



## Electric Service Requirements


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# Residential Overhead Engineering Specification T002

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August 2024



 <b>SMUD<sup>®</sup></b>	<b>ENGINEERING SPECIFICATION</b>	No. <b>T002</b> Page 1 of 11	
		REV. 5	DATE: 8/24
CATEGORY	<b>ELECTRIC SERVICE REQUIREMENT</b>		
SUBJECT	<b>RESIDENTIAL OVERHEAD INSTALLATIONS</b>		

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## 1 GENERAL REQUIREMENTS FOR SERVICE

1.1. This is a guide to the Sacramento Municipal Utility District's (SMUD) requirements for the establishment of electric service to new or rewired residential overhead installations. The requirements presented here are necessary for SMUD to supply uniform, satisfactory, and safe service. It is necessary that all written material (this text, as well as all of the notes on the drawings) be carefully read.

1.2. It is important that satisfactory arrangements be made for the installation of electric service lines and the location and setting of meters. Go to [www.smud.org/projectapplication](http://www.smud.org/projectapplication) or contact SMUD's Customer Services Department, 6301 S Street, (888) 742-7683, for new or additional service. This must be accomplished as soon as initial planning is considered. Delays in supplying this required information could cause an unnecessary inconvenience for the customer. Electric service will **not** be established until the "service entrance facilities" and interior wiring 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.

1.3. Where the operation of the customer's equipment will require unusually stable voltage regulation free from momentary and transient voltage excursions, or other stringent voltage control beyond that supplied by SMUD in the normal operation of its system, the customer, at their own expense, shall be responsible for installing, owning, operating, and maintaining any special or auxiliary equipment on the load side of the meter that will be required, as deemed necessary by the customer, for the operation of the customer's equipment.

1.4. All materials used and all work performed on a customer's premise, with the exception of the meter and service, must conform with local inspection authority requirements. **No** service can be connected unless passed by the appropriate inspection authority. Only authorized SMUD employees are permitted to make permanent connections between SMUD wiring and customer wiring.

1.5. SMUD reserves the right to revise commitments after six months. A new SMUD commitment will normally be required after one year unless a customer has requested and received written approval for a longer period of time from a SMUD Engineering Designer.

1.6. In addition to SMUD's own requirements, the customer is responsible for complying with applicable provisions of City and County ordinances; the CEC and NEC; and all applicable orders, rules, and regulations of the State of California. All meter panel and customer service switchboard equipment shall meet SMUD and EUSERC requirements and be UL approved.

1.7. Plot plans should be furnished to SMUD at 4401 Bradshaw Rd. Sacramento Ca.95827-3834 as soon as possible. Delays in supplying this required information could cause an unnecessary inconvenience for the customer.

- 1.8. The customer's service voltage will be determined by SMUD's Transmission & Distribution Line Design Department. Normally, only one service point will be granted to one building or one parcel of property. Multiple service points may be granted to one building or multiple buildings on one parcel, provided they meet the requirements of the CEC and NEC as well as the requirements of SMUD and the Authority Having Jurisdiction (AHJ).
- 1.9. The location for all meter installations will be designated by a SMUD Engineering Designer. The meter(s) shall be located within 3 feet of the corner of the building closest to the SMUD service point and shall be a minimum of 3 feet from all property lines. Meter locations other than described above will not be allowed without advance written permission from SMUD's Engineering Designer. Deviations may be made for special structural requirements and must be approved by the Designer. Meter locations other than those described above are subject to additional charges, payable prior to meter installation.
- 1.10. Failure to comply with the above procedures could be costly and cause unnecessary delays for the customer.
- 1.11. This guide may not cover all situations or installations. If an installation is not addressed or identified within this guide the customer shall seek approval from a SMUD Engineering Designer prior to construction.

## 2 ABBREVIATIONS

The following abbreviations may be used throughout these Service Requirements:

A = A Type Meter	KW = Kilowatts
Amp. or A = Amperes	L.P. = Lightning Protector
Ag. Can = Agricultural Meter Can	Man. = Manual
C.C. = Circuit Closing	M.B. = Meter Mounting Base
Cl. = Class of Meter	M.D. = Maximum Demand
Comb. Can = Combination Can	NEC = National Electric Code
CEC = California Electric Code	O.H. = Overhead
D.B. = Direct Burial	R.M.T. = Rigid Metallic Conduit
E.B. = Encased Burial	S. = S Type Meter
EUSERC = Electric Utility Service	S.P. = Separate Potential
Equipment Requirements Committee	S.S. = Safety Socket
EI. = Element	U.G. = Underground
G.O. = General Order	UL = Underwriters Lab
I.M.T. = Intermediate Metallic	V. = Volts
Int. = Interval	W. = Wire

**USE CAUTION WHEN DIGGING TO AVOID  
 BURIED ELECTRICAL CABLES.  
 BEFORE DIGGING CALL U.S.A.  
 (Underground Service Alert),  
 800-227-2600**



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### 3 MINIMUM REQUIREMENTS FOR RESIDENTIAL OVERHEAD INSTALLATIONS

#### 3.1. Metering

##### 3.1.1. Meter Locations

- 3.1.1.1. All meter locations must be approved by the SMUD Engineering Designer. Call Customer Service at 1-888-742-7683 to request a meter location.
- 3.1.1.2. The meter(s) shall be located within three (3) feet of the corner of the building closest to the SMUD service point and shall be a minimum of three (3) feet from all property lines. Deviations from the required meter location may be made for special structural requirements and must have advance approval, in writing, from SMUD's Engineering Designer.
- 3.1.1.3. A level standing space and working surface of 36" L X 30" W shall be provided in front of each meter, permitting ready access to the meter (See drawing A-2).
- 3.1.1.4. Meters may be located in locked rooms, cabinets, or fenced enclosures only after approval by SMUD's Engineering Designer. Access by SMUD representatives to such areas shall be obtainable by using a SMUD key. The customer is responsible for having the lock keyed for a SMUD key.
- 3.1.1.5. Carports, breezeways, covered or screened porches and patios, 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 written approval by SMUD's Engineering Designer.
- 3.1.1.6. Meters or metering equipment shall not be installed in elevators, ventilator shafts, closets, lavatories, in or over stairways, over doorways, windows, sinks, wash trays, gas meters or other grounded objects, in driveways, or in any other hazardous location.
- 3.1.1.7. The area on either side of a door, swinging window, or gate which is equal to the width of that door, swinging window, or gate is not acceptable as a meter location.

##### 3.1.2. Meter Socket

- 3.1.2.1. The meter socket must be installed in a true, vertical plane.
- 3.1.2.2. Any unused outlets in meter sockets must be sealed with internally removable plugs.
- 3.1.2.3. Residential, self-contained meter sockets shall be UL approved and shall have a maximum current rating equal to or greater than the current rating of the associated load service equipment.
- 3.1.2.4. Neutral taps shall be connected to the service neutral conductor and located behind sealed panels. Wire nuts are **not** permitted.
- 3.1.2.5. Meter sockets with extruded or cast aluminum jaws are **not** acceptable and will **not** be connected.

- 3.1.2.6. Sockets for residential installations should **not** be equipped with test bypass devices.
- 3.1.2.7. All Meter Sockets shall be ring type.
- 3.1.3. Metering Arrangement
  - 3.1.3.1. The required SMUD standard provides for the line current to enter first the meter and then the customers disconnect (switch) and overload protective devices (fuses or circuit breakers).
  - 3.1.3.2. Unmetered service wires and metered load wires shall be run in separate conduits, raceways, or wiring gutters.
- 3.1.4. Metering Residential Services in Excess of 200 Amps
  - 3.1.4.1. See Pages A-7 through A-10 for requirements on service panels in excess of 200 Amps.
- 3.2. Multiple Meter Installations
  - 3.2.1. All apartment "house" meters require test bypass devices.
  - 3.2.2. Plastic meter covers will be used to cover energized sockets only if the socket is installed for future use. 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 permanently closed and sealed by the customer.
  - 3.2.3. For multiple-meter installations, the meter sockets shall have a minimum horizontal clearance of 7-1/2 inches, center to center, and a minimum vertical clearance of 8-1/2 inches, center to center.
  - 3.2.4. Meters should be grouped together.
- 3.3. Meter Cabinets and Enclosures
  - 3.3.1. The cabinet shall be so designed that the roof, doors and the roof or door supports will **NOT** interfere with the installation of the meter.
  - 3.3.2. Shallow cabinets, with holes cut in the door for meters to protrude through, will **NOT** be permitted.
  - 3.3.3. Clearances between the sealing flanges of the meter sockets and the inside of a closed cabinet door shall be:
    - 3.3.3.1. 7" minimum for an apartment meter.
    - 3.3.3.2. 9" minimum for apartment "house" meters' See SMUD drawing A-6 for details.
  - 3.3.4. Hinged doors shall **NOT** exceed 4' x 4' and shall be fabricated with a positive locking device to hold them in the open position safely.
  - 3.3.5. All doors shall be fitted properly to ensure positive opening and closing and shall be equipped with adequate pulls, hinges and latches.

- 3.3.6. All cabinets exposed to the weather shall be rain-tight and constructed of weather resistant materials. All top openings (conduits entering and leaving) shall be flashed and sealed.
- 3.3.7. When cabinets are to be locked with the customer's lock, a double lock arrangement shall be provided by the customer to accommodate a SMUD padlock.
- 3.4. Service Drops
- 3.4.1. A "service drop" is the span of overhead wires furnished by SMUD from SMUD's pole to the customer's point of attachment.
- 3.4.2. Service drops will **not** exceed 100 feet unless special permission is granted by SMUD's Engineering Designer. This distance is measured from SMUD's pole to the customer's point of attachment.
- 3.5. Point of Attachment
- 3.5.1. Must be located at or near the corner of the building or structure nearest and facing the SMUD pole designated by the SMUD Engineering Designer.
- 3.5.2. The point of attachment installation must be able to withstand 600lbs of pull.
- 3.5.3. See Pages A-3 through A-5 for details and clearance requirements.
- 3.6. Service Head
- 3.6.1. An approved, rain tight service head shall be installed at a point suitable for connecting the customer service entrance conductors to the service drop.
- 3.6.2. The service head should be higher than the point of attachment. See Page A-5 for illustrations.
- 3.7. Service Entrance Conductors
- 3.7.1. The Authority Having Jurisdiction must be consulted for size and type of wire.
- 3.7.2. A minimum of 24 inches of conductor must remain outside of the service head and allow for a drip loop at the service connection.
- 3.7.3. The service entrance conductors must be continuous without splices. Neutral line wire (normally white) shall be continuous without a splice, from the service head through the bonding lug to the neutral bar in the switch. Neutral must always be identified. Where special permission is granted, the neutral line wire may be broken if the socket is equipped with an approved connection device.
- 3.8. Service Riser Conduit
- 3.8.1. The Authority Having Jurisdiction must be consulted for size and type of conduit.

- 3.8.2. Conduit should **be** in one continuous length from service head to meter socket. A limited number of approved type condulets may be permitted when building construction makes a continuous run impractical. If gutters are required, they must be approved by SMUD's Engineering Designer and shall be equipped with approved sealing devices.
- 3.8.3. Rigid Metallic Conduit (RMC), or Intermediate electrical conduit (IMC) of 1 1/2 inch inside diameter, is the minimum service riser conduit acceptable for attaching SMUD service cables. The customer must provide the point(s) of attachment.
- 3.8.4. Fire protection, in accordance with the Authority Having Jurisdiction, is required where service risers are enclosed in combustible materials.
- 3.8.5. Conduit may be concealed in building walls and/or attics on the Utility (line) side of the meter under the following conditions:
- 3.8.5.1. A semi-flush, mounted, combination meter socket main breaker used.
- 3.8.5.2. A 1 1/2 inch minimum inside diameter conduit is used.
- 3.8.5.3. Conduit is in 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** couplings, compression fittings, or sleeves are allowed.
- 3.8.6. Where a periscope type service riser is used for service attachment, the following conditions must be met:
- 3.8.6.1. Only a 1-1/2 inch minimum RMC or IMC electrical conduit may be used. Inspection authorities may require a larger size conduit.
- 3.8.6.2. Any coupling above the roofline must be threaded, RMC or IMC electrical conduit.
- 3.8.6.3. If couplings are used, couplings shall be below the brace kit attachment.
- 3.8.6.4. All conduits must be properly braced within 12 inches of the point of attachment (See Figure D on drawing A-5).
- 3.8.6.5. Proper braces must include bolts through the rafters or another equivalent structural part of the structure. No lag screws will be accepted.
- 3.8.6.6. When no eave is present the service conduit must be attached to the structure wall via Unistrut, with 5/16in min. lag screw into wall stud. Pull bracing shall be added (See Figure E on drawing A-5).
- 3.9. Service Main Disconnect
- 3.9.1. The service main disconnect must be installed on the customer's (load) side of the SMUD meter.
- 3.9.2. All service switches must be approved by SMUD's Meter Division and the Authority Having Jurisdiction.



- 3.9.3. If the switch is installed outside, it must be of an approved, rain tight type.
- 3.9.4. A customer's service main disconnect, or fused disconnect, will normally be installed within 10 feet of where the service enters the building structure. Special permission of SMUD and the Authority Having Jurisdiction must be obtained to increase this distance.
- 3.9.5. Whether the service main disconnect is immediately adjacent to the meter socket or not, the wiring between the two must be in an approved conduit. Sealable gutters are allowed only with the **prior** approval of a SMUD Engineering Designer and the Authority Having Jurisdiction.
- 3.9.6. The Authority Having Jurisdiction must be consulted for required service main disconnect or circuit breaker size.

#### 3.10. Grounding

- 3.10.1. An approved concrete encased electrode (ufer ground) must be used for all new construction and remodeling (Per California Electric Code, National Electric Code).
- 3.10.2. The Authority Having Jurisdiction must be consulted for ground conductor and type.
- 3.10.3. The connection between customer ground and customer service equipment must be visible to SMUD and the Authority Having Jurisdiction.

#### 3.11. Non-installation of Meters

- 3.11.1. The meters will **not** be installed until the customer has complied with all the requirements noted above, **and**
- 3.11.2. The work has been passed by the proper inspecting authorities, **and**
- 3.11.3. Each service main disconnect and meter position, in a multiple meter installation, has been clearly and prominently marked in a permanent manner with oil base paint, or an engraved plate has been fastened with stainless steel screws to indicate the particular address supplied by each meter. Street addresses, suite/apartment numbers, etc., identifiable to the appropriate meter, shall be permanently affixed to the building.

