

PROJECTS

DAN HOUSE ELECTRIC Micanopy Horse Farm

Overview

DESIGNER: Chris Morrison,
Planet Green Solutions,
planetgreensolutions.com

LEAD INSTALLER: Daniel House, Dan
House Electric, danhouseelectric.com

DATE COMMISSIONED:
December 2010

INSTALLATION TIME FRAME: 9 days

LOCATION: Micanopy, Florida 29.8° N

SOLAR RESOURCE: 5.1 kWh/m²/day

HIGH/LOW DESIGN TEMPERATURES:
per solarabcs.org/permitting/map:
93°F/23°F

ARRAY CAPACITY: 2.9 kW

ANNUAL AC PRODUCTION:
3,851 kWh



Courtesy Dan House Electric (2)

Equipment Specifications

MODULES: 12 Canadian Solar
CS6P-230P, 230 W STC, +2.2%/-0%,
7.78 Imp, 29.6 Vmp, 8.34 Isc, 36.8 Voc

INVERTER: Motech PVMate 2900U-
240, 2.9 kW, 600 Vdc maximum
input, 200–550 Vdc MPPT range,
240 Vac output

ARRAY: One string of 12 modules
(2,760 W, 7.78 Imp, 355.2 Vmp, 8.34
Isc, 441.6 Voc)

ARRAY INSTALLATION: ASE custom
ground mount; 180° azimuth, 20° tilt
(manually adjustable)

Located at a residential horse farm, a solar shade structure was built to offset the electrical consumption for the service it is interconnected to while providing a location for outdoor recreation. Aesthetics were a primary consideration during the system's design and installation.

Tropical storms regularly pass through Florida, and the array structure stands nearly 10 feet tall at its highest point, so careful consideration was required. The custom mounts, designed by ASE, use standard PV mounting rails to support the modules and transfer the load to the steel substructure. Trim pieces were added to conceal the modules' wiring and provide a uniform appearance. The top and side trim pieces are perforated to provide sufficient airflow for cooling.

AAA Builders of Micanopy, Florida, completed the concrete and structural



work. The design called for individual 32-inch deep concrete pads under each leg section, along with a 3-inch slab under the entire array. Each leg is secured to two 12-inch J-bolts embedded into the pads. Dan House Electric was responsible for the system's electrical

work. The inverter is located outside on a pedestal mount, 75 feet from the array, to minimize the visual impact of the electrical service equipment and to allow for a convenient location for the utility interconnection.

"The structural considerations for this array were difficult enough on their own. The unique aesthetic requirements made the Micanopy array one of the more rewarding residential installations we have done."

—Daniel House, President,
Dan House Electric