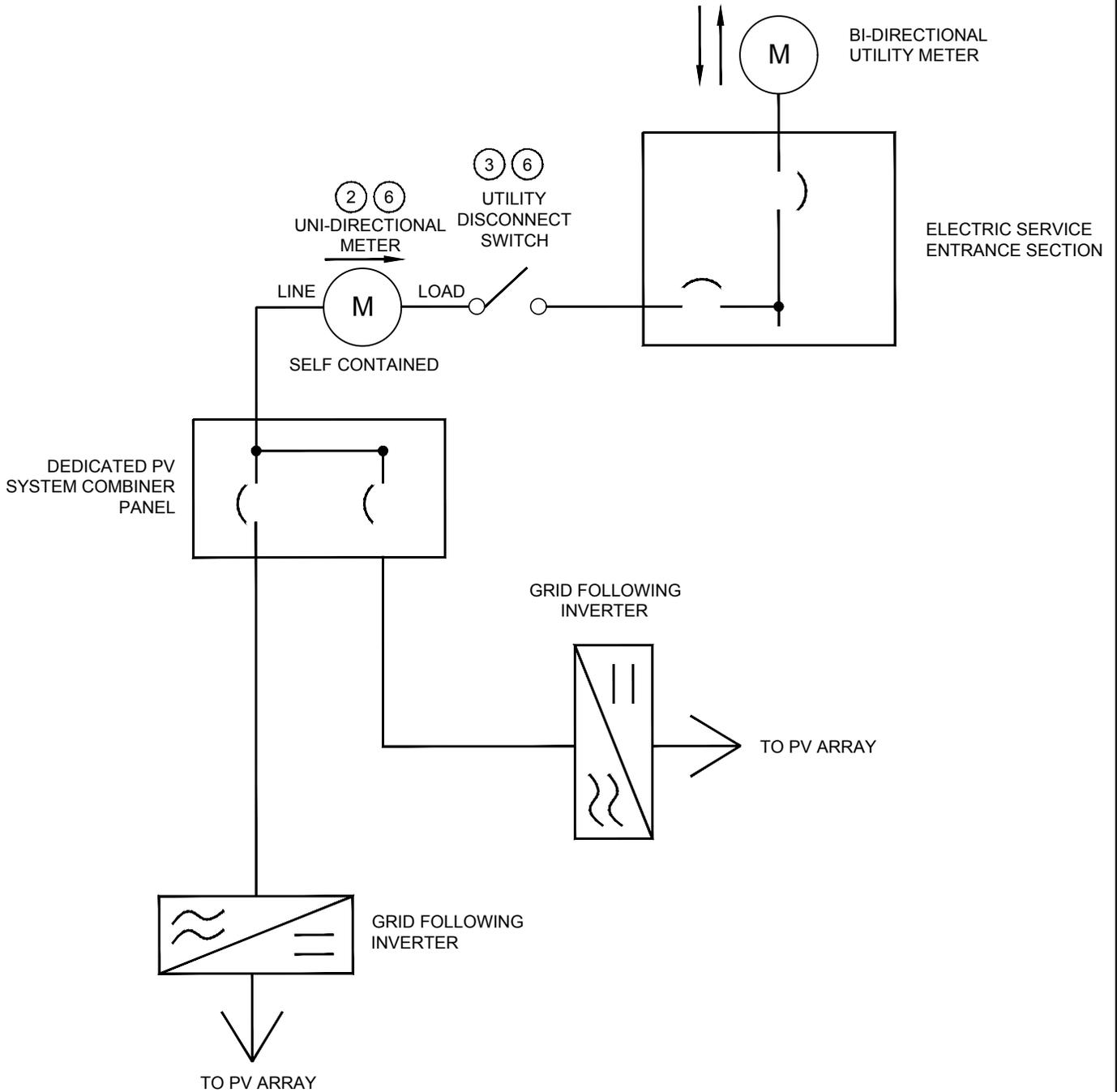


FIGURE ILLUSTRATES REPRESENTATIVE CONCEPTS & INTENT

- PROPRIETARY INVERTER ISOLATION/CONTROL EQUIPMENT MAY VARY DEPENDING ON TECHNOLOGY (INSIDE PANEL OR SEPARATE DEVICE).
- APS DOES NOT PERMIT BACKFEEDING THE GRID WITH BATTERY ENERGY IRRESPECTIVE IF ENERGY TO CHARGE THE BATTERY ORIGINATED FROM APS.
- **FOR SYSTEMS THAT PROVIDE LOAD SHIFTING/PEAK SHAVING (OF CUSTOMER USAGE), DER SYSTEMS ARE REQUIRED TO SHUT-DOWN DURING A GRID OUTAGE**
- **THESE CONCEPTUAL DIAGRAMS DEPICT APS REQUIRED ISOLATION AND METERING EQUIPMENT ONLY.**

