"	None	Fig. 2

* NOT compliant with EUSERC 301A

AIC Note:
For short circuit current ratings see page 131.

Sample 3: Generation Socket



Form 1: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

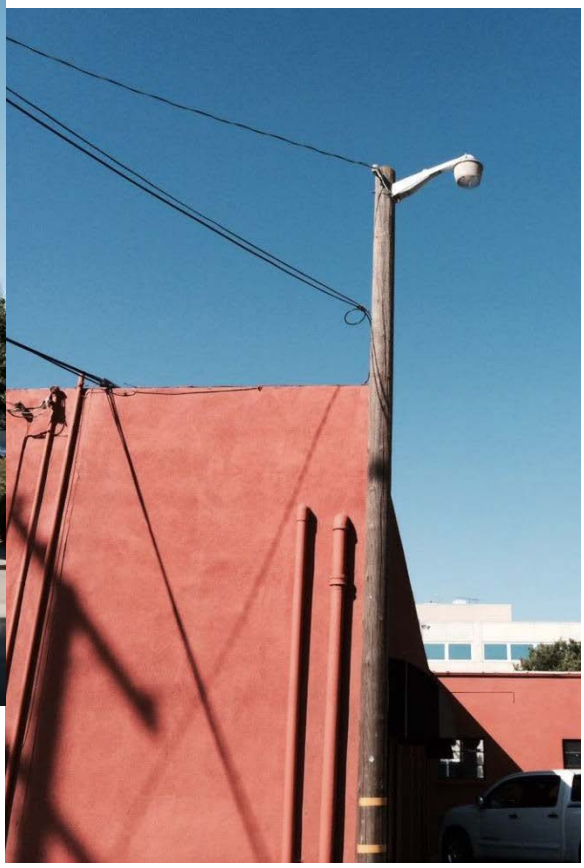
	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Street Lighting & Miscellaneous



Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

A. Frequently Asked Questions

1. What is a Lighting Service?

MID offers two types of lighting services. We offer a "Street Light" service and a "Dusk-to-Dawn Light" service.

Street Light Service (see page 7 for photo) is only utilized for any governing agency in charge of a city, county, or home owners association. The typical home owner cannot apply for a street light service; however they can apply for a dusk-to-dawn light service.

Dusk-to-Dawn Light Service (see page 7 for photo) can be used for residential customers or business customers on private property. Dusk-to-dawn lights are only allowed for those customers for whom there is existing overhead service available. Dusk-to-dawn lights can be installed on existing poles if available, or they can be installed on new poles (monthly service rate is slightly higher).

Refer to the Electric Rate Schedule SL (Lighting) for our current Rates (www.mid.org/tariffs/).

2. Does MID offer decorative lighting?

No, MID does not offer decorative lighting. Homeowners can purchase their own private lights from home improvement stores or other stores that sell lights. These lights are typically installed, operated, and maintained by private electricians or homeowners and do not require approvals or inspections by MID. Private lights are not allowed to be installed on MID-owned poles.

3. Does MID offer flat rate services?

As of the date of the publication of this Guide, MID does not offer any flat rate services.

4. How are monthly fees or rates calculated?

Existing street lights are calculated by time of use for each light. Refer to the Electric Rate Schedule SL (Lighting) for our current Rates (www.mid.org/tariffs/). For new street light installations after January 1, 2015, all street lights will be metered. See Drawing MISC-001.0 and Drawing MISC-002.0 (pages 5 and 6) for a typical metered pedestal.

All agencies (and/or their qualified contractors) who have been authorized to install facilities must have a signed "Pole Attachment Agreement" on file with the District's Board Secretary. Contact your designated Engineering Technician (see map on page 14).

5. How do I obtain one of the above services?

See Section B.

B. Procedures for Obtaining a Lighting Service

Contact an MID Engineering Technician to apply for service. Use the Area Map on page 14 for the number to call.

Street light services will require final approval by your local governing authority (see a list of authorities on page 4).

1. Street Light Service

a) The customer must submit a completed "Application for Non-Residential Electric Service(s)" (see page 8 for sample) to MID.

b) The customer must obtain approval from the MID Engineering Department to attach any street light to MID solely-owned wood poles.

c) The customer must have a signed "Pole Attachment Agreement" on file as described in Rule 2 (www.mid.org/tariffs/).

d) After the completed submittal has been received, an MID Engineering Technician will review the plans to determine point of connection(s). These plans will be sent back to the customer.

e) Upon inspection by the local governing authority, the project will be sent for service connection.

2. Dusk-to-Dawn Lights

a) The customer must submit a completed Dusk-to-Dawn Light application (see page 10 for sample) to the MID Electrical Engineering Department for processing and review.

b) The customer will be contacted by an Engineering Technician should further information be required.

c) After the Electrical Engineering Department review, an Engineering Technician will process the paperwork for service installation.

d) Lighting options include:

- 200 W HPS or LED equivalent light output
- 100 W HPS or LED equivalent light output

An Engineering Technician should be contacted to properly size the dusk-to-dawn lights.

e) MID reserves the right to install **standard** shields on the fixture in the event there is a complaint of light reflection.

f) MID installs the dusk-to-dawn light fixture.

g) MID maintains the dusk-to-dawn lights.

C. Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send final set of site plans to MID's Electrical Engineering Department for review and design.
2	MID	7 business days	Engineering Technician designs the electric layout and sends the installation agreement and one marked-up copy of site plan to the Customer.
3	Customer		Pay any charges, return a signed installation agreement, and return completed Commercial Load Information Form with all relevant dates regarding construction and service requirements. Both must be returned to MID. Obtain all necessary permits from the local governing authority.
4	MID	7 business days	Engineering Technician designs engineering drawing(s), materializes and assembles the work order.
5	Customer		Call USA to locate underground utilities, install conduit and substructures, return Application for Electric Services to the Customer Service Department, request MID and local governing authority to inspect conduit, substructure, transformer pad, and electric facilities. Close trench, pull service conductors to agreed location, connect conductors to panel. Local governing authority inspects electric facilities. Your facilities pass inspection and you request service.
6	MID	7 business days pending weather and scope of project	MID construction installs transformer, primary cables and secondary cables where needed. MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, the meter is set and the panel is energized.

D. Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

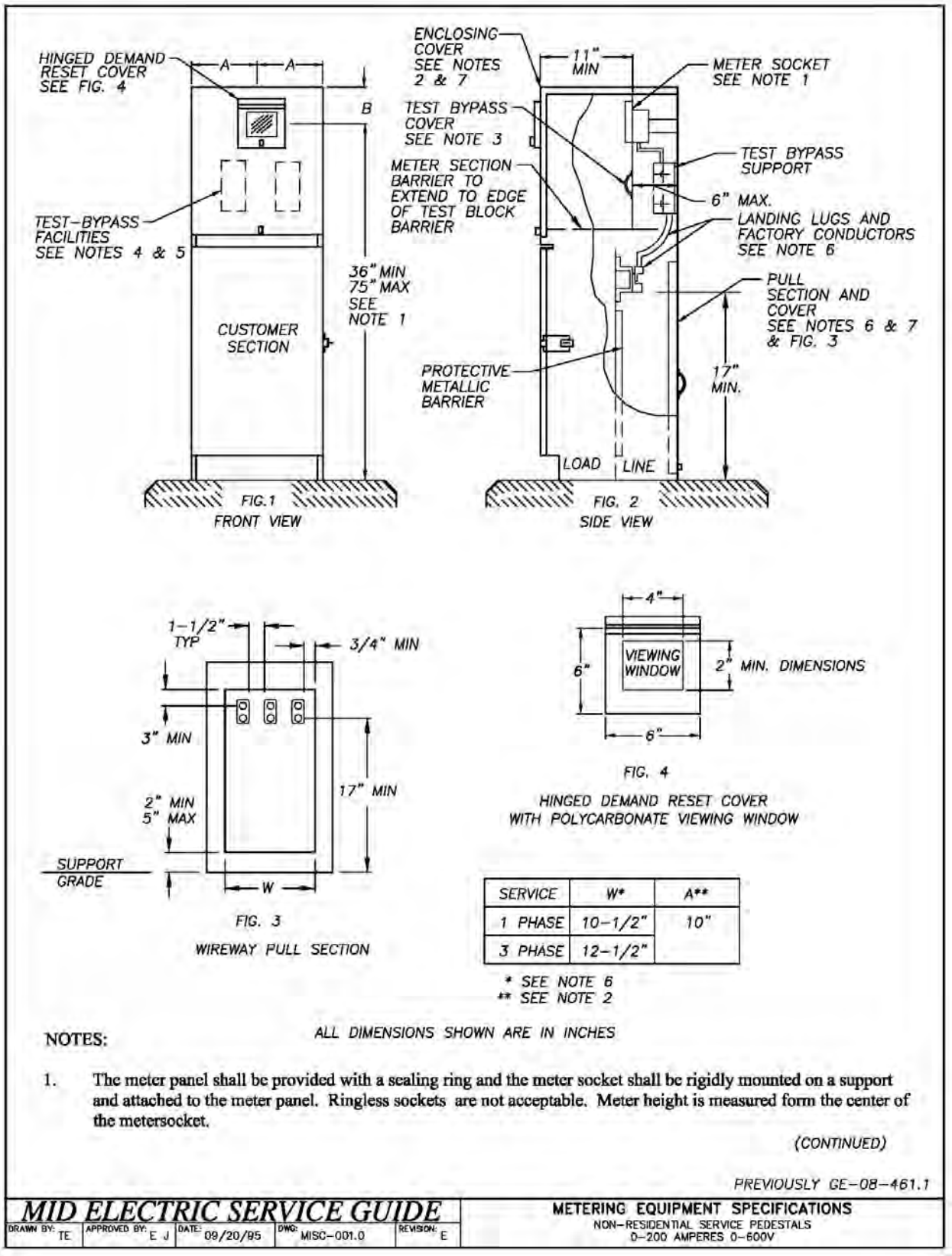
City of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

E. MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 14).



SERVICE	W*	A**
1 PHASE	10-1/2"	10"
3 PHASE	12-1/2"	

* SEE NOTE 6
** SEE NOTE 2

NOTES: ALL DIMENSIONS SHOWN ARE IN INCHES

1. The meter panel shall be provided with a sealing ring and the meter socket shall be rigidly mounted on a support and attached to the meter panel. Ringless sockets are not acceptable. Meter height is measured form the center of the metersocket.

(CONTINUED)

PREVIOUSLY GE-08-461.1

MID ELECTRIC SERVICE GUIDE

DRAWN BY: TE	APPROVED BY: E J	DATE: 09/20/95	DWG: MISC-001.0	REVISION: E

METERING EQUIPMENT SPECIFICATIONS
NON-RESIDENTIAL SERVICE PEDESTALS
0-200 AMPERES 0-600V

Drawing MISC-001.0: Non-Residential Service Pedestals

NOTES: (CONTINUED)

2. The meter shall be enclosed and the enclosing cover shall be:

   a. Hinged to allow the top and front to be rotated back as one unit to expose the metering compartment. The "A" dimension applies when the meter compartment side panels are fixed in place and obstruct the meter socket side clearence. The lifting force required to open the cover shall not exceed 25 pounds.
   b. Equipped with a lifting handle.
   c. Sealable and lockable with a padlock having a 5/16 inch lockshaft.
   d. Provided with a demand reset cover with a viewing window (See Fig. 3). The reset cover shall be sealable and lockable with a padlock having 5/16 inch lockshaft.

3. Test-bypass compartment covers shall be sealable and fitted with a lifting handle-cover exceeding 16 inches in width shall require two lifting handles.

4. Test-bypass blocks with rigid barriers shall be furnished, installed and wired or bussed to the meter socket by the manufacturer. Connection sequences shall be LINE-LOAD from left to right and clearly identified by **3/4 inch minimum block letter labeling**. See dwgs. GE-08-463.0 and GE-08-465.0 for test-bypass block details.

5. Test-bypass shall be installed with the following clearances:

   a. 3-inches of vertical clearance from the upper test connector stud to the upper compartment access opening and 3 inches from the center of the cable terminal screw to the lower compartment access opening.
   b. 1-1/2 inches of side clearance from the rigid insulating barriers to the compartment sides and 1 inch to the compartment access openings.

6. The terminating pull section shall:

   a. Comply with the minimum dimensions shown in table 1 (the "W" dimension is measured between the access opening return flanges), accept a minimum 3 inch conduit, and the cover shall be equipped with a lifting handle.
   b. Be equipped with aluminum-bodied, pressure-type lugs, with a range of No. 2 AWG through 350 KCMIL, for termination of the service conductors. Insulated cable or bus shall be installed between the termination lugs and the test-bypass facilities.
   c. Have a protective metallic barrier (16 gauge minimum) provided between the pull section and the customer distribution section. There shall be a 1/4 inch minimum clearance between the customer section wall and the barrier to prevent screws and bolts from protruding into the pull section.

7. Utility compartments covers (i.e., meter cover, demand reset cover, and pull section) shall be sealable and lockable with a padlock having a 5/16 inch lockshaft.

8. Internal equipment attached to the outer walls of the enclosure shall be secured in place with devices that may not be loosened from the outside. Screws or bolts requiring special tools for installation or removal are not acceptable.

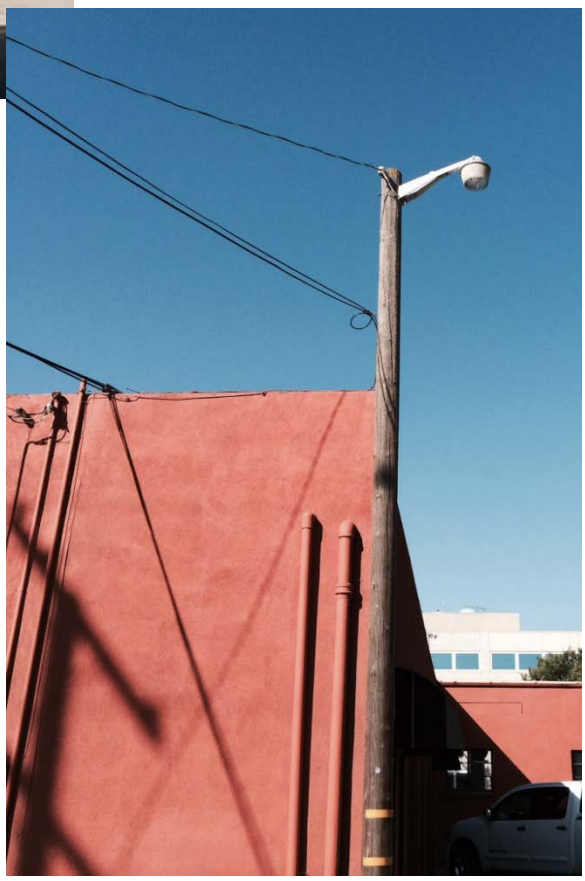
9. For structural mounting and support of the pedestal, consult a M.I.D. Engineering Technician.

PREVIOUSLY GE-08-461.2

MID ELECTRIC SERVICE GUIDE					METERING EQUIPMENT SPECIFICATIONS NON-RESIDENTIAL SERVICE PEDESTALS 0-200 AMPERES 0-600V
DRAWN BY: TE	APPROVED BY: E J	DATE: 09/20/95	DWG: MISC-002.0	REVISION: D	

Drawing MISC-002.0: Non-Residential Service Pedestals, continued

Sample 1: Street Light



Sample 2: Dusk-to-Dawn Light

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

--MID USE ONLY--			
CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date 9/10/2015 **Service start date:** 12/1/2015 **Power On?** ☐ Yes ☒ No

Type of Service: ☐ Commercial ☐ Industrial ☒ Lighting ☐ Ag Pump – horsepower: 50

New construction: ☐ Yes ☐ No Square footage of building or work area:

1. Legal billing name: John Doe
2. Doing business as (DBA): Business Name (Name of Organization or Entity)
3. Service address: 1234 Sample Drive (Street) Modesto (City) 95352 (Zip Code)
4. Mailing address: PO Box 1111 (Street) Modesto (City) 95352 (Zip Code)
5. Type of business: Distribution/Trucking Company (Complete description of goods or services rendered) Franchisee? ☐ Yes ☒ No
6. Number of years in business: 10 Business phone: 209-123-4567 Fax number: 209-456-7890
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☒ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: California (Copy of documents required) Year filed: 2004
9. Taxpayer ID number (EIN or SSN): 123456789 Business License number: 1234567 (Copy of license required)
10. If business name is legal billing name, fictitious name file number: 11-2345 Filing date: 9/8/2010
11. Address of corporate office or residence address if sole proprietor:
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth
John Doe	President/CEO	209-123-4567	D1234567	1/18/75
Jane Doe	Vice President	209-456-0987	D9876543	5/30/76

13. Contact for billing inquiries: Jane Doe (Name) Vice President (Title) 209-456-0987 (Phone) janedoe@email.com (email address)
14. Name of person completing form: Jane Doe (Name) Vice President (Title)

Signature (required):

Owner or Corporate Officer	Driver's License number & State	Date of Birth
Jane Doe (Print Name)	Vice President (Title)	9/10/2015 (Date)

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Go to http://www.mid.org/forms/ for the most current Application.

Sample 3: Application for Non-Residential Electric Service(s)

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: Sample Warehouse Expansion
Location (Street): 1234 Sample Way, Modesto, CA 95353
Owner (Name): John Doe Telephone: (209) 555-4444
Address: 5687 Data Drive, Modesto, CA 95353
Engineer (Name): David Doe Telephone: (209) 566-5664
Address: 7896 Sample Ct., Modesto, CA 95352
Estimated Date Ready for Service: 9-15-2015 Pre-Construction Meeting Date: _____
Begin Rough Grading Date: _____

General Information

Approximate Square Footage: 8528 Type of Business: Warehouse

Electric Load Information

	Initial		Future			Initial		Future	
Lighting	3.4	kW		kW	Receptacles	1.0	kW		kW
Water Heater	1.5	kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners	20	HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: 35 kW Size Main Fused Switch: 600 Amps
Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____
Type of Service Desired: (circle one) (Overhead) Underground
Phase: 3 Voltage: 208/120 Wires: 4 Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
(X) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Go to http://www.mid.org/forms/ for the most current Form.

Office Use Only

Application Complete ☐ Yes ☐ No Checked By: _____ Date: _____
If no, explain: _____

9/2015

Sample 4: Commercial Load Information Form

MODESTO IRRIGATION DISTRICT

1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

DUSK TO DAWN LIGHT APPLICATION

All night outdoor area lighting service supplied from an existing, overhead, 120 volt source, where the lighting facilities are installed, owned, and maintained by the District. Terms and rates for light installation are summarized below; services provided as specified in Electric Rate Schedule SL Section 2. In accordance with MID Rules, a deposit of $30 per light may be required to activate service.

Terms

A) **Lamp and Fixture on Existing Pole (pole installed for purpose other than lighting; i.e. power pole)**

12 continuous months and thereafter until cancelled. Service to lamps here under is continuous and temporary disconnection shall not be made.

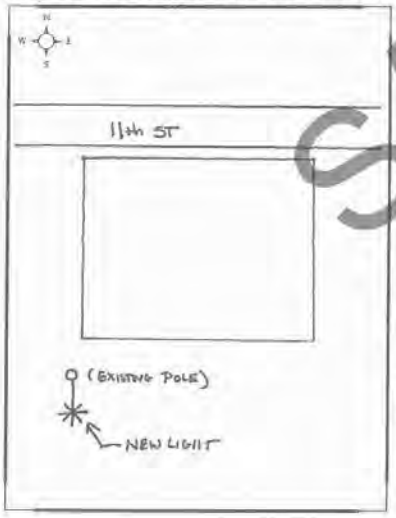
B) **Lamp and Fixture with Pole (pole installed specifically for the purpose of lighting)**

36 continuous months and thereafter until cancelled. Service to lamps hereunder are continuous and temporary disconnection shall not be made.

C) **Service Period**

If service is cancelled prior to the expiration of the initial 12- or 36-month period, the customer pays the District the monthly charges for the remaining portion of the period.

Map for New Light Service Placement



Customer Information

Date 6/24/2014
New Account # (Separate Acct) 123456789
Account # (Existing Acct) 987654321
Customer name Modesto Irrigation District
Location 1231 11th St.
City Modesto Zip Ca
Phone 209-526-7373
Mailing address: 1231 11th St.
Description of purpose: Install one Dusk to Dawn light on existing pole #( ) S/W of property
Customer signature
Applicant is: Owner ☒ Tenant ☐
Property owner signature
Property owner phone number 209-526-7373

Go to http://www.mid.org/forms/ for the most current Application.

*** MID Use Only ***

Type: 925140 LP Sodium Vapor ☐ 925130 HP Sodium Vapor ☑ 925110 Incand
Number of Lights 1 HPS Completed By Date Completed
Pole Needed: ☐ Yes ☑ No Number Authorized By

W0906

Sample 5: Dusk-to-Dawn Application

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

---MID USE ONLY---			
CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date _____ **Service start date:** _____ **Power On?** ☐ Yes ☐ No

Type of Service: ☐ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: _____

New construction: ☐ Yes ☐ No Square footage of building or work area: _____

1. Legal billing name: _____
2. Doing business as (DBA): _____
   Name of Organization or Entity
3. Service address: _____
   Street City Zip Code
4. Mailing address: _____
   Street City Zip Code
5. Type of business: _____ Franchisee? ☐ Yes ☐ No
   Complete description of goods or services rendered
6. Number of years in business: _____ Business phone: _____ Fax number: _____
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☐ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: _____ Year filed: _____
   Copy of documents required
9. Taxpayer ID number (EIN or SSN): _____ Business License number: _____
   Copy of license required
10. If business name is legal billing name, fictitious name file number: _____ Filing date: _____
11. Address of corporate office or residence address if sole proprietor:
    _____
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth

13. Contact for billing inquiries: _____
    Name Title Phone **email address**
14. Name of person completing form: _____
    Name Title Telephone

Signature (required): _____
Owner or Corporate Officer **Driver's License number & State** **Date of Birth**

Print Name Title Date

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: _____ Type of Business: _____

Electric Load Information

	Initial		Future			Initial		Future	
Lighting		kW		kW	Receptacles		kW		kW
Water Heater		kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners		HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: _____ kW Size Main Fused Switch: _____ Amps

Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

_____

9/2015

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337
Fax: (209) 526-7359

DUSK TO DAWN LIGHT APPLICATION

All night outdoor area lighting service supplied from an existing, overhead, 120 volt source, where the lighting facilities are installed, owned, and maintained by the District. Terms and rates for light installation are summarized below; services provided as specified in Electric Rate Schedule SL Section 2. In accordance with MID Rules, a deposit of $30 per light may be required to activate service.

Terms

A) Lamp and Fixture on Existing Pole (pole installed for purpose other than lighting; i.e. power pole)

12 continuous months and thereafter until cancelled. Service to lamps here under is continuous and temporary disconnection shall not be made.

