

LOCAL HISTORIC DISTRICT: Plaza Midwood
PROPERTY ADDRESS: 1609 The Plaza
SUMMARY OF REQUEST: Solar Panels
OWNER: Carol Sawyer
APPLICANT: Jeff Redwine

Details of Proposed Request

Existing Conditions

The existing structure is a 1.5 story Craftsman style Bungalow constructed in 1938. It has a full width shed roofed porch supported by tapered wood pillars on brick piers.

Proposal

The proposal is for solar panels installed on the front shed porch roof.

Policy & Design Guidelines

The HDC Policy & Design Guidelines do not explicitly define the location of solar panels on rooftops but considers this proposal an Addition. Ideally, solar panels should be located to the rear of a property and not substantially visible. The Secretary of Interior's Standards states solar panels can be installed in a sensitive manner and should conform to guidance regarding rooftop additions, i.e. that they be minimally visible to avoid altering the historic character of the building. See the National Park Service's *Technical Preservation Services* section on alternative energy (ITS Number 52).

Policy & Design Guidelines

HDC Design Policy on Additions requires that additions be evaluated according to the following:

<i>1. All additions will be reviewed for compatibility by the following criteria:</i>	
<i>a. Size</i>	<i>the relationship of the project to its site</i>
<i>b. Scale</i>	<i>the relationship of the building to those around it</i>
<i>c. Massing</i>	<i>the relationship of the building's various parts to each other</i>
<i>d. Fenestration</i>	<i>the placement, style and materials of windows and doors</i>
<i>e. Rhythm</i>	<i>the relationship of fenestration, recesses and projections</i>
<i>f. Setback</i>	<i>in relation to setback of immediate surroundings</i>
<i>g. Materials</i>	<i>proper historic materials or approved substitutes</i>
<i>h. Context</i>	<i>the overall relationship of the project to its surroundings</i>

2. Additions must respect the original character of the property, but must be distinguishable from the original construction.

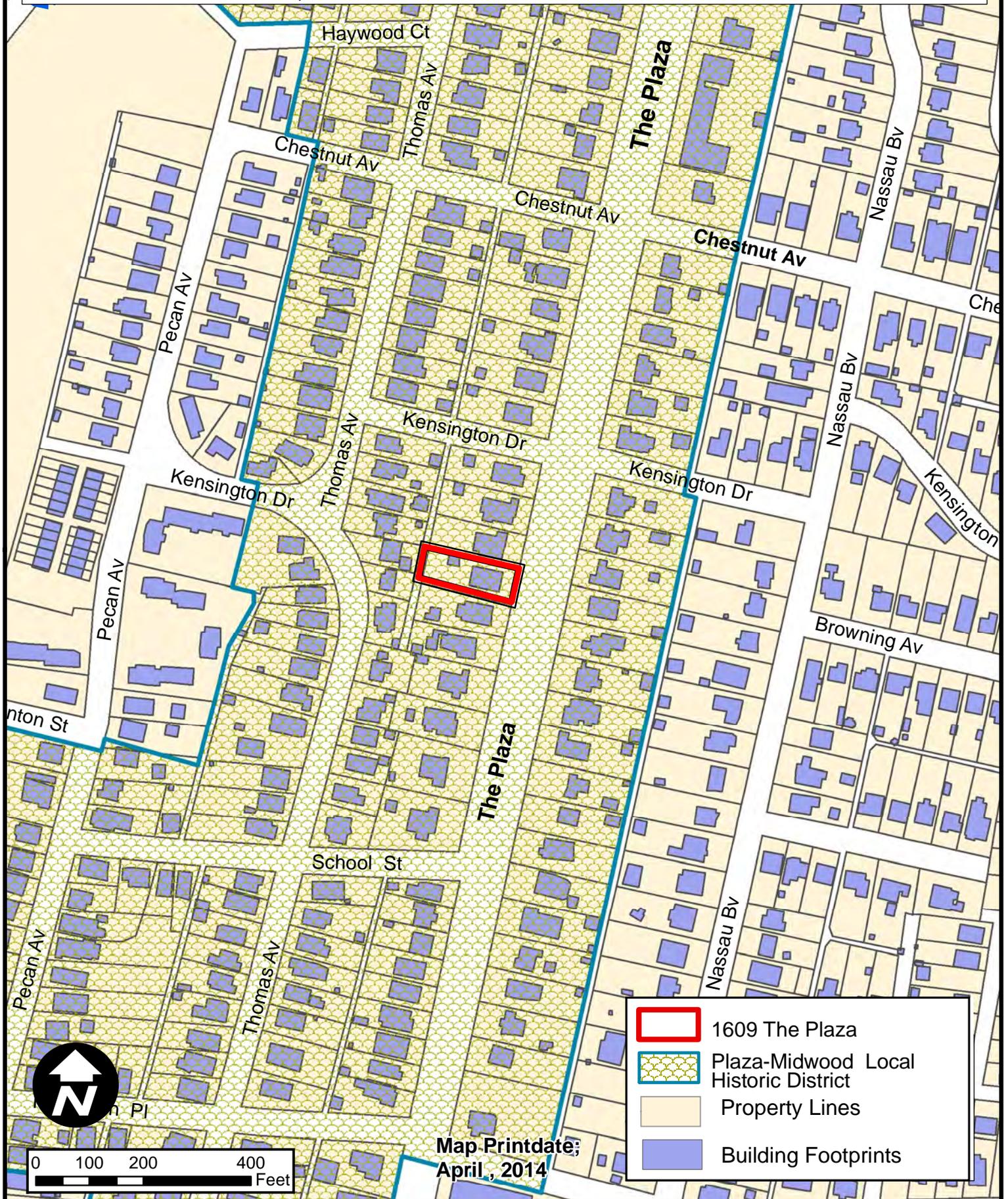
3. All additions to the front or side of existing properties must be of a design that is sensitive to the character and massing of the existing structure.
4. Additions to the front or side of existing structures that are substantially visible from a street must go before the full Commission.