① ⑤



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SAMPLE RESIDENTIAL/SMALL COMMERCIAL PV SYSTEM CONFIGURATION

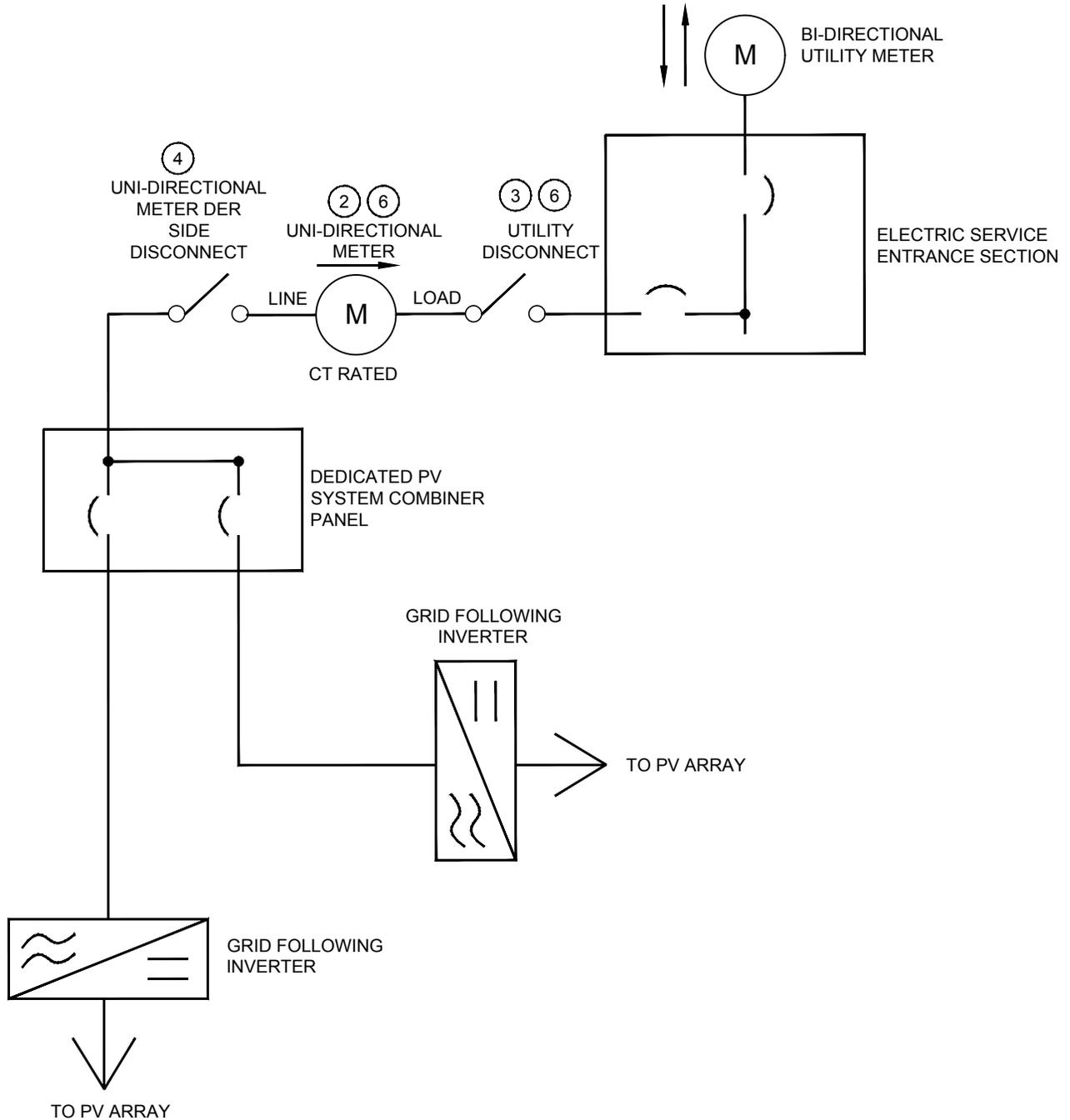
8.5" x 11"