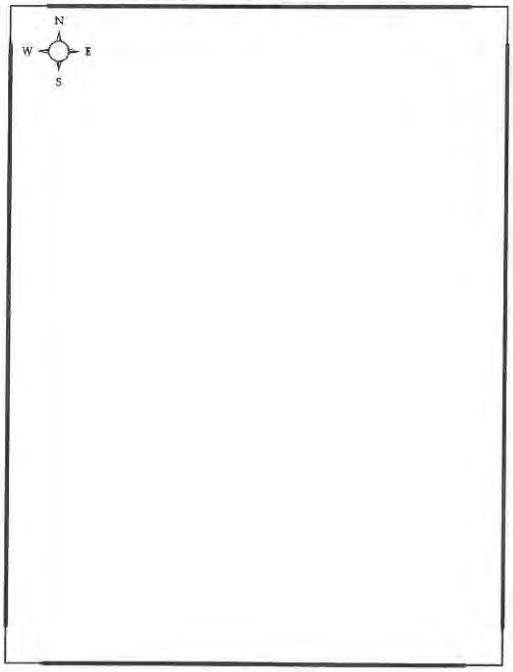
B) Lamp and Fixture with Pole (pole installed specifically for the purpose of lighting)

36 continuous months and thereafter until cancelled. Service to lamps hereunder are continuous and temporary disconnection shall not be made.

C) Service Period

If service is cancelled prior to the expiration of the initial 12- or 36-month period, the customer pays the District the monthly charges for the remaining portion of the period.

Map for New Light Service Placement



Customer Information

Date _____

New Account # (Separate Acct) _____

Account # (Existing Acct) _____

Customer name _____

Location _____

City _____ Zip _____

Phone _____

Mailing address: _____

Description of purpose: _____

Customer signature _____

Applicant is: Owner ☐ Tenant ☐

Property owner signature _____

Property owner phone number _____

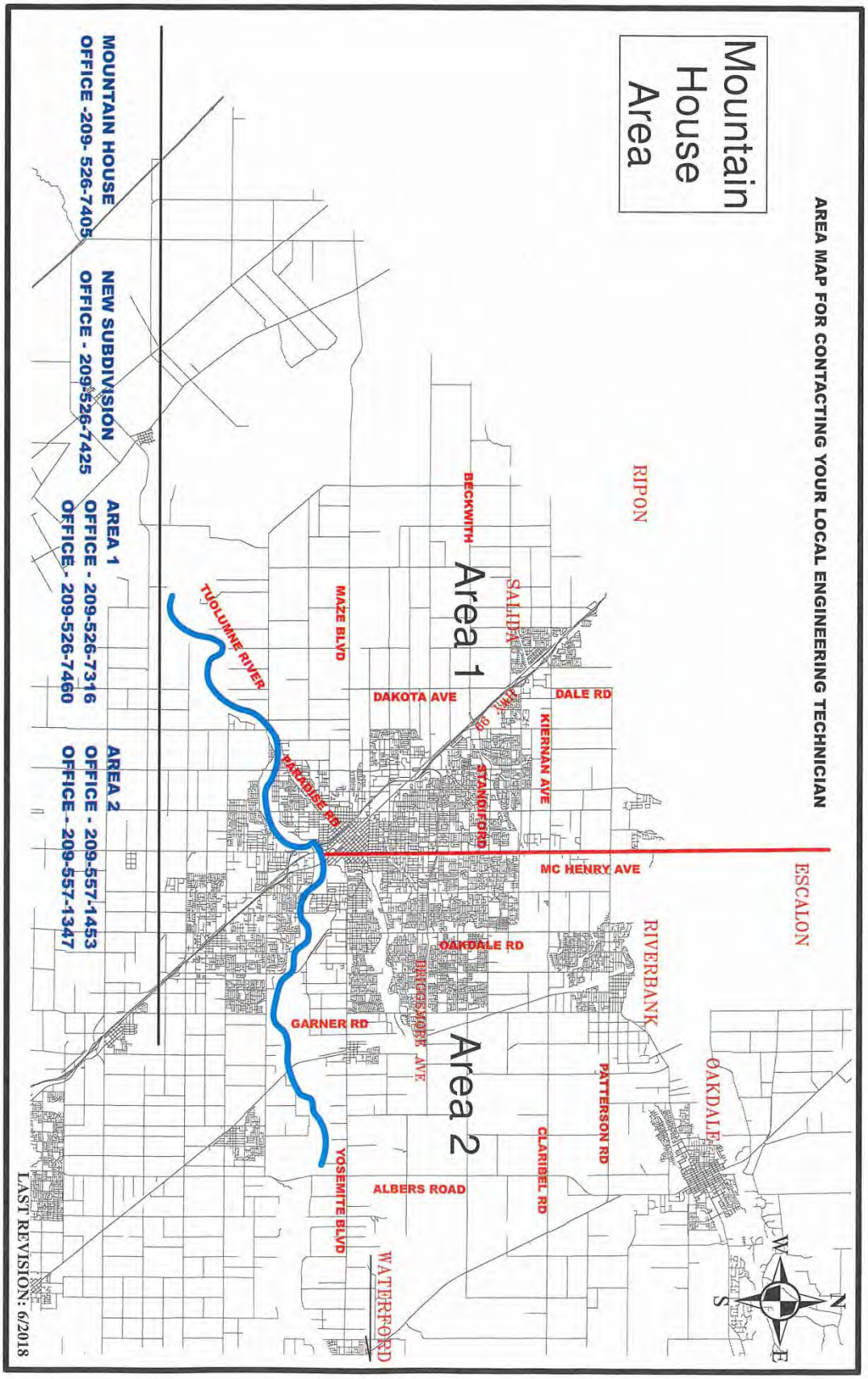
***** MID Use Only *****

Type: 925140 LP Sodium Vapor ☐ 925130 HP Sodium Vapor ☐ 925110 Incandescent ☐ **NAICS** _____

Number of Lights _____ **HPS** _____ **Completed By** _____ **Date Completed** _____

Pole Needed: ▣ Yes ▣ No **Number** _____ **Authorized By** _____

W0906



Form 4: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Residential Subdivision

Modesto Irrigation District

The Power to Grow

June 1, 2019

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

A. Frequently Asked Questions

1. *What is a Residential Subdivision?*

A residential subdivision is defined as a group of residential lots consisting of 3 or more lots.

2. *What are the procedures to obtain electrical service to my subdivision?*

You need to provide MID with a full set of signed civil improvement plans and a completed "Application for Residential Subdivision Engineering" (see page 23 for a sample, page 24 for the form). For complete step by step requirements, see page 2, Section B of this document.

3. *Does MID design my subdivision?*

Yes and no. You (or the developer) are responsible for the actual layout design of the subdivision (lots, streets, etc.). MID will only design the electrical portion of the project. However, this cannot be accomplished until the initial subdivision design is complete.

4. *How long does the MID engineering process take?*

Design work by MID normally takes 6-8 weeks. You (or the developer) can start your portion of the project any time after you receive the requirements package (see page 2, Requirements for Obtaining Electric Service to a Subdivision). MID crews can mobilize and start installing our facilities within 4 weeks of completed requirements.

5. *When will MID install its facilities?*

MID normally **starts** this process 4-6 weeks **after** final inspections are complete on **all MID** required facilities.

6. *Are there any fees?*

Fees may be required depending on where the subdivision is located. You'll need to contact the MID Engineering Department for all applicable fees.

7. *Can I have sub-surface transformers?*

The standard and MID-preferred transformer style is a pad-mounted transformer. If sub-surface transformers are chosen, you will be required to pay a non-refundable cost per transformer according to the current fees listed in Appendix A of the Electric Service Rules.

B. Requirements for Obtaining Electric Service to a Subdivision

The following is a general list of items needed to obtain electric service to a proposed subdivision. In all instances a unique letter and drawings will be provided outlining all requirements that must be met by the customer/developer. The letter will also outline what MID will be providing and/or installing.

1. The customer must contact the MID Engineering Technician assigned to the customer's area (see the Map on page 25).

2. Submit a completed *Application for Residential Subdivision* and a full set of signed, civil improvement plans to the MID Engineering Department. Civil improvement plans must be submitted via electronic media using AutoCAD version 2000 and above format. Submit this information to the assigned MID Engineering Technician. MID contact information is found on page 4.

3. The MID Engineering Department will design the electrical utilities per the submitted civil improvement plans. MID will issue a *Residential Subdivision Contract*, a *Residential Subdivision Requirements Letter*, and a *Residential Subdivision Requirements Drawing(s)*. This process normally takes 8-10 weeks. Larger projects may take an additional 2-3 weeks.

4. The customer is responsible for coordinating all joint trench composite drawings and coordinating the installation of facilities for all other utilities.

5. The customer must install all required underground facilities per the *Requirements Letter* and *Drawing(s)*. Facilities to include, but not be limited to, underground conduits, service boxes, transformer pads, and switchgear pads.

6. All conduit installations must be inspected and mandrilled per Drawing RES SUB-008.0 (page 11).

7. All vaults and/or service boxes must be installed and inspected per Drawings RES SUB-001.0 through Drawing RES SUB-019.0 (page 22).

8. After final inspections on all required facilities, the customer may apply for electrical service.

9. MID will install electric facilities. MID normally **starts** this process 4-6 weeks **after** final inspections are complete on **all MID** required facilities.

C. Project Scheduling Table

Step	Party	Typical Time Required by MID	Action
1	Customer		Send complete application package to MID's Electrical Engineering Department for review and design.
2	MID	21 business days	Engineering Technician sends preliminary design to Joint Trench Coordinator or other utilities for Joint Trench Intent.
3	MID	40 business days following Step 2	Engineering Technician designs the conduit and electrical layout. Engineering Technician sends the Application for Underground Electrical Service and one conduit and two electric layout plans to the Customer.
4	Customer		Return the signed Application for Underground Electrical Service and pay any applicable fees. Obtain all necessary permits from the local governing authority.
5	MID	15 business days	Engineering Technician assembles the work order package and submits to MID construction.
6	Customer		Call USA to locate underground utilities, install conduit and substructures, request MID and local governing authority to inspect trench and conduit.
7	MID	5 business days	MID inspects trench and conduit.
8	Customer		Curb, gutter and sidewalk are installed, and substructures set to grade. Request final inspection from MID.
9	MID	5 business days	MID inspects all substructures and witnesses mandrel test performed by developer.
10	MID	30 business days pending weather and scope of project	MID installs its electrical facilities and energizes the project.

D. Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

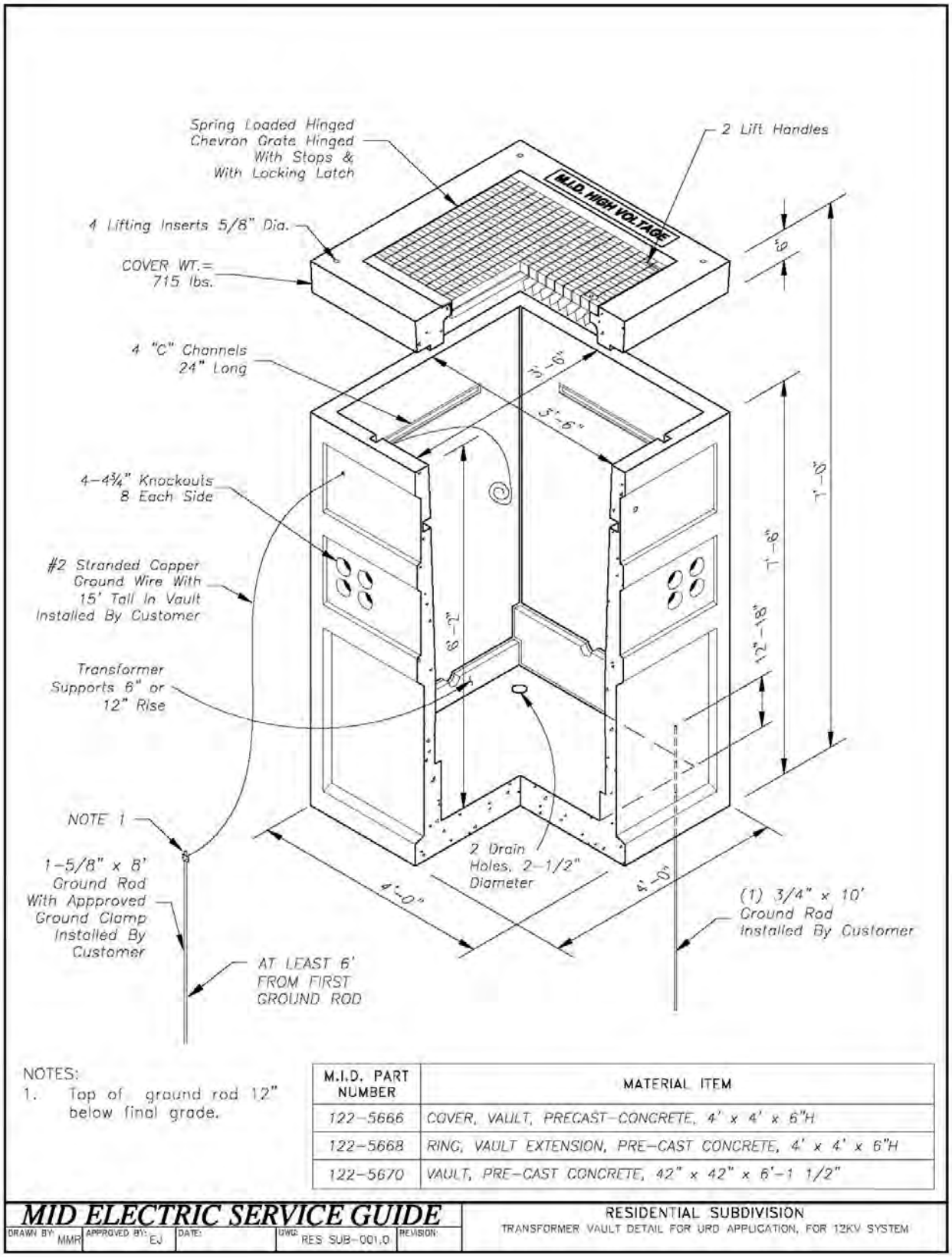
City of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

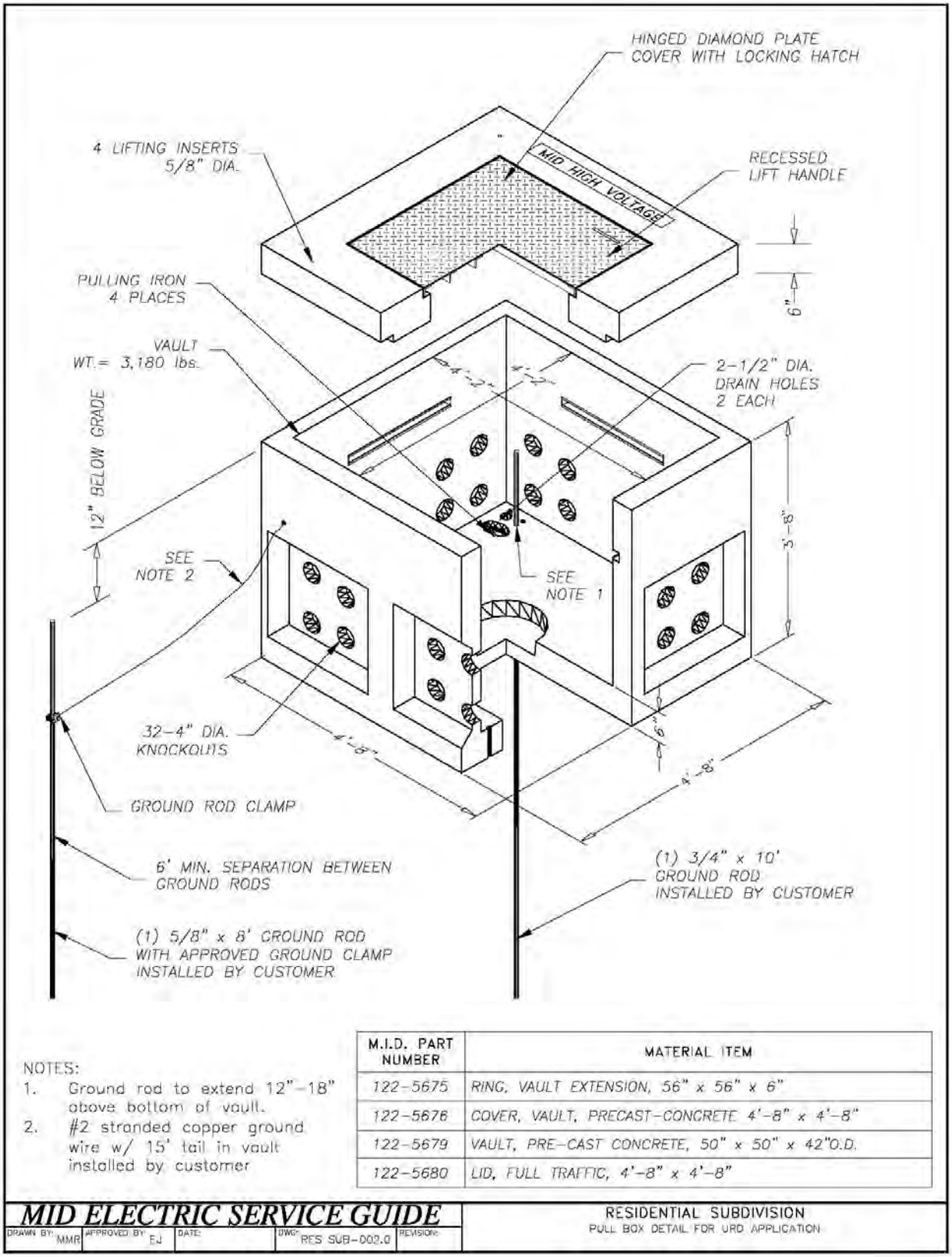
E. MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electrical Engineering Department[1]
Phone: 209-526-7468
Fax: 209-526-7357

[1] Contact the MID Engineering Technician assigned to the area (see map on page 25).



Drawing RES SUB-001.0: Transformer Vault Detail for URD Application, for 12kV System



NOTES:
1. Ground rod to extend 12"-18" above bottom of vault.
2. #2 stranded copper ground wire w/ 15' tail in vault installed by customer

M.I.D. PART NUMBER	MATERIAL ITEM
122-5675	RING, VAULT EXTENSION, 56" x 56" x 6"
122-5676	COVER, VAULT, PRECAST-CONCRETE 4'-8" x 4'-8"
122-5679	VAULT, PRE-CAST CONCRETE, 50" x 50" x 42"O.D.
122-5680	LID, FULL TRAFFIC, 4'-8" x 4'-8"

MID ELECTRIC SERVICE GUIDE

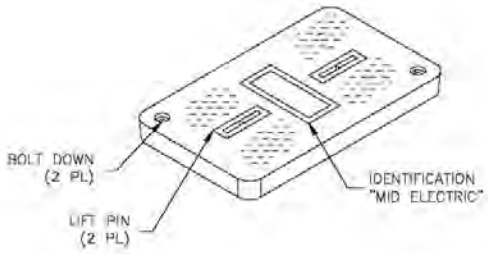
DRAWN BY: MMR | APPROVED BY: EJ | DATE: | DWG: RES SUB-002.0 | REVISION:

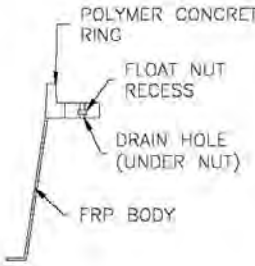
RESIDENTIAL SUBDIVISION
PULL BOX DETAIL FOR URD APPLICATION

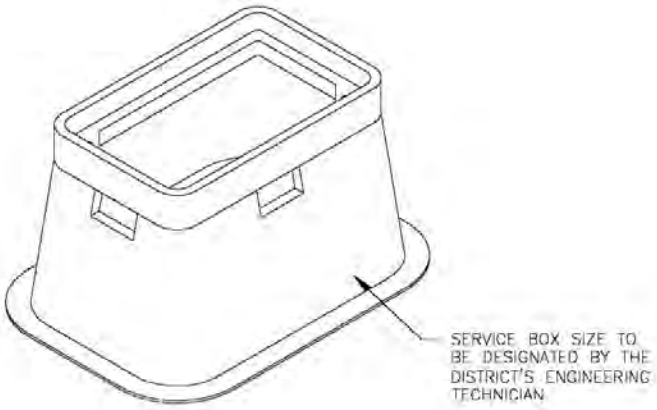
Drawing RES SUB-002.0: Pull Box Detail for URD Application

COVER FEATURES:

* 20,800 WHEEL LOAD ON 10" X 20" PLATE
* POLYMER CONCRETE CONSTRUCTION
* 2 COIL REA FASTENERS
* NON-SKID SURFACE STANDARD FOR SAFTEY
* APPROX. WEIGHT 35 LBS.







BOX FEATURES:

* POLYMER CONCRETE RING
* FIBER REINFORCED POLYMER BODY
* LIGHTWEIGHT
* APPROX. WEIGHT 45 LBS.

M.I.D. PART NUMBER	MATERIAL ITEM
122-5506	13x24x18 SECONDARY SERVICE BOX ASSEMBLY W/ COVER, MARKED "MID ELECTRIC"
122-5507	13x24 SECONDARY SERVICE BOX LID MARKED "MID ELECTRIC"
122-5508	13x24 SECONDARY SERVICE BOX EXTENSION - 8" POLYMER BOX EXTENSION FOR 122-5506

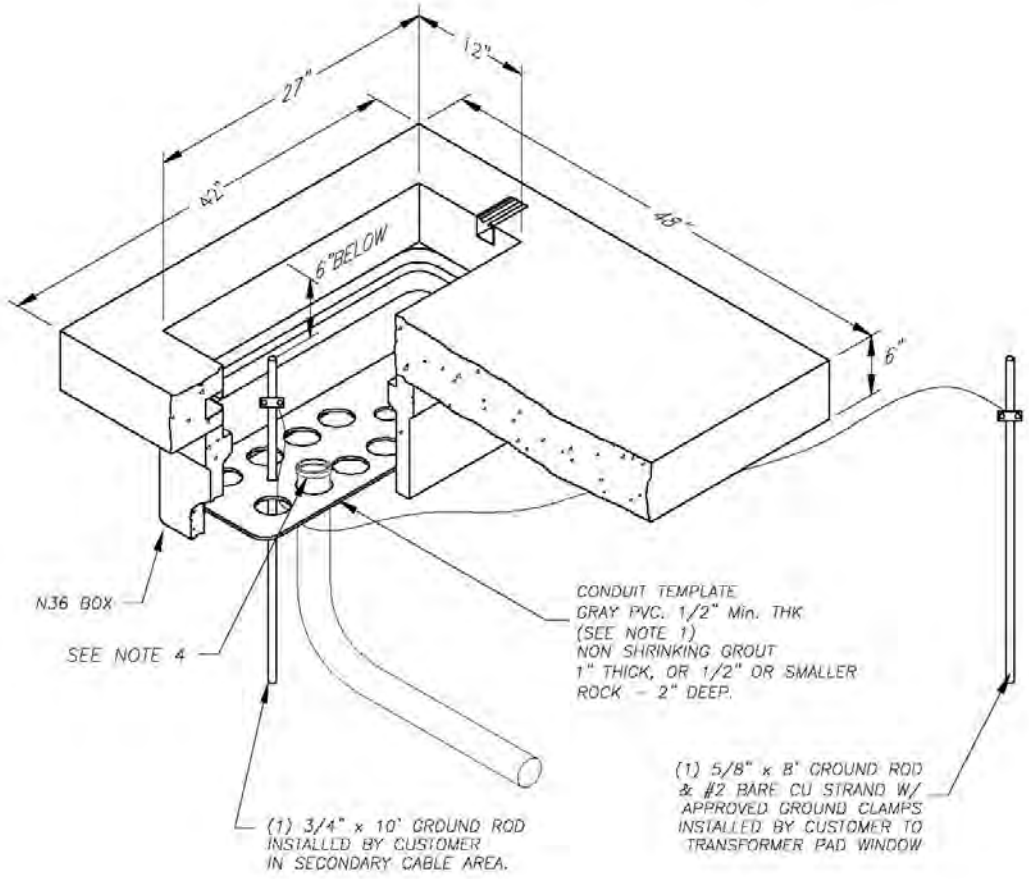
MID ELECTRIC SERVICE GUIDE

DRAWN BY: MMR | APPROVED BY: EJ | DATE: | DWG: RES SUB-003.0 | REVISION:

RESIDENTIAL SUBDIVISION
SERVICE BOX DETAIL FOR URD APPLICATION

Drawing RES SUB-003.0: Service Box Detail for URD Application

The purpose of this drawing is to provide a clear understanding of a 1Ø URD transformer pad and conduit template installation.