Staff Analysis

The Commission will determine if the proposed location of solar panels significantly alter the original character of the property. Staff believes the proposal is incongruous with the district.

Charlotte Historic District Commission - Case 2014-117

Historic District; Plaza-Midwood













Sunmodule⁺™

SW 250 poly / Version 2.0 and 2.5 Frame

World-class quality

Fully-automated production lines and seamless monitoring of the process and material ensure the quality that the company sets as its benchmark for its sites worldwide.

SolarWorld Plus-Sorting

Plus-Sorting guarantees highest system efficiency. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25 years linear performance guarantee and extension of product warranty to 10 years

SolarWorld guarantees a maximum performance degradation of 0.7% p.a. in the course of 25 years, a significant added value compared to the two-phase warranties common in the industry. In addition, SolarWorld is offering a product warranty, which has been extended to 10 years.*

*in accordance with the applicable SolarWorld Limited Warranty at purchase.
www.solarworld.com/warranty



- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection



SW 250 poly / Version 2.0 and 2.5 Frame

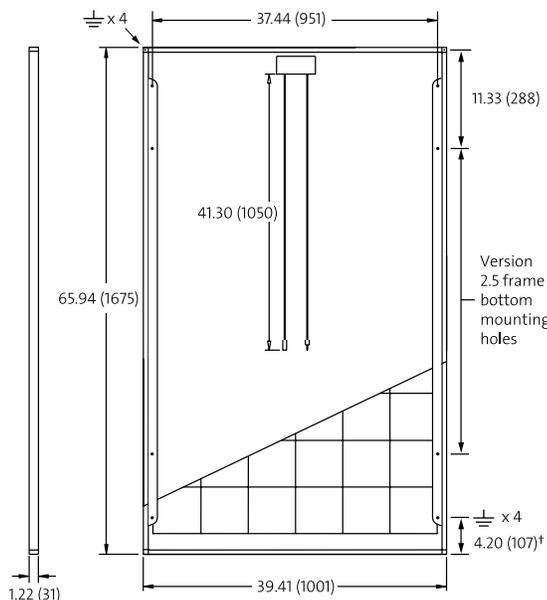
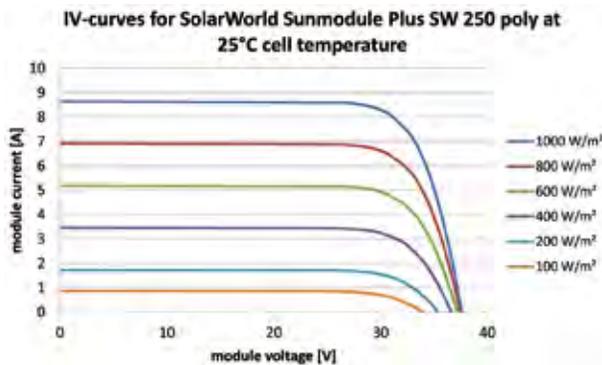
PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