Sht. 1 of 7

FIGURE ILLUSTRATES REPRESENTATIVE CONCEPTS & INTENT

- PROPRIETARY INVERTER ISOLATION/CONTROL EQUIPMENT MAY VARY DEPENDING ON TECHNOLOGY (INSIDE PANEL OR SEPARATE DEVICE).
- APS DOES NOT PERMIT BACKFEEDING THE GRID WITH BATTERY ENERGY IRRESPECTIVE IF ENERGY TO CHARGE THE BATTERY ORIGINATED FROM APS.
- **FOR SYSTEMS THAT PROVIDE LOAD SHIFTING/PEAK SHAVING (OF CUSTOMER USAGE), DER SYSTEMS ARE REQUIRED TO SHUT-DOWN DURING A GRID OUTAGE**
- **THESE CONCEPTUAL DIAGRAMS DEPICT APS REQUIRED ISOLATION AND METERING EQUIPMENT ONLY.**

① ⑤



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**SAMPLE CT RATED METER
PV SYSTEM CONFIGURATION**

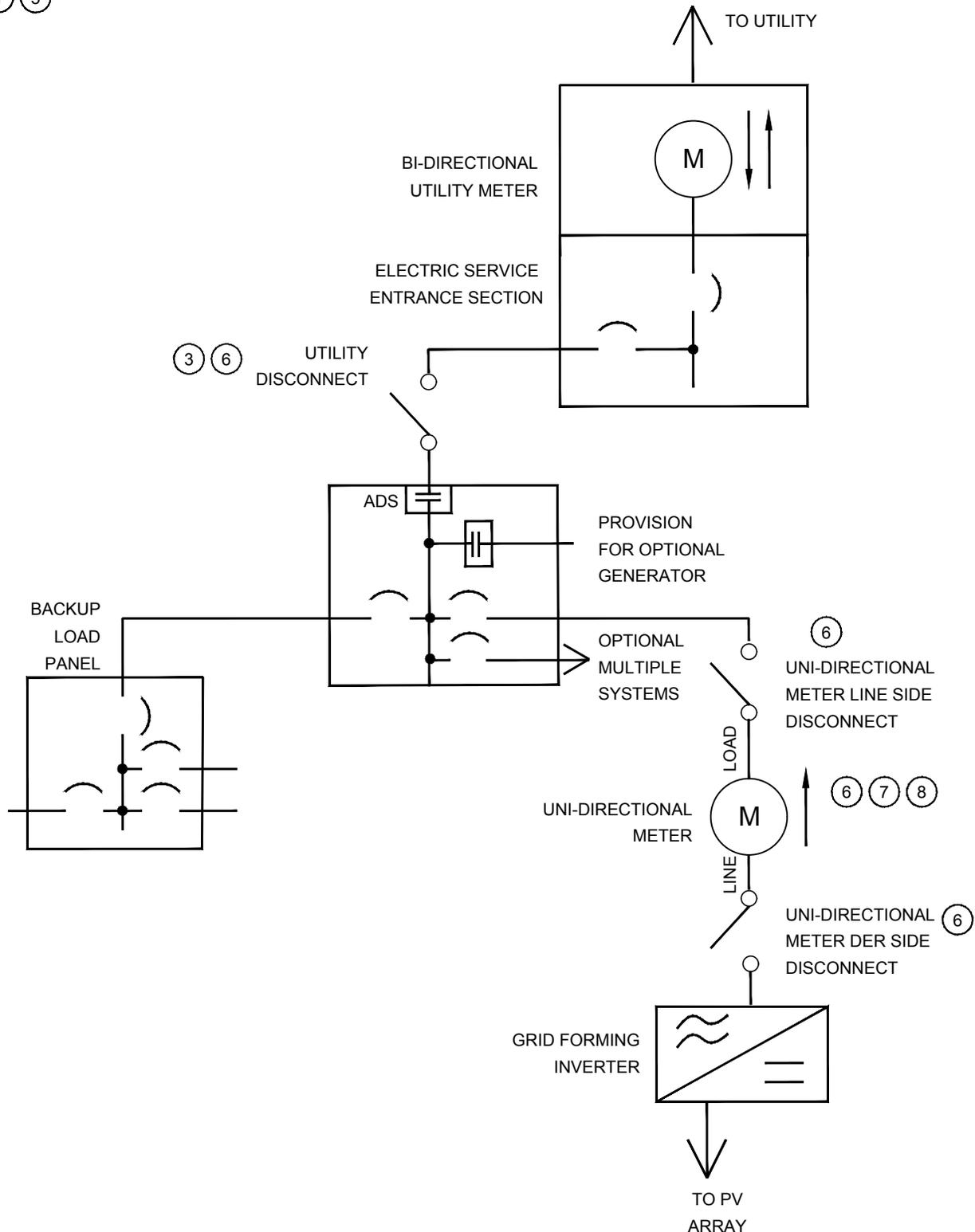
8.5" x 11"