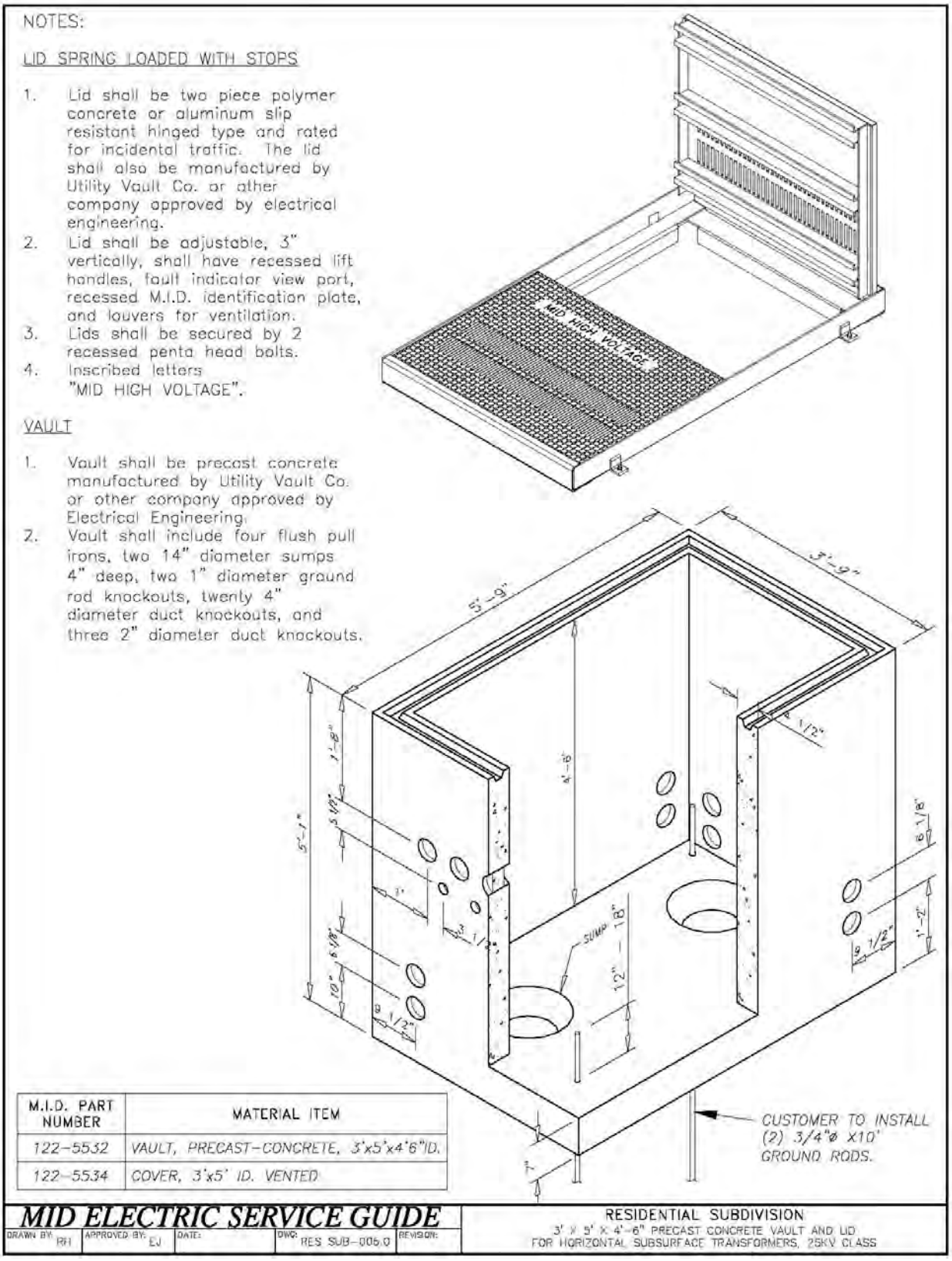


NOTES:
1. The number of conduits are dependent upon final engineering design by M.I.D. A conduit template drawing will be provided by M.I.D. after a drawing is finalized.
2. Conduits shall be capped to prevent foreign material from entering conduits.
3. A 6 foot minimum separation shall be maintained between ground rods.
4. Bell ends required for all conduits entering template.

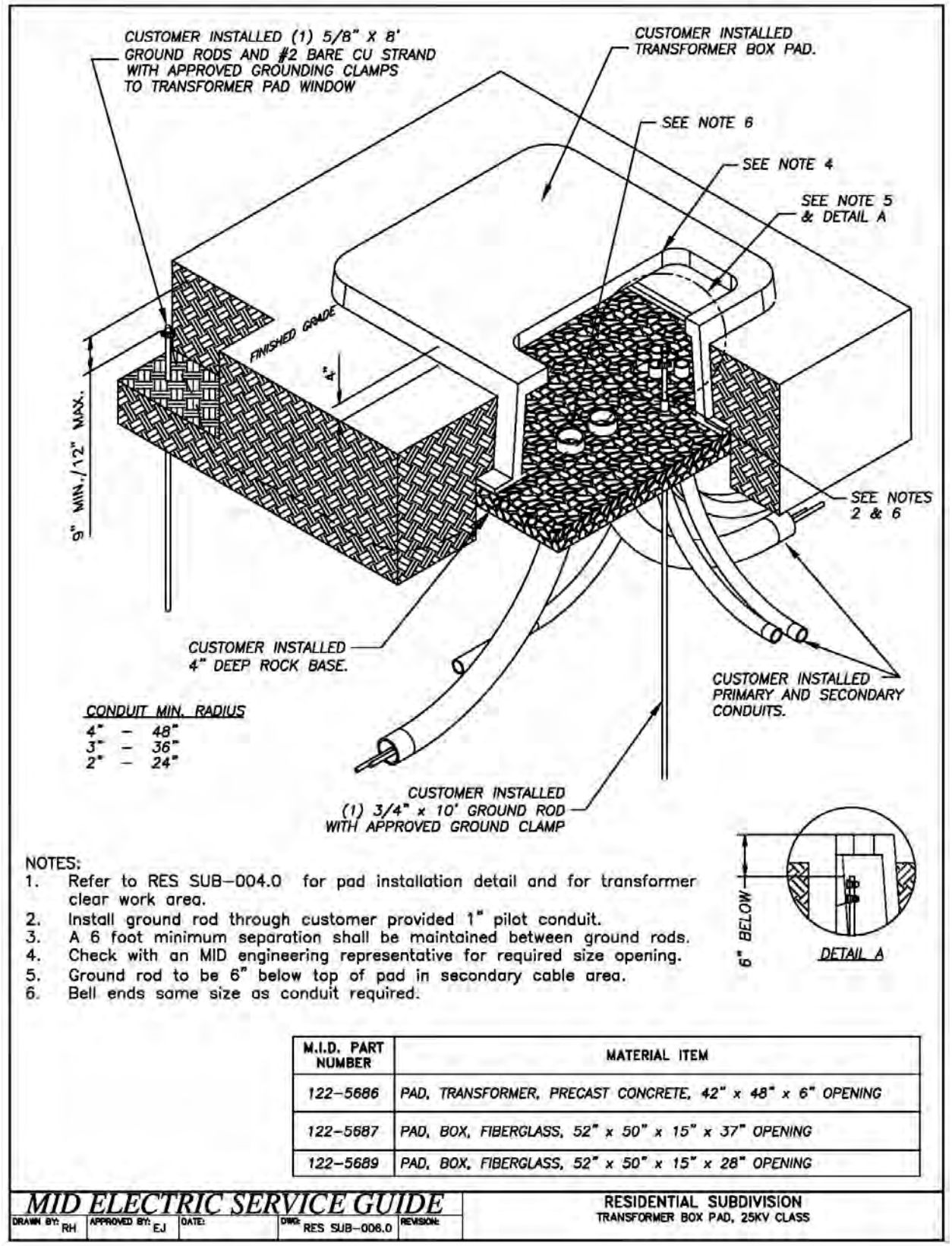
M.I.D. PART NUMBER	MATERIAL ITEM
122-5686	PAD, TRANSFORMER, PRECAST CONCRETE 42" x 48" x 6"

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SUBDIVISION URD TRANSFORMER PAD INSTALLATION FOR 12KV SYSTEM
DRAWN BY: AG	APPROVED BY: EJ	DATE:	DWG: RES SUB-004.0	REVISION:	

Drawing RES SUB-004.0: URD Transformer Pad Installation for 12kV System



Drawing RES SUB-005.0: Precast Concrete Vault and Lid for Horizontal Subsurface Transformers, 25kV Class



Drawing RES SUB-006.0: Transformer Box Pad, 25kV Class

1.0 GENERAL

These specifications cover installation of transformer pad, high voltage and secondary voltage conduit for single phase power service in a residential subdivision. All material shown shall be furnished by the customer or his contractor including the transformer pad or vault, secondary pull box and, primary and secondary voltage conduit. All materials used shall be supplied by a district approved manufacturer. The District will furnish and install the transformers, switchgear, and the high voltage and secondary cables.

2.0 DUCT INSTALLATION

Duct shall be installed at the proper depth consistent with District requirements and specifications and per the manufacturer's recommendations and shall be properly joined together with couplings, primer and cement and aligned such that there are no sharp edges on the inside to damage the cable. Bell ends (same size at the conduit) are required for all conduits entering pull boxes, transformer pads, and vaults.

The minimum radius of bends depends on duct size and type of installation and shall be as specified in RES SUB-018.0, RES SUB-005.0, and RES SUB-006.0 as applicable or as otherwise noted on the District approved engineering drawing. The total of all angles at couplings and bends shall not exceed 360° in any continuous duct run between outlets.

An inspection must be made by the district when the duct and any required concrete encasement is installed in the open trench. Call 526-7457 to notify the district inspector. After this part of the installation has been approved, the customer will back-fill and compact the trench and prepare to pull a mandrel no less than 0.5" smaller than the inside diameter of the duct and 12" in length. The next inspection will be made by the District when the mandrel is pulled through the duct. At time of inspection the customer will supply an appropriate length of footage-calibrated "pull tape" to attach to the mandrel and pull in the duct. The "pull tape" will be used by the District for subsequent cable installation. Failure to have required inspections at the proper time will result in a delay until the duct is uncovered for inspection and/or the mandrel is pulled in the presence of the District's inspector. See section 2 page 6 for inspection details.

All conduit shall be held vertical when back filling.

3.0 APPROVED DUCT TYPES

Polyvinyl Chloride (PVC) duct designed for direct burial installation shall comply with one of the following standards: Conduit marked schedule 40 PVC ASTM TC-2, or schedule 40 U.L., 90°C.

The District reserves the right to reject any of the above ducts which show signs of damage, or where improperly installed.

Solvent cemented joints shall be made according to the manufacturer's recommendations, using primer and cements meeting the requirements of ASTM D2564 of PVC duct.

4.0 APPROVED PULL TAPES

ARNCO part number DL WP25, Neptco product number WP2500P, or a District approved equivalent.

5.0 TRANSFORMER PADS AND VAULTS, PULL BOXES, AND SERVICE BOXES

Transformer pads shall be in accordance with District specification RES SUB-004.0 or RES SUB-006.0

Transformer vaults shall be in accordance with District specification RES SUB-001.0 or RES SUB-005.0

Pull boxes shall be in accordance with District specification RES SUB-002.0.

Service boxes shall be in accordance District specification RES SUB-003.0.

6.0 STREET CROSSINGS

At locations where the primary and/or the secondary facilities cross a street, the letter 'E' shall be stamped on the curb and gutter on both sides of the street.

NOTE:

For minimum requirements for terminating underground electric services see M.I.D. drawings RES SUB-007.0 & RES SUB-020.0 thru RES SUB-024.0.

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SUBDIVISION GENERAL SPECIFICATIONS FOR URD DUCT INSTALLATION, PAD, VAULT AND PULL BOXES
DRAWN BY:	APPROVED BY:	DATE:	DWG: RES SUB-008.0	REVISION:	

Drawing RES SUB-008.0: General Specifications for URD Duct Installation, Pad, Vault & Pull Boxes

PURPOSE:

1.0 These drawings provide a variety of landscape ideas that may be used by the applicant to screen pad-mounted transformers.

2.0 Landscape screening such as plants, shrubs, retaining walls and decorative walls are installed, owned and maintained by the applicant. Landscape screening is encouraged as it helps to improve the overall appearance and acceptance of pad-mounted transformers, which are much less costly to install and maintain than subsurface transformers.

GENERAL:

1.0 These drawings are intended to illustrate a variety of design concepts. They may be modified to fit a particular need or site condition.

2.0 These are illustrative designs and are not intended to be construction or working drawings. Materials and construction methods will have to be determined by the installer to meet the requirements of the particular site.

3.0 The addition of suitable plants to these basic designs will enhance the overall screening effect.

4.0 The designs illustrate screening single-phase transformers, but the same concepts may be applied to screening three phase transformers.

CLEARANCES:

1.0 A clear, level working space of 10 feet is required in front of the transformer.

2.0 Clearance of 3 feet is required from the transformer pad to incidental walls, such as those depicted in these drawings. This may be reduced to 1 foot if the wall height does not exceed 2 feet and the wall thickness does not exceed 1 foot.

PLANTS FOR SCREENING TRANSFORMERS:

All shrubs listed below are evergreen plants that are not over 5' at maturity.
All plants should be planted at a minimum 5 gallon size.

1.0 *Nandina Domestica* (Heavenly Bamboo)

2.0 *Agapanthus Orientalis* (Lily-of-The-Nile)

3.0 *Santolina Chamaecyparissus* (Lavender Cotton)

4.0 *Cistus Hybridus* (White Rockrose)

5.0 *Cistus Purpureus* (Orchid Rockrose)

6.0 *Raphiolepis I. "Coates Crimson"* (Indian Hawthorn)

7.0 *Raphiolepis Indica. "Enchantress"* (Indian Hawthorn)

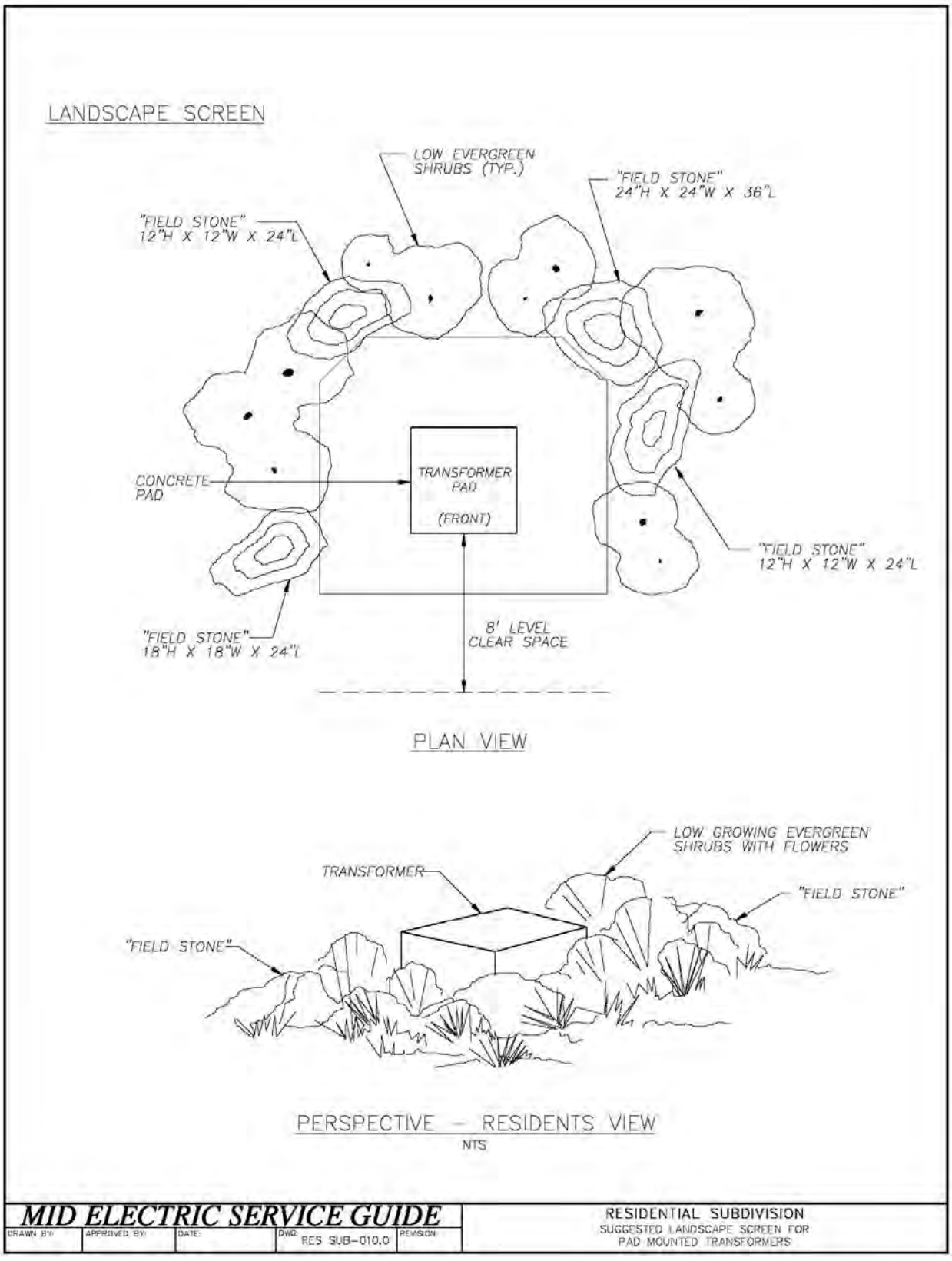
8.0 *Eriophyllum Conferliflorum* (Yellow Yarrow)

9.0 *Juniperus Conferta* (Shore Juniper)

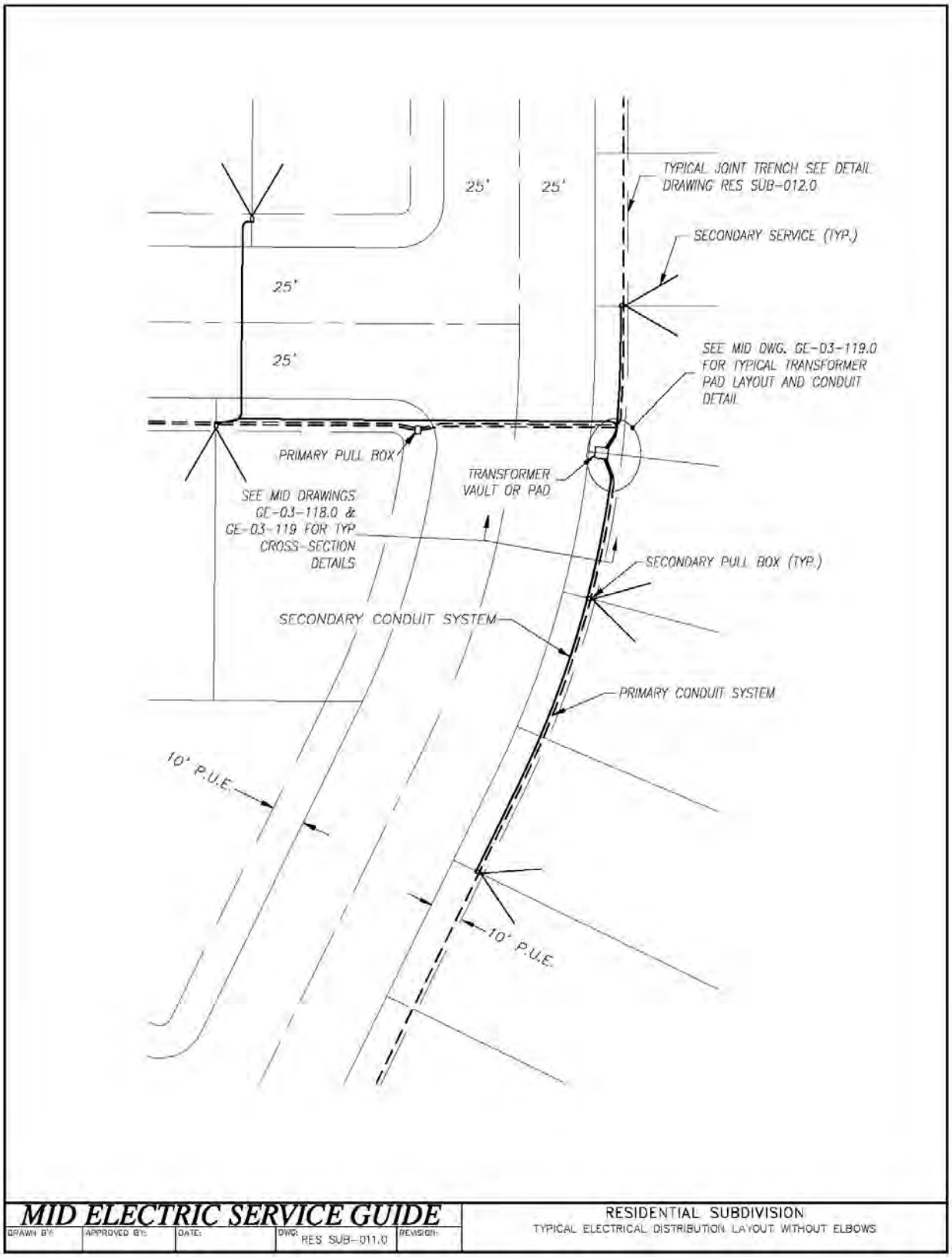
10.0 *Rosmarinus Officinalis* (Creeping Rosemary)

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SUBDIVISION
DRAWN BY:	APPROVED BY:	DATE:	DWG: RES SUB-009.0	REVISION:	SUGGESTED LANDSCAPE SCREEN FOR PAD MOUNTED TRANSFORMERS