### **4 SWIMMING POOL CLEARANCES FOR SUPPLY SERVICE DROPS (INCLUDES HOT TUBS)**

- 4.1. The installation and maintenance of service drops over swimming pools area is to be avoided where practical.
- 4.2. The customer must contact a SMUD Engineering Designer to determine SMUD's service requirements before installing a new pool or rewiring an existing residence where a SMUD service drop is over, or will cross within 10 feet horizontally of, a pool.
- 4.3. The following options, in order of desirability, are to be followed where an O.H. service would cross within 10 feet horizontally of a pool:

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- 4.3.1. Convert the existing service panel to U.G., or install a new U.G. service panel and provide conduit for a SMUD furnished U.G. service.
- 4.3.2. Relocate the service entrance.
- 4.3.3. Relocate the point of attachment.
- 4.3.4. Provide a point of attachment that will allow an O.H. service drop to cross over the pool area when the following conditions can be met:
  - 4.3.4.1. SMUD cannot provide a midspan tap service when the customer does some rewiring in an effort to eliminate the service crossing within 10 feet of the pool.
  - 4.3.4.2. The customer provides a clear, level working space so a SMUD crew can safely use a ladder to connect the service drop. This could mean a level working space on the roof and/or on the ground.
  - 4.3.4.3. When the customer service riser will require any couplings above the roof, the following conditions must be met:
    - a. Only a 1-1/2 inch minimum RMC or IMC electrical conduit may be used. Inspection authorities may require a larger size conduit.
    - b. Any coupling above the roofline must be threaded, RMC or IMC electrical conduit.
    - c. If couplings are used, couplings shall be below the brace kit attachment.
    - d. All conduits must be properly braced within 12 inches of the point of attachment.
    - e. Proper braces must include bolts through the rafters or another equivalent structural part of the structure. **No** lag screws will be accepted.
- 4.4. The clearances shown on Page A-15 are minimum requirements in SMUD's service area.

## Appendix A: Design and Construction Drawings

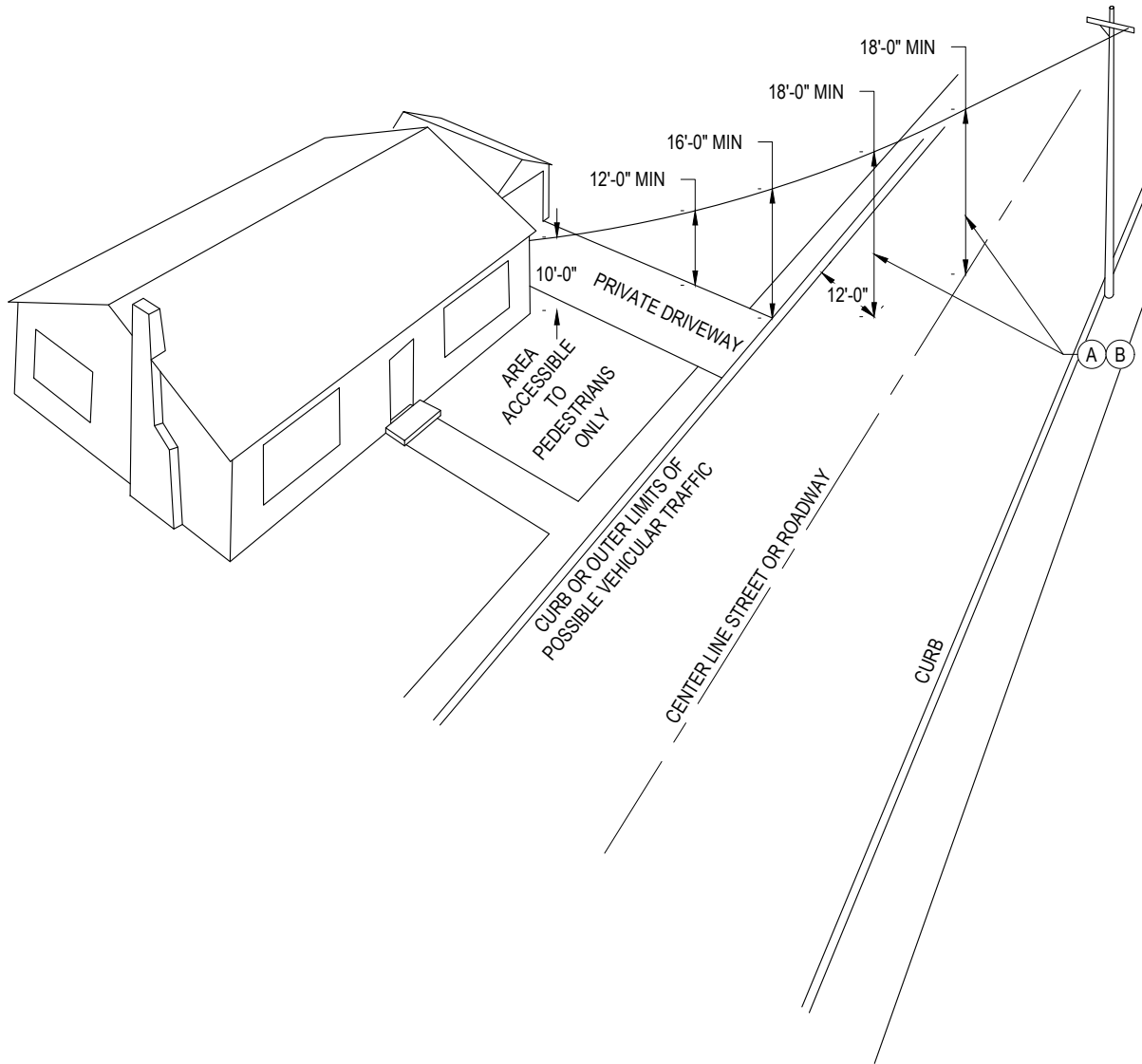
The customer and/or their representatives or contractors shall adhere to the design and construction drawings listed in the table below, unless otherwise specified in writing by a SMUD inspector or designer. The Customer shall review all drawings. Any questions or comments shall be brought to Sacramento Municipal Utility District's (SMUD) attention for clarification or resolution.

### Design and Construction Drawings

Drawing Title	Drawing Identification Code	Page Number
MINIMUM GROUND CLEARANCE FOR SUPPLY SERVICE DROPS 0-300 VOLTS, RESIDENTIAL PREMISES	AG6.0	A-1
REQUIRED MINIMUM CLEARANCES OF METER SOCKET FROM OBSTRUCTIONS	ZM2.0	A-2
TYPICAL INSTALLATION ILLUSTRATING SERVICE HEAD, SERVICE DROP ETC.	ZM3.0	A-3
SERVICE DROP CLEARANCE REQUIREMENTS FOR WINDOWS, DOORS, FIRE ESCAPES, STAIRWAYS, BALCONIES, ETC.	AG6.1	A-4
TYPICAL SERVICE ATTACHMENTS ILLUSTRATING CLEARANCE AND STRENGTH REQUIREMENTS	ZM4.0	A-5
CLEARANCES FOR METER CABINET ENCLOSURES	ZM5.0	A-6
METER PANEL WITHOUT SOCKET BYPASS FACILITY RESIDENTIAL OVERHEAD SERVICE 400 AMPS (CLASS 320), 120/240 VOLTS, SINGLE PHASE, 3 WIRE	ZM6.0	A-7
COMBINATION METER AND CURRENT TRANSFORMER CABINET, MAIN SWITCH OR BREAKER RATED 201-400 AMPS SINGLE PHASE, 3 WIRE, 120/240 VOLT	ZM7.0	A-8
CURRENT TRANSFORMER CABINETS, SINGLE PHASE 3 WIRE, 120/240 VOLT MAIN SWITCH OR BREAKER RATED ABOVE 200 AMPS	ZM8.0	A-9

Drawing Title	Drawing Identification Code	Page Number
CURRENT TRANSFORMER COMPARTMENT, 201-800 AMPS, SINGLE PHASE, 3 WIRE, 120/240 VOLT SERVICE	ZM9.0	A-10
METER ROOM ARRANGEMENTS FOR INDIVIDUALLY METERED APARTMENTS (SELF CONTAINED SOCKET TYPE METERS)	ZM10.0	A-11
SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS DEVICES, 100 AMPS MAXIMUM	ZM11.0	A-12
SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS DEVICES, 200 AMPS MAXIMUM	ZM12.0	A-13
TEST BYPASS BLOCKS FOR SAFETY SOCKET 0-200 AMPS	ZM13.0	A-14
SERVICE CLEARANCES OVER SWIMMING POOLS	AG7.0	A-15
DIAGRAM OF CONNECTIONS, METER SOCKETS FOR SELF-CONTAINED METERS 0-200 AMPS SINGLE PHASE SOCKETS	ZM14.0	A-16
RESIDENTIAL METER REQUIREMENTS	ZM15.0	A-17





**NOTES:**

**VERTICAL CLEARANCES ABOVE RAILS:**

- |    |   |                |
|----|---|----------------|
| A. | CROSSING ABOVE RR TRACKS WITHOUT OVERHEAD TROLLEY WIRE                      | 25'-0" MINIMUM |
| B. | CROSSING ABOVE RR TRACKS WITH OVERHEAD TROLLEY WIRE:                        |                |
|    | (A) ABOVE RAILS WHERE FREIGHT CARS ARE TRANSPORTED                          | 26'-0" MINIMUM |
|    | (B) ABOVE RAILS WHERE FREIGHT CARS ARE NOT TRANSPORTED                      | 23'-0" MINIMUM |
|    | (C) IN EACH CASE THE SERVICE DROP MUST CLEAR TROLLEY WIRES BY NOT LESS THAN | 4'-0" MINIMUM  |
| C. | CROSSING ABOVE PRIVATE DRIVEWAYS OR OTHER AREAS ACCESSIBLE TO VEHICLES      | 12'-0" MINIMUM |
| D. | CROSSING ABOVE AREAS ACCESSIBLE TO PEDESTRIANS ONLY                         | 10'-0" MINIMUM |



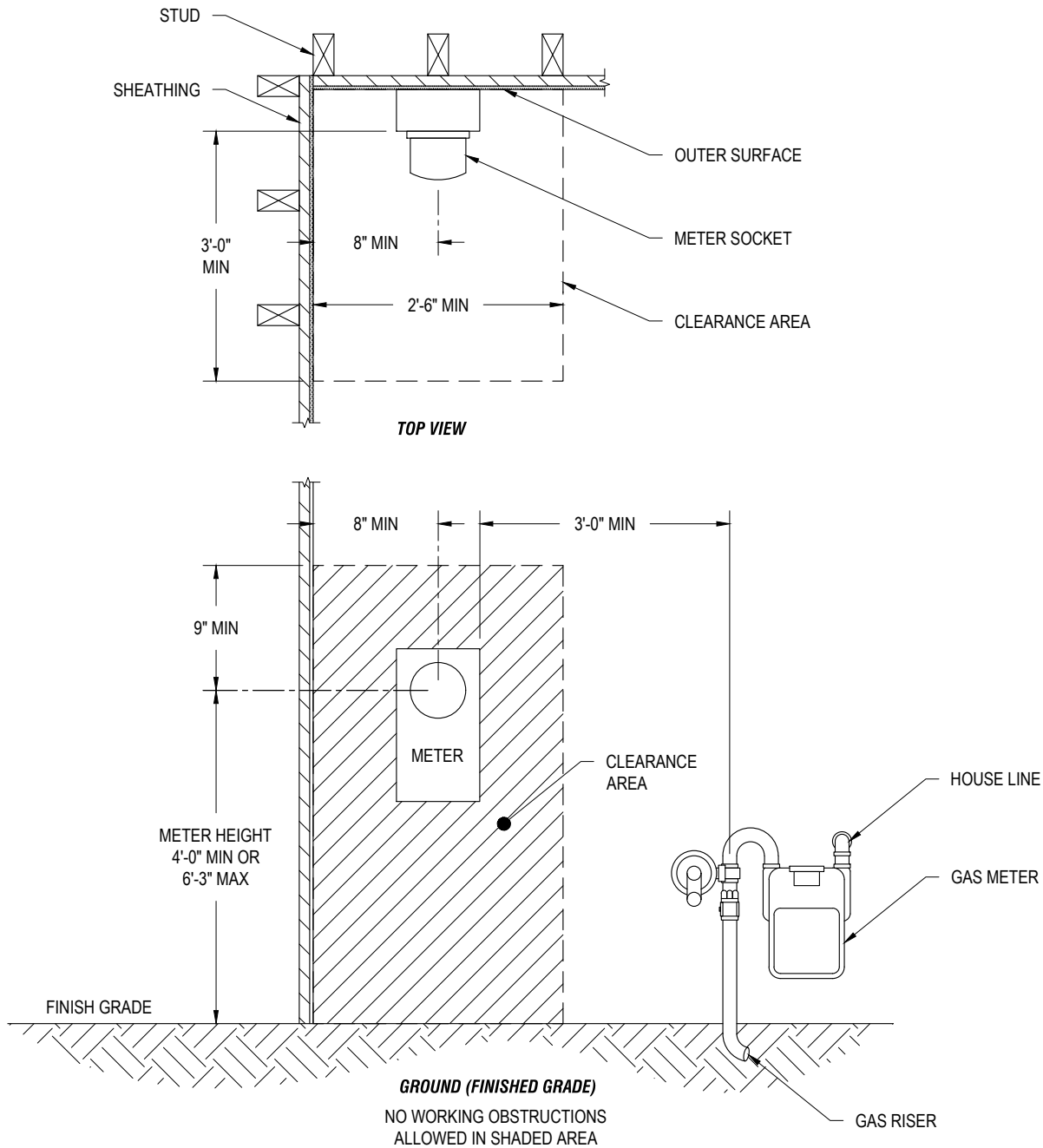
ESR: T002

ESR PG. NO.: A-1

REV. DATE: AUGUST 2024  
REV. NO.: 5

**MINIMUM GROUND CLEARANCE FOR SUPPLY SERVICE  
DROPS 0-300 VOLTS, RESIDENTIAL PREMISES**

STANDARD NO.:  
**AG6.0**



----- INDICATES BOUNDARY OF AREA WHICH MUST BE KEPT CLEAR OF OBSTRUCTIONS.