Sht. 2 of 7

FIGURE ILLUSTRATES REPRESENTATIVE CONCEPTS & INTENT

- PROPRIETARY INVERTER ISOLATION/CONTROL EQUIPMENT MAY VARY DEPENDING ON TECHNOLOGY (INSIDE PANEL OR SEPARATE DEVICE).
- APS DOES NOT PERMIT BACKFEEDING THE GRID WITH BATTERY ENERGY IRRESPECTIVE IF ENERGY TO CHARGE THE BATTERY ORIGINATED FROM APS.
- **FOR BACKUP POWER SYSTEMS, ISOLATION/SEPARATION FROM THE GRID IS REQUIRED DURING A GRID OUTAGE**
- **FOR SYSTEMS THAT PROVIDE LOAD SHIFTING/PEAK SHAVING (OF CUSTOMER USAGE), DER SYSTEMS ARE REQUIRED TO SHUT-DOWN DURING A GRID OUTAGE**
- PROVISIONS FOR GENERATOR NOT DEPICTED.
- THESE CONCEPTUAL DIAGRAMS DEPICT APS REQUIRED ISOLATION AND METERING EQUIPMENT ONLY.

① ⑤



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SAMPLE GRID FORMING PV SYSTEM CONFIGURATION

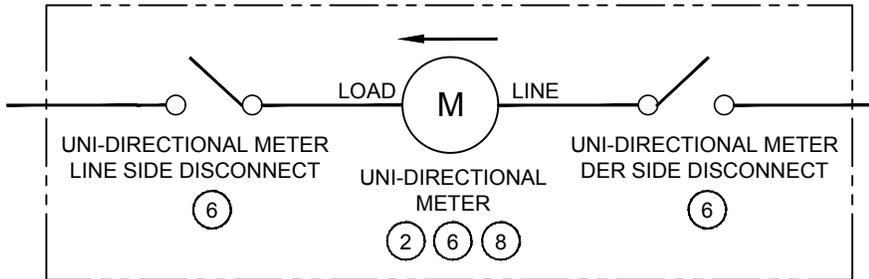
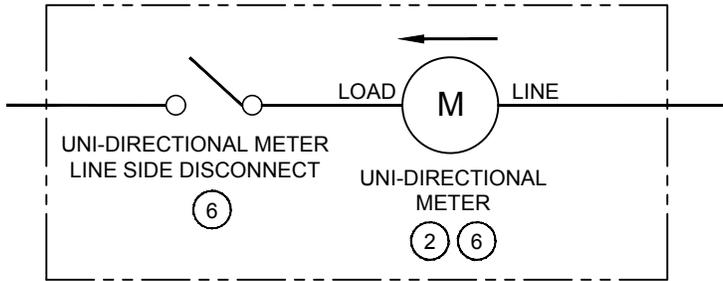
8.5" x 11"

Sht. 3 of 7

FIGURE ILLUSTRATES REPRESENTATIVE CONCEPTS & INTENT

- THESE CONCEPTUAL DIAGRAMS DEPICT APS REQUIRED ISOLATION AND METERING EQUIPMENT ONLY.
- DASHED BOXED EQUIPMENT BELOW MAY OPTIONALLY BE REPLACED WITH APS APPROVED METER TESTBLOCK ENCLOSURE.