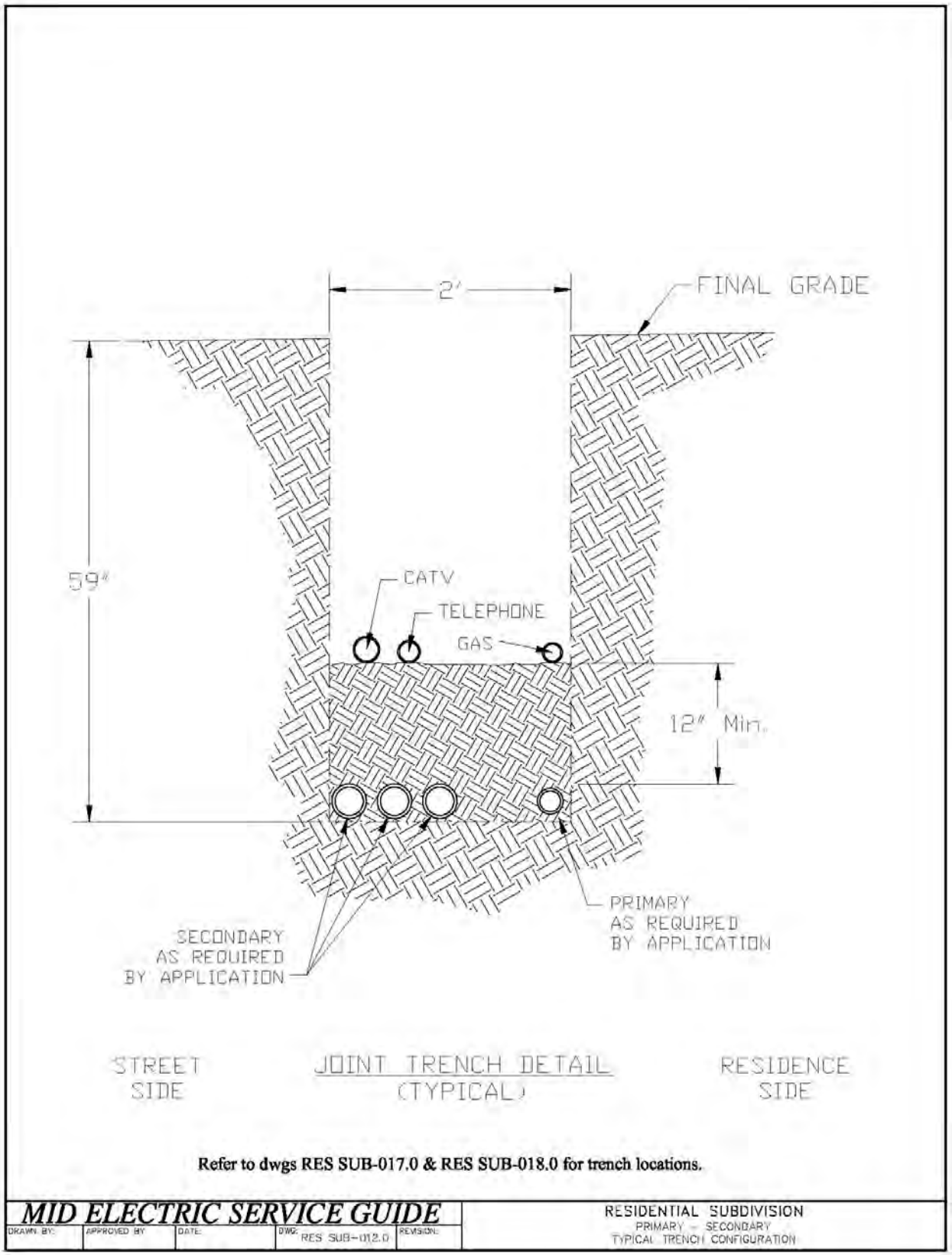
Drawing RES SUB-009.0: Suggested Landscape Screen for Pad Mounted Transformers



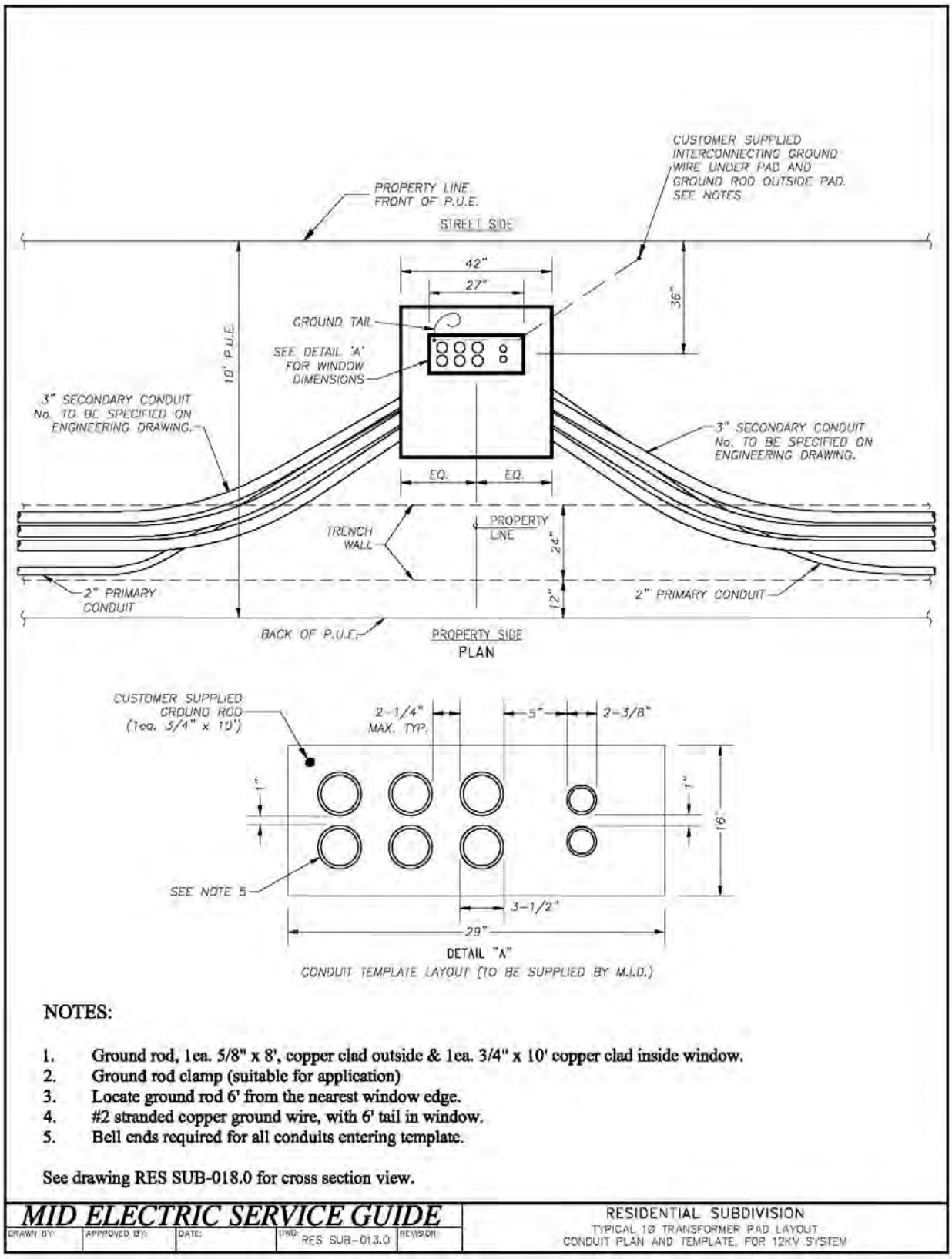
Drawing RES SUB-010.0: Suggested Landscape Screen for Pad Mounted Transformers



Drawing RES SUB-011.0: Typical Electrical Distribution Layout Without Elbows



Drawing RES SUB-012.0: Primary - Secondary Typical Trench Configuration



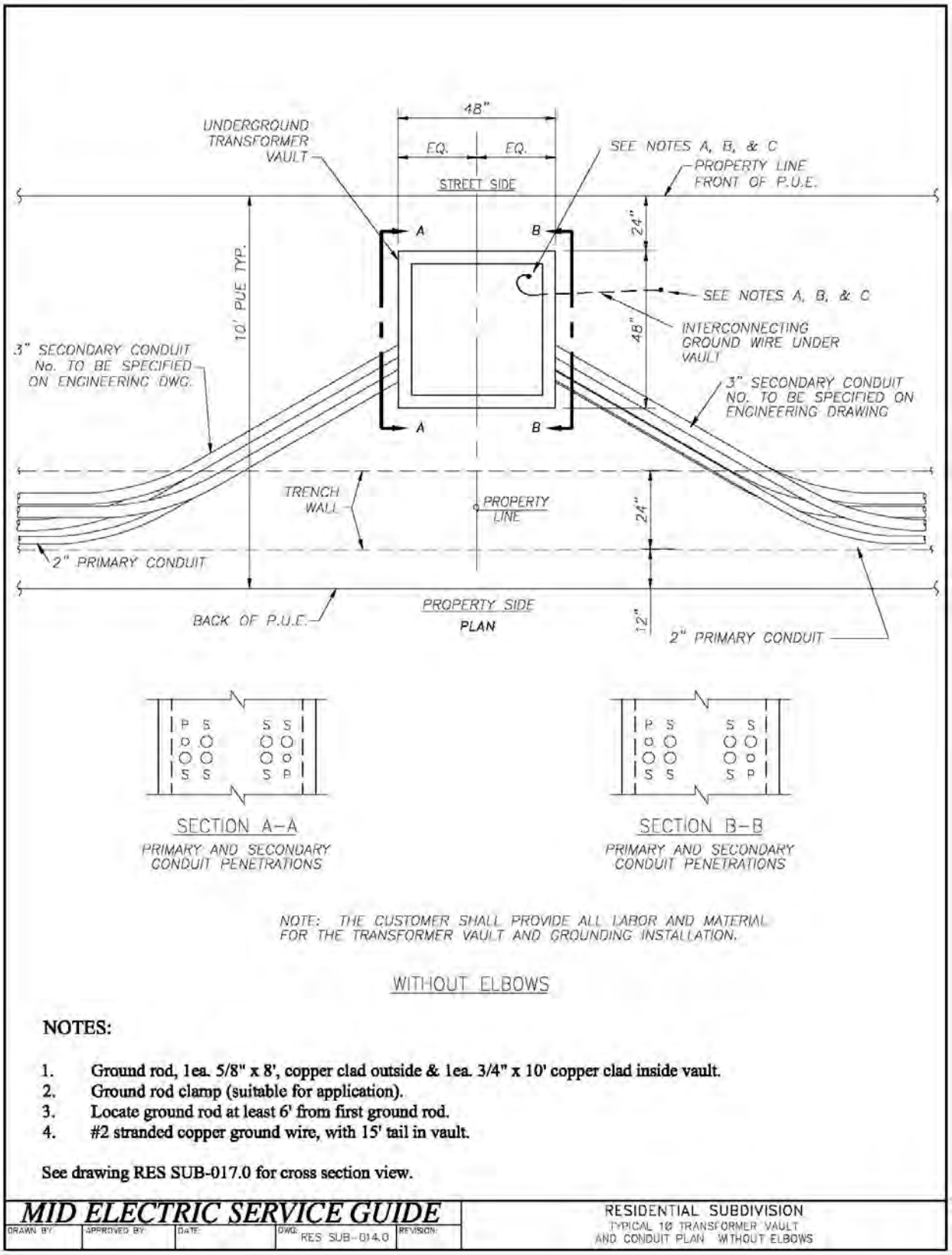
NOTES:

1. Ground rod, 1ea. 5/8" x 8', copper clad outside & 1ea. 3/4" x 10' copper clad inside window.
2. Ground rod clamp (suitable for application)
3. Locate ground rod 6' from the nearest window edge.
4. #2 stranded copper ground wire, with 6' tail in window.
5. Bell ends required for all conduits entering template.

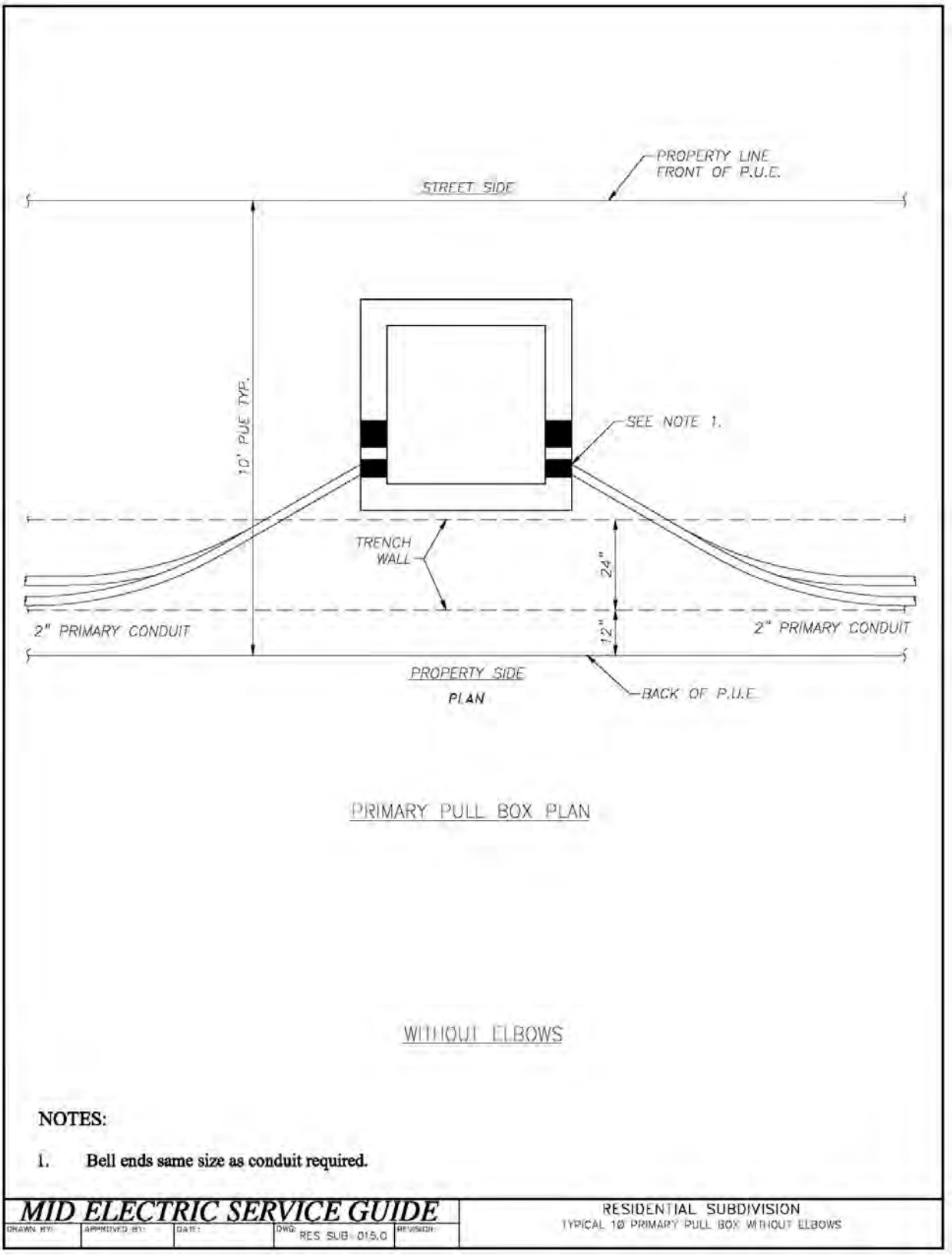
See drawing RES SUB-018.0 for cross section view.

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SUBDIVISION
DRAWN BY:	APPROVED BY:	DATE:	DWG: RES SUB-013.0	REVISION	TYPICAL 1Ø TRANSFORMER PAD LAYOUT CONDUIT PLAN AND TEMPLATE, FOR 12KV SYSTEM

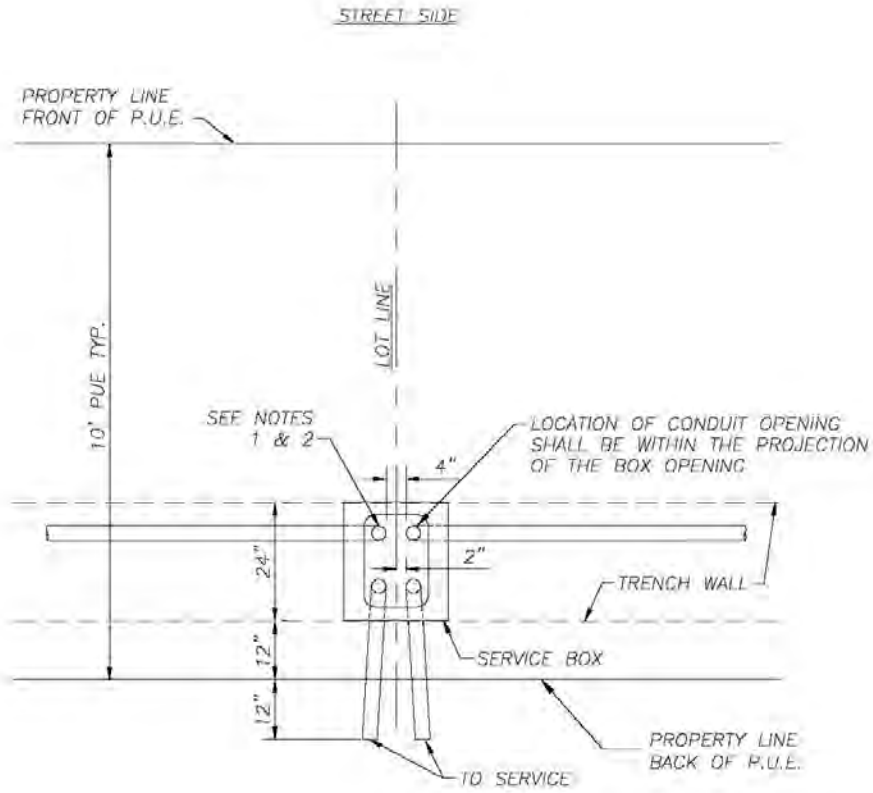
Drawing RES SUB-013.0: Typical 1Ø Transformer Pad Layout Conduit Plan and Template, for 12kV System



Drawing RES SUB-014.0: Typical 1Ø Transformer Vault and Conduit Plan Without Elbows



Drawing RES SUB-015.0: Typical 1Ø Primary Pull Box Without Elbows



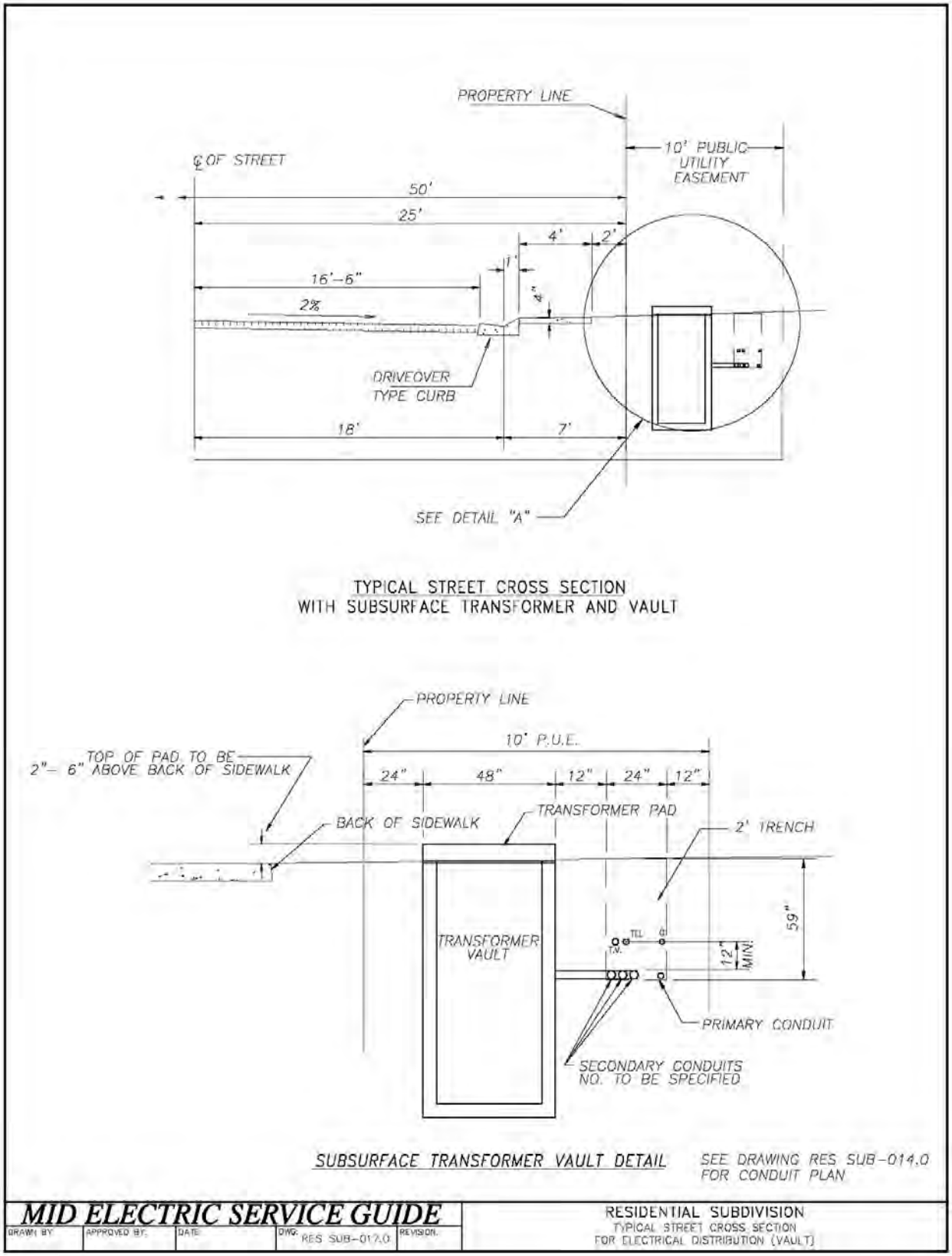
SECONDARY SERVICE BOX PLAN

NOTES:

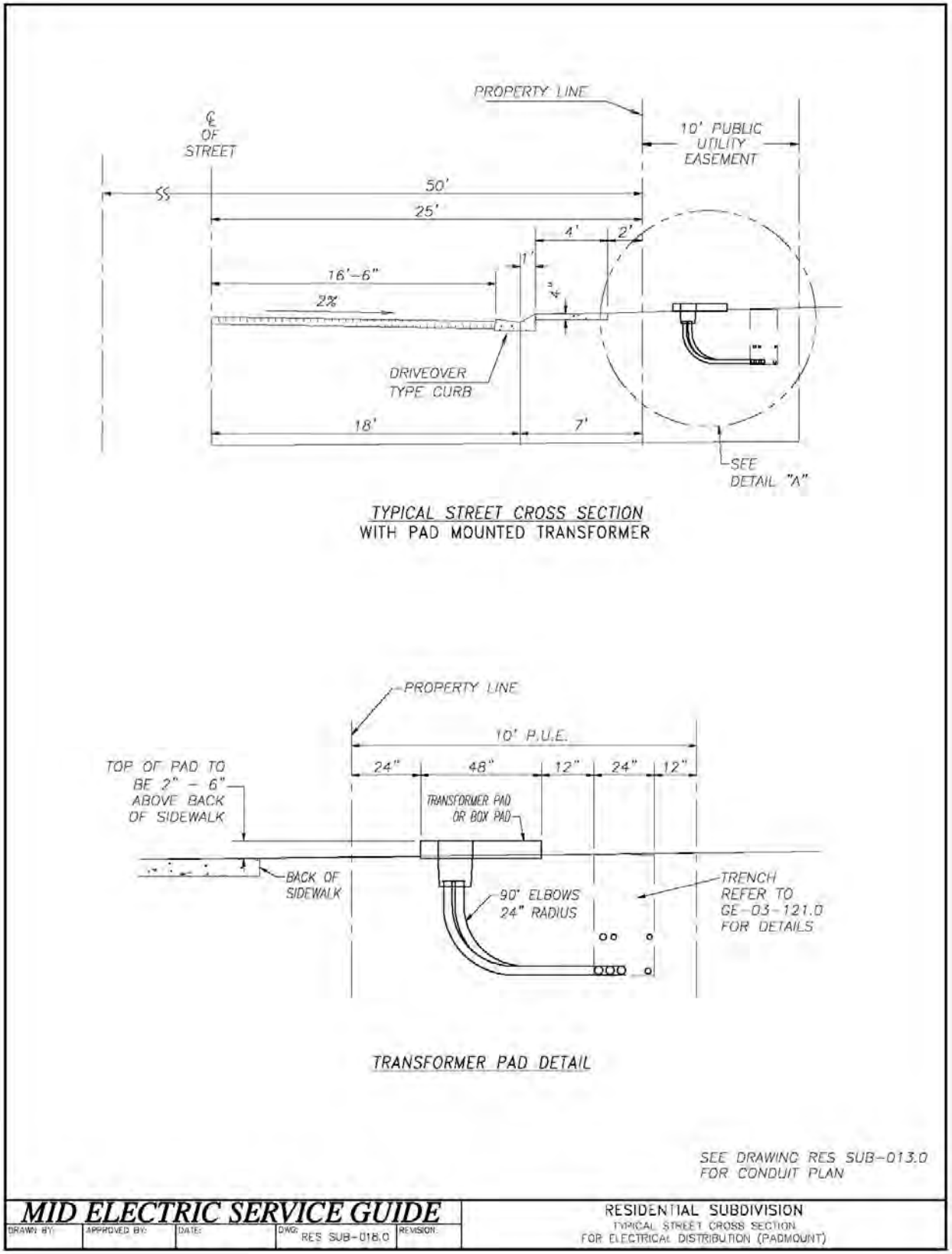
1. **Conduits shall be capped to prevent any foreign material from entering.**
2. **Bell ends same size as conduit required.**

MID ELECTRIC SERVICE GUIDE					RESIDENTIAL SUBDIVISION
DRAWN BY:	APPROVED BY:	DATE:	DWG: RES SUB-016.0	REVISION:	TYPICAL 1Ø SECONDARY SERVICE BOX

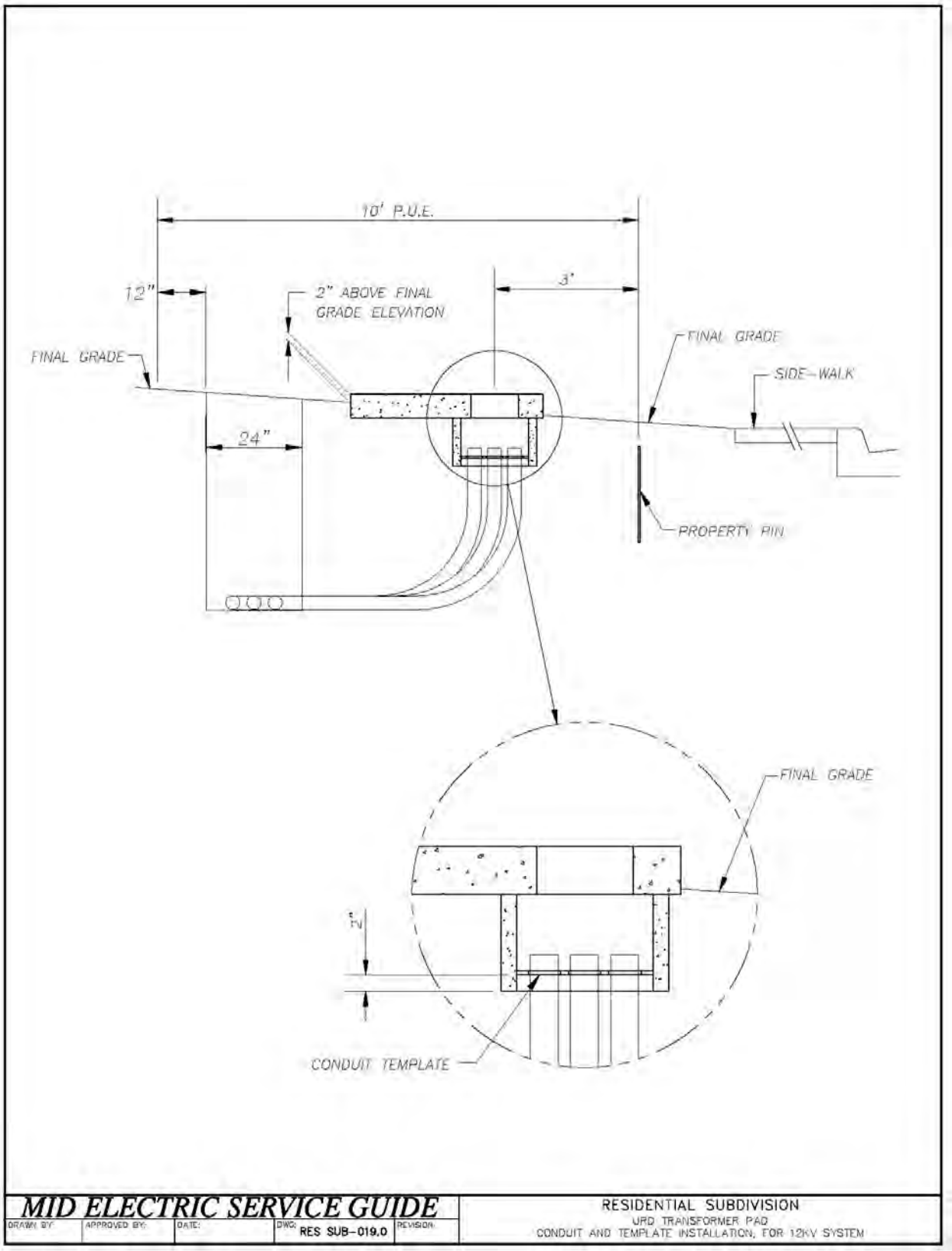
Drawing RES SUB-016.0: Typical 1Ø Secondary Service Box



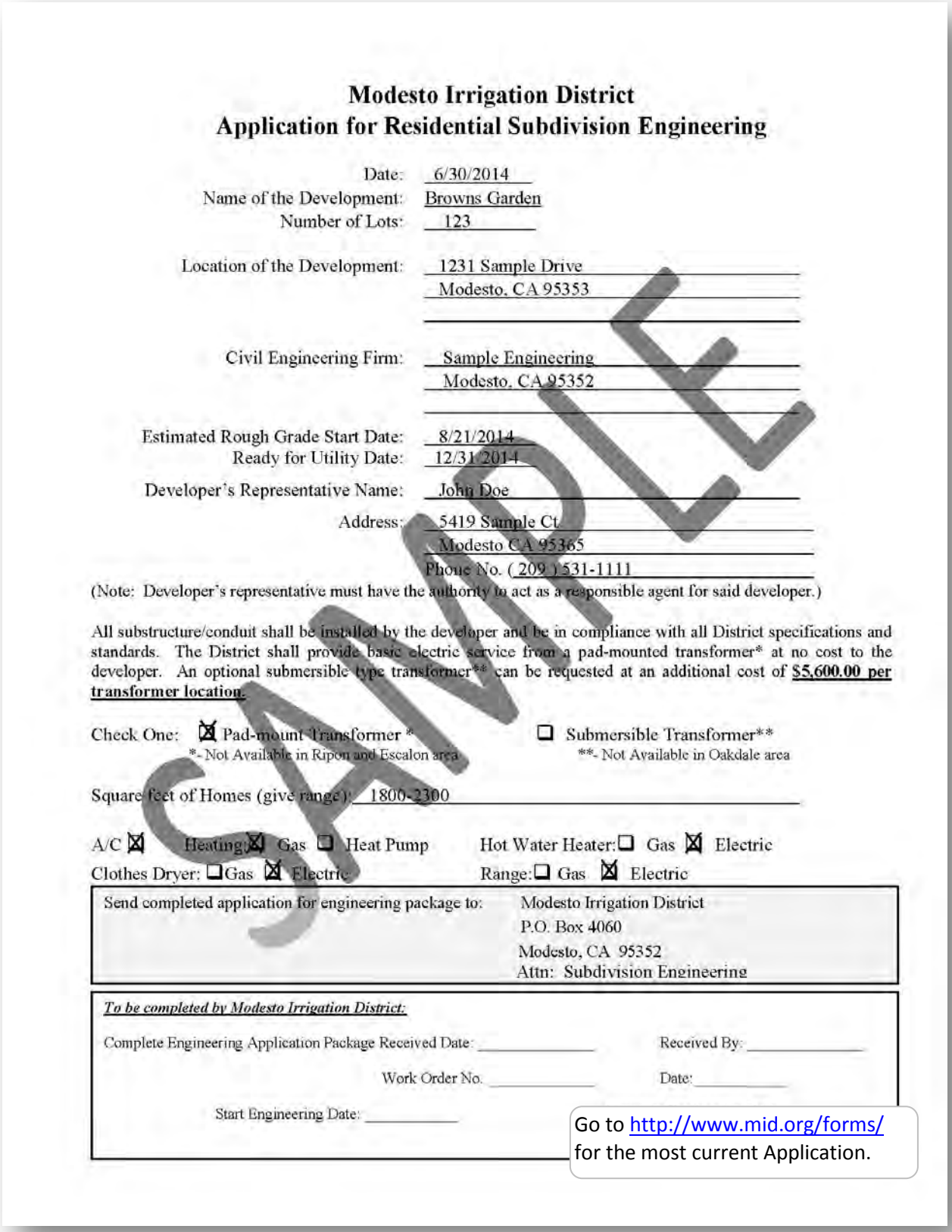
Drawing RES SUB-017.0: Typical Street Cross Section for Electrical Distribution (Vault)



Drawing RES SUB-018.0: Typical Street Cross Section for Electrical Distribution (Padmount)



Drawing RES SUB-019.0: URD Transformer Pad Conduit and Template Installation, for 12kV System



Modesto Irrigation District
Application for Residential Subdivision Engineering

Date: 6/30/2014
Name of the Development: Browns Garden
Number of Lots: 123

Location of the Development: 1231 Sample Drive
Modesto, CA 95353

Civil Engineering Firm: Sample Engineering
Modesto, CA 95352

Estimated Rough Grade Start Date: 8/21/2014
Ready for Utility Date: 12/31/2014

Developer's Representative Name: John Doe

Address: 5419 Sample Ct
Modesto CA 95365
Phone No. (209) 531-1111

(Note: Developer's representative must have the authority to act as a responsible agent for said developer.)

All substructure/conduit shall be installed by the developer and be in compliance with all District specifications and standards. The District shall provide basic electric service from a pad-mounted transformer* at no cost to the developer. An optional submersible type transformer** can be requested at an additional cost of **$5,600.00 per transformer location.**

Check One: ☒ Pad-mount Transformer *
*- Not Available in Ripon and Escalon area

☐ Submersible Transformer**
**- Not Available in Oakdale area

Square feet of Homes (give range): 1800-2300

A/C ☒ Heating: ☒ Gas ☐ Heat Pump Hot Water Heater: ☐ Gas ☒ Electric
Clothes Dryer: ☐ Gas ☒ Electric Range: ☐ Gas ☒ Electric

Send completed application for engineering package to:
Modesto Irrigation District
P.O. Box 4060
Modesto, CA 95352
Attn: Subdivision Engineering

To be completed by Modesto Irrigation District:

Complete Engineering Application Package Received Date: _____ Received By: _____

Work Order No. _____ Date: _____

Start Engineering Date: _____

SAMPLE

Go to http://www.mid.org/forms/ for the most current Application.

Sample 1: Application for Residential Sudivision Engineering

Modesto Irrigation District
Application for Residential Subdivision Engineering

Date: _____

Name of the Development: _____

Number of Lots: _____

Location of the Development: _____

_____

_____

Civil Engineering Firm: _____

_____

_____

Estimated Rough Grade Start Date: _____

Ready for Utility Date: _____

Developer's Representative Name: _____

Address: _____

_____

Phone No. (_____) _____

(Note: Developer's representative must have the authority to act as a responsible agent for said developer.)

All substructure/conduit shall be installed by the developer and be in compliance with all District specifications and standards. The District shall provide basic electric service from a pad-mounted transformer* at no cost to the developer. An optional submersible type transformer** can be requested at an additional cost of **$5,600.00 per transformer location.**

Check One: ❑ Pad-mount Transformer * ❑ Submersible Transformer**

*- Not Available in Ripon and Escalon area

**- Not Available in Oakdale area

Square feet of Homes (give range): _____

A/C ❑ Heating: ❑ Gas ❑ Heat Pump Hot Water Heater: ❑ Gas ❑ Electric

Send completed application for engineering package to:

Modesto Irrigation District
P.O. Box 4060
Modesto, CA 95352
Attn: Subdivision Engineering

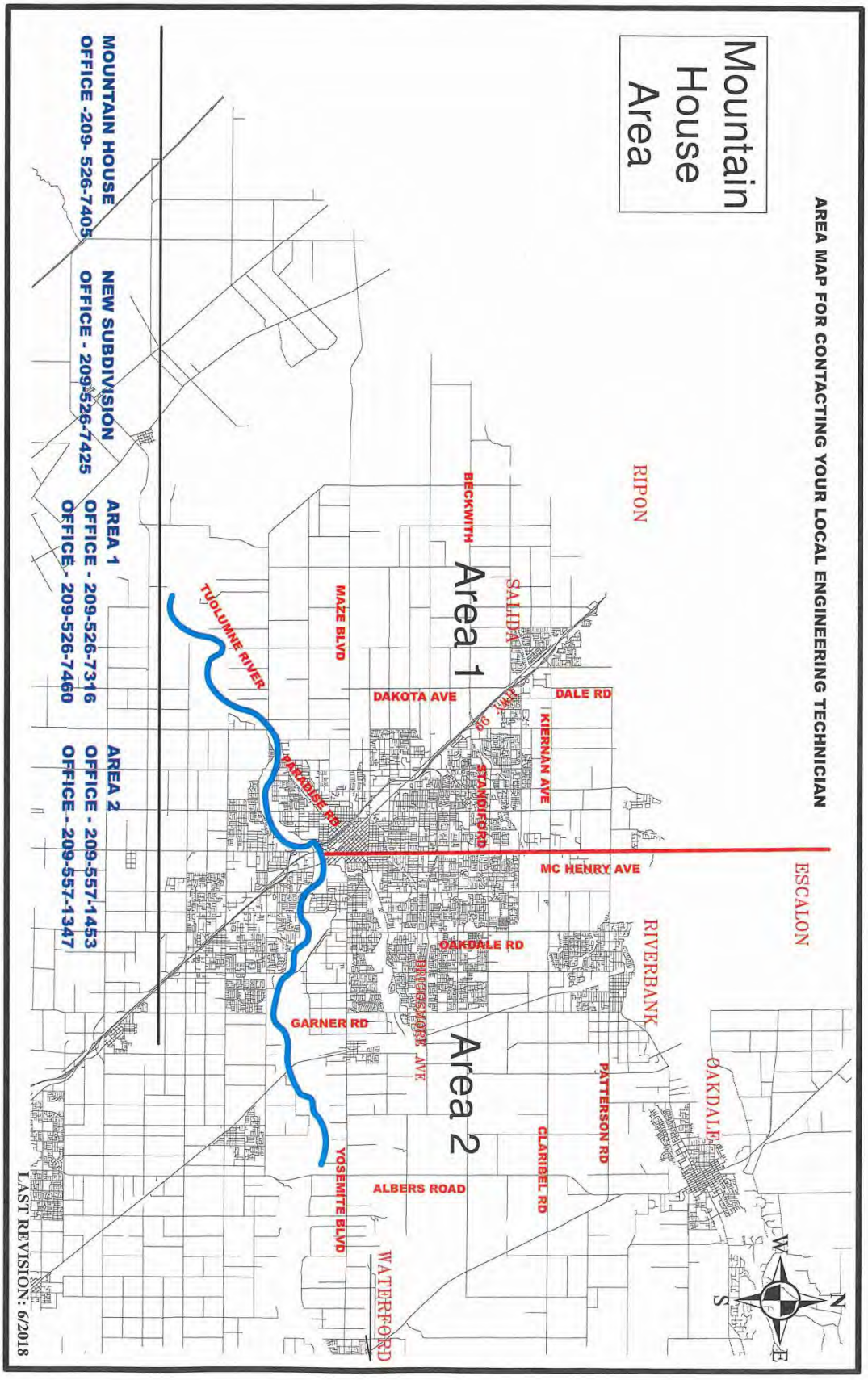
Clothes Dryer: ❑ Gas ❑ Electric Range: ❑ Gas ❑ Electric

To be completed by Modesto Irrigation District:

Complete Engineering Application Package Received Date: _____ Received By: _____

Work Order No. _____ Date: _____

Start Engineering Date: _____ Complete Engineering Date: _____



Form 2: Area Map

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electrical Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and Miscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____


MID
Modesto
Irrigation
District
The Power to Grow

Electric Service Guide

Primary Services

Modesto Irrigation District
The Power to Grow

August 18, 2022

Contact MID's Electric Engineering Department
(electric.standards@mid.org)
with any questions about this Service Guide.

Check MID's website (www.mid.org) "Electric Service Guide" for the most current version of this Service Guide.

If you have any suggestions about improving this Service Guide, please complete the form on the last page of this Guide and return it to MID's Electric Engineering Department.

The Modesto Irrigation District (MID) has requirements for primary voltage service and switchgear that may, or may not, be consistent with other utilities. We strongly recommend that the MID Electric Service Guide for Primary Service is reviewed prior to design of the project and that a qualified licensed engineer is used in the design, testing and installation of the primary switch gear and components.

USE CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES

BEFORE DIGGING CALL
USA (Underground Service Alert)
1 (800) 227-2600 or 811

Table of Contents

List of Attachments

1 General Requirements for Service

1.1 This Guide sets forth Modesto Irrigation District's (MID's) requirements for the establishment of electric service to new or re-wired primary service installations. The requirements presented here are necessary for MID to supply uniform, satisfactory, and safe service. It is necessary that all written material (this Guide, as well as all of the notes on the drawings) be carefully read and followed.

1.2 It is important that arrangements be made prior to the purchase and installation of electric service lines and the location and setting of meters. Contact MID's Energy Services Department at (209) 526-7339 for new or additional service. This must be completed as soon as initial planning is considered.

NOTE: customer "service entrance facilities" is the term used to designate all the electrical components required to be furnished and installed by the customer.

1.3 Where the operation of the customer's equipment will require unusually stable voltage regulation, refer to Rule 2 in MID's Electric Service Rules at www.mid.org.

1.4 In addition to MID's requirements, the customer is responsible for complying with applicable provisions of City and County ordinances, the NEC, EUSERC, UL listed, and State of California General Orders, rules and regulations of the State of California.

1.5 NO service can be connected until approved by the appropriate local governing authority and MID. **Only authorized MID employees** are permitted to make connections between MID wiring and customer wiring. (See a list of local governing authorities on page 18.)

1.6 The MID design, service letter and cost estimate are valid for six months.

1.7 Building plans and definite load information for commercial and industrial installations must be furnished to a MID Electric Engineering Department: Project Manager at 1231 11th Street, Modesto, CA 95354, as soon as possible. Delays in supplying this required information could cause unnecessary inconvenience for the customer.

1.8 The customer's service voltage will be determined by a MID Electric Engineering Department. Multiple service voltages to one building or parcel of property will only be granted upon approval of a MID Electric Engineering Department and local governing authorities.

1.9 Normally, only one service point will be granted to one building or one parcel of property. Multiple service points may be granted one building or multiple buildings on one parcel, provided they meet the requirements of the "National Electric Code" as well as the requirements of MID and local governing authorities.

1.10 All primary meter installations must be reviewed and approved by MID. These drawings shall show the customer's name and job address. Submit a copy to: MID Electric Engineering Department, PO Box 4060, Modesto, CA 95352, prior to fabrication. A copy will be returned to the sender with approvals or required corrections.

1.11 Customer must submit panel manufacturer's specifications to a MID Electric Engineering Project Manager. The Electric Engineering Project Manager will submit the specifications to the Meter Department for approval.

1.12 If any changes are required to be made during the approval process, customer will be required to resubmit the package in its entirety and identify the changes visually or pictorially. Any previous approvals will be null and void.

2 Abbreviations

The following abbreviations may be used throughout this Service Guide.

Amp	Ampere
EUSERC	Electric Utility Service Equipment Requirements Committee
NEC	National Electric Code
CT	Current Transformer

3 Minimum Requirements for Commercial/Industrial Electric Service Installations

3.1 Underground Services

The customer is to provide all conduit to a location designated by MID.

3.2 Meter Location

a) A clear, unobstructed work space shall be left on all sides of the meter. (See Drawings pages 28-32.)

b) The meter(s) shall be located on the exterior of the building and shall be at least 3 feet from a property line. When it is absolutely necessary to locate meters in dedicated meter rooms, cabinets, or fenced enclosures, consult the MID Project Manager. MID representatives shall have access to such areas by using a MID key. The customer is responsible for having the lock(s) keyed for a MID key.

c) Carports, breezeways, covered or screened porches, or any other area that might be enclosed at some future date should not be selected as a meter location. These areas may only be utilized with prior approval of the MID Project Manager.

d) Meters or metering equipment shall be approved by the MID Metering Department.

e) The area on either side of a door or swinging window, equal to the width of that door or swinging window is not acceptable as a meter location.

f) A level standing and working surface shall be provided in front of each meter to permit ready access to the meter. This space must be at least 36 X 36 inches and contain no working obstructions.

3.3 Meter Socket

a) The meter socket must be installed in a true vertical plane.

b) The neutral conductor shall be connected to the neutral lugs and shall be located behind sealed panels.

c) Meter sockets with extruded or cast aluminum jaws are not acceptable and will not be connected.

d) Primary switchboard service sections shall be EUSERC compliant.

e) The customer's wiring for new service or rewiring shall include a grounded conductor or bus in the service entrance equipment. The grounded conductor or bus shall connect to the proper terminals in the service entrance meter compartment and service switch. Sizing of this conductor or bus shall be in accordance with the requirements of local governing authorities.

3.4 Grounding

a) Lugs for terminating the customer's ground wire (or \other grounding conductors_ shall be located outside of the sealable section and shall be deigned to readily permit the customer's neutral system to be isolated, when necessary, form the serving agency.

b) Ground buss, when provided, shall be located at the rear of underground terminating enclosures (i.e. pull boxes and pull sections.)

c) Bare bus 7 inches above and below the current transformers shall be provided to permit application of MID safety grounds. A grounding knob may be provided on the line and load side of the bus at each current transformer location.

3.5 Metering Arrangements

a) The metering arrangement shall be approved by the MID Meter Department.

b) Unmetered services wires and metered load wires shall not be combined in the same conduit, raceway, or gutter.