		SW 250
Maximum power	P_{max}	250 Wp
Open circuit voltage	V_{oc}	37.6 V
Maximum power point voltage	V_{mpp}	30.8 V
Short circuit current	I_{sc}	8.64 A
Maximum power point current	I_{mpp}	8.12 A

*STC: 1000W/m², 25°C, AM 1.5

THERMAL CHARACTERISTICS

NOCT	46 °C
TC I_{sc}	0.081 %/K
TC V_{oc}	-0.37 %/K
TC P_{mpp}	-0.45 %/K
Operating temperature	-40°C to 85°C



PERFORMANCE AT 800 W/m², NOCT, AM 1.5

		SW 250
Maximum power	P_{max}	180.4 Wp
Open circuit voltage	V_{oc}	33.9 V
Maximum power point voltage	V_{mpp}	27.8 V
Short circuit current	I_{sc}	6.96 A
Maximum power point current	I_{mpp}	6.50 A

Minor reduction in efficiency under partial load conditions at 25°C: at 200W/m², 95% (+/-3%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Poly crystalline
Cell dimensions	6.14 in x 6.14 in (156 mm x 156 mm)
Front	tempered glass (EN 12150)
Frame	Clear anodized aluminum
Weight	46.7 lbs (21.2 kg)

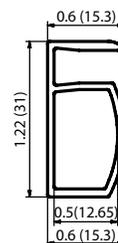
SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II	1000 V	
Max. system voltage USA NEC	600 V	
Maximum reverse current	16 A	
Number of bypass diodes	3	
UL Design Loads*	Two rail system	113 psf downward 64 psf upward
UL Design Loads*	Three rail system	170 psf downward 64 psf upward
IEC Design Loads*	Two rail system	113 psf downward 50 psf upward

*Please refer to the Sunmodule installation instructions for the details associated with these load cases.

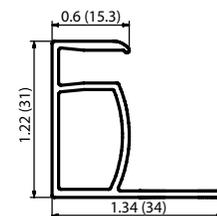
ADDITIONAL DATA

Power tolerance ²⁾	-0 Wp / +5 Wp
J-Box	IP65
Connector	MC4
Module efficiency	14.91 %
Fire rating (UL 790)	Class C



VERSION 2.0 FRAME

- Compatible with "Top-Down" mounting methods
- ⚡ Grounding Locations: 4 corners of the frame