⑦ SEE OPTIONAL EQUIPMENT TESTBLOCK WIRING DIAGRAM SHEET #



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**OPTIONAL EQUIPMENT
METER TESTBLOCK**

8.5" x 11"

Sht. 4 of 7

KEY NOTES

- ① All Customer equipment shall be installed and maintained by the Customer in accordance with the local AHJ, NEC and APS. If no jurisdictional authority is responsible, a Letter In-Lieu of Electrical Clearance shall be required following completion of all work.
- ② The output of multiple PV System inverters shall be combined before connecting to the dedicated PV kWh meter such that each billing meter is to have only one dedicated PV System kWh meter and associated disconnect switch used to isolate the entire system.
- ③ The Utility Disconnect shall be connected between the Electric Service Entrance Section (SES) and PV system as shown. The Customer-fused disconnect required for residential and commercial PV systems with a short circuit rating greater than 10 kA shall be connected between the SES and Utility Disconnect.
- ④ For CT Rated PV systems, a CT meter isolation device shall be connected between the production meter and the Dedicated PV System Combiner Panel (or PV System Inverter if only one Inverter present). The CT meter isolation device, NEMA 3R or better, shall include locking provisions per OSHA LOTO Requirements with an APS pad lock.
- ⑤ The SES, Utility Disconnect, production meter socket(s) and CT meter isolation device(s) shall be grouped together within a maximum distance of 10' with no obstructions and Readily Accessible per APS ESRM.

EXCEPTION: If conditions prohibit grouping the Utility Disconnect(s), production meter socket(s) and CT meter isolation device(s) within 10' of the SES, the production meter socket(s) and associated Utility Disconnect and CT meter device(s) shall be grouped together at an alternate location, however, APS approval is required. The alternate location must be a Readily Accessible location per APS ESRM. The SES shall have ESRM signage indicating an interconnected generator and express directions to the location of the Utility Disconnect, the production meter socket(s) and CT meter isolation device as applicable. The Utility Disconnect shall have signage with express concise directions to the location of the SES.

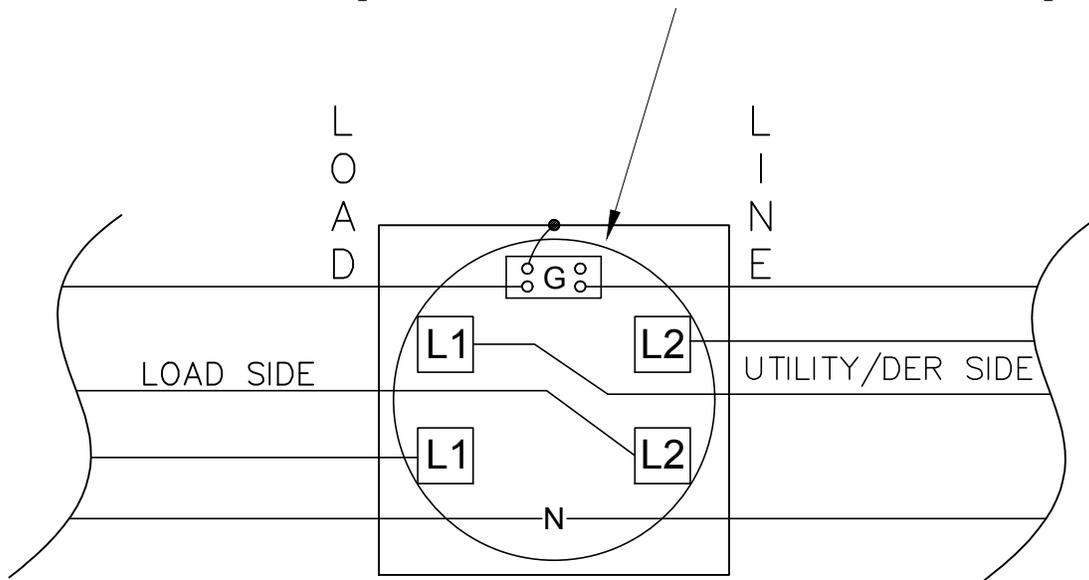
The Utility Disconnect, production meter socket(s) and CT meter isolation disconnect(s) shall be a minimum 36" from any natural gas vent or water bib in accordance with the APS ESRM, Section 301.15.

If the SES is upgraded, a new SES may require relocation to meet present APS ESRM requirements. Consult an APS Design representative.

- ⑥ Label equipment as shown. Accurate labeling is crucial for APS field personnel for safety and efficiency and avoids meter set fails and multiple truck rolls.
- ⑦ Individual Meter and Disconnects may be replaced with single Meter with Testblocks. See Pre-Approved Production Meter Sockets in the APS Residential Manufacture List at aps.com/esrm. Testblocks are NOT to replace Utility Disconnect. Retain all meter and disconnect labels.
- ⑧ Grid forming DER generation systems shall include associated meter socket and disconnect as shown.