4 Meter Installations on Low Voltage Switchboards, 12-21 Kilovolts, 0-600 Amps

4.1 Metering Equipment Requirements

4.1.1 EUSERC - Electric Utility Service Equipment Requirements Committee

EUSERC is an organization comprised of utility representatives from the western section of the United States that work to promote the standardization of electric service requirements and the design and engineering of metering and service equipment.

All metering and service equipment approved for use in the areas served by MID shall be built to the requirements developed by EUSERC. Approved metering and service equipment is available to customers and contractors through electrical wholesale distributors.

4.1.2 Approval of Electric Service Panel Manufacturer's Drawings

All electric service panels shall meet EUSERC requirements. Purchase or installation of any equipment that does not conform to EUSERC requirements is done at the customer's risk. Any electrical service panels that do not comply with EUSERC will be required to have field modifications completed or be replaced at the developer's expense.

Electric service panel drawings are submitted for review prior to purchase and installation. The project developer can submit three (3) copies of the panel manufacturer's drawings to MID. Submitted drawings shall reflect correct EUSERC drawing numbers. One copy will be returned to the sender with approval or corrections as needed. Send submittals to:

Modesto Irrigation District
Attn: Electric Engineering Department
Project Manager
Box 4060
Modesto, CA 95352
Telephone: (209) 526-7337

4.2 UL Listing Required

All meter sockets, boxes and enclosures shall be designed in accordance with the latest revision of AEIC-EEI-NEMA standard for watt-hour meter sockets, publication ANSI c12.7, UL standard for meter sockets UL414.

4.3 Panel Inspection Required Prior to Establishment of Service

Electric service will not be established until the service entrance facilities are satisfactorily inspected by MID and passes inspection by the local governing authority. MID will charge a re-inspection fee if multiple trips are required due to improperly installed or unapproved service facilities. Requirements will be set forth by the Engineering and Metering Departments. See the Notice To Contractor for requirements on page 27.

4.4 Type of Service

Since the type of service available may vary, it is important that the customer consult MID for information before proceeding with the purchase or equipment or installation of wiring. Equipment that is improperly installed or does not meet MID and EUSERC requirements will be rejected and must be replaced or repaired at the customer's expense before service will be established. The replaced or repaired equipment must be approved by a certified UL inspector for MID's acceptance.

4.5 Service Entrance Facilities

a) The customer shall furnish, install and maintain the service equipment beyond the point of attachment to MID's primary service delivery point. All shall not be concealed except with expressed consent of MID.

b) The type and size of service entrance conductors shall conform to the ordinance and codes of the local governing authority, or where there is no ordinance requirement they shall conform to current standards of the NEC.

c) In general, a primary service will be supplied through only one set of service conductors of the same voltage classification.

4.6 Underground Service Terminations

The customer will terminate all service conductors to the service pull section or switchgear. (See Drawings pages 28-32) The customer/developer will terminate its service conductors on lug landings in the pull section.

4.7 Pull Section Lug Landings and Busing Requirements

a) Single meter switchboard installation rated 600 Amps:

Bus bars shall extend from the landing lugs in the pull section to the CT bus stubs.

4.8 Meter and Service Locations Require MID Approval

a) The location for the meter and service disconnect shall comply with applicable codes, laws and ordinances of the local governing authorities, and with the provisions of this Service Guide.

b) On new installations, it is necessary that the location for the meter be approved in writing by a MID Electric Engineering Technician.

c) Whenever any addition or alteration on existing service conduits, service entrance conductors or metering equipment is contemplated, the customer or contractor shall contact the Electric Engineering Technician.

d) For single-occupancy buildings, meters and metering equipment may be installed:

   1) Outdoors.

   2) In a room within a building, approved by MID for the location of electric meters, with provision for proper illumination and with access only by a door opening to the outside of the building. See item 4.10, Meter Rooms.

e) MID may require the customer to relocate a metering installation, at the customer's expense, if an existing meter location becomes inaccessible.

f) For service stations, the utility underground service lateral conductors may not extend through a hazardous (classified) class 1 location (as defined by article 514 of the NEC). The underground pull can/section and metering would then be grouped and located outside (and prior to) the hazardous area at a location approved by MID.

4.9 Unacceptable Meter Locations

Contact a MID Electric Engineering Project Manager at 209-526-7540 for proper placement of Meter Equipment.

Meters or meter rooms shall not be located in or adjacent to a drive through.

4.10 Meter Rooms

An electric meter room is a weatherproof, illuminated room provided by the customer at his option and approved by MID for the location of the electric metering equipment. The following provisions will apply:

a) Access: Access must be through a door on the building exterior opening directly into the electric meter room that provides immediate 24 hour a day access. All meter rooms that are to be locked must be keyed to MID specifications. *Al's Certified Safe and Lock* or *Easy Locks* will provide the specifications to qualified locksmiths or can provide the work. The key way for the lock is Schlage "C". Meter rooms must not inhibit use of personal protective equipment gear, e.g., not in a biohazard area.

b) Communications equipment: Telephone, CATV, data processing equipment, etc., are not permitted in an electric meter room.

c) Doors: The entrance to the electric meter room shall be through a vertical doorway not less than 3'-0" wide and 6'-6" high, and should swing out whenever possible.

   Local governing authorities may require the doors to open out and utilize "lever-operated" hardware. If the door swings into the room, it is to be located so that it will not open into the meters or working space. Roll-up doors are not acceptable.

d) Foreign equipment: Equipment foreign to the electrical equipment is not permitted within the electric meter room. **Only electric service equipment is permitted**.

Note: Sprinkler heads, when required in an electric meter room by the local fire department or building official, are acceptable. Requirements for shielding will be determined by the local governing authority.

e) Meter clearances: All meter installations must provide minimum clearances as shown on pages 28-32.

f) Meter heights: The minimum height of the meter may be 3 feet and the maximum height may be 6 feet 3 inches as measured from the standing surface to the centerline of the meter.

g) Meter marking: See Section 4.11, Multi-Meter Identification (Labeling Requirements), for meter identification examples.

h) Pull sections: The position of a pull section in a meter room is subject to approval by MID.

1) Pull sections should be positioned either:

(a) Opposite the access door to allow use of the doorway as additional working space for cable-pulling equipment.

(b) On a wall perpendicular to the access door.

Note: Do not locate on the same wall as the access door.

2) Pull sections must allow a minimum of 3 feet clear and level working space in front of the section. All 12kV pull sections require an unobstructed 8 feet clear area in front of any and all access doors for installation and removal of MID safety grounds.

i) Readily accessible: Capable of being reached quickly and conveniently 24 hours a day for construction, operation, maintenance, inspection, testing or reading, without requiring those seeking access to climb over or remove obstacles; or to obtain special permission or security clearances. A stairway of normal rise (4" to 7") and run (11" minimum) conforming to building code requirements is acceptable. Shipboard ladders are unacceptable.

j) Room identification: The meter room must be permanently identified "electric meter room" or "meter room" or "electric room." Placards are to be purchased and installed by the customer. The identifying marking for rooms shall be engraved into or raised from a tag of plastic laminate, aluminum, brass or other approved non-ferrous metal with 2-inch minimum letters. The engraving shall be deep or raised enough to prevent it from being obscured by subsequent painting of the service sections. **The tag shall be attached to a non-removable area of the door with a high strength, 5-minute epoxy adhesive.** Other types of adhesives **WILL NOT** be acceptable. The tag shall not be able to be removed without the use of hand tools.

k) Vehicle access: Permanent vehicle access to the meter room is required for the installation and maintenance of metering equipment. Under some conditions, as determined by MID, the vehicle access requirement may be waived.

4.11 Multi-Meter Identification (Labeling Requirements)

a) Marking of all meters and disconnects shall be required as follows:

- Where the installation requires more than one meter for service to the premises, each meter panel shall be permanently marked (**NOT PAINTED**) by the customer to properly identify the portion of the premises being served.
- When adding a new meter to an existing service location, **ALL** meters shall be identified to properly indicate the portion of the premises being served.
- Each main service disconnect shall be permanently marked (**NOT PAINTED**) by the customer to properly identify the street address and the building number (if applicable).

b) The identifying marking for meters and disconnects shall be engraved into or raised from a tag of plastic laminate, aluminum, brass or other approved non-ferrous metal with 1/4 inch minimum letters. The engraving shall be deep or raised enough to prevent it from being obscured by subsequent painting of the service sections. **The tag shall be attached to a non-removable area of the panel with a high strength, 5-minute epoxy adhesive.** Other types of adhesives **WILL NOT** be acceptable. The tag shall not be able to be removed without the use of hand tools. If the main breakers are **NOT** installed directly adjacent to the meters, **BOTH** the meter and the main breaker shall be identified with individual tags.

4.12 Meter Access

All electric meters and main disconnects shall be accessible by MID 24 hours a day, 7 days a week. Fences, gates, alarms, security guards or the other means that prohibit direct accessibility are a violation of this requirement.

If the metering service panel is located behind a locked gate or door, the lock must be keyed to MID specifications. *Al's Certified Safe and Lock* or *Easy Locks* will provide the specifications to qualified locksmiths or can provide the work. The key way for the lock is Schlage "C". Another option is double hasp padlock hardware with a padlock keyed to MID specifications. These requirements apply to any situation where access is restricted.

4.13 Working Space in the Area of Meter Installation

A level standing and working surface shall be provided and maintained in front of each metering installation. A clear and unobstructed working space shall be provided above this surface. The width of the working space shall be sufficient to permit ready access to the metering equipment in no case less than 3 feet. The height of the working space shall be equal to the overall height of the metering installation and in no case less than 6 feet 6 inches. The working space shall extend at least 3 feet in front of the metering enclosure.).

4.14 Meter Heights

Meters shall be located not more than 75 inches and not less than 48 inches above the ground or standing surface when installed outdoors. When installed in a cabinet or indoors in a meter room the minimum height may be reduced to 36 inches. The meter height shall be measured to the meter axis.

4.15 Meter Sockets

Sockets for primary instrument transformer installations shall be furnished and installed by the customer.

4.16 Meter Socket Connections

a) For instrument transformer-rated meters, MID will furnish and install the normal secondary wiring from the metering transformers to the meter socket.

4.17 Grounding

a) Lugs for terminating the customer's ground wire (or other grounding conductors) shall be located outside of the sealable section and shall be deigned to readily permit the customer's neutral system to be isolated, when necessary, form the serving agency.

b) Ground buss, when provided, shall be located at the rear of underground terminating enclosures (i.e. pull boxes and pull sections.)

c) Bare bus 7 inches above and below the current transformers shall be provided to permit application of MID safety grounds. A grounding knob may be provided on the line and load side of the bus at each current transformer location.

4.18 Instrument Transformer Enclosure-General

a) No connections shall be made in the instrument transformer enclosure to supply any other meter, or more than one load circuit.

b) When the neutral conductor is a part of the service, it shall pass through the instrument transformer box, be continuous, and be capable of being bondable to the box.

4.19 Metered and Unmetered Conductors

Line side (unmetered) and load side (metered) conductors are prohibited from occupying the same raceway or enclosure by both MID policy and the NEC. Conductors from the customer's distribution section shall not pass through MID's sealable sections.

4.20 Sealing of Meters and Metering Equipment

a) All meters and enclosures for meters, metering equipment and service entrance equipment on the line side of the meter, except as approved for access to replace fuses used for over-current protection, will be sealed by MID. The MID seal shall not be broken except by an authorized representative of MID, or with MID's permission granted in response to a request warranting approval. No person is permitted to tamper, or in any way interfere, with a meter or its connections as placed by MID.

b) All removable panels and covers (tops, sides, front, and rear) to compartments used for terminating or routing unmetered conductors shall be sealable.

c) Sealable latches, stud and wing-nut assembly, or sealing screws shall be used for sealing covers or sections.

d) When a latch is used, it shall be designed to permit positive locking and made of a durable material that is non-corrosive.

e) When a stud and wing-nut assembly is used for sealing, the stud shall be 1/4" x 20" (minimum). The stud and wing-nut shall each be drilled .0635" minimum for sealing purposes.

f) Screws or bolts requiring special tools for installation or removal are not acceptable. Sealing methods, other than those mentioned, require MID approval.

g) All service disconnects shall have a provision for locking in the open/off position.

h) All compartments containing unmetered conductors shall be sealable. When a raceway or conduit for meter secondary wiring is necessary, such raceway or conduit shall be sealable.

4.21 Meter Socket Sealing Rings

Meter sockets shall be equipped with approved sealing rings as a part of the meter socket installation.

4.22 Switchboards-General

a) Contact MID Metering Department for approval of switchgear specifications prior to manufacture of the switchgear to determine the type of metering, size of current and/or voltage transformers, and any special arrangement necessary for mounting instrument transformers, and compliance with EUSERC standards. Submit three (3) copies to: MID Meter Department, P.O. Box 4060, Modesto, CA 95352, prior to manufacturing.

b) The rating of the instrument transformers will not necessarily be the same as the service switch.

c) All compartments containing unmetered conductors shall be sealable. When a raceway or conduit for meter secondary wiring is necessary, such raceway or conduit shall be sealable.

d) The meter current and potential transformers supplied by MID shall not be utilized for any other purpose.

4.23 Specially Engineered Service Section

All specially engineered service sections require MID approval. A switchboard design which does not conform to the standard switchboard herein, is considered specially engineered, and includes installations:

a) Rated over 600 Amps or 24000 Volts.

b) Where the service breaker ampacity rating exceeds that of the standard service section

c) When recessed meter panels are used.

4.24 Service Limitations

Primary service is limited to 600 Amps maximum.

4.25 Metering Emergency Alarm Systems

MID policy typically does not allow connections to a customer's service preceding the electric meter. In those cases when it is impractical to install an emergency alarm system on the load side of the service meter, a separate house meter for the emergency system will be required.

4.26 Inspection Tag

MID inspects all new meter installations prior to energizing the customer's panel. Figure 1 on Drawing COMM-001.1 (page27) shows a copy of an orange colored tag that the MID service representative leaves when the MID inspection does not pass. The tag lists the most common installation infractions that prevent MID from setting electric meters.

5 Requirements for Commercial Multiple Meter Installations

5.1 Totalized Metering

Totalized metering may be available for certain larger commercial/industrial services. Contact MID Energy Services Department.

5.2 Non-Installation of Meters

The meters will not be installed until:

a) The customer has complied with all the requirements listed above.

b) The work has been inspected and passed by the local governing authorities.

c) All required fees are paid.

6 Protection Requirements for Primary Distribution Services

6.1 General Protection Requirements

It is important to minimize the potential hazard to life and property when interconnecting facilities to the MID distribution system. This requires the automatic detection of abnormal conditions and trouble related to a PS (Primary Service) customer's equipment and the isolation of the condition and/or equipment within a reasonable time.

As a general rule, neither party should depend on the other for system protection. As such, MID's minimum protection requirements are designed and intended to protect the MID power system only. Moreover, the interconnection of a PS customer to the MID distribution system must not degrade existing MID protection and control schemes or interfere with the service of other customers.

The PS customer's facilities must isolate any fault or abnormality that could adversely affect the MID electric system or the electric systems of other entities connected to the MID electric system.

MID assumes no liability for damage to the PS customer-owned facilities resulting from a lack of adequate coordination between the PS customer's protective device(s) and MID's protective devices, or negligence due to the PS customer's failure to maintain protective and/or isolation equipment.

MID requires that the PS customer acquire the services of a qualified and licensed electrical engineer to review its plans. The PS customer must, at its expense, install, operate, and maintain system protection facilities in accordance with all applicable regulatory rules and requirements, and in accordance with this bulletin.

a) Data the PS Customer Provides to MID

The PS customer must provide the information necessary for MID to determine the interconnection requirements before MID approves the specific PS installation. This information includes, but is not limited to, the following:

- Single-Line diagrams.
- Meter and Relay diagrams.
- Three-Line diagrams of required protective device.
- Control diagrams including tripping circuit.
- Proposed relay specifications and settings.
- Relay manufacturer, model, style, type, ranges, settings, and a copy of the relay instruction manual.
- Projected electrical demand (kW), including the following information:
  Power factor, load factor, large motor sizes, motor starting currents, customer's transformer size and estimated breakdown of electric energy use (kWh) by month.
- Full-size phase and ground coordination curves showing full coordination with MID's system.
- A registered electrical engineer must prepare and stamp the fault-study results.

- Maintenance program documentation for MID-required switches, interrupting devices and protective equipment.

MID strongly recommends that the PS customer, or their representative, provide the above information before ordering equipment and finalizing the design.
Also, before energizing the new PS facility, the PS customer must also provide a copy of the on-site test reports for the switches, devices, and relays at least 10 working days prior to energizing the service. This allows sufficient time for review, modification, and final MID approval. Qualified personnel must prepare these on-site test reports. Refer to Section 6.3 "Equipment Test Requirements" and Section 6.4 "Pre-Energizing Test" for further details.

b) Data that MID Provides to the Applicant

MID provides the following engineering data to the PS customer:

- System fault-duty at the property line.
- Settings for MID source-side protection devices and the required clearance time to comply with MID protection standards.

6.2 Specific Protection Requirements

MID must review and approve the fault-interrupting devices that the PS customer selects. There are four basic types of fault-interrupting devices available for distribution systems:

- Circuit breakers
- Recloser
- Interrupter
- Fuses

The following sections provide specific requirements for each of these devices.

a) Circuit Breaker Requirements

The interconnecting circuit breaker must have sufficient capacity to interrupt the maximum available fault current at its location. Phase and ground relays approved by MID (See Section Below) must be used to trip the circuit breaker for phase and ground faults. These relays must coordinate with MID's source-side protection.

b) Relay Requirements

MID requires PS customers to install phase and ground over-current relays that trip the interrupting device at the POS (Point of Service). These relays must detect all phase and ground faults, and coordinate with MID's source-side protection. All required relays must include relay targets, and have "manual reset" capability.

The PS customer must select phase and ground relays with event reporting capabilities approved by MID.

MID strongly recommends that PS customers submit all relays specification and setting proposals for MID approval before finalizing the design and ordering equipment. PS customers not submitting this information risk delaying their project

c) Relay Redundancy Requirements

The PS customer's protection system must contain redundancy such that the failure of any one component will still allow the customer's system to isolate the PS facility from the MID system under a fault condition. Three single-phase over-current relays and a ground over-current relay, or two three-phase over-current relays and a ground over-current relay satisfy the redundancy requirement. PS facilities, using microprocessor-based relays as a multifunctional protective device, must have backup relays.

d) Reclosers and Interrupters

MID must approve reclosers and interrupters.

e) Fuse Requirements

Fuses are single-phase, direct-acting, sacrificial links that melt to interrupt fault current and protect the equipment.

MID may approve the use of fuses as the fault interrupting device at the POS for load-only facilities (i.e., no generation is interconnected), if the fuses coordinate with the MID source-side devices for both phase and ground faults. Large primary fuses that do not coordinate with MID's source-side protective phase and ground relays are not allowed. These fuses may cause other customers on the circuit to lose power due to a fault inside the PS customer's facility.

The PS customer must replace the blown fuses manually after each fault before the facility can return to service. Only trained, qualified personnel should replace the primary fuses. If MID approves the fuses, the PS customer should consider installing a negative-sequence relay and/or other devices to protect its facility against single-phase conditions (however, this is not a requirement). The PS customer is responsible for protecting their equipment against single-phase conditions, if they determine or feel that it is needed. Customers must keep a full set of replacement fuses (MID must approve the size and type) onsite.

6.3 Equipment Test Requirements

The tests in this section apply only to the MID required equipment at the POS, specifically, the breaker, the relays, and the tripping circuitry.

The customer must complete the following requirements:

- The equipment must pass all the tests described below.
- The customer must submit two copies of the test reports to MID a minimum of 10 working days before energizing the PS facilities.
- Each test report must identify the equipment tested and that identification must match that in the Single-Line or Three-Line diagrams.

The customer must meet the above requirements and obtain MID approval of the test reports at least three working days before MID energizes the PS. MID strongly recommends that the PS customer coordinate the test program with MID.

a) Circuit Breaker Tests

The PS customer must perform the following circuit breaker tests:

- Minimum-to-trip test at 70% or less of the nominal control voltage on all circuit breakers operated by MID-required relays.
- Micro-ohm test on the main circuit breaker(s) at the POS.
- Timing test showing the time from the trip initiation to the opening of the main poles.
- Proving insulation tests, as described below.

b) Providing Insulation

A 1,000 or 2,500 volt (V) DC megger test, or a 1,000 V high-pot test is acceptable for the insulation tests described below.

- Megger circuit breaker(s) at the POS that is operated by MID-required relays according to Table 1 below:

Table 1 Circuit Breaker Positions and Connections

Circuit Breaker Position	Connection
Circuit Breaker Open	Each pole to ground, pole 1 to 2, pole 3 to 4, pole 5 to 6
Circuit Breaker Closed	Pole 1-ground, pole 3-ground, pole 5-ground
If the poles are in a common tank or cell	Pole 1 to 3, pole 3 to 5, pole 5 to 1

- Megger (phase-to-phase and phase-to-ground) all buses from the POS to the main breaker or fuses.
- The main circuit breaker(s) must have a dielectric test performed on the insulating medium (gas or oil). This test is not required for factory-sealed, circuit-switcher interrupters.

c) Tests for Current Transformers and Current Circuits

PS customers must perform the following tests for current transformers (CTs) and current circuits associated with MID-required relays:

- Check the saturation on all CTs. If this is not possible, a manufacturer's curve is acceptable.
- Prove the ratio of all CTs by using current (primary to secondary) or voltage (secondary to primary).
- Check the CTs for the proper polarity.

- Check the CT circuits for the proper connections.
- Check the continuity of the CTs by:
  - Applying primary or secondary current at the CT block.
  - Verifying that the proper current exists in each phase relay and the ground relay.

Customers must perform each test (primary to secondary) in all combinations to prove that all phase relays and ground relays have proper connections.

PS customers must also ensure that no loose wiring or parallel current path exist, by applying or injecting the current to achieve a secondary reading of 5 amperes (A) in each relay.

Check each phase of each current circuit feeding MID-required relays. Megger the total circuit with the ground wire lifted (to prove that only one ground exists).

d) Relay and Fuse Tests

The testing requirements for relays/fuses include:

- PS customers must field test the settings of MID-required relays to verify the following items:
  - The minimum operating point at which the relays picks up (minimum pickup).
  - Time delays at three different current-test points, in integral multiples of the minimum pickup that closely characterize the time-current curve.
  - Test results must be within the tolerances listed below:
    - Current/Voltage/Time +or- 10%
    - Impedance/Phase Angle +or- 0.05%
    - Frequency +or- 0.05 Hz
- Check all fuses for continuity before energizing.

e) Test Recommended (But Not Required by MID) for the PS Customer's Transformer

It is recommended (but not required my MID) that the customer perform the following tests to prove the insulation and turns ratio on their primary service transformers.

Proving Insulation:

A 1,000 or 2,500 volt (V) dc megger test or a 1,000 V high-pot test is recommended for any of the insulation and turns ration their primary service transformers.

- Megger the main transformer(s) winding-to-winding and each winding-to-ground.
- Megger the buses (phase-to-phase and phase-to-ground) from the POS to the main transformer.
- Perform a dielectric test on the main transformer(s) insulating medium (gas or oil).

Proving Ratios

Prove the main transformer(s) ratio(s) using one of the following methods:

- Turns-ratio tester.
- Voltage-ratio test on the final operating tap. Consult with MID to best match the present distribution-system voltage.

