



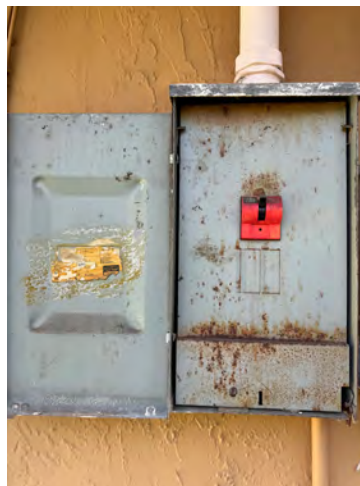
## Electrical Upgrades Identification Cheat Sheet

Purpose: To assist in identifying possible electrical code violations on an existing residential dwelling that will need to be corrected for the implementation of solar.

### Uninsurable Service Panels:

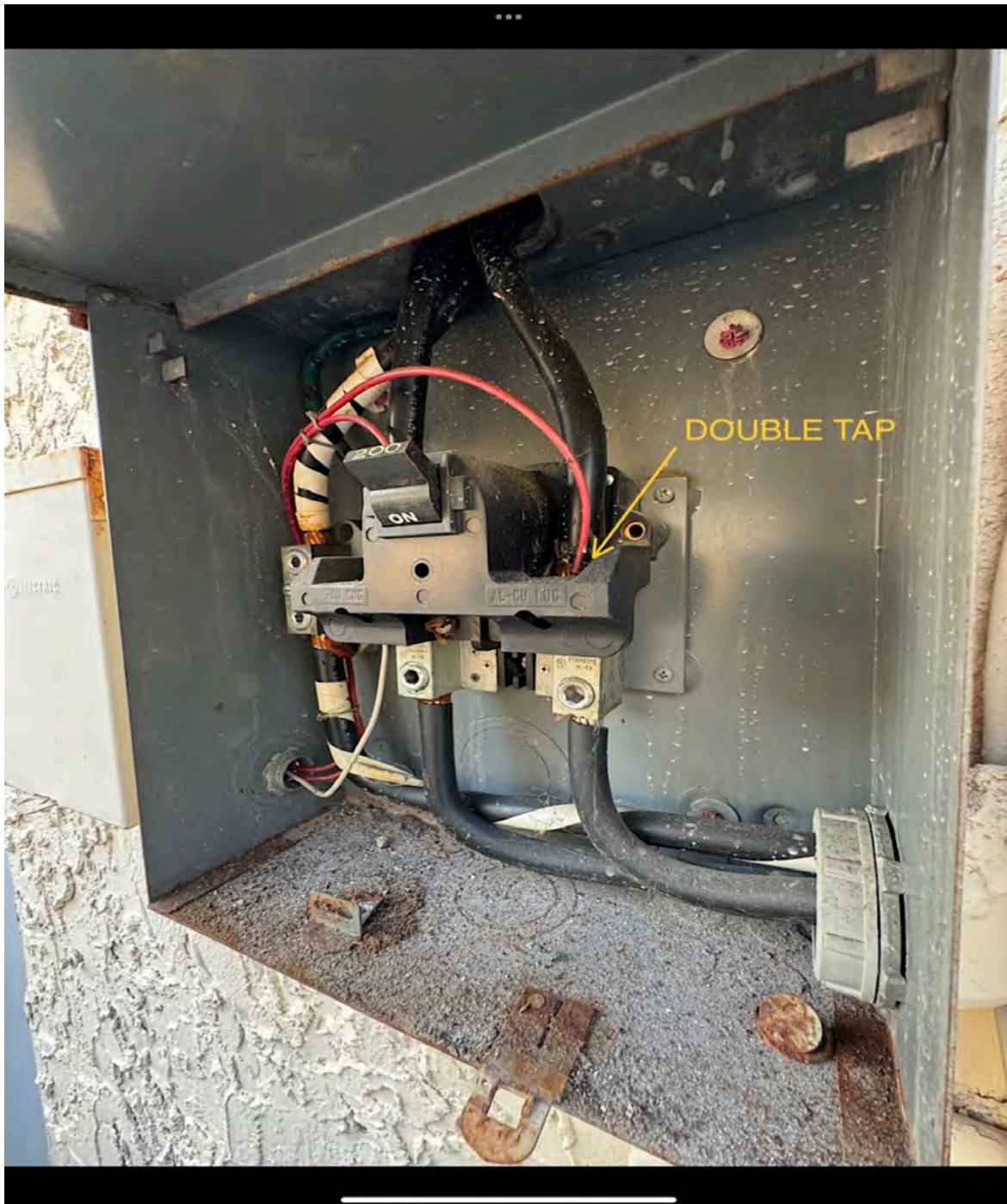
Below is a list of electrical service panels that are either not UL Listed or insurable by home insurance. This becomes an issue particularly with the Main Service Panel (MSP) or first means of disconnect for the home. In these instances the electrical panel will require a Main Panel Upgrade (MPU) which will incur further costs on the job. The name and marking of the MSP can be found on the lid/cover of the panel:

- Zinsco
- Sylvania
- Westinghouse
- Federal Pacific
- Bryant
- Murray
- Fuse box panels



### **Electrical Code Violations:**

**The MSP is double-tapped (multiple wires coming out of the lugs of the main breaker) this can be assumed when an additional service panel is next to the MSP that can only contain a main breaker:**





**No main breaker inside the MSP to protect the loads of the home (the main breaker is larger than the other breakers in the panel). This is required by code:**

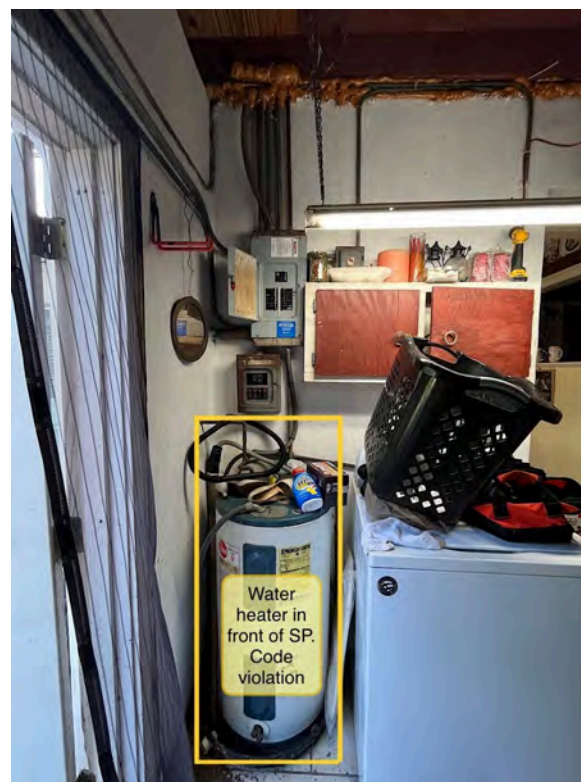
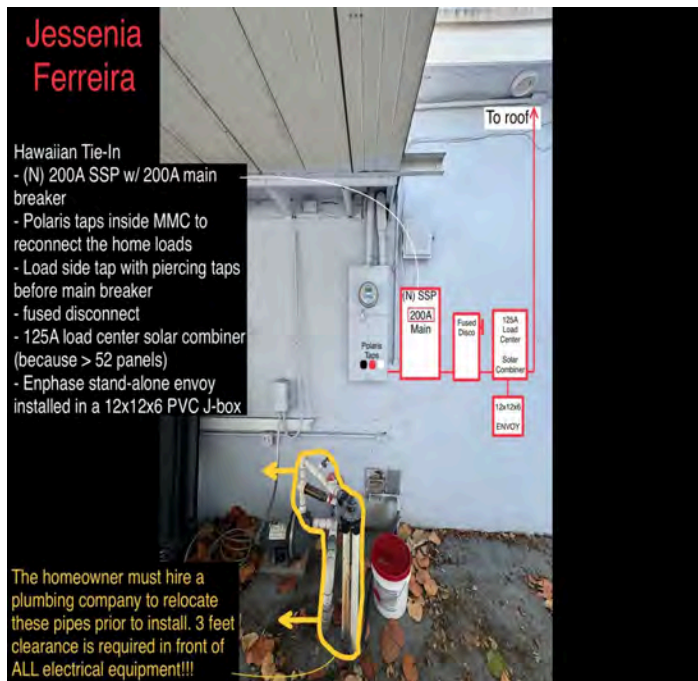
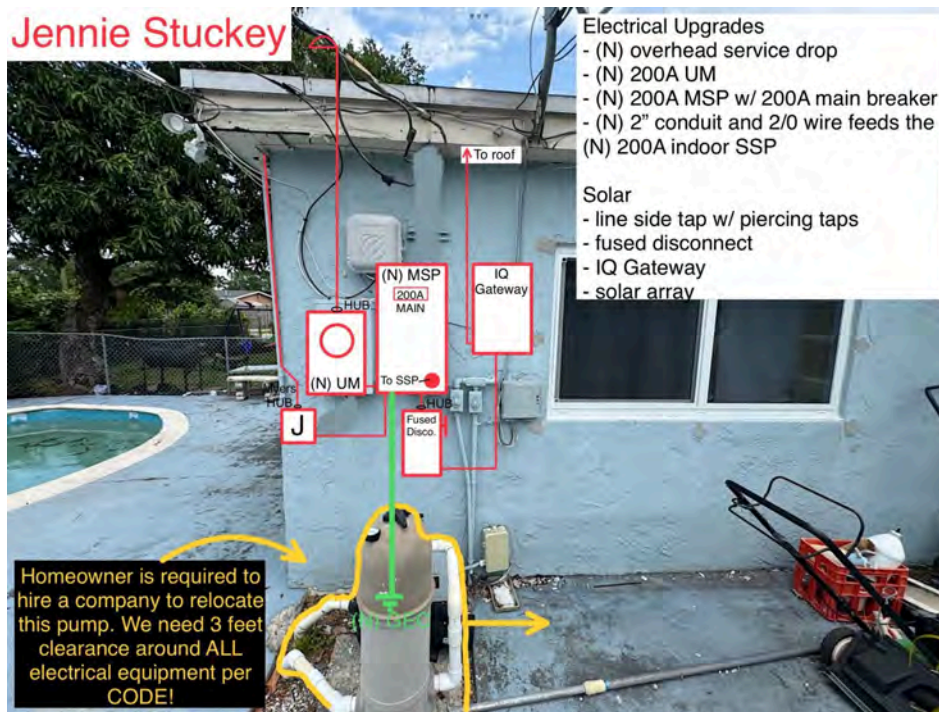