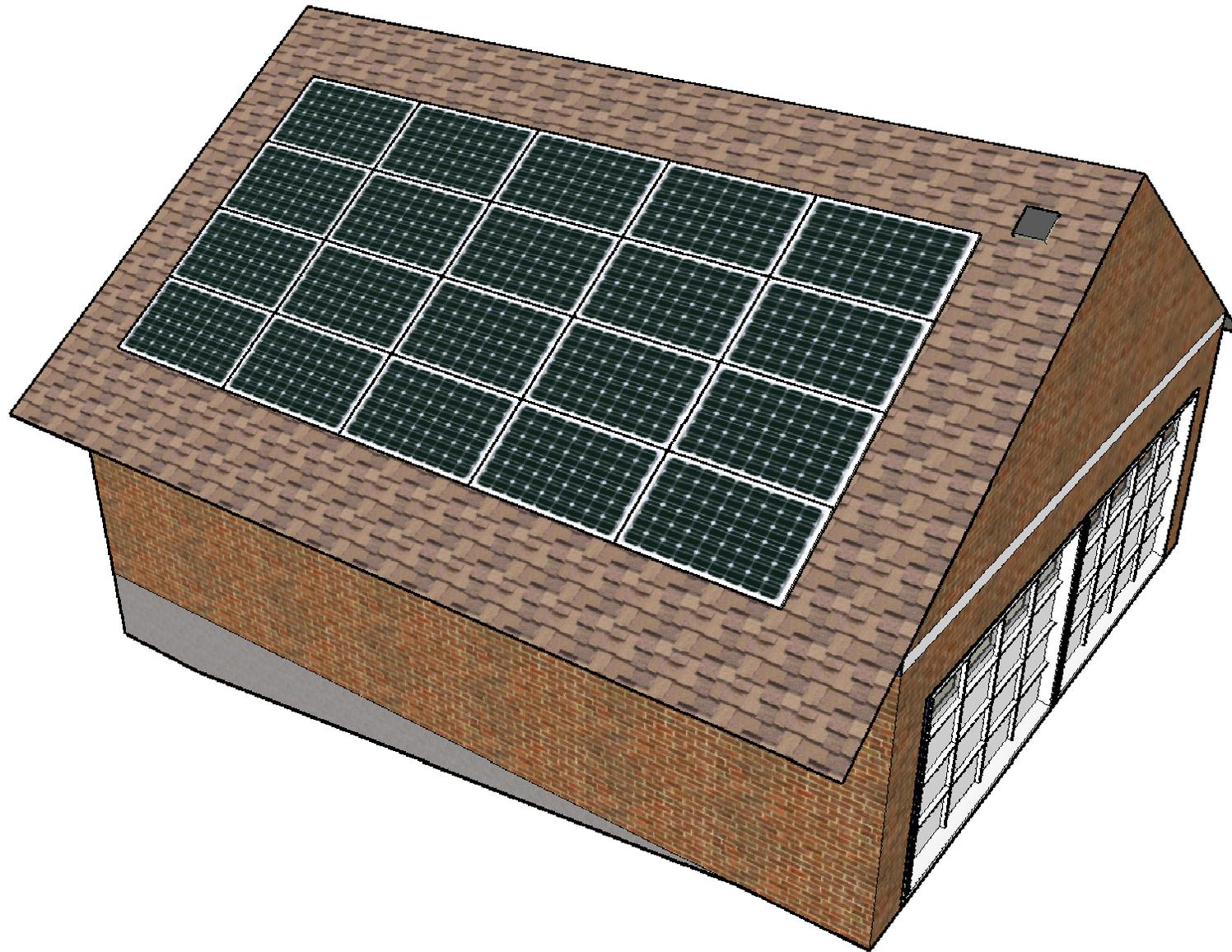
VERSION 2.5 FRAME

- Compatible with both "Top-Down" and "Bottom" mounting methods
- ⚡ Grounding Locations: - 4 corners of the frame - 4 locations along the length of the module in the extended flange†

1) Sunmodules dedicated for the United States and Canada are tested to UL 1703 Standard and listed by a third party laboratory. The laboratory may vary by product and region. Check with your SolarWorld representative to confirm which laboratory has a listing for the product.

2) Measuring tolerance traceable to TUV Rheinland: +/- 2% (TUV Power Controlled).