6.4 Pre-Energizing Test

Customers must meet the following requirements before MID will energize the PS:

- Ensure that any inspections required by local governmental and regulatory agencies are complete and any applicable permits are obtained before MID energizes the PS.
- An MID technical representative must witness trip checks of all MID–required relays. This may require injecting a signal to trigger the relay. This proves that the relay will handle the trip current of the circuit breaker. It also proves relay targeting. Jumpering the studs on the back of the relay are not acceptable.

6.5 Post-Energizing Operation

- After energizing the PS and adding load, a MID technical representative must witness the reading of the load current in each phase relay and the absence of load current in the ground relay.

7 Maintenance Protection Requirements

7.1 General Protection Requirements

a) Data the PS Customer Provides to MID:

The PS customer must provide the information necessary for MID to determine the preventative requirements of their specific PS installation. This information includes, but is not limited to, the following:

- Single-Line diagrams.
- Meter and Relay diagrams.
- Three-Line diagrams of required protective device.
- Control diagrams including tripping circuit.
- Proposed relay specifications and settings (if settings changes are part of the maintenance).
- Relay manufacturer, model, style, type, ranges, settings, and a copy of the relay instruction manual (if settings changes are part of the maintenance).
- Full-size phase and ground coordination curves showing full coordination with MID's system (if settings changes are part of the maintenance).
- A registered electrical engineer must prepare and stamp the fault-study results (if settings changes are part of the maintenance).

b) Data that MID Provides to the Applicant:

MID provides the following engineering data to the PS customer if settings changes are part of the maintenance:

- System fault-duty at the property line.
- Settings for MID source-side protection devices and the required clearance time to comply with MID protection standards.

7.2 Equipment Test Requirements

The tests in this section apply only to the MID required equipment at the POS, specifically, the breaker, the relays, and the tripping circuitry.

The customer must complete the following requirements:

- The equipment must pass all the tests described below.
- The customer must submit two copies of the test reports to MID.
- Each test report must identify the equipment tested and that identification must match that in the Single-Line or Three-Line diagrams.

a) Circuit Breaker Tests

The PS customer must perform the following circuit breaker tests:

- Minimum-to-trip test at 70% or less of the nominal control voltage on all circuit breakers operated by MID-required relays.
- Micro-ohm test on the main circuit breaker(s) at the POS.
- Timing test showing the time from the trip initiation to the opening of the main poles.
- Providing insulation tests, as described below.

b) Proving Insulation

A 1,000 or 2,500 volt (V) DC megger test, or a 1,000 V high-pot test is acceptable for the insulation tests described below.

- Megger circuit breaker(s) at the POS that is operated by MID-required relays according to Table 1 below:

Table 1 Circuit Breaker Positions and Connections

Circuit Breaker Position	Connection
Circuit Breaker Open	Each pole to ground, pole 1 to 2, pole 3 to 4, pole 5 to 6
Circuit Breaker Closed	Pole 1-ground, pole 3-ground, pole 5-ground
If the poles are in a common tank or cell	Pole 1 to 3, pole 3 to 5, pole 5 to 1

- Megger (phase-to-phase and phase-to-ground) all buses from the POS to the main breaker or fuses.
- The main circuit breaker(s) must have a dielectric test performed on the insulating medium (gas or oil). This test is not required for factory-sealed, circuit-switcher interrupters.

c) Tests for Current Transformers and Current Circuits

PS customers must perform the following tests for current transformers (CTs) and current circuits associated with MID-required relays:

- Check the saturation on all CTs. If this is not possible, a manufacturer's curve is acceptable.
- Prove the ratio of all CTs by using current (primary to secondary) or voltage (secondary to primary).
- Check the CTs for the proper polarity.
- Check the CT circuits for the proper connections.
- Check the continuity of the CTs by:
  - Applying primary or secondary current at the CT block.
  - Verifying that the proper current exists in each phase relay and the ground relay.

Customers must perform each test (primary to secondary) in all combinations to prove that all phase relays and ground relays have proper connections.

PS customers must also ensure that no loose wiring or parallel current path exists by applying or injecting the current to achieve a secondary reading of 5 amperes (A) in each relay.

Check each phase of each current circuit feeding MID-required relays. Megger the total circuit with the ground wire lifted (to prove that only one ground exists).

d) Relay and Fuse Tests

The testing requirements for relays/fuses include:

- PS customers must field test the settings of MID-required relays to verify the following items:
  - The minimum operating point at which the relays pickup (minimum pickup).
  - Time delays at three different current-test points, in integral multiples of the minimum pickup that closely characterize the time-current curve.
  - Test results must be within the tolerances listed below:
    - Current/Voltage/Time +or- 10%
    - Impedance/Phase Angle +or- 0.05%
    - Frequency +or- 0.05 Hz
- Check all fuses for continuity before energizing.

e) Test Recommended (but not required by MID) for the PS Customer's Transformer

It is recommended (but not required by MID) that the customer perform the following tests to prove the insulation and turns ratio on their primary service transformers.

Proving Insulation:

A 1,000 or 2,500 volt (V) dc megger test or a 1,000 V high-pot test is recommended for any of the insulation and turns ratio on their primary service transformers.

- Megger the main transformer(s) winding-to-winding and each winding-to-ground.
- Megger the buses (phase-to-phase and phase-to-ground) from the POS to the main transformer.
- Perform a dielectric test on the main transformer(s) insulating medium (gas or oil).

Proving Ratios:

Prove the main transformer(s) ratio(s) using one of the following methods:

- Turns-ratio tester.
- Voltage-ratio test on the final operating tap. Consult with MID to best match the present distribution-system voltage.

8 General Notes

The following General Notes apply to both new and existing PS customers.

- The MID system has an A-C-B counterclockwise rotation.
- Before making changes to MID-required protection equipment, the customer must submit the proposed changes to MID for review and approval.

Submit to:
Energy Services Department
Attn: Major Account Representative
1231 Eleventh St. Modesto, CA 95354

- The customer is responsible for maintaining MID-required protection equipment in accordance with MID maintenance and test practices **every 5 years**. After completing such tests, the customer must submit maintenance and test report documentation to MID for review and approval.
- Contact the local MID representative with any questions.
- The PS customer is responsible for providing all test equipment and qualified personnel to conduct the tests in the presence of a MID technical representative.
- MID must approve Protective System designs including relays, fuses, settings and test results before energization can proceed.
- The customer is required to send a copy of all Final Reports related to the PS to MID.

9 Project Scheduling Table

Step	Party	Typical Time Required by MID *	Action
1	Customer		Supply Project proposal including site plans and commercial load form.
2	MID	40 business days	Engineering reviews the site plan and load information. MID to give rates for either primary vs. secondary service
3	Customer		Customer decides on type of service.
4	MID	5 business days	MID gives initial requirements to customer.
5	Customer		Customer submits final site plan and load info.
6	MID	20 business days	MID reviews and approves final site plan and load info.
7	Customer		Customer submits main panel cut sheets, switchgear drawings, protection packages, pays fees, and submits application to PM.
8	MID	15 business days	MID approves all submittals if no changes needed
9	Customer		Customer calls USA to locate underground utilities, install conduit and substructure. Request MID and the appropriate local governing authority to inspect conduit, substructure, and electric facilities.
10	MID	10 business days	MID inspects trench, conduit, and substructure. This stage repeats itself until there is satisfactory inspections. Meter department inspects installed panel for EUSERC compliance.
11	Customer		Customer submits protection testing results.
12	MID	25 Business Days	MID reviews protection testing results and approves. MID pulls primary cable.

13	Customer		Close trench, connect conductors to main panel. Contact the appropriate local governing authority for on-site inspection of electric facilities. Your facilities pass inspection and you request service.
14	MID	15 business days	Meter Department wires instrument transformers; MID reviews the local governing authority inspection tag to verify equipment conformance; if the equipment passes, pre energization testing is performed. If passed the meter is set and the panel is energized.
15	Customer and MID	45 business days	Customer performs post energization testing. MID witnesses testing

*** -** : This schedule is to be used only as a general guide of what tasks are anticipated and the projected completion time of the tasks. The exact timing of many of the items on this list depends on many factors including MID review and construction times which are completely dependent on the project managers. There are also items that are out of everyone's control i.e. weather, natural occurrences. Customer response time will also determine length of the project.

This schedule is for a typical new primary service project. All items listed here may not apply to your project.

10 Local Governing Authorities Within MID's Service Area

City of Modesto Building Department
1010 Tenth St. 3rd Floor
Modesto, CA 95353
Phone: 209-577-5232

Stanislaus County Building Department
1010 Tenth St. Suite 3500
Modesto, CA 95354
Phone: 209-525-6557
Fax: 209-525-7759

San Joaquin County Building Department
1810 Hazelton Ave.
Stockton, CA 95205
Phone: 209-468-3121

City of Riverbank Building Department
6617 3rd St.
Riverbank, CA 95367
Phone: 209-863-7128

City of Ripon Building Department
259 N. Wilma Ave.
Ripon, CA 95366
Phone: 209-599-2613
Fax: 209-599-2183

City of Waterford Building Division
101 E St.
Waterford, CA 95386
Phone: 209-874-2328
Fax: 209-874-9656

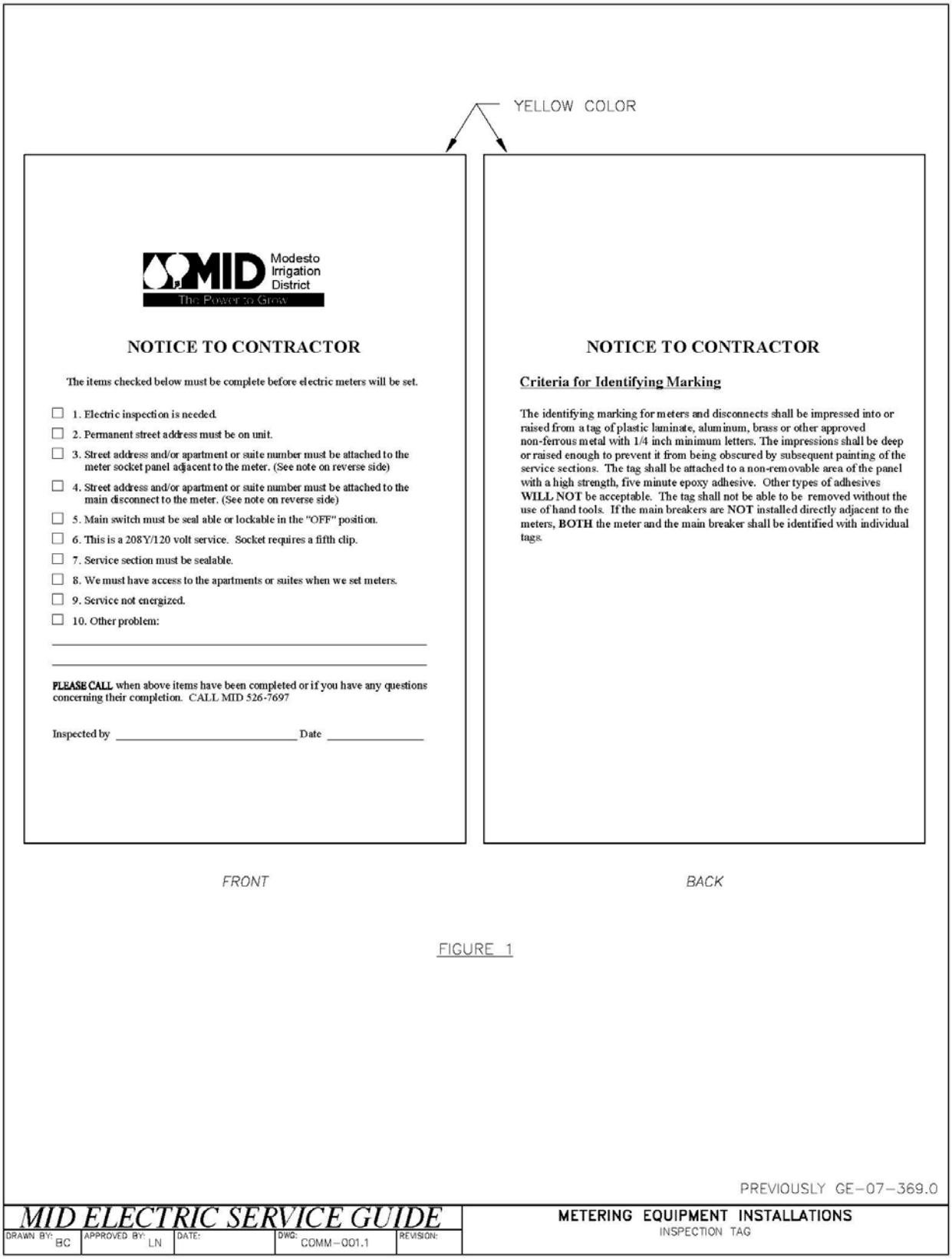
City of Oakdale Community Development
455 S. Fifth Ave.
Oakdale, CA 95361
Phone: 209-845-3625
Fax: 209-848-4344

City of Escalon Building Department
2060 McHenry Ave.
Escalon, CA 95320
Phone: 209-691-7460
Fax: 209-691-7439

11 MID Contact Information

Modesto Irrigation District
1231 Eleventh Street (P.O. Box 4060)
Modesto, CA 95354 (Modesto, CA 95352)
Electric Engineering Department
Phone: 209-526-7337

Drawing Pri 001.1: Inspection Tag



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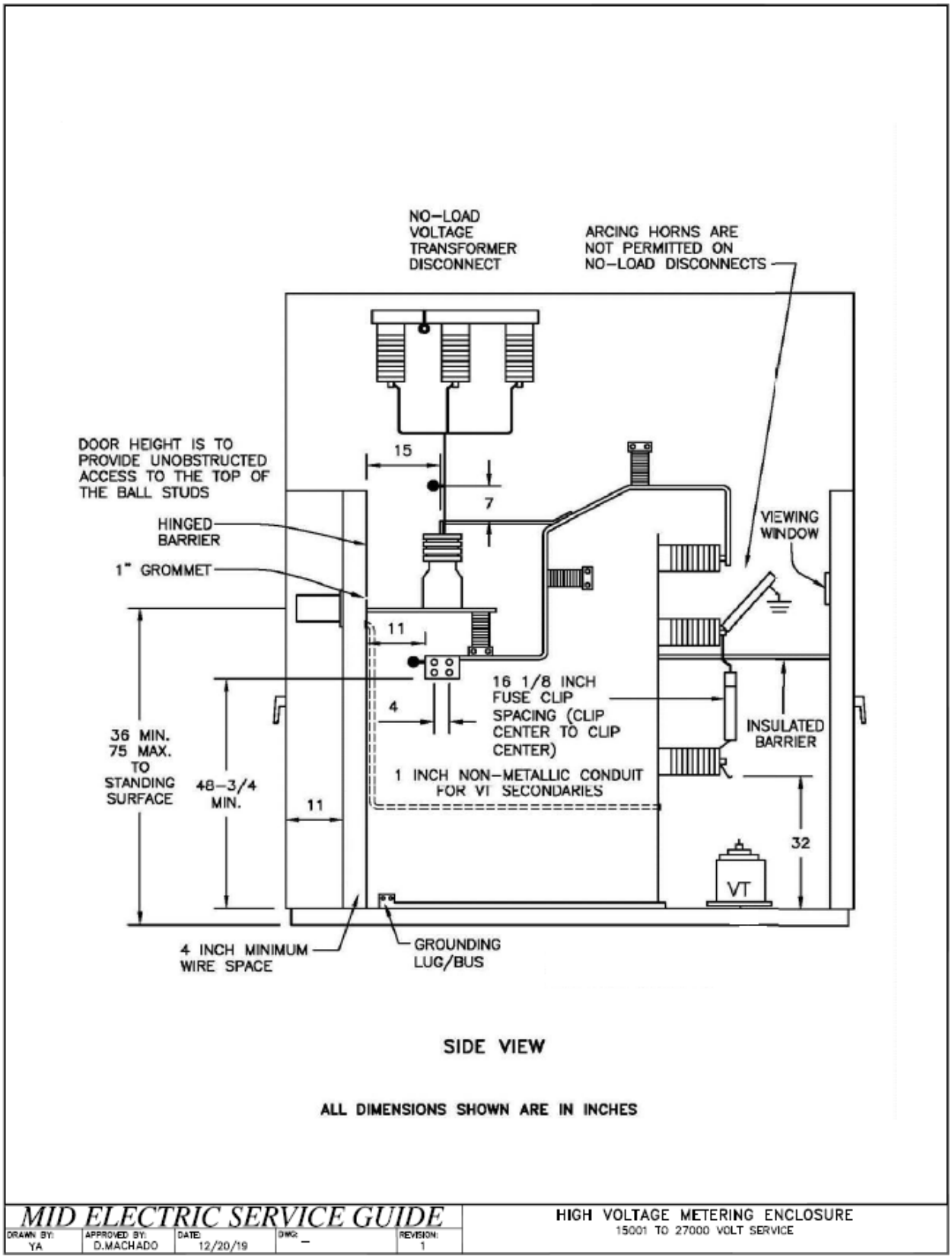

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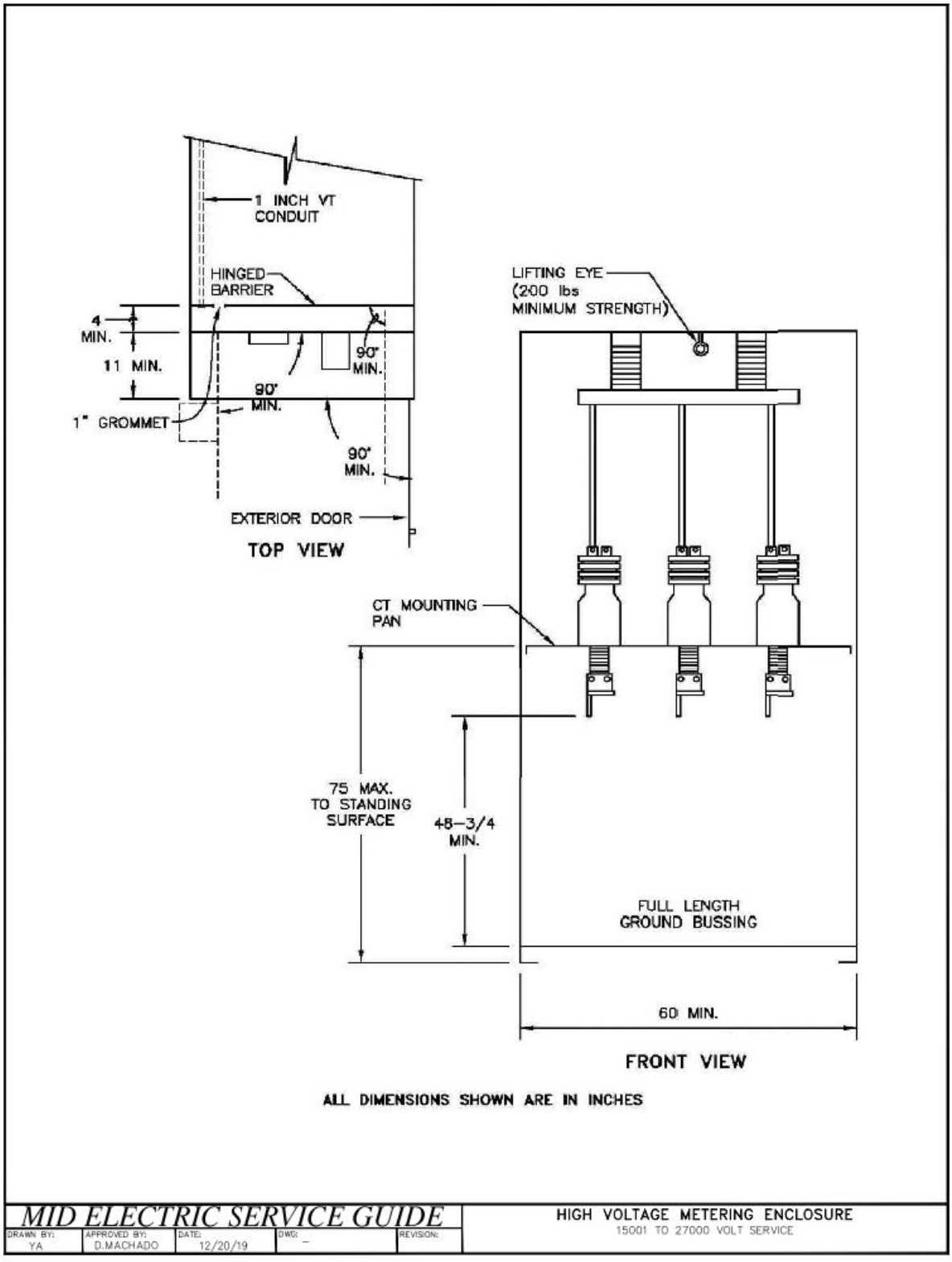

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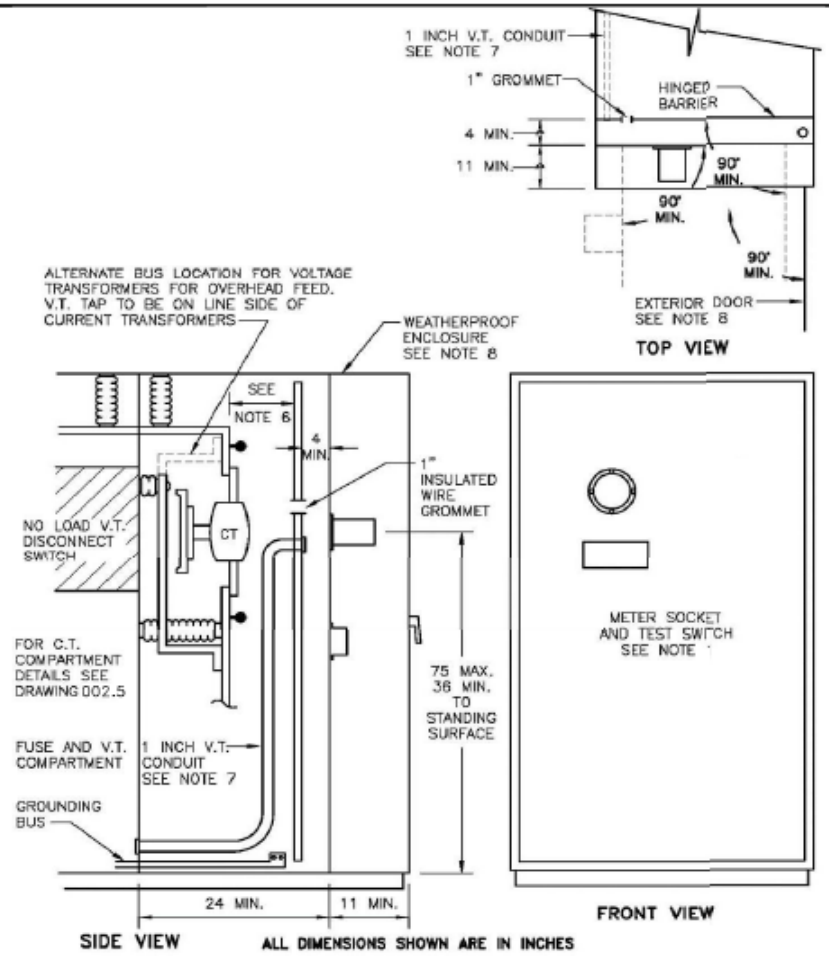


NOTES:

1. THE MASTER SOCKET PANEL SHALL BE A SINGLE, FULL–HEIGHT DOOR CONSTRUCTED OF 12–GUAGE (MINIMUM) STEEL AND FURNISHED WITH A METER RING, METER SOCKET, SEALING RING AND A SLOTTED OPENING WITH A REMOVABLE PLATE FOR INSTALLATION OF A TEST SWITCH. THE PLATE SHALL BE ATTACHED TO THE REAR OF THE PANEL WITH SCREWS THAT DO NOT PROTRUDE THROUGH THE FACE OF THE PANEL. THE EDGES OF THE PLATE AND THE SLOTTED OPENING SHALL BE SMOOTH TO PREVENT DAMAGE TO THE METER WIRING. SEE DRAWING 409 FOR METER SOCKET, TEST SWITCH CUTOUT AND REMOVABLE PLATE DETAILS.