## WHAT MAIN BREAKER TYPICALLY LOOKS LIKE:





**Obstructions in front of the MSP and/or UM; homeowners will need to relocate these prior to solar installation. All electrical equipment required 3 feet radial clearance:**





### Undersized Utility Meter:





**Meter/Main Combo (MMC) with the Service Panel (SP) further than 25 feet or SP cannot accept a main breaker or 2 story home where SP cannot be access via attic- this requires a Hawaiian Tie-In (HTI) panel to interconnect the solar to the home:**





**NO MAIN BREAKER INSIDE MAIN ENCLOSURE BOX- MAIN BREAKER IS  
REQUIRED TO BE ON THE OUTSIDE OF THE HOME PER CODE:**





## **Costs to Expect from Electrical Upgrades**

These price ranges are not definitive but rather to give an idea of what to expect from each type of electrical upgrade:

<b>Electrical Upgrade</b>	<b>Typical Cost Range</b>
Utility Meter	\$1,000 - \$1,500
MSP ONLY	\$1,200 - \$1,700
SSP ONLY	\$2,200 - \$2,700
Utility Meter + MSP	\$2,000 - \$2,500
Utility Meter + MSP + SSP	\$3,000 - \$3,500
Hawaiian Tie-In Panel	\$1,700 - \$2,200
Meter/Main Combo	\$1,700 - \$2,200
Tap Box	\$500-\$1,000
New Feeder Wire / Main Breaker	\$500 - \$1,000