**NOTES:**

- A. MAINTAIN A CLEARANCE AREA AROUND THE SOCKET AS SHOWN IN THE ILLUSTRATIONS.
- B. THERE MUST BE AN 8" MIN HORIZONTAL & A 9" MIN VERTICAL (ABOVE) CLEARANCE BETWEEN THE CENTER OF THE METER SOCKET & ANY OBSTRUCTION (NO OBSTRUCTIONS IN THE CLEARANCE AREA SEE DRAWING ABOVE).
- C. A LEVEL STANDING SPACE AT LEAST 3'-0" L X 2'-6" W SHALL BE MAINTAINED IN FRONT OF THE METER SOCKET TO ALLOW FOR INSTALLATION, TESTING & READING (SEE SEC. 3-3.1.1.3 PAGE 4).
- D. METERS SHALL BE LOCATED SO THAT THEY WILL NOT BE DAMAGED BY A SWINGING WINDOW, DOOR, OR GATE.
- E. THE SURFACE OF THE WALL ON EITHER SIDE OF A WINDOW, DOOR, OR GATE FOR THE DISTANCE EQUAL TO THE WIDTH OF THE WINDOW, DOOR, OR GATE, IS UNACCEPTABLE AS A METER SPOT, UNLESS A SUITABLE STOP SHALL BE INSTALLED.



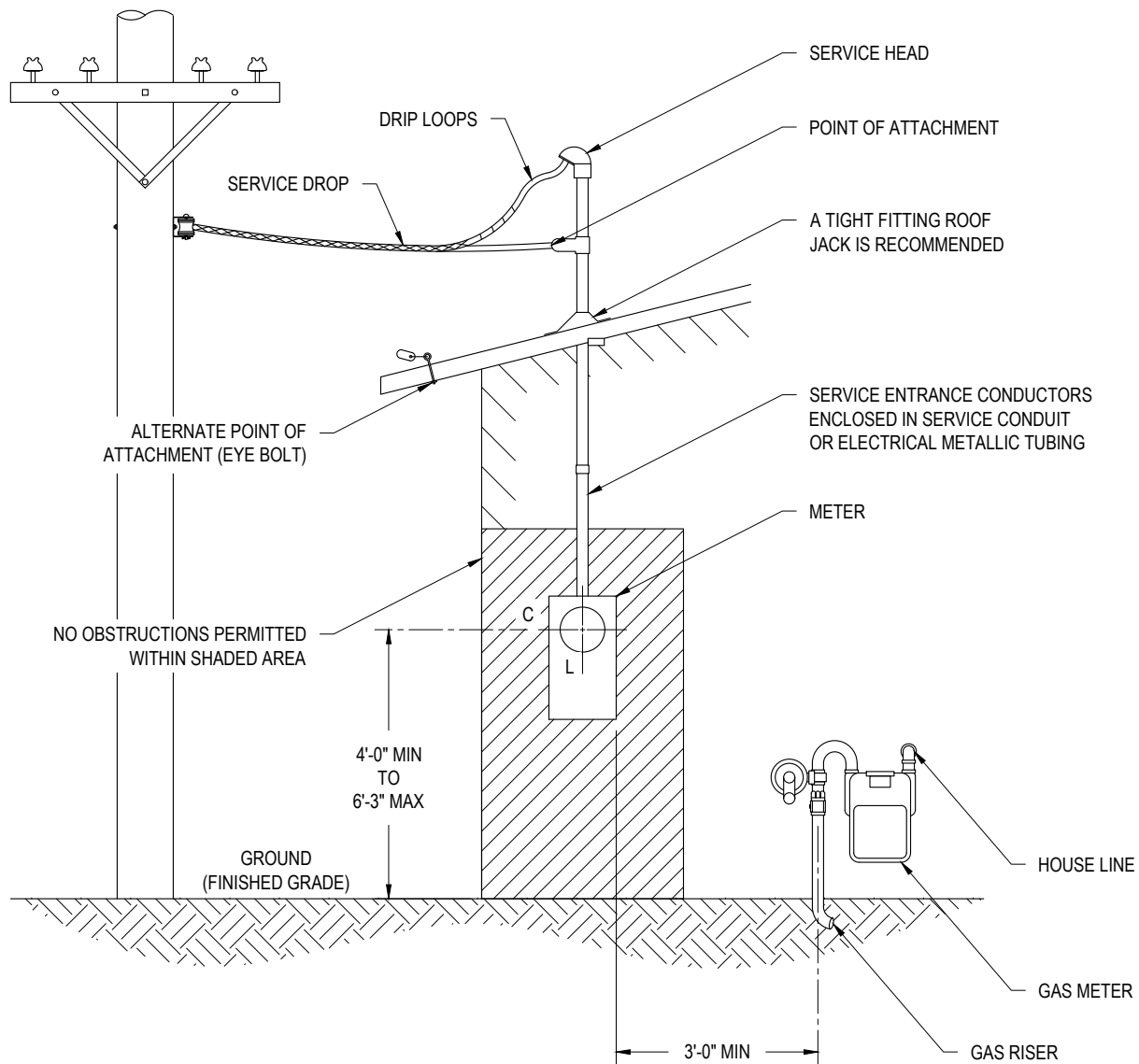
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REV. DATE: AUGUST 2024  
REV. NO.: 5

**REQUIRED MINIMUM CLEARANCES OF METER SOCKET FROM OBSTRUCTIONS**

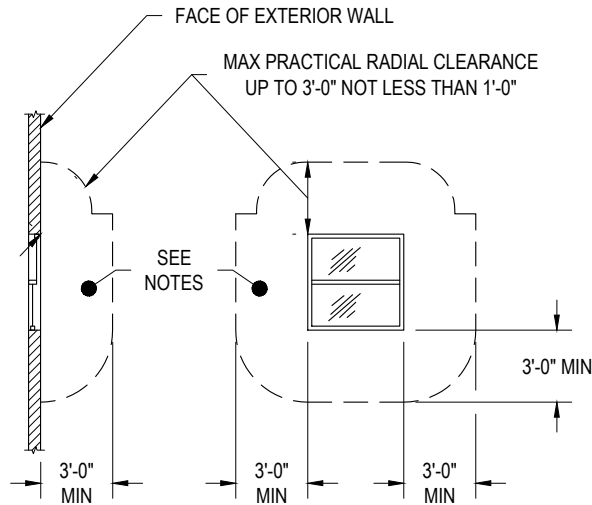
STANDARD NO.:  
**ZM2.0**



**NOTES:**

- A. METER SOCKET CLEARANCE FROM THE GROUND MUST BE MEASURED FROM THE FINISHED GRADE.
- B. WHERE CAPACITY REQUIRES HEAVY SERVICE DROP CONDUCTORS, SMUD'S (T & D LINE DESIGN) DEPARTMENT WILL SPECIFY THAT THE SERVICE DROP IS TO BE 3 SINGLE CONDUCTORS INSTEAD OF CABLE. IN SUCH CASE, 3 EYEBOLTS OR INSULATED CLEAVISES WILL BE REQUIRED.
- C. SEE PAGE A-2 FOR CLEARANCES AROUND THE METER.
- D. ACCESS TO THE CUSTOMER'S POINT OF ATTACHMENT MUST PROVIDE FOR A 1 TO 4 SLOPE TO SET UP THE LADDER USED TO CONNECT SMUD SERVICE & CUSTOMER SERVICE ENTRANCE CABLES.

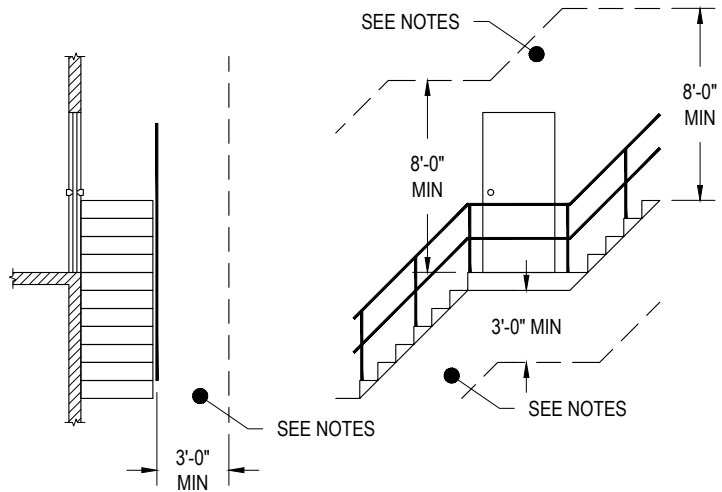
**CLEARANCE FROM WINDOWS,  
DOORS, EXITS, ETC.**



**SIDE VIEW**

**FRONT VIEW**

**CLEARANCE FROM FIRE ESCAPES,  
STAIRWAYS, PORCHES, ETC.**



**SIDE VIEW**

**FRONT VIEW**

----- INDICATES BOUNDARY OF CLEARANCE AREA THROUGH WHICH CONDUCTORS MUST NOT PASS

**NOTES:**

- A. SERVICE WIRES SHOULD NOT BE ATTACHED TO THE BUILDING WALL WITHIN THE ABOVE CLEARANCE AREAS & SHOULD NOT PASS THROUGH CLEARANCE SPACE ILLUSTRATED IN THESE SKETCHES.
- B. THE RULES FOR OVERHEAD LINE CONSTRUCTION, ISSUED BY THE CALIFORNIA PUBLIC UTILITIES COMMISSION, REQUIRE THAT:
  - a. ALL PORTIONS OF THE SERVICE DROP SHALL HAVE A HORIZONTAL CLEARANCE OF 3'-0" FROM ANY EXIT, WINDOW, DOOR OR OTHER POINT AT WHICH HUMAN CONTACT MIGHT BE EXPECTED.
  - b. SERVICE DROPS SHALL BE SO ARRANGED AS TO MINIMIZE HAMPERING & ENDANGERING WORKMEN & FIREMEN IN THE PERFORMANCE OF THEIR DUTIES. THIS IS INTERPRETED TO MEAN THAT SERVICE DROPS SHALL BE SO ARRANGED THAT A FIREMAN CAN PLACE A LADDER AGAINST ANY WINDOW WITHOUT INTERFERENCE OR DANGER.
- C. SMUD WILL NOT BE RESPONSIBLE FOR ANY DAMAGE TO THE BUILDING CAUSED BY RAIN OR STRUCTURAL FAILURE.
- D. WHERE A SMUD T & D LINE DESIGNER SPECIFIES THAT THE SERVICE DROP IS TO BE 3 SINGLE WIRES, CLEARANCE BETWEEN SERVICE DROP CONDUCTORS MUST A MINIMUM OF 6". IF AN 8" MINIMUM BETWEEN POINTS OF ATTACHMENT DOES NOT PROVIDE THE NECESSARY 6" CLEARANCE BETWEEN WIRES, THE SEPARATION BETWEEN THE POINTS OF ATTACHMENT MUST BE INCREASED SUFFICIENTLY TO PROVIDE THE 6" CLEARANCE.
- E. SERVICE ATTACHMENT MUST MEET THE SERVICE DROP CLEARANCE REQUIREMENTS OF LOCAL INSPECTION AUTHORITY.
- F. SERVICE ATTACHMENT MUST ALSO PROVIDE AT LEAST THE FOLLOWING:
  - a. THE MAXIMUM VERTICAL CLEARANCE FOR THE SERVICE CONDUCTOR SHALL BE 8'-0" ABOVE THE ROOF OF THE PREMISES SERVED.
    - EXCEPTIONS:
      - 3'-0" CLEARANCE IF ROOF PITCH IS 4:12 OR STEEPER; OR ROOF NOT CAPABLE OF SUPPORTING A PERSON WALKING.
      - 1'-6" IF VOLTAGE DOES NOT EXCEED 300V & NO MORE THAN 6'-0" OF CONDUCTORS, 4'-0" HORIZONTALLY, PASS ABOVE THE ROOF OVERHANG, & THEY ARE TERMINATED AT A THROUGH-THE-ROOF RACEWAY.
    - b. 8'-0" VERTICAL CLEARANCE FOR INSULATED SERVICE DROPS THAT CROSS OVER ANY METALLIC ROOF ON THE PREMISES SERVED.
      - EXCEPTIONS:
        - 3'-0" CLEARANCE IF ROOF IS NOT CAPABLE OF SUPPORTING A PERSON WALKING.
      - c. 8'-0" VERTICAL CLEARANCE FOR SERVICE DROPS THAT CROSS OVER ANY ROOF ON OTHER PREMISES. DEVIATION FROM THESE CLEARANCES REQUIRES PRIOR APPROVAL BY BOTH THE INSPECTION AUTHORITY & THE T & D LINE DESIGNER.
  - G. THE METHODS OF SUPPORTING SERVICE DROPS SHOWN ON PAGE A-5 MAY BE USED WHERE THE ROOF OVERHANG IS EXPOSED. WHERE THE ROOF OVERHANG IS SEALED, THESE METHODS MAY ALSO BE USED IF THE SERVICE CONDUIT IS VERTICAL THROUGH THE SEALED AREA. HORIZONTAL CONDUIT RUNS ARE NOT TO BE MADE IN A SEALED PORTION.
  - H. WHERE A SERVICE RISER PROJECTS THROUGH A ROOF, THE CONDUCTOR MUST BE A MINIMUM OF 1'-6" ABOVE THE ROOF LINE.
  - I. ALL SERVICE ATTACHMENTS SHALL BE CAPABLE OF WITHSTANDING A MINIMUM SERVICE PULL OF 600 POUNDS WITHOUT DAMAGE TO THE BUILDING STRUCTURE.
  - J. WHERE A PERISCOPE TYPE SERVICE RISER IS USED FOR SERVICE ATTACHMENT, THE SERVICE RISER MUST BE BRACED IF THE CENTER LINE OF LOAD EXCEEDS 2'-6" ABOVE THE ROOF, BRACING MUST BE OF RIGID CONDUIT WITH A BRACE KIT AS ILLUSTRATED ON PAGE A-5, FIG. D.
  - K. COUPLINGS OR SLEEVES WILL NOT BE PERMITTED IN THE PERISCOPE TYPE SERVICE RISER BETWEEN THE UPPERMOST POINT OF SERVICE ATTACHMENT & THE BOTTOM SUPPORT CLAMP.
  - L. LAG SCREWS ARE NOT ALLOWED IN ANY PORTION OF THE SERVICE ATTACHMENT.
  - M. GUY WIRES ARE NOT ALLOWED FOR SERVICE ATTACHMENT SUPPORT.
  - N. CONSULT SMUD'S (T & D LINE DESIGN) DEPARTMENT FOR ANY OTHER POINTS OF ATTACHMENT.
  - O. WHEN THE WEATHERHEAD DOES NOT EXTEND THROUGH THE ROOF DIRECTLY ABOVE THE METER PANEL AN EYEBOLT OR BRACE ARE REQUIRED, SEE FIG C ON PAGE A-5.