2. THE PANEL SHALL BE EQUIPPED WITH HINGES. THE HINGES SHALL PERMIT THE PANEL TO OPEN TO 90–DEGREES AND SHALL BE EASILY INTERCHANGEABLE, RIGHT OR LEFT, ON THE METER SOCKET PANEL. REMOVABLE PIN TYPE HINGES SHALL BE REMOVABLE FROM THE TOP.

3. THE PANEL SHALL HAVE A HANDLE ATTACHED ON THE SIDE OPPOSITE THE HINGES.

4. PANEL SHALL BE SEALABLE ON THE SIDE OPPOSITE THE HINGES.

5. THE PANEL SHALL BE BONDED TO THE SWITCHBOARD ENCLOSURE WITH A FLEXIBLE, BRAIDED WIRE INSTALLED ACROSS THE HINGES.

6. A METAL ENCLOSED BARRIER WITH A CLEAR VIEWING WINDOW SHALL BE PROVIDED TO ISOLATE THE CURRENTTRANSFORMER COMPARTMENT FROM THE METER PANEL. THE BARRIER MUST BLOCK ALL ARC/FAULT ENERGY FROM COMING OUT OF THE CURRENT TRANSFORMER/PULL SECTION COMPARTMENT TOWARDS ANY PORTION OF THE DOORS DESCRIBED IN NOTE 8. THE BARRIER SHALL BE HINGED WITH A DOOR STOP AND MUST CLOSE WITH THE SERVING UTILITY'S CURRENT–TRANSFORMERS INSTALLED WITHOUT THE BARRIER CONTACTING THE TRANSFORMERS. THE HINGED METAL CLAD BARRIER MUST MAINTAIN PROPER CLEARANCES BETWEEN ALL EQUIPMENT ENERGIZED WITH PRIMARY VOLTAGE AND BONDED/GROUNDED EQUIPMENT. ENERGIZED EQUIPMENT INCLUDES BUT IS NOT LIMITED TO, CTS, "GROUND BALL STUDS" WITH COVERS INSTALLED, BUSS, ETC. THE INSPECTION WINDOWS MUST ALLOW FOR INFRARED TESTING AND VIEWING OF THE UPPER AND LOWER PRIMARY CT CONNECTIONS, "BALL GROUND STUDS;" THE CT SECONDARY CONNECTIONS AND THE UTILITY'S INCOMING CONNECTIONS TO BUSS BELOW THE CTS.

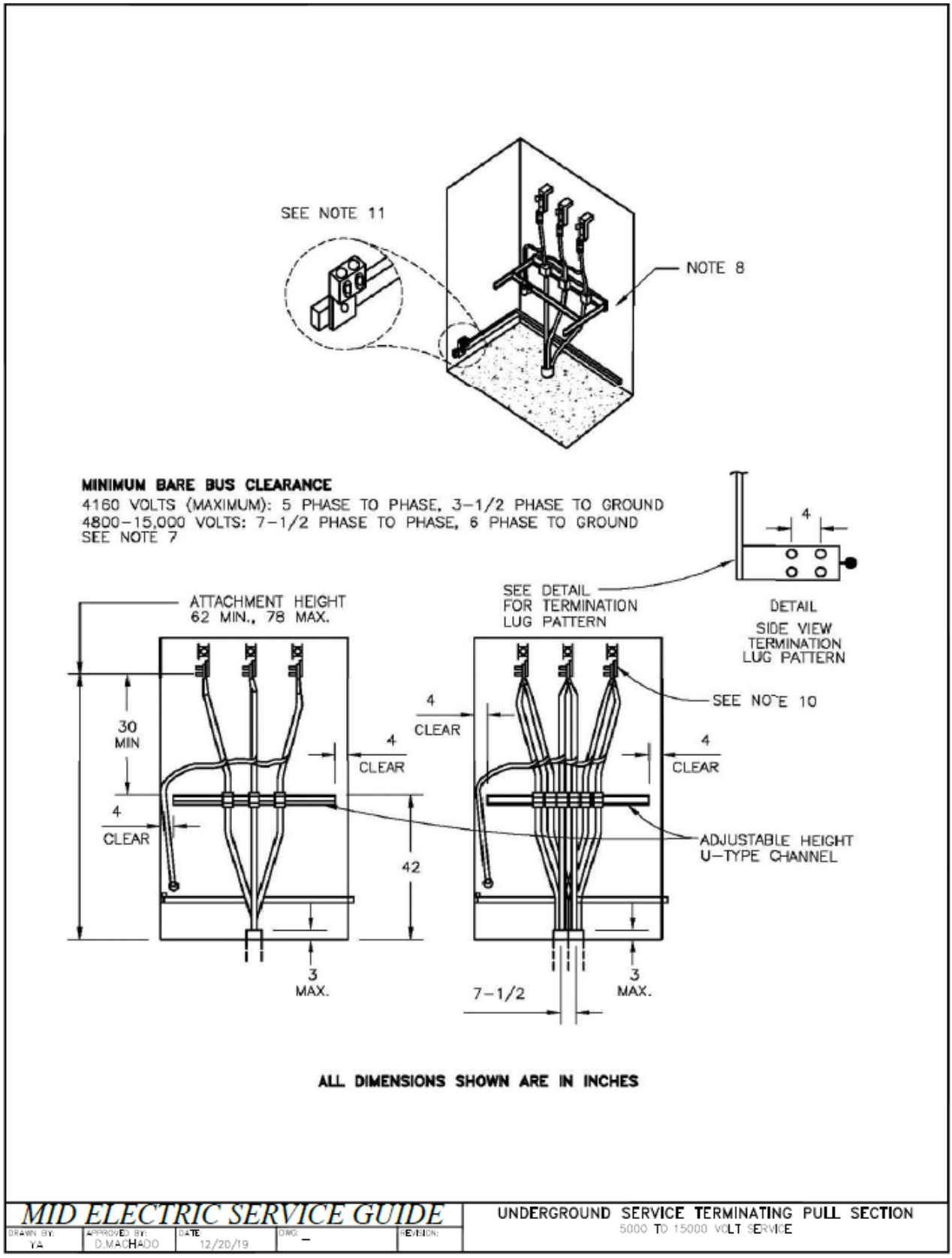
7. ONE INCH, NON–METALLIC, VT AND C.T. CONDUIT SHALL BE LOCATED ON THE HINGED SIDE OF THE METER PANEL AT A MAXIMUM OF 75 INCHES ABOVE THE STANDING SURFACE. THE CONDUITS SHALL BE CONTINUOUS CONDUITS WITH NO JUNCTION BOXES OR "CONDULETS."

8. THE ALTERNATE METER PANEL ARRANGEMENT IS SHOWN AS A WEATHERPROOF ENCLOSURE WITH AN EXTERIOR DOOR.

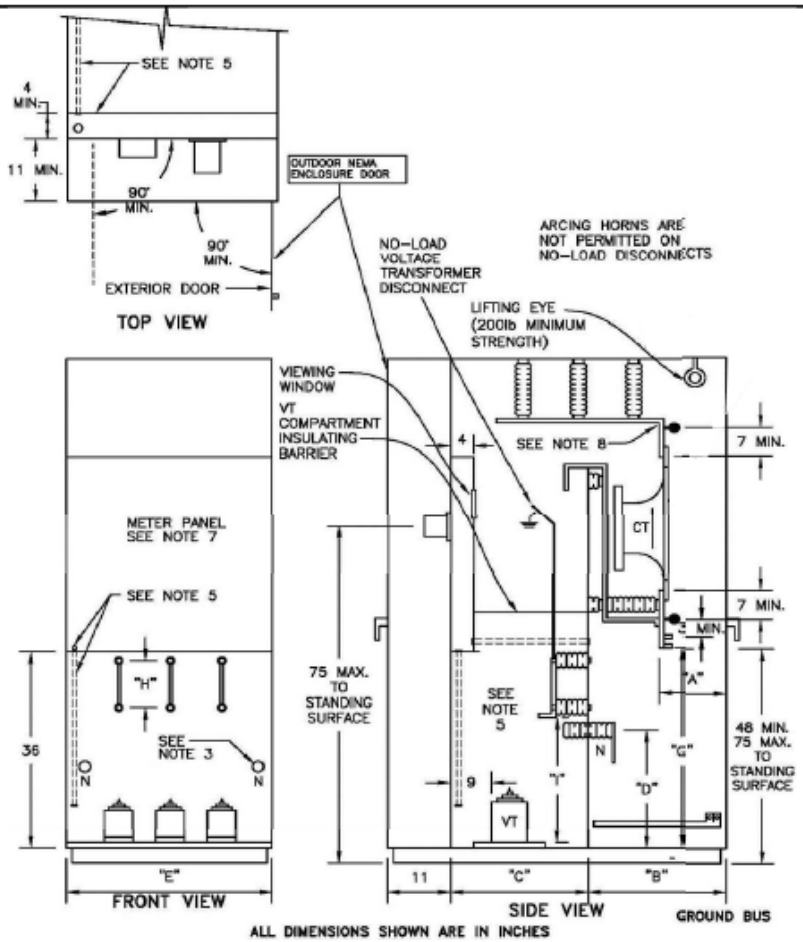
9. THE UTILITY PULL SECTION HOUSING, THE UTILITY CURRENT TRANSFORMERS, THE UTILITY VOLTAGE TRANSFORMERS AND THE UTILITY REQUIRED VOLTAGE TRANSFORMER DISCONNECT CABINET/SECTIONS MUST BE OF METAL ENCLOSED DESIGN.

MID ELECTRIC SERVICE GUIDE				HINGED METER PANEL WITH DUAL SOCKET FOR 2400 TO 27000 VOLT SERVICE
DRAWN BY: YA	APPROVED BY: D.MACHADO	DATE: 12/20/19	DWG: –	REVISION: 1

Drawing Pri 002.4



Drawing Pri 002.5



ALL DIMENSIONS SHOWN ARE IN INCHES

NOTES:

1. FOR REAR ACCESS DOOR REFER TO DWG 400. SHEET 2 NOTE 7.

2. CONSULT SERVING UTILITY FOR NEUTRAL REQUIREMENTS IN 4 WIRE APPLICATIONS.

3. PROVIDE FULL VOLTAGE AND BIL INSULATED NEUTRAL BUSHING FOR CONNECTION TO V.T. COMPARTMENT.

4. PRIMARY TAPS FOR V.T.'S SHALL BE CONNECTED TO LINE SIDE OF METERING C.T.'S.

5. ONE INCH, NON-METALLIC, V.T. AND C.T. CONDUIT SHALL BE LOCATED ON THE HINGED SIDE OF THE METER PANEL AT A MAXIMUM OF 75 INCHES ABOVE THE STANDING SURFACE. THE CONDUITS SHALL BE CONTINUOUS CONDUITS WITH NO JUNCTION BOXES OR CONDULETS.

6. THE GROUNDING BUS SHALL EXTEND ON EITHER LEFT OR RIGHT SIDE OF THE ACCESS AREA OF THE C.T. COMPARTMENT. THE GROUNDING TERMINALS FOR USE WITH THE BALL STUDS SHALL BE TWO ALUMINUM-BODIED MECHANICAL LUGS ACCEPTING A RANGE OF 6 AWG THROUGH 250 KCMIL CONDUCTORS, AND SHALL BE IDENTIFIED WITH A LABEL READING "SAFETY GROUNDING POINT FOR UTILITY USE ONLY".

7. FOR SINGLE SOCKET METER PANEL REQUIREMENTS SEE DRAWING 408. FOR DUAL SOCKET PANEL REQUIREMENTS SEE DRAWING 409.

8. BALL STUDS (1/2"-13 THREADS WITH INSULATING COVERS) FOR THE ATTACHMENT OF SAFETY GROUNDS SHALL BE PROVIDED ON THE LINE AND LOAD SIDE OF THE CURRENT TRANSFORMER (C.T.) BUS UNITS. THE STUDS SHALL BE LOCATED ON LESS THAN 7 INCHES FROM THE END OF THE BUS UNIT AND ORIENTED TOWARD THE COMPARTMENT ACCESS OPENING.

SPECIFICATIONS	VOLTAGE RATING	
	4800 Max.	4801-15000
MINIMUM BARE BUS CLEARANCE TO GROUND	3-1/2"	6"
MINIMUM BARE BUS CLEARANCE O TO O	5"	7-1/2-
DIMENSION "A"	5" Min. 10" Max.	8" Min. 10" Max.
DIMENSION "B"	24" Min.	24" Min.
DIMENSION "C"	24" Min.	24" Min.
DIMENSION "D"	18" Min.	18" Min.
DIMENSION "E"	48" Min.	60" Min.
DIMENSION "G" (*See note below)	36-3/4" Min.	36-3/4" Min.
DIMENSION "H" FUSE MOUNTING (**) CLIP CENTER	8-1/2"	11-1/2"
DIMENSION "H" FUSE FERRULE DIAMETER	1-5/8"	1-5/8"
DIMENSION "I"	24"	24"

* DIMENSION "G" APPLIES WHEN USED AS A CABLE TERMINATION SECTION. CONSULT UTILITY.
** FUSE CENTERLINES SHALL BE ADJUSTABLE TO ALLOW FUSE VOLTAGE SELECTION AT NOT LESS THAN 70% OF THE ACTUAL SYSTEM VOLTAGE APPLICATION.

MID ELECTRIC SERVICE GUIDE

DRAWN BY:	APPROVED BY:	DATE	DWG:	REVISION:
YA	D.MACHADO	12/20/19	–	1

HIGH VOLTAGE METERING ENCLOSURE
2400 TO 15000 VOLT SERVICE

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

--MID USE ONLY--			
CSR Name	☐ Equivalent ☐ Change in svc ☐ New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date 9/10/2015 **Service start date:** 12/1/2015 **Power On?** ☐ Yes ☒ No

Type of Service: ☒ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: 50

New construction: ☐ Yes ☐ No Square footage of building or work area:

1. Legal billing name: John Doe
2. Doing business as (DBA): Business Name (Name of Organization or Entity)
3. Service address: 1234 Sample Drive (Street) Modesto (City) 95352 (Zip Code)
4. Mailing address: PO Box 1111 (Street) Modesto (City) 95352 (Zip Code)
5. Type of business: Distribution/Trucking Company (Complete description of goods or services rendered) Franchisee? ☐ Yes ☒ No
6. Number of years in business: 10 Business phone: 209-123-4567 Fax number: 209-456-7890
7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☒ Corporation ☐ Public Agency ☐ Other
8. If corporation, LLP or LLC list state where filed: California (Copy of documents required) Year filed: 2004
9. Taxpayer ID number (EIN or SSN): 123456789 Business License number: 1234567 (Copy of license required)
10. If business name is legal billing name, fictitious name file number: 11-2345 Filing date: 9/8/2010
11. Address of corporate office or residence address if sole proprietor:
12. Name and information for all corporate officers, partners, or sole owners:

Name	Title	Phone	Driver's License & State	Date of Birth
John Doe	President/CEO	209-123-4567	D1234567	1/18/75
Jane Doe	Vice President	209-456-0987	D9876543	5/30/76

13. Contact for billing inquiries: Jane Doe (Name) Vice President (Title) 209-456-0987 (Phone) janedoe@email.com (email address)
14. Name of person completing form: Jane Doe (Name) Vice P (Title)

Go to http://www.mid.org/forms/ for the most current Application.

Signature (required):

Owner or Corporate Officer	Driver's License number & State	Date of Birth
Jane Doe (Print Name)	Vice President (Title)	9/10/2015 (Date)

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Sample 1: Application for Non-Residential Electric Services

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electrical Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: Sample Warehouse Expansion

Location (Street): 1234 Sample Way, Modesto, CA 95353

Owner (Name): John Doe Telephone: (209) 555-4444

Address: 5687 Data Drive, Modesto, CA 95353

Engineer (Name): David Doe Telephone: (209) 566-5664

Address: 7896 Sample Ct., Modesto, CA 95352

Estimated Date Ready for Service: 9-15-2015 Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: 8528 Type of Business: Warehouse

Electric Load Information

	Initial		Future			Initial		Future	
Lighting	3.4	kW		kW	Receptacles	1.0	kW		kW
Water Heater	1.5	kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners	20	HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: 65 kW Size Main Fused Switch: 600 Amps

Total Future Connected Electrical Load: _____ kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) (Overhead) Underground

Phase: 3 Voltage: 208/120 Wires: 4 Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
(X) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Go to http://www.mid.org/forms/ for the most current Form.

Office Use Only

Application Complete □ Yes □ No Checked By: _____ Date: _____
If no, explain: _____

9/2015

Sample 2: Commercial Load Information Form

MODESTO IRRIGATION DISTRICT
1231 Eleventh Street, PO Box 4060, Modesto, CA 95352
Customer Service Phone: (209) 526-7337 Fax: (209) 526-7359
Email address: CSCommercial@MID.org

APPLICATION FOR NON-RESIDENTIAL ELECTRIC SERVICE(S)

--- MID USE ONLY ---			
CSR Name	Equivalent Change in svc New construction	Franchise District:	Tax District:
Account #:	Anticipated Load:	Rate:	Reactive Meter: Yes No
Svc Pt #:	NAICS Code:	Voltage:	
Deposit Amount/Reason for waiving:	Map grid seq #:	Class 1 Code:	
CS Approved by: Date:	Mktg Approved by: Date:	Engr Approved by:	Date:

Please fill out the application completely, and attach supporting documentation. Sign and return to MID in the office, by fax or email.
In accordance with MID Rules & Regulations, a minimum deposit of $300, or three times the highest monthly bill, may be required to activate service.

Today's date_____ **Service start date:**_____ **Power On?** ☐ Yes ☐ No

Type of Service: ☐ Commercial ☐ Industrial ☐ Lighting ☐ Ag Pump – horsepower: _____

New construction: Yes No Square footage of building or work area: _____

1. Legal billing name: _____

2. Doing business as (DBA): _____
   Name of Organization or Entity

3. Service address: _____
   Street City Zip Code

4. Mailing address: _____
   Street City Zip Code

5. Type of business: _____ Franchisee? ☐ Yes ☐ No
   Complete description of goods or services rendered

6. Number of years in business: _____ Business phone: _____ Fax number: _____

7. Type of ownership: ☐ Sole Proprietor ☐ Partnership ☐ LLC ☐ LLP ☐ Corporation ☐ Public Agency ☐ Other

8. If corporation, LLP or LLC list state where filed: _____ Year filed: _____
   Copy of documents required

9. Taxpayer ID number (EIN or SSN): _____ Business License number: _____
   Copy of license required

10. If business name is legal billing name, fictitious name file number: _____ Filing date: _____

11. Address of corporate office or residence address if sole proprietor:

    _____

12. Name and information for all corporate officers, partners, or sole owners:

    _____
    Name Title Phone Driver's License & State Date of Birth

    _____
    Name Title Phone Driver's License & State Date of Birth

    _____
    Name Title Phone Driver's License & State Date of Birth

13. Contact for billing inquiries: _____
    Name Title Phone **email address**

14. Name of person completing form: _____
    Name Title Telephone

Signature (required): _____
Owner or Corporate Officer **Driver's License number & State** **Date of Birth**

_____
Print Name Title Date

Note: In accordance with published MID regulations, supporting documents verifying the legal billing name may be required.

Commercial Load Information Form

Modesto Irrigation District
ATTN: Electric Engineering
PO Box 4060
1231 11th Street
Modesto, California 95352
Fax: (209) 526-7357

Date: _____

Project: _____

Location (Street): _____

Owner (Name): _____ Telephone: _____

Address: _____

Engineer (Name): _____ Telephone: _____

Address: _____

Estimated Date Ready for Service: _____ Pre-Construction Meeting Date: _____

Begin Rough Grading Date: _____

General Information

Approximate Square Footage: _____ Type of Business: _____

Electrical Load Information

	Initial		Future			Initial		Future	
Lighting		kW		kW	Receptacles		kW		kW
Water Heater		kW		kW	Duct Air Heaters		kW		kW
Unit Air Heaters		kW		kW	1Ø Air Conditioners		HP/Ton		HP/Ton
Cooking Units		kW		kW	3Ø Air Conditioners		HP/Ton		HP/Ton
X-Ray (input)		kW		kW	1Ø Heat Pump		HP/Ton		HP/Ton
Welders		kW		kW	3Ø Heat Pump		HP/Ton		HP/Ton
Aux. Strip Heater		kW		kW	1Ø Misc. Motors		HP/Ton		HP/Ton
3Ø Motors		HP		HP	Largest 3Ø Motor		HP/Ton		HP/Ton

Total Initial Connected Electrical Load: _____kW Size Main Fused Switch: _____Amps

Total Future Connected Electrical Load: _____kW Estimated Date of Future Load: _____

Type of Service Desired: (circle one) Overhead Underground

Phase: _____ Voltage: _____ Wires: _____ Estimated Initial Date: _____

Site Plan: ( ) One site plan in dfx or Autocad format on a CD
( ) One sepia or two reproducible hard copies of the site plan; scaled
( ) Emailed electronic file to electric.standards@mid.org

_____
Signature of Applicant

Office Use Only

Application Complete □ Yes □ No

Checked By: _____ Date: _____

If no, explain: _____

9/2015

Service Guide Customer Input Form

The Modesto Irrigation District strives to provide excellent customer service. In an effort to improve our Service Guides, this form is provided so you can share your comments and suggestions. Please fill out this form and submit it with along with your comments. Please be as specific as possible. Once the form is complete, email the form to our Standards Department at electric.standards@mid.org, or mail the form to the Modesto Irrigation District office, attention Electric Standards.

Modesto Irrigation District
Attn: Electrical Standards
PO Box 4060
Modesto CA, 95352-4060

Name: _____ Date: _____

Phone Number: _____ Email: _____

Indicate which Service Guide your comments pertain to:

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial and Industrial
- ☐ Temporary
- ☐ Solar Photovoltaic
- ☐ Electric Vehicle
- ☐ Residential Subdivision
- ☐ Street Lighting and M iscellaneous

	Not Effective	Somewhat Effective	Effective	Very Effective	N/A
Organization of Service Guide	☐	☐	☐	☐	☐
Requirements Were Clear	☐	☐	☐	☐	☐
Effectiveness of Sample Forms	☐	☐	☐	☐	☐
Effectiveness of Drawings	☐	☐	☐	☐	☐
Effectiveness of Service Guide	☐	☐	☐	☐	☐

Comments: _____

_____

_____

_____

_____

_____


MID
Modesto
Irrigation
District
The Power to Grow