

Electric Outage Back-Up Power System (revised 7 april)

Daniel Hellerstein Residence 1909 Franwall Avenue, Silver Spring, Md 20902

The proposed system consists of a battery bank, a Magnum pure sine inverter, and a portable 6.5 kilowatt gasoline generator. It will provide power for computers and selected household loads in the event of a Pepco power outage.

The proposed back-up power system is not connected to any components of a solar grid-tied solar system that was installed in 2013. This is NOT an AC Coupled solar system that uses power from the existing solar panels.

The back up power system is automatically triggered when a power outage occurs and only draws power from the battery bank for selected critical loads. For longer outages, the generator would be manually turned on and connected via a manually engaged Gen/Tran transfer switch that simultaneously cuts off connection of the back up power circuitry to the main electrical panel and enables the generator and Magnum inverter to provide power from the battery bank to the designated loads. This prevents any possibility of back feed to the grid through the main panel.

The Gen/Tran switch and additional subpanel will provide power during normal conditions to the Magnum inverter to maintain the batteries, and to provide power to the critical loads.

These battery backed up critical loads are on the critical loads panel connected to the Magnum.

Second tier, sub-critical loads (which include several multiwire branch circuits) will NOT be battery backed up. They are powered through breakers on the Gen/Tran (and the additional subpanel). During longer outages, they can be powered from the generator. The Magnum can receive AC power from the generator via the Gen/Tran switch.

Critical Loads

Up to 6 computers
40" TV

Refrigerator

Boiler, natural gas

Lighting 15 lights, CFL or LED

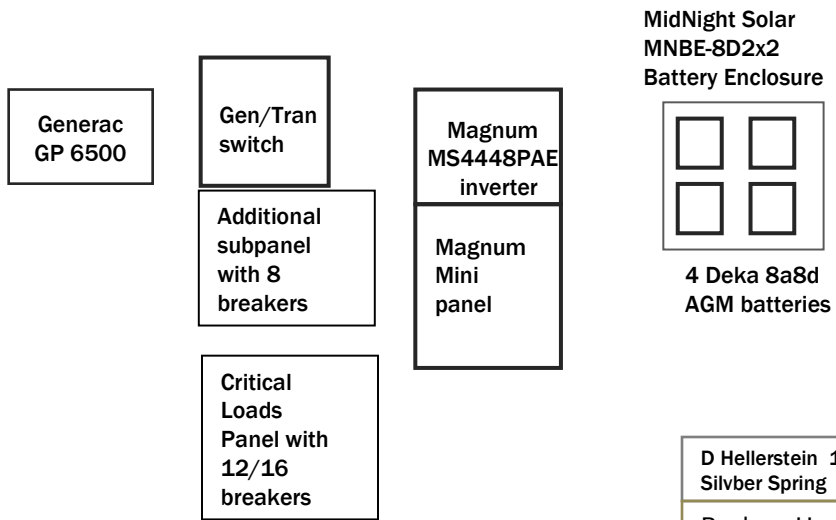
Duplex loads -> vacuum cleaner; household appliances
several radios; clocks, and floor lamps.

Attic vent & whole house fan, and bathroom vent

No 240V loads on critical panel (i.e; AC, dryer, and oven are NOT critical loads

Subcritical Loads: microwave and toaster, additional lighting.

Back Up Components



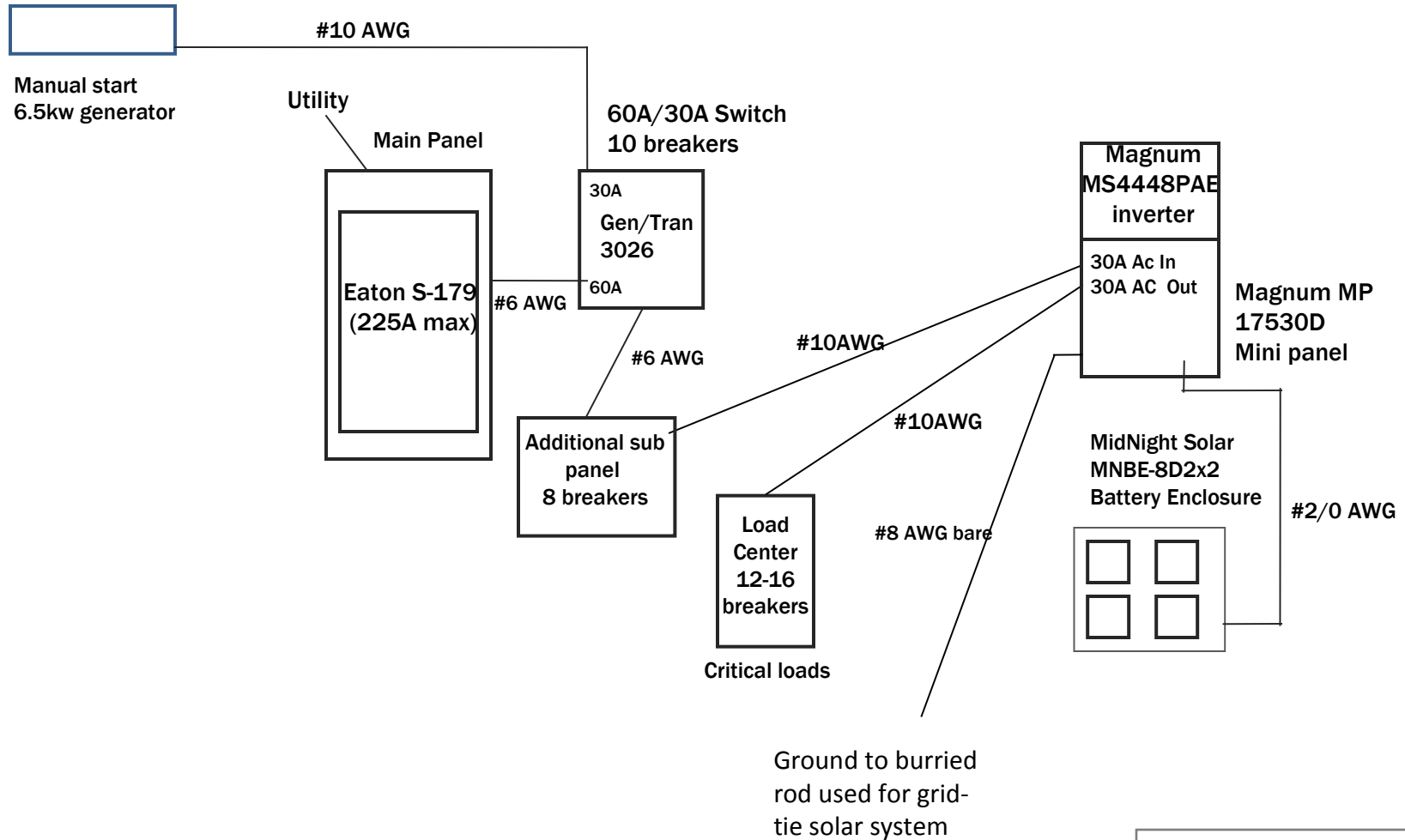
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Single Line Diagram Proposed Back-Up System (revised 7 April)



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