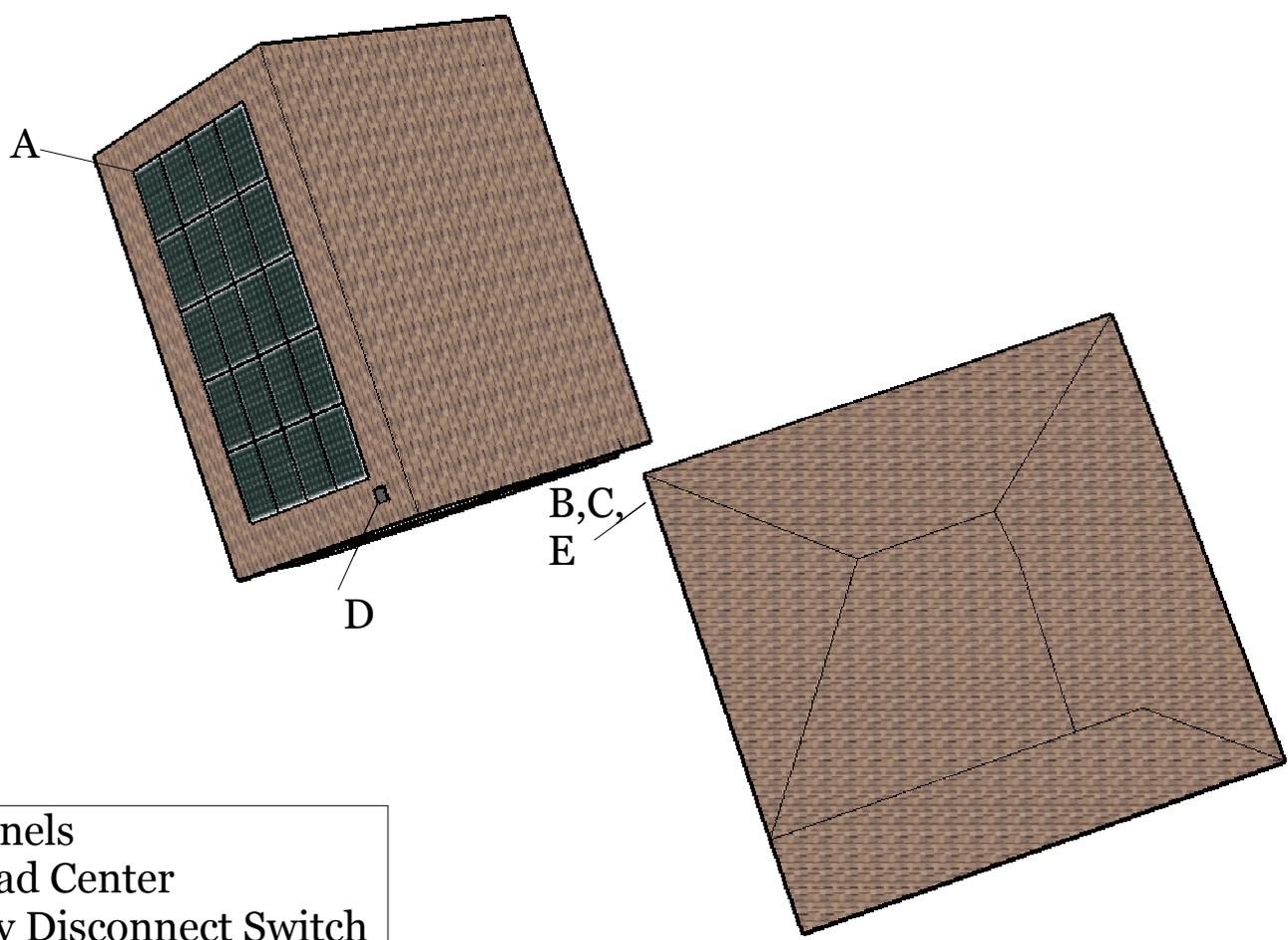
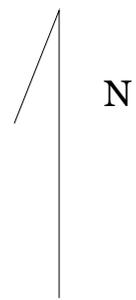
3) All units provided are imperial. SI units provided in parentheses.



Plemmons Residence Grid Tied
Photovoltaic System
200 Old Doc Ct.
Lexington NC 27295



September 30, 2012



A=240w PV Panels
 B=AC Main Load Center
 C=Utility Safety Disconnect Switch
 D=Solardeck Roof Combiner
 E=Utility Meter