**ESR: T002**

**ESR PG. NO.: A-4**

REV. DATE: AUGUST 2024  
REV. NO.: 5

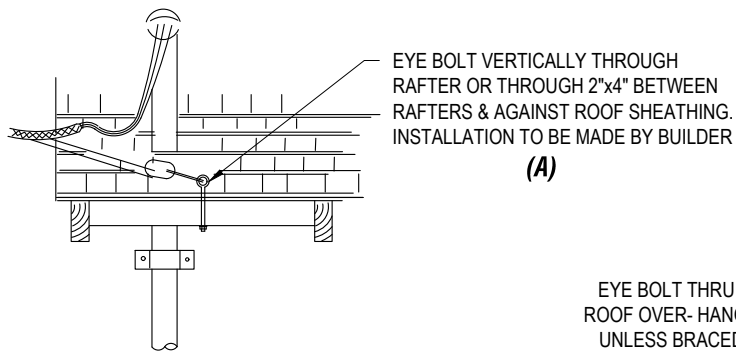
**SERVICE DROP CLEARANCE REQUIREMENTS  
FOR WINDOWS, DOORS, FIRE ESCAPES,  
STAIRWAYS, BALCONIES, ETC**

STANDARD NO.:

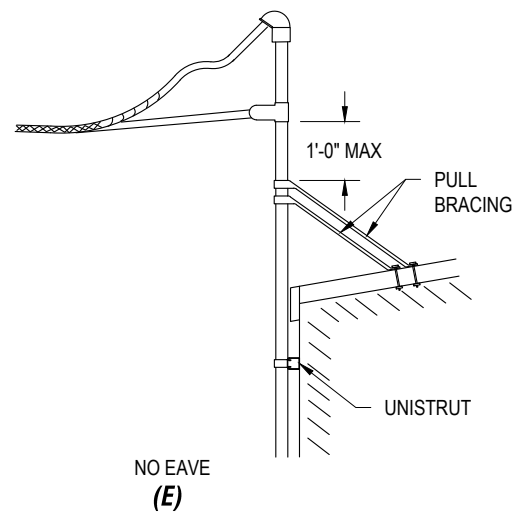
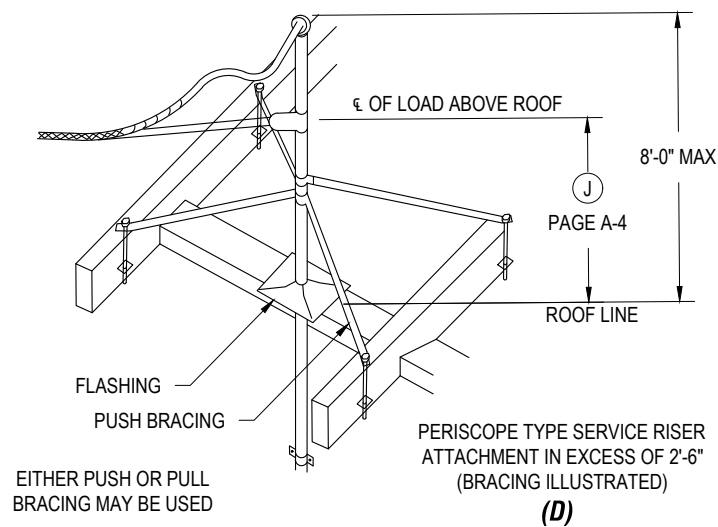
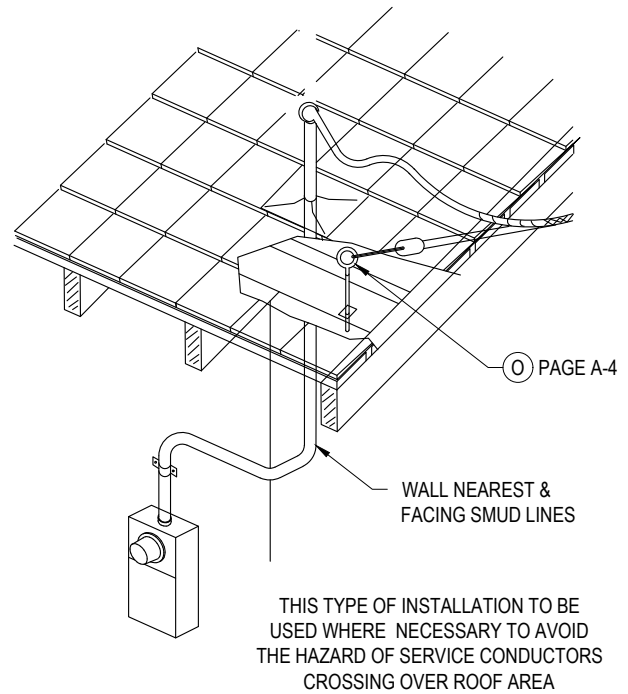
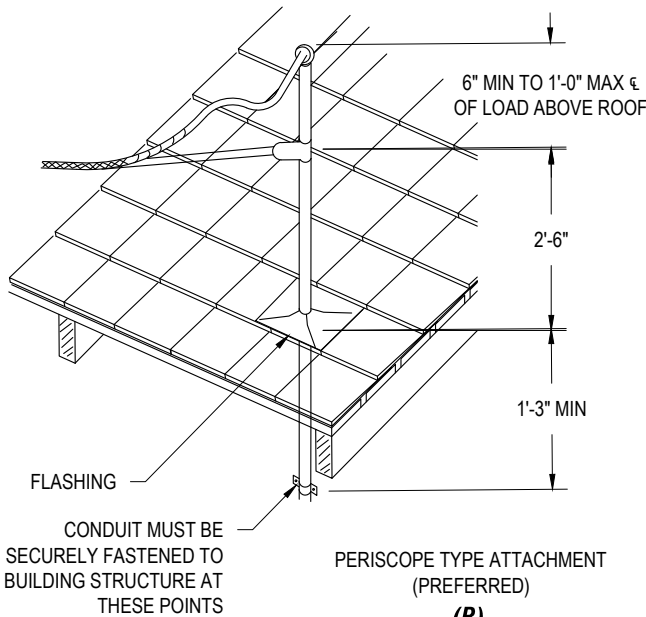
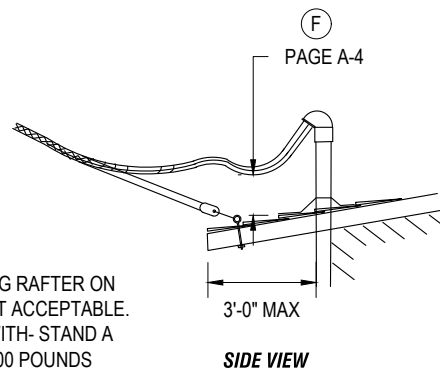
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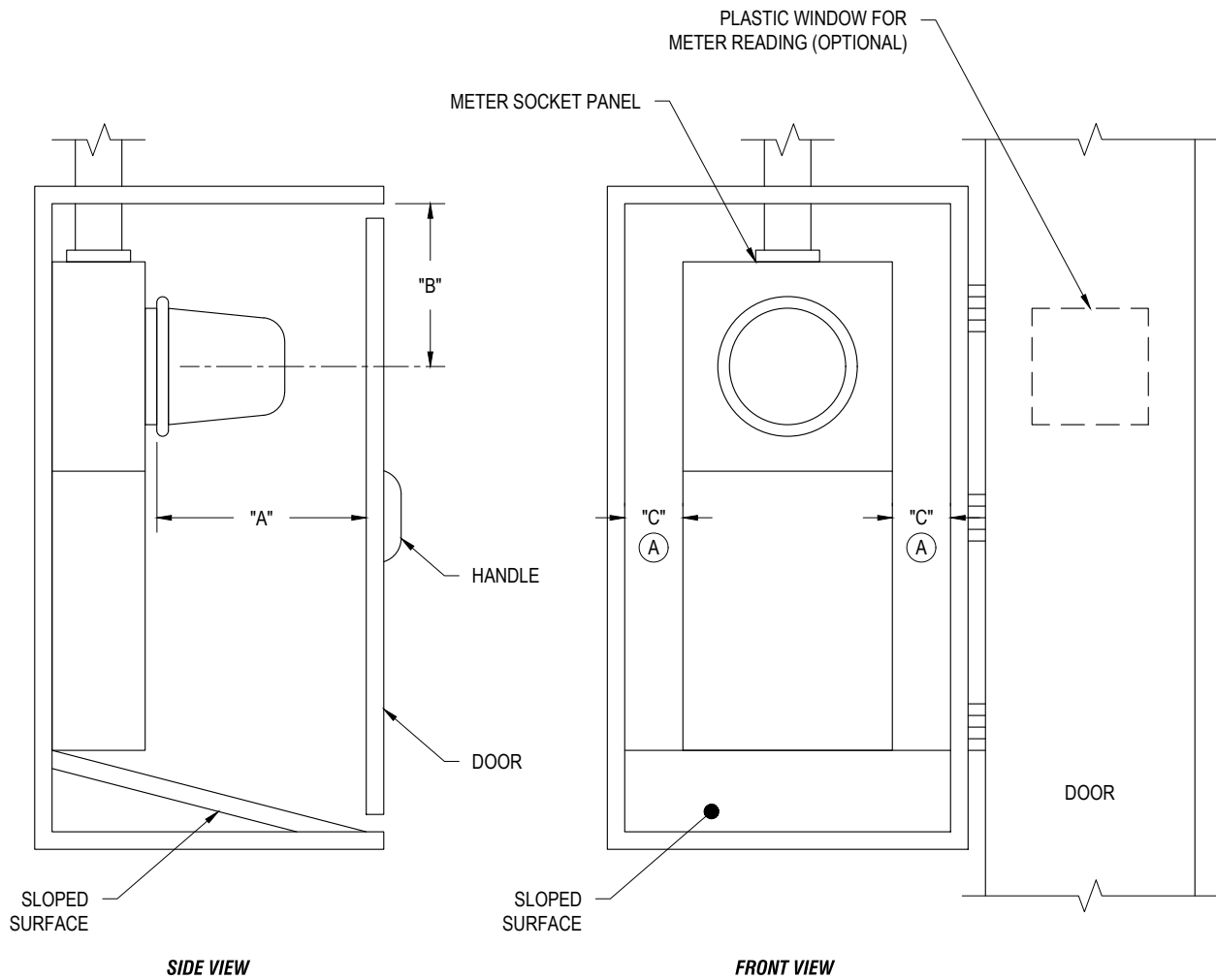
PAGE 1 OF 1





EYE BOLT THRU FACING RAFTER ON ROOF OVER-HANGS NOT ACCEPTABLE. UNLESS BRACED TO WITH-STAND A SERVICE PULL OF 600 POUNDS





DIMENSION "A":  
 7" MINIMUM FOR RESIDENTIAL SINGLE-PHASE APARTMENT METERS 1'-3" MAXIMUM  
 9" MINIMUM FOR COMMERCIAL SINGLE PHASE APARTMENT "HOUSE" METERS 1'-3" MAXIMUM

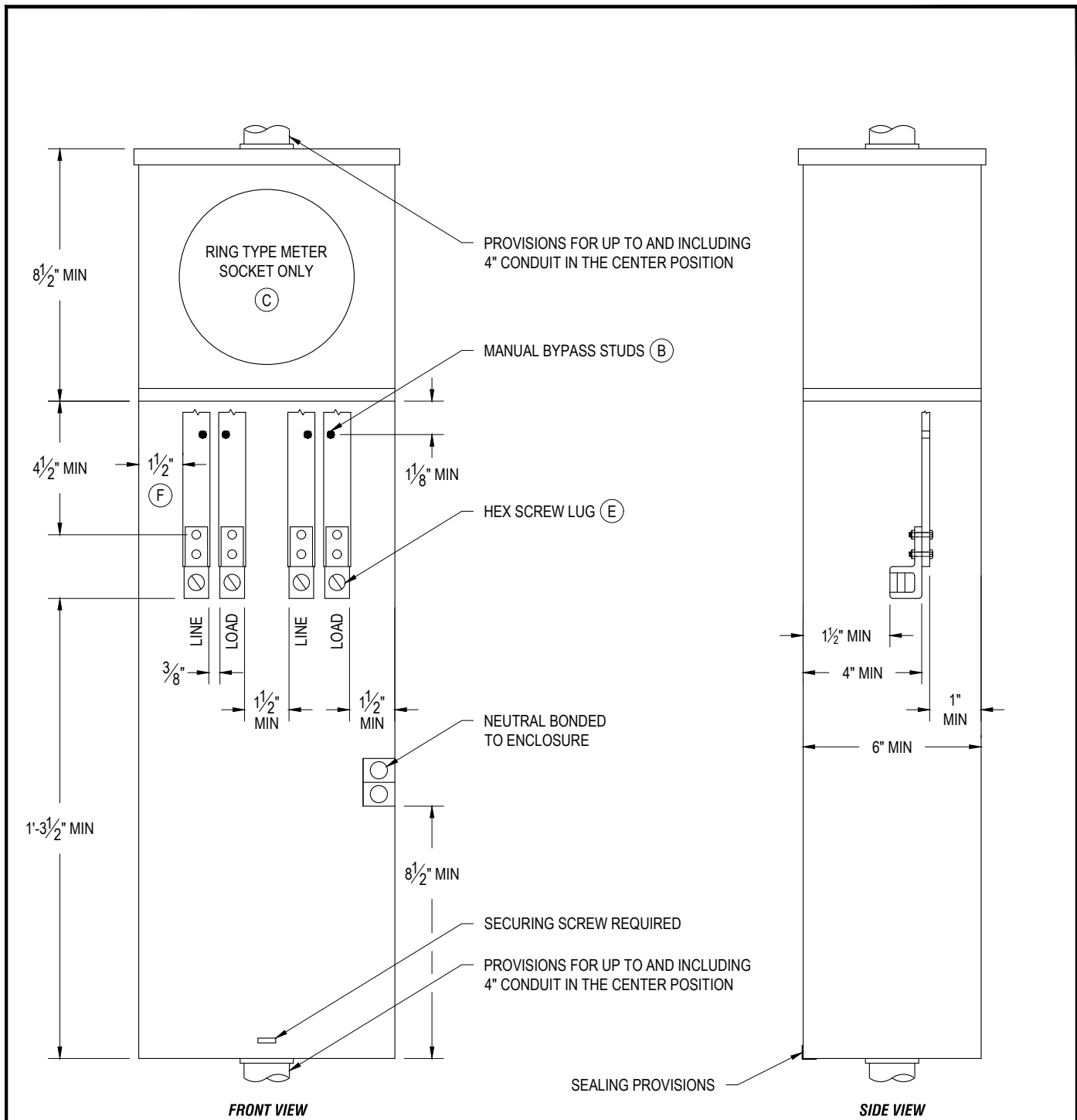
DIMENSION "B":  
 7" MINIMUM FOR RESIDENTIAL SINGLE-PHASE

DIMENSION "C":  
 2½" MINIMUM FOR RESIDENTIAL SINGLE PHASE (A)

NOTE: DIMENSION "A" APPLIES ONLY TO THAT PORTION OF THE CABINET ENCLOSING DOOR IN FRONT OF THE METER.