		ARIZONA PUBLIC SERVICE COMPANY			PV SYSTEM CONFIGURATION NOTES	8.5" x 11"
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LINE SIDE (TOP) TERMINALS
 CONNECT PHASE "A" TO THE LEFT
 ELEMENT (TERMINAL) OF THE METER
 [LOOKING AT THE FRONT OF THE METER]



PHOTOVOLTAIC/ENERGY STORAGE
 PRODUCTION METER
 [SPECIFY FORM #, MAKE & MODEL #]
 240V, 100A, RINGTYPE



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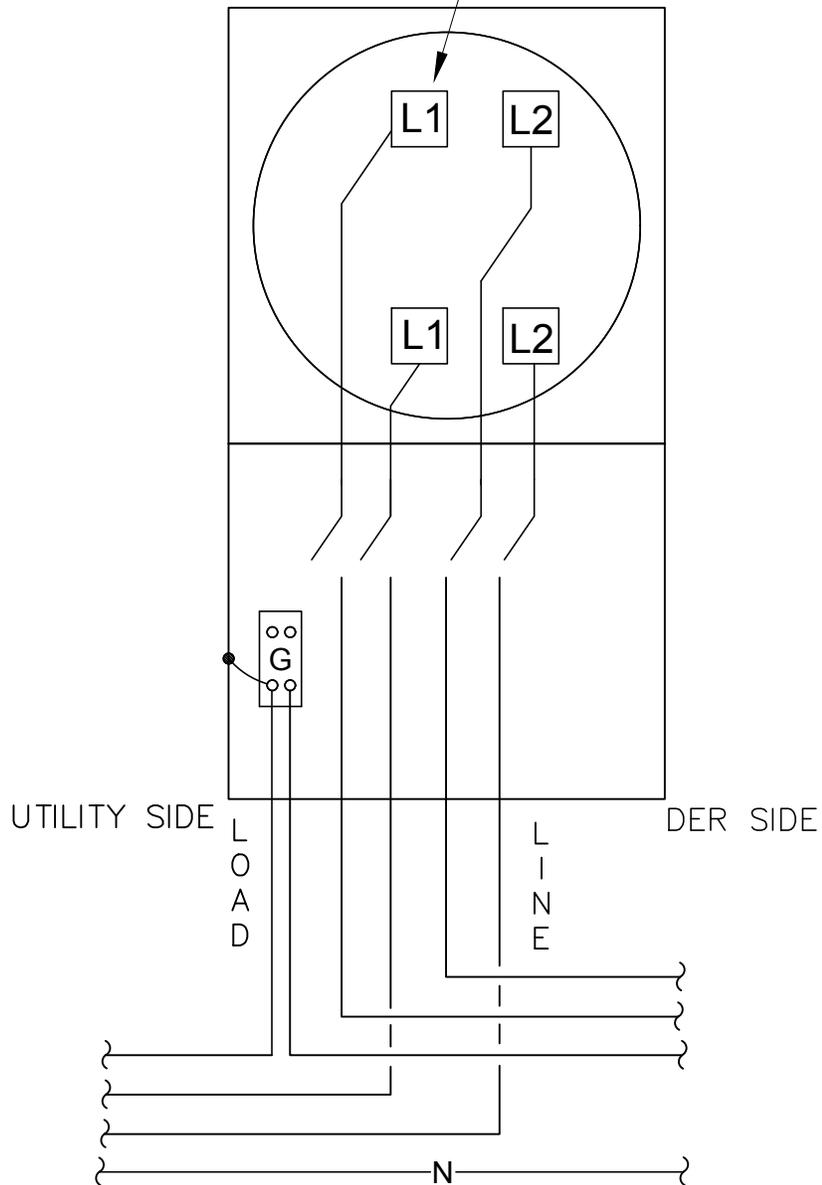
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GENERAL FORM 2S UNI-DIRECTIONAL METER
 WIRING DIAGRAM

8.5" x 11"

Sht. 6 of 7

LINE SIDE (TOP) TERMINALS
 CONNECT PHASE "A" TO THE LEFT
 ELEMENT (TERMINAL) OF THE METER
 [LOOKING AT THE FRONT OF THE METER]



TEST BLOCK METER
 [SPECIFY FORM #, MAKE & MODEL #]
 240V, 100A, RINGTYPE

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GENERAL FORM 2S TEST BLOCK METER
 WIRING DIAGRAM

8.5" x 11"

Sht. 7 of 7