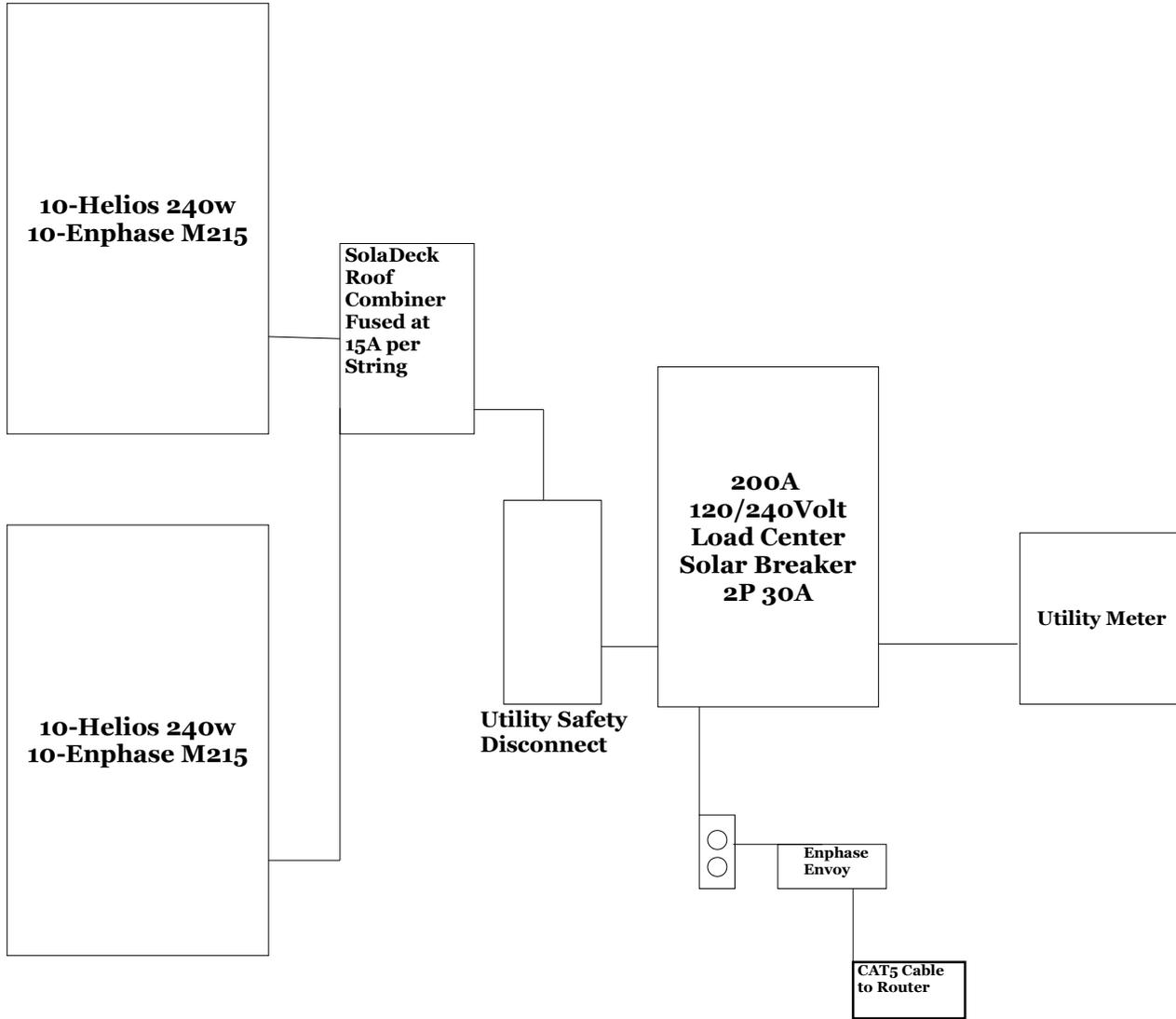
System Layout



Plemmons Residence

REVISIONS		
	MM/DD/YY	REMARKS
1	9/30/2012	CML-Construction
2	--/--/--	...
3	--/--/--	...
4	--/--/--	...
5	--/--/--	...