**NOTES:**

- (A) METER SOCKETS, HAVING JAWS THAT MUST BE TIGHTENED WITH A WRENCH, SHALL BE INSTALLED WITH A MINIMUM OF 10" CLEAR SPACE ON EACH SIDE ("C") TO PERMIT USE OF THE WRENCH.
- B. CARE SHOULD BE EXERCISED TO DESIGN THE CABINET SUCH THAT NEITHER THE ROOF NOR DOOR SUPPORTS WILL INTERFERE WITH INSTALLATION OF THE METER. WITH THE CABINET DOOR OPEN, A CLEAR SPACE OF AT LEAST 1'-3" DIRECTLY IN FRONT OF THE SOCKET IS REQUIRED TO INSERT THE METER INTO THE SOCKET.
- C. WHEN THE CABINET DOOR IS LOCKABLE, A DOUBLE LOCK ARRANGEMENT IS REQUIRED.



**NOTES:**

- A. THE PANEL SHOWN IS A COMBINATION DEVICE HAVING BOTH A UTILITY SECTION (I.E. PULL SECTION & METERING SECTION) & CUSTOMER SECTION, BUT MAY ALSO BE CONSTRUCTED WITHOUT AN ATTACHED CUSTOMER SECTION.
- B. THE PANEL SHALL BE MARKED WITH EITHER A RATING OF "320 AMPERES CONTINUOUS" OR "400 AMPERES MAXIMUM (320 AMPERES CONTINUOUS)".
- (C). THE PANEL SHALL BE PROVIDED WITH A SEALING RING & THE METER SOCKET SHALL BE RIGIDLY MOUNTED ON A SUPPORT & ATTACHED TO THE METER PANEL.
- D. SEE EUSERC DRAWING 302A.

 <p>Sacramento Municipal Utility District</p>	<p><b>ESR: T002</b></p>	<p><b>ESR PG. NO.: A-7</b></p>	<p>REV. DATE: AUGUST 2024</p> <p>REV. NO.: 5</p>
	<p><b>METER PANEL WITHOUT SOCKET BYPASS FACILITY RESIDENTIAL OVERHEAD SERVICE 400 AMPS (CLASS 320), 120/240 VOLTS, SINGLE PHASE, 3 WIRE</b></p>		<p>STANDARD NO.: <b>ZM6.0</b> PAGE 1 OF 1</p>

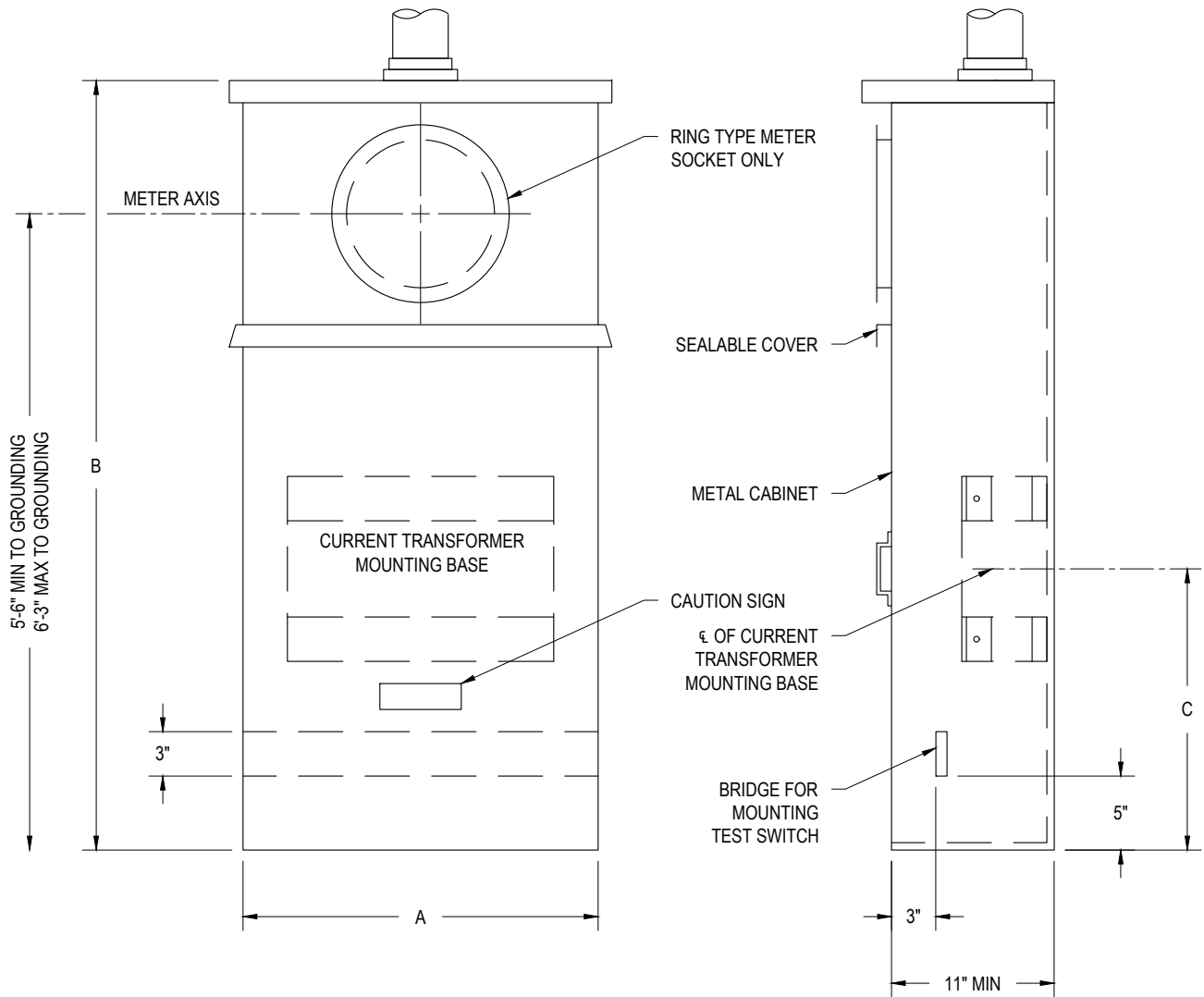


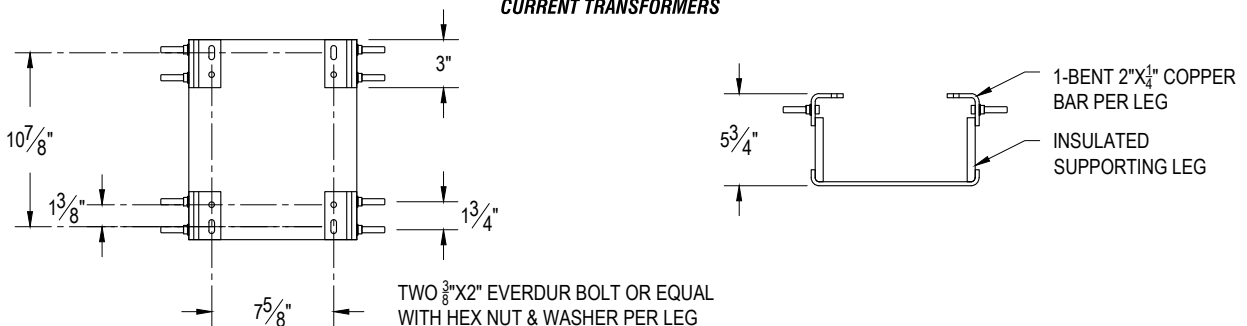
TABLE - 1

MINIMUM DIMENSIONS	CABINET			TRANSFORMER MOUNTING BASE	MAXIMUM WIRE SIZE	USE
	A	B	C			
2'-0" X 3'-6" X 11"	2'-0"	4'-4"	1'-7"	FIG B PG C-9	500,000 (A)	1Ø

NOTES:

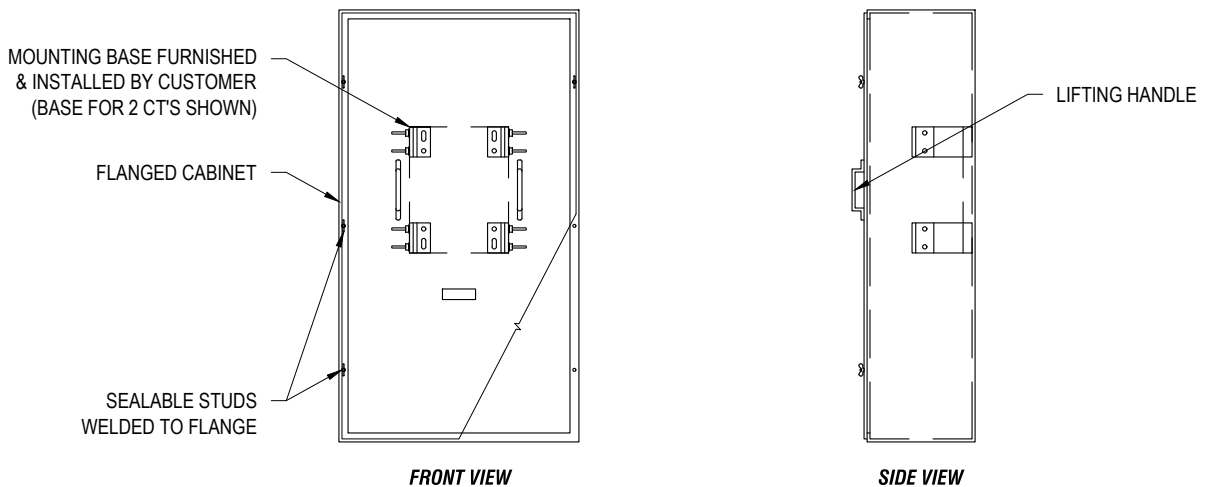
- (A) 1Ø CONDUCTORS LARGER THAN 500MCM SHALL NOT BE INSTALLED EXCEPT WHEN REQUIRED BY CODE OR ORDINANCE FOR 400 AMPERE CAPACITY.

MOUNTING BASE FOR TWO CURRENT TRANSFORMERS



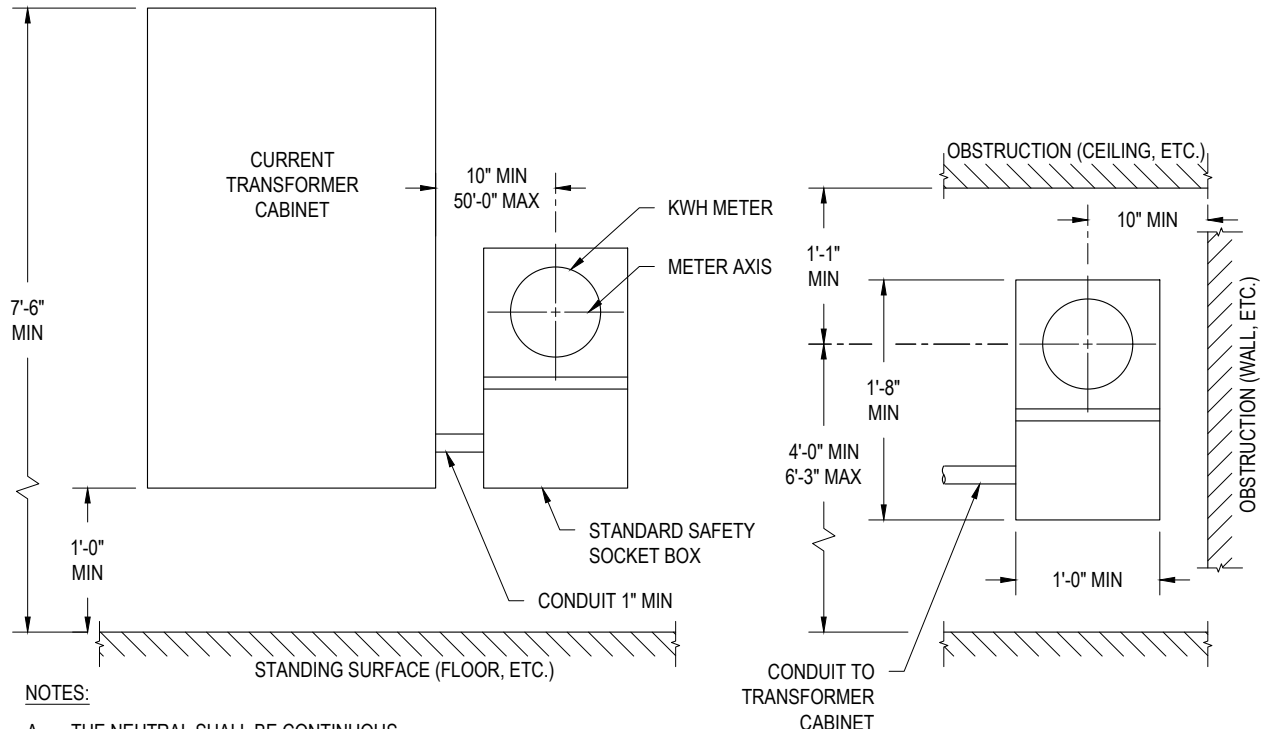
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**COMBINATION METER & CURRENT TRANSFORMER CABINET, MAIN SWITCH OR BREAKER RATED 201-400 AMPS SINGLE PHASE, 3 WIRE, 120/240 VOLT**

REV. DATE: AUGUST 2024 REV. NO.: 5  
 STANDARD NO.: **ZM7.0**  
 PAGE 1 OF 1




GENERAL ARRANGEMENT  
CURRENT TRANSFORMER CABINET INSTALLATION

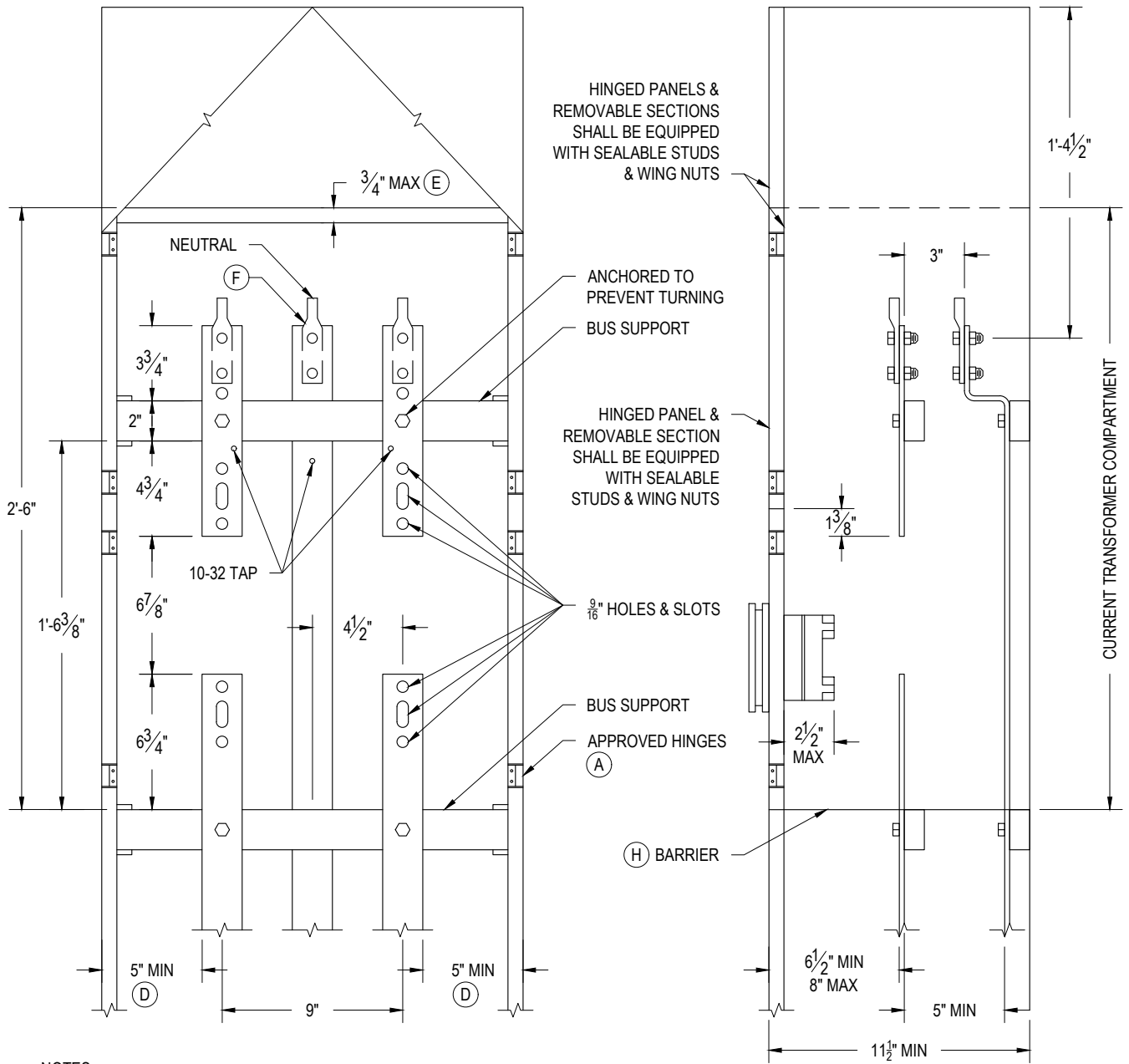
TYPE OF SERVICE	MINIMUM CABINET SIZE	MOUNTING BASE
3-WIRE SERVICE - 1Ø	2'-0" X 3'-6" X 11"	TWO CURRENT TRANSFORMER BASE



**NOTES:**

- A. THE NEUTRAL SHALL BE CONTINUOUS.
- B. THE DIRECTION OF FEED THROUGH THE CURRENT TRANSFORMER CABINET SHALL BE VERTICAL.
- C. ALL SAFETY SOCKET BOXES ARE TO BE INSTALLED PLUMB.
- D. FOR OUTDOOR INSTALLATIONS, A RAIN-TIGHT TRANSFORMER CABINET & RAIN-TIGHT METER ENCLOSURE ARE NECESSARY.
- E. A CLEAR WORKING SPACE OF AT LEAST 3'-0" MUST EXTEND FROM THE SURFACE OF THE METERING EQUIPMENT.
- F. THE METER HEIGHT MAY BE REDUCED TO 3'-0" WHEN IN A METER ROOM OR AN APPROVED CABINET.
- G. THE COVER SHALL BE SEALABLE.
- H. THE COVER SHALL NOT BE ATTACHED BY MEANS OF SCREWS.
- I. A HINGED COVER MAY BE USED, PROVIDED THERE IS PROPER CLEARANCE TO OPEN THE COVER WHEN THE CABINET IS INSTALLED.
- J. THE CUSTOMER SHALL FURNISH LUGS & CONNECT CABLE TO THE CURRENT TRANSFORMER MOUNTING BASE.
- K. THE GROUNDING LUG SHALL BE PROVIDED BY SMUD.
- L. NO CONNECTION SHALL BE MADE IN ANY INSTRUMENT TRANSFORMER CABINET TO SUPPLY ANY OTHER METER. IN ADDITION, NO MORE THAN ONE LOAD CIRCUIT SHALL LEAVE ANY SUCH CABINET, EXCEPT WHEN REQUIRED BY SMUD.
- M. FOR SINGLE PHASE MANUFACTURER METER PANEL/CURRENT TRANSFORMER CABINET INFORMATION PLEASE SEE ESR T004, DRAWING A-6.

 Sacramento Municipal Utility District	<b>ESR: T002</b>	<b>ESR PG. NO.: A-9</b>	REV. DATE: AUGUST 2024 REV. NO.: 5
	<b>CURRENT TRANSFORMER CABINETS, SINGLE PHASE          3 WIRE, 120/240 VOLT MAIN SWITCH OR BREAKER          RATED 200-400 AMPS</b>		STANDARD NO.: <b>ZM8.0</b> PAGE 1 OF 1



**NOTES:**

- (A) THE STATIONARY PORTION OF THE HINGES SHALL BE ATTACHED TO BOTH SIDES OF THE SWITCHBOARD IN ORDER TO PERMIT READY INTERCHANGEABILITY OF HINGED PANELS TO THE RIGHT OR LEFT SIDE.
- B. THE COMPARTMENT SHALL BE ON THE SUPPLY SIDE OF THE MAIN SWITCH OR BREAKER.
- C. THE DIRECTION OF THE FEED SHALL BE VERTICAL, & NO OTHER CONDUCTORS SHALL PASS THROUGH THIS COMPARTMENT.
- (D) THE CLEARANCE TO THE SIDE OF EACH COMPARTMENT SHALL BE INCREASED BY THE AMOUNT BY WHICH THE CORNER ANGLE EXCEEDS 1°.
- (E) RETURN FLANGES FOR THE LOWER & UPPER METAL PANEL SUPPORT SHALL NOT PROJECT MORE THAN 3/4" UP OR DOWN FROM THE ADJACENT SWITCHBOARD PANELS.
- (F) EACH BUS SHALL HAVE A CONNECTOR THAT WILL ACCEPT STRANDED CONDUCTORS HAVING THE AMPERE CAPACITY OF THE MAIN SWITCH OR BREAKER.
- G. THE NEUTRAL MAY BE LOCATED ON THE SIDE WALL OR AT EITHER SIDE.
- (H) THE BARRIER SHALL BE OF INSULATING, NONTRACKING MATERIAL & HAVE A MINIMUM OF 24 VENT HOLES OF Ø3/8".
- I. THE BUS DIMENSIONS SHALL BE A MAXIMUM OF 3/4" X 2" & A MINIMUM OF 1/4" X 2". WHEN A LAMINATED BUS IS USED, THERE SHALL BE NO SPACE BETWEEN LAMINATIONS IN THE CURRENT TRANSFORMER COMPARTMENT.



ESR: T002

ESR PG. NO.: A-10

REV. DATE: AUGUST 2024  
REV. NO.: 5

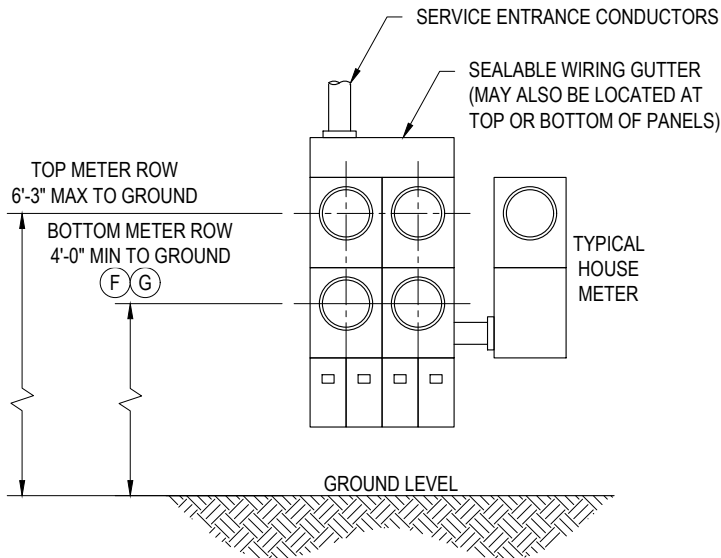
CURRENT TRANSFORMER COMPARTMENT,  
201-400 AMPS, SINGLE PHASE, 3 WIRE,  
120/240 VOLT SERVICE

STANDARD NO.:

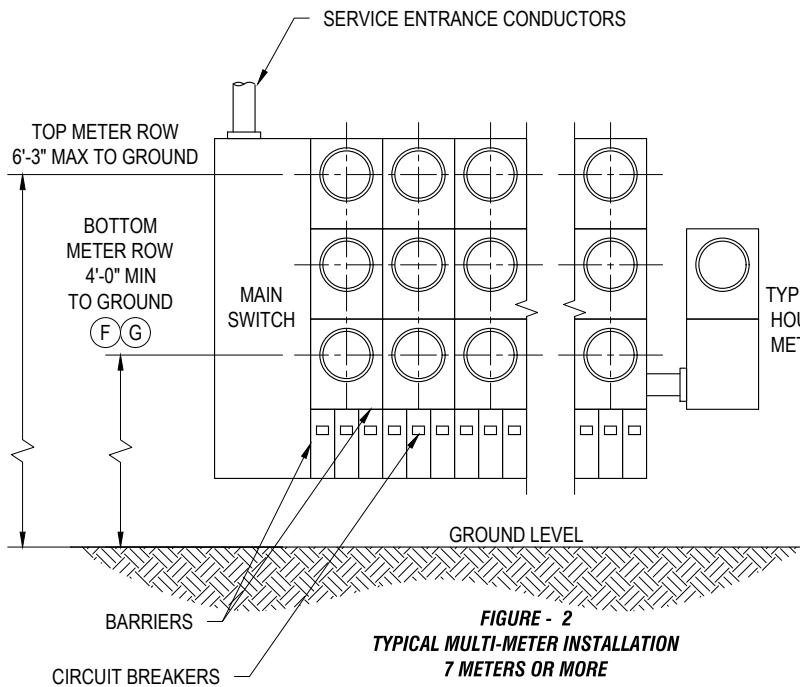
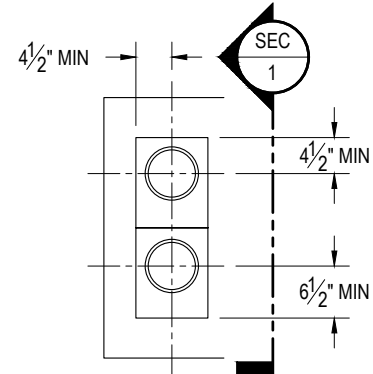
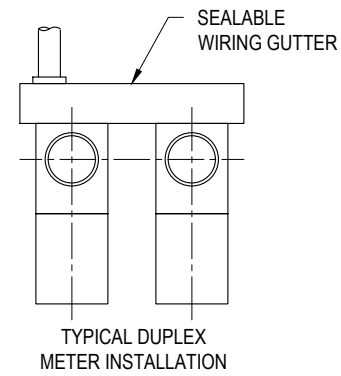
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PAGE 1 OF 1

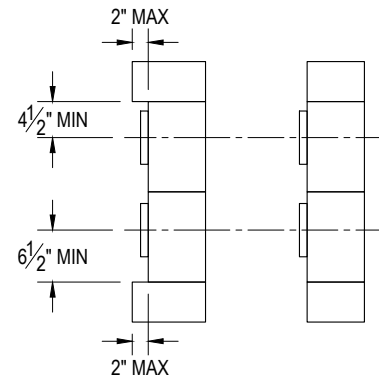




**FIGURE - 1**  
**TYPICAL MULTI-METER INSTALLATION**  
**6 METERS OR LESS INCLUDES HOME METER**



**FIGURE - 2**  
**TYPICAL MULTI-METER INSTALLATION**  
**7 METERS OR MORE**



**SECTION - 1**  
**RECESSED**  
**METER SOCKETS**

**SECTION - 1**  
**FLUSH METER**  
**SOCKETS**

**NOTES:**

- A. TEST BYPASS DEVICES ARE NOT TO BE INSTALLED ON INDIVIDUAL APARTMENT METERS.
- B. FOR TEST BYPASS REQUIREMENTS ON APARTMENT "HOUSE" METERS, SEE PAGES A-12 THROUGH A-14.
- C. THE PANEL DESIGN SHALL PERMIT CONVENIENT REPLACEMENT OF ANY INDIVIDUAL METER SOCKET JAW ASSEMBLY.
- D. METER PANELS SHALL BE SEALABLE.
- E. BEFORE USING THESE ARRANGEMENTS ON 3-PHASE, 4-WIRE SERVICES, CONSULT SMUD.
- (F) FOR OUTDOOR INSTALLATIONS, THE MAXIMUM METER HEIGHT IS 6'-3" & THE MINIMUM IS 4'-0". WHEN VERTICALLY STACKED, THE MINIMUM METER HEIGHT MAY BE REDUCED TO 3'-6".
- (G) FOR INSTALLATIONS INSIDE A DOUBLE LOCKED CABINET OR METER ROOM THE MINIMUM METER HEIGHT MAY BE REDUCED TO 3'-0".