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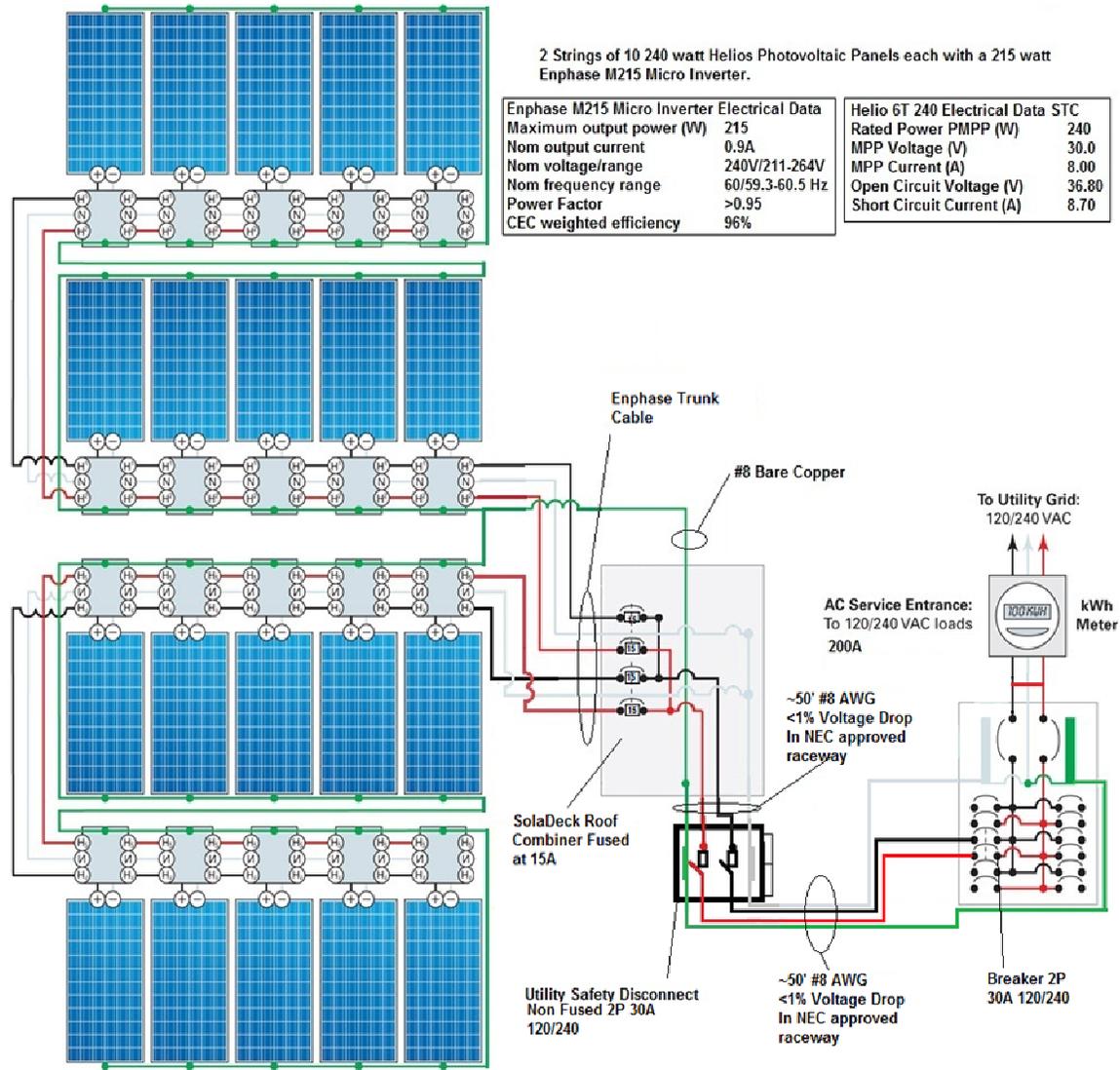
Block Diagram



Plemmons Residence

REVISIONS		
	MM/DD/YY	REMARKS
1	7/30/2012	CML-Construction
2	--/--/--	...
3	--/--/--	...
4	--/--/--	...
5	--/--/--	...

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Note: All numbers are rated, manufacturers' specifications, or nominal unless otherwise specified. WEEB grounding clips were used between modules and rails; the only ground wire is between the rails and from the rails to ground rod.

Three Line Electrical Diagram



Plemmons Residence

REVISIONS

	MM/DD/YY	REMARKS
1	9/30/2012	CML-Construction
2	--/--/--	...
3	--/--/--	...
4	--/--/--	...
5	--/--/--	...

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