ESR: T002

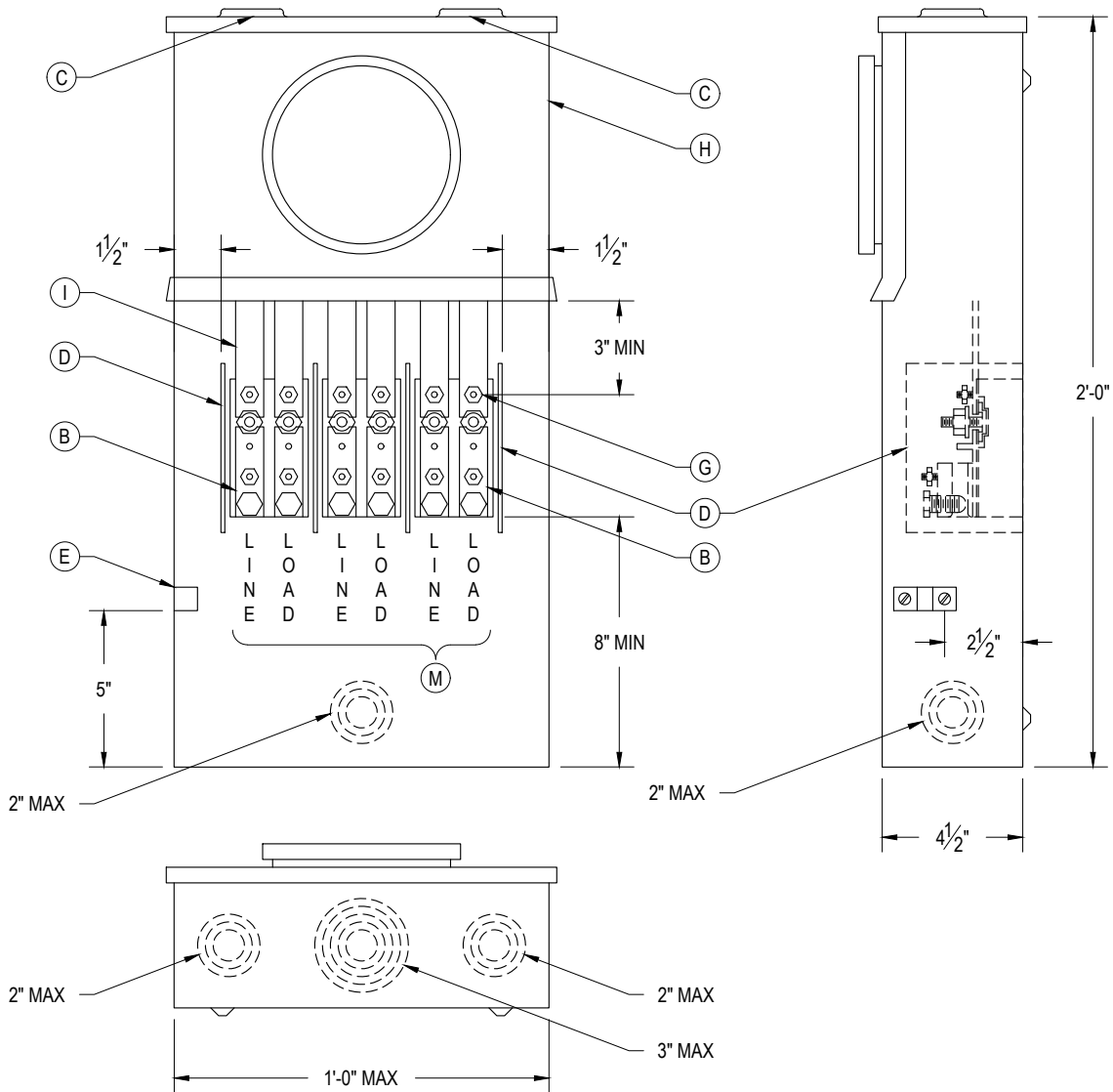
ESR PG. NO.: A-11

REV. DATE: AUGUST 2024  
 REV. NO.: 5

**METER ROOM ARRANGEMENTS FOR INDIVIDUALLY  
 METERED APARTMENTS (SELF CONTAINED  
 SOCKET TYPE METERS)**

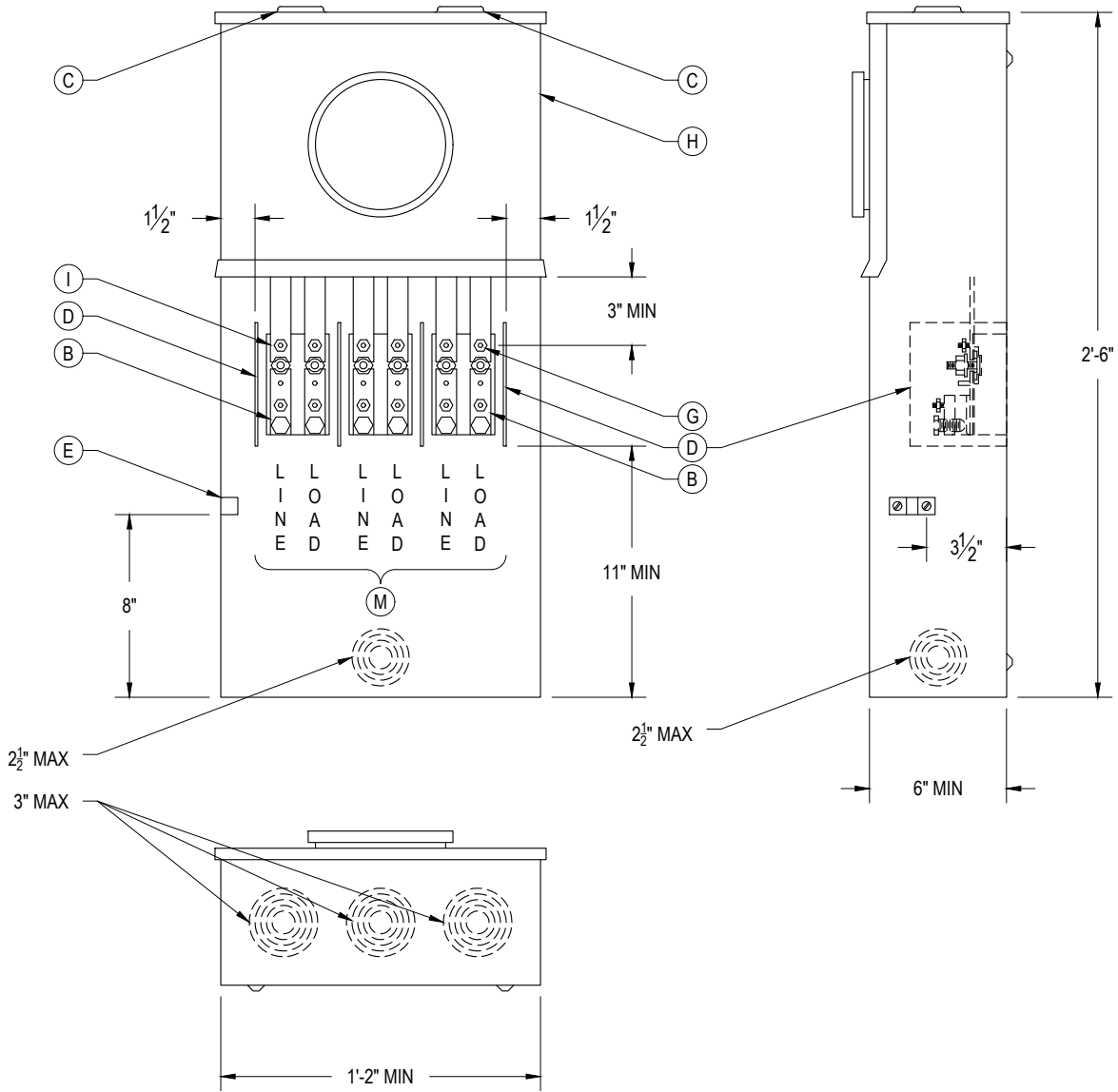
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PAGE 1 OF 1




**NOTES:**

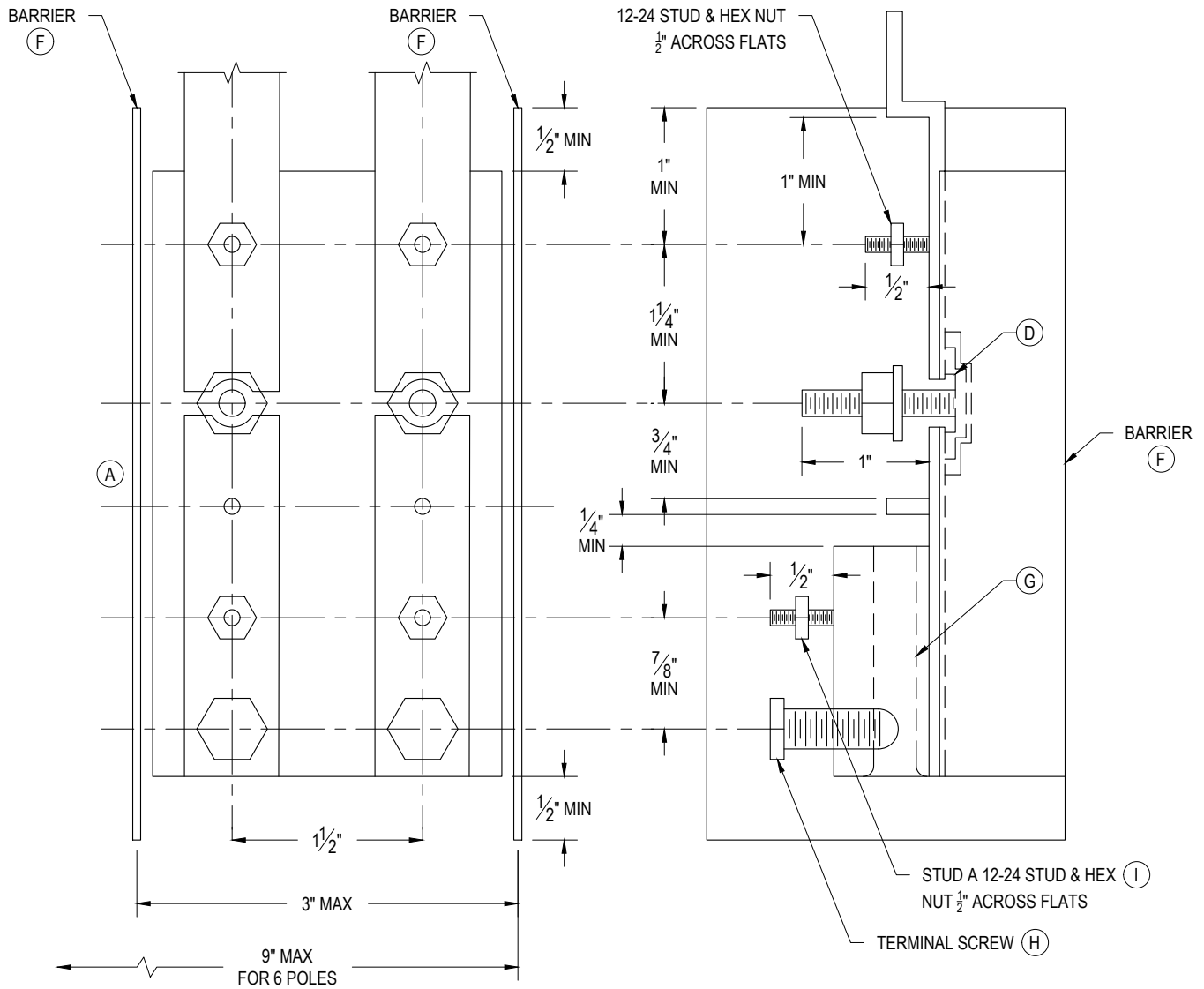
- A. SELF-CONTAINED METER SOCKETS SHALL BE U/L CURRENT RATED FOR CONTINUOUS DUTY.
- B. ALUMINUM BODIED TERMINALS SHALL BE USED FOR NO. 6 THROUGH NO. 1/0 WIRE.
- C. HUBS MUST BE CAPPED OFF.
- D. RIGID INSULATING BARRIERS MUST BE USED.
- E. INSULATED, BONDABLE VERTICAL LAY-IN, DOUBLE NEUTRAL LUG WITH NO. 1/0 WIRE CAPACITY.
- F. TEST BLOCKS SHALL BE BUSSED OR WIRED TO SOCKET JAWS OR TERMINALS.
- G. UPPER TEST CONNECTOR STUDS.
- H. ALL SECTION COVERS SHALL BE INDEPENDENTLY REMOVABLE. THE UPPER COVER SHALL BE NONREMOVABLE WHEN THE METER IS IN PLACE. THE LOWER COVER SHALL BE SEALABLE & PERMANENTLY LABELED: "DO NOT BREAK SEALS, NO FUSES INSIDE."
- I. FOR 3/Ø, 4 WIRE, CONNECT THE 7TH JAW TO THE BODY OF THE NEUTRAL LUG WITH NO. 8 COPPER WIRE.
- J. FOR 3/Ø, 4 WIRE DELTA, IDENTIFY THE RIGHT HAND TEST BYPASS BLOCK (2 POLES) AS THE POWER LEG.
- K. FOR 1/Ø, 3 WIRE, OMIT THE CENTER BLOCK & ASSOCIATED BARRIERS.
- L. FOR 1/Ø, 3 WIRE, 120/208V, OMIT THE CENTER BLOCK & ASSOCIATED BARRIERS & CONNECT THE 5TH JAW TO THE BODY OF THE NEUTRAL LUG WITH NO. 8 COPPER WIRE.
- M. DECALS ON THE INSIDE BACK OF THE ENCLOSURE MUST BE IN 3/4" MINIMUM HIGH BLOCK LETTERS.
- N. TEST BLOCK DETAILS ARE ON PAGE A-14.



**NOTES:**

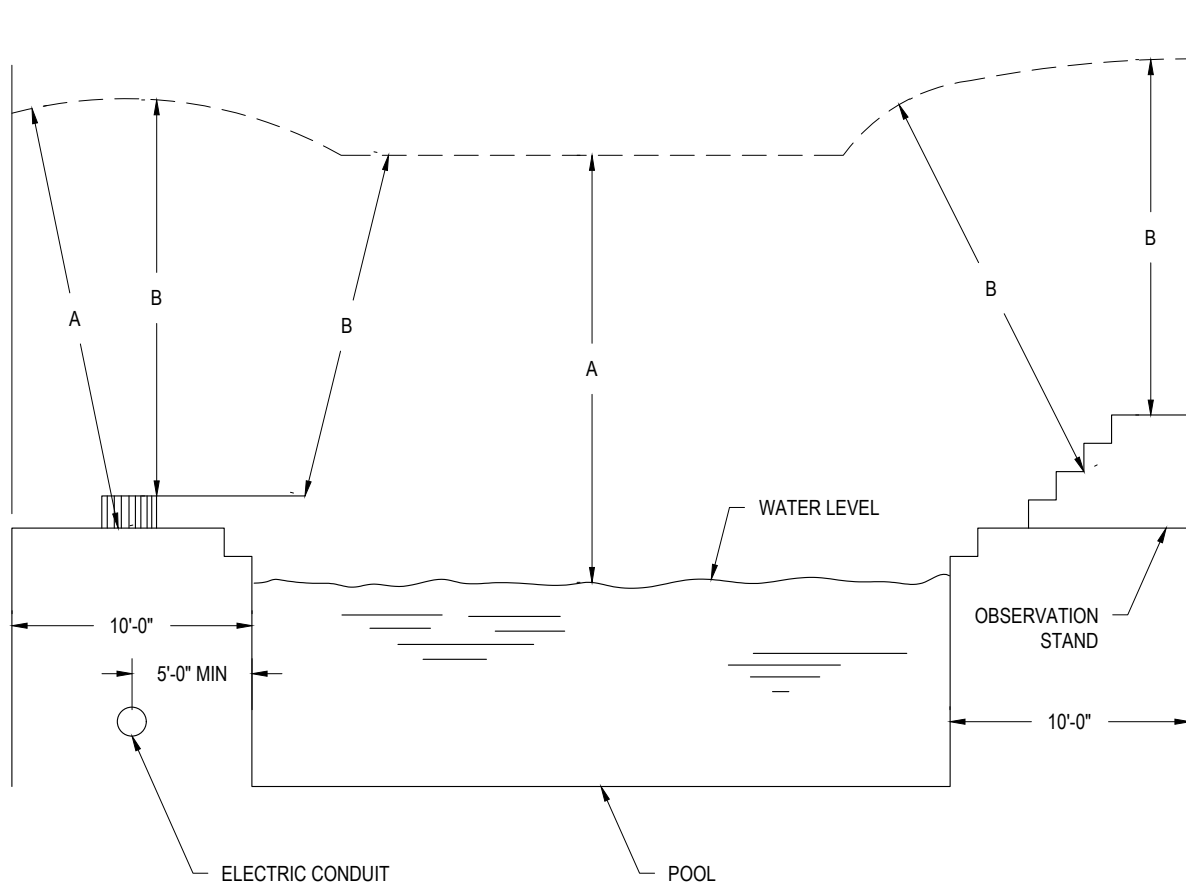
- A. SELF-CONTAINED METER SOCKETS SHALL BE U/L CURRENT RATED FOR CONTINUOUS DUTY.
- B. ALUMINUM BODIED TERMINALS SHALL BE USED FOR NO. 1/0 THROUGH NO. 250 MCM WIRE.
- C. HUBS MUST BE CAPPED OFF.
- D. RIGID INSULATING BARRIERS MUST BE USED.
- E. INSULATED, BONDABLE VERTICAL LAY-IN, DOUBLE NEUTRAL LUG WITH NO. 250 MCM WIRE CAPACITY.
- F. TEST BLOCKS SHALL BE BUSSED OR WIRED TO SOCKET JAWS OR TERMINALS.
- G. UPPER TEST CONNECTOR STUDS.
- H. ALL SECTION COVERS SHALL BE INDEPENDENTLY REMOVABLE. THE UPPER COVER SHALL BE NONREMOVABLE WHEN THE METER IS IN PLACE. THE LOWER COVER SHALL BE SEALABLE & PERMANENTLY LABELED: "DO NOT BREAK SEALS, NO FUSES INSIDE."
- I. FOR 3/Ø, 4 WIRE, CONNECT THE 7TH JAW TO THE BODY OF THE NEUTRAL LUG WITH NO. 8 COPPER WIRE.
- J. FOR 3/Ø, 4 WIRE DELTA, IDENTIFY THE RIGHT HAND TEST BYPASS BLOCK (2 POLES) AS THE POWER LEG.
- K. FOR 1/Ø, 3 WIRE, OMIT THE CENTER BLOCK & ASSOCIATED BARRIERS.
- L. FOR 1/Ø, 3 WIRE, 120/208V, OMIT THE CENTER BLOCK & ASSOCIATED BARRIERS & CONNECT THE 5TH JAW TO THE BODY OF THE NEUTRAL LUG WITH NO. 8 COPPER WIRE.
- M. DECALS ON THE INSIDE BACK OF THE ENCLOSURE MUST BE IN 3/4" MINIMUM HIGH BLOCK LETTERS.
- N. TEST BLOCK DETAILS ARE ON PAGE A-14.

 <p><b>SMUD</b> Sacramento Municipal Utility District</p>	ESR: T002	ESR PG. NO.: A-13	REV. DATE: AUGUST 2024	REV. NO.: 5
	<p><b>SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS DEVICES, 200 AMPS MAXIMUM</b></p>			<p>STANDARD NO.: <b>ZM12.0</b> PAGE 1 OF 1</p>



**NOTES:**

- (A) THE STRIKE DISTANCE BETWEEN THE UPPER & LOWER BUS SECTIONS SHALL NOT BE LESS THAN  $\frac{1}{4}$ " WHEN THE SHORTING NUT IS BACKED OFF.
- B. THE CIRCUIT-CLOSING NUT SHALL BE A HEX NUT  $\frac{5}{8}$ " ACROSS FLATS WITH PLATED COPPER WASHER ATTACHED & HAVE THREADS COUNTER-BORED AT THE BOTTOM TO FACILITATE REINSTALLATION. THE BOLT HEAD SHALL BE SECURED IN PLACE TO PREVENT TURNING & BACKOUT.
- C. THE CIRCUIT-CLOSING NUT & BOLT ASSEMBLY SHALL MAINTAIN THE APPLIED CONTACT PRESSURE BETWEEN THE PLATED COPPER WASHER & THE BUS MEMBERS OF THE TEST BYPASS BLOCK.
- (D) THE INSULATING WASHER SHALL BE MADE FROM DIMENSIONALLY STABLE, NONTRACKING MATERIAL & SHALL PROVIDE A MINIMUM OF  $\frac{1}{8}$ " CREEP DISTANCE BETWEEN THE BOLT & THE BUS SECTIONS. BUS SECTIONS SHALL BE PLATED.
- E. WIRE STOPS SHALL EXTEND TO THE CENTER OF THE TERMINAL OPENING OR BEYOND.
- (F) RIGID INSULATING BARRIERS SHALL PROJECT AT LEAST  $\frac{1}{4}$ " BEYOND ANY ENERGIZED PARTS WHEN THE MAXIMUM WIRE SIZE IS INSTALLED.
- (G) TERMINALS SHALL BE ALUMINUM BODIED. THE OPENING SHALL EXTEND THROUGH THE TERMINAL BODY &, IF THE WIRE HOLE IS ROUND, SHALL BE CHAMFERED AS NECESSARY TO FACILITATE INSTALLATION OF THE LARGEST SIZE WIRE.
- (H) THE TERMINAL SCREW MAY BE OF THE ALLEN TYPE ( $\frac{3}{16}$ " ACROSS FLATS FOR 100 AMP OR  $\frac{5}{16}$ " ACROSS FLATS FOR 200 AMP). IF STUD "A" IS A PART OF THE TERMINAL SCREW, THE TERMINAL SCREW SHALL BE  $\frac{5}{8}$ " HEX ACROSS FLATS.
- (I) STUD "A" SHALL BE LOCATED IN THE CLEAR AREA BETWEEN THE TERMINATING LUG & THE CIRCUIT-CLOSING NUT & MAY BE POSITIONED ON THE TERMINAL BODY, ON THE TERMINAL SCREW, ON THE BUS MEMBER, OR INCORPORATED AS PART OF THE WIRE STOP.



**CLEARANCES**

	INSULATED SUPPLY OR SERVICE DROP CABLES, 0-750 VOLTS TO GROUND, SUPPORTED ON & CABLED TOGETHER WITH AN EFFECTIVELY GROUNDED BARE MESSENGER	ALL OTHER SUPPLY OR OTHER SERVICE DROP CONDUCTORS	
		VOLTAGE TO GROUND	
		0-15 KV	15-50 KV
A. CLEARANCE IN ANY DIRECTION TO THE WATER LEVEL, EDGE OF WATER SURFACE, BASE OF DIVING PLATFORM OR PERMANENTLY-ANCHORED RAFT.	22'-6"	25'-0"	27'-0"
B. CLEARANCE IN ANY DIRECTION TO THE OBSERVATION STAND, DIVING PLATFORM OR TOWER.	14'-6"	17'-0"	18'-0"

**NOTES:**

A. CLEARANCES PER LATEST NEC/GENERAL ORDER 95.



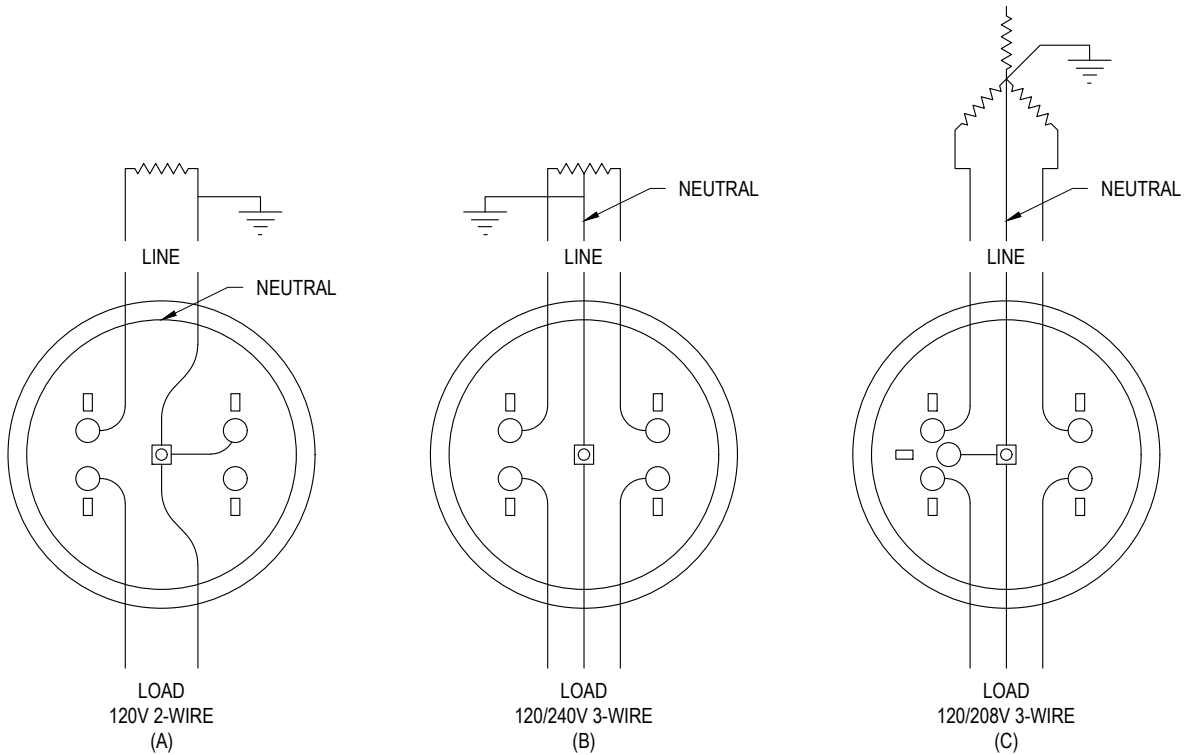
ESR: T002

ESR PG. NO.: A-15

REV. DATE: AUGUST 2024  
REV. NO.: 5

**SERVICE CLEARANCES OVER SWIMMING POOLS**

STANDARD NO.:  
**AG7.0**



**NOTES:**

- A. SOCKETS FOR RESIDENTIAL INSTALLATIONS SHALL NOT BE EQUIPPED WITH TEST BYPASS DEVICES.
- B. LINE CONDUCTORS SHALL ALWAYS BE CONNECTED TO THE TOP TERMINALS OF THE SOCKET, & LOAD CONDUCTORS CONNECTED TO THE BOTTOM TERMINALS OF THE SOCKET.
- C. NEUTRAL TAPS SHALL BE CONNECTED TO THE SERVICE NEUTRAL CONDUCTOR & LOCATED BEHIND SEALED PANELS. WIRE NUTS ARE NOT PERMITTED.
- D. RESIDENTIAL, SELF-CONTAINED METER SOCKETS SHALL BE U/L APPROVED & SHALL HAVE A MAXIMUM CURRENT RATING EQUAL TO OR GREATER THAN THE CURRENT RATING OF THE ASSOCIATED LOAD SERVICE EQUIPMENT.
- E. METER SOCKETS WITH EXTRUDED OR CAST ALUMINUM JAWS ARE NOT ACCEPTABLE & WILL NOT BE CONNECTED.
- F. NEUTRAL LINE WIRE (WHITE) SHALL BE CONTINUOUS WITHOUT A SPLICE FROM THE SERVICE HEAD THROUGH THE BONDING LUG TO THE NEUTRAL BAR IN THE SWITCH. WHERE SPECIAL PERMISSION IS GRANTED, THE NEUTRAL LINE MAY BE BROKEN IF THE SOCKET IS EQUIPPED WITH AN APPROVED CONNECTION DEVICE.

**DELTA METER REQUIREMENTS**

TYPE OF SERVICE	REF. PAGE NO.	MAIN SIZE (AMPS)	METER	METER SOCKET	CURRENT TRANSFORMERS	TEST BYPASS (D)
2W-1 PHASE 120V	A-16	0-100	CL. 100 120V 2W 1 PHASE (B)	100A 4 POINT		
3W-1 PHASE 120/240V	A-16	0-125	CL. 200 240V 3W 1 PHASE	100A 4 POINT		
3W-1 PHASE 120/240V	A-16	126-200	CL. 200 240V 3W 1 PHASE	200A 4 POINT		
3W-1 PHASE 120/240V	A-8, A-9, A-10	201-400	CL. 20 240V 3W 1 PHASE	COMB. CAN 6 POINT	2-2W (C)	7 POLE TEST SWITCH (E)
3W-1 PHASE 120/240V	A-7	400 (MAX)	CL. 320 240V 3W 1 PHASE	400A MAX CL. 320 4 POINT		

**WYE METER REQUIREMENTS**

TYPE OF SERVICE	REF. PAGE NO.	MAIN SIZE (AMPS)	METER	METER SOCKET	CURRENT TRANSFORMERS	TEST BYPASS (D)
2W-1 PHASE 120V	A-16	0-100	CL. 100 120V 2W 1 PHASE (B)	100A 4 POINT		
3W-1 PHASE 120/208V	A-16	0-200	CL. 200 240V 3W 3 PHASE	100A-200A 5 POINT		

**NOTES:**

- A. SINGLE PHASE SERVICE ABOVE 400A IS NOT AVAILABLE.
- (B) DEPENDING ON MANUFACTURER, METER IS RATED CL. 100 OR CL. 200.
- (C) METERING CURRENT TRANSFORMERS PROVIDED BY SMUD.
- (D) SEE A-11, A-12, A-13, A-14 FOR APARTMENT "HOUSE" METERS. SEE A-7 FOR 400 AMPERE (CLASS 320) METER.
- (E) TEST SWITCH PROVIDED BY SMUD.



ESR: T002

ESR PG. NO.: A-17

REV. DATE: AUGUST 2024    REV. NO.: 5

**RESIDENTIAL METER REQUIREMENTS**

STANDARD NO.:  
**ZM15.0**