



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

Metropolitan Historic Zoning Commission
Sunnyside in Sevier Park
3000 Granny White Pike
Nashville, Tennessee 37204
Telephone: (615) 862-7970
Fax: (615) 862-7974

STAFF RECOMMENDATION 1716 Sweetbriar Avenue June 19, 2013

Application: New construction-addition of solar panels
District: Belmont - Hillsboro Neighborhood Conservation Zoning Overlay
Council District: 18
Map and Parcel Number: 11704000700
Applicant: William Harkey, Owner
Project Lead: Fred Zahn, fred.zahn@nashville.gov

<p>Description of Project: The applicant is proposing to install twenty (20) solar panels on the roof of a one and one half-story contributing house. The panels will be on the front slope (south) of the side-gabled roof and the side slopes of a front facing gable dormer.</p> <p>Recommendation Summary: Staff recommends approval of the roof mounted solar panels. Although the front roof plane would generally not be the preferred location for solar panels, the secondary slopes of this roof face north and the rear yard are covered by the shade of several mature trees. Because there is not another feasible location for the panels, because the panels add minimal height to the structure, and because they could be removed without impairing the form, staff finds them to meet guidelines II.B.1. and II.B.2.</p>	<p>Attachments</p> <p>A: Photographs B: Installation diagram</p>
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Vicinity Map:



Aerial Map:



Applicable Design Guidelines:

II.B. GUIDELINES

1. New Construction

a. Height

The height of the foundation wall, porch roof(s), and main roof(s) of a new building shall be compatible, by not contrasting greatly, with those of surrounding historic buildings.

b. Scale

The size of a new building and its mass in relation to open spaces shall be compatible, by not contrasting greatly, with surrounding historic buildings.

c. Setback and Rhythm of Spacing

The setback from front and side yard property lines established by adjacent historic buildings should be maintained. Generally, a dominant rhythm along a street is established by uniform lot and building width. Infill buildings should maintain that rhythm.

d. Materials, Texture, Details, and Material Color

The materials, texture, details, and material color of a new building's public facades shall be visually compatible, by not contrasting greatly, with surrounding historic buildings. Vinyl and aluminum siding

e. Roof Shape

The roof(s) of a new building shall be visually compatible, by not contrasting greatly, with the roof shape, orientation, and pitch of surrounding historic buildings.

f. Orientation

The orientation of a new building's front facade shall be visually consistent with surrounding historic buildings.

g. Proportion and Rhythm of Openings

The relationship of width to height of windows and doors, and the rhythm of solids (walls) to voids (door and window openings) in a new building shall be compatible, by not contrasting greatly, with surrounding historic buildings.

2. ADDITIONS

- a. Generally, an addition should be situated at the rear of a building in such a way that it will not disturb either front or side facades. To distinguish between the historic structure and an addition, it is desirable to set the addition in from the building side wall or for the addition to have a different exterior cladding. Additions normally not recommended on historic structures may be appropriate for non-historic structures in Hillsboro-West End. Front or side alterations to non-historic buildings that

increase habitable space or change exterior height should be compatible, by not contrasting greatly, with the adjacent historic buildings.

Placement

Additions should be located at the rear of an existing structure.

Connections to additions should, as much as possible, use existing window and door openings rather than remove significant amounts of rear wall material.

Generally rear additions should inset one foot, for each story, from the side wall.

Additions should be physically distinguished from the historic building and generally fit within the shadow line of the existing building.

In order to assure that an addition has achieved proper scale, the addition should generally be shorter and thinner than the existing building. Exceptions may be made when unusual constraints make these parameters unreasonable, such as:

- *An extreme grade change*
- *Atypical lot parcel shape or size*

In these cases, an addition may rise above or extend wider than the existing building; however, generally the addition should not higher and extend wider.

When an addition needs to be taller:

Whenever possible, additions should not be taller than the historic building; however, when a taller addition is the only option, additions to single story structures may rise as high as 4' above the shadow line of the existing building at a distance of 40' from the front edge of the existing building. In this instance, the side walls and roof of the addition must set in as is typical for all additions. The portion of the roof that can be seen should have a hipped, side gable or clipped gable roof to help decrease the visual mass of the addition.

- b. When a lot width exceeds 60 feet or the standard lot width on the block, it may be appropriate to add a side addition to a historic structure. The addition should set back from the face of the historic structure and should be subservient in height, width and massing to the historic structure.

The addition should set back from the face of the historic structure (at or beyond the midpoint of the building) and should be subservient in height, width and massing to the historic structure.

Side additions should be narrower than half of the historic building width and exhibit a height of at least 2' shorter than the historic building.

To deemphasize a side addition, the roofing form should generally be a hip or side-gable roof form.

- c. The creation of an addition through enclosure of a front porch is not appropriate. The creation of an addition through the enclosure of a side porch may be appropriate if the addition is constructed in such a way that original form and openings on the porch remain visible and undisturbed.

- d. Contemporary designs for additions to existing properties are not discouraged when such additions do not destroy significant historical, architectural, or cultural material; and when such design is compatible, by not contrasting greatly, with the size, scale, color, material, and character of the property, neighborhood, or environment.

- e. A new addition should be constructed in such a manner that if the addition were to be removed in the future, the essential form and integrity of the original structure would be unimpaired.

Connections should, as much as possible, use existing window and door openings rather than remove significant amounts of rear wall material.

- f. Additions should follow the guidelines for new construction.

Background: The building at 1716 Sweetbriar Avenue is a one and one half-story brick, Bungalow style house, constructed circa 1930. It is listed as a contributing structure in the National Register survey of the district.

Analysis and Findings: The applicant proposes to install twenty (20) photovoltaic solar panels on the front, south facing slope, of the side-gabled roof and the side slopes of a front-facing gable dormer. The panels will be “flush mounted,” matching the pitch of the existing roof. Each panel will be thirty-nine by sixty-four inches (39” x 64”), and with the mounting hardware will project four inches (4”) from the existing roof plane, covering an approximate total area of three hundred forty-seven square feet (347 sq.ft.), or approximately 38% of the total publically-visible area. The panels will be black, against the existing medium brown asphalt shingle roof. This color is compatible with surrounding roofs and meets guideline II.B.1.d. Because of the low-profile installation, staff finds that the solar panel system will be compatible with the height and character of the house, and will meet guideline II.B.1.a.

The production meter and AC disconnect switch will be located adjacent and to the rear of the existing NES billing meter on the west elevation of the home. The panels will have minimal impact on the historic home, retaining the original form and existing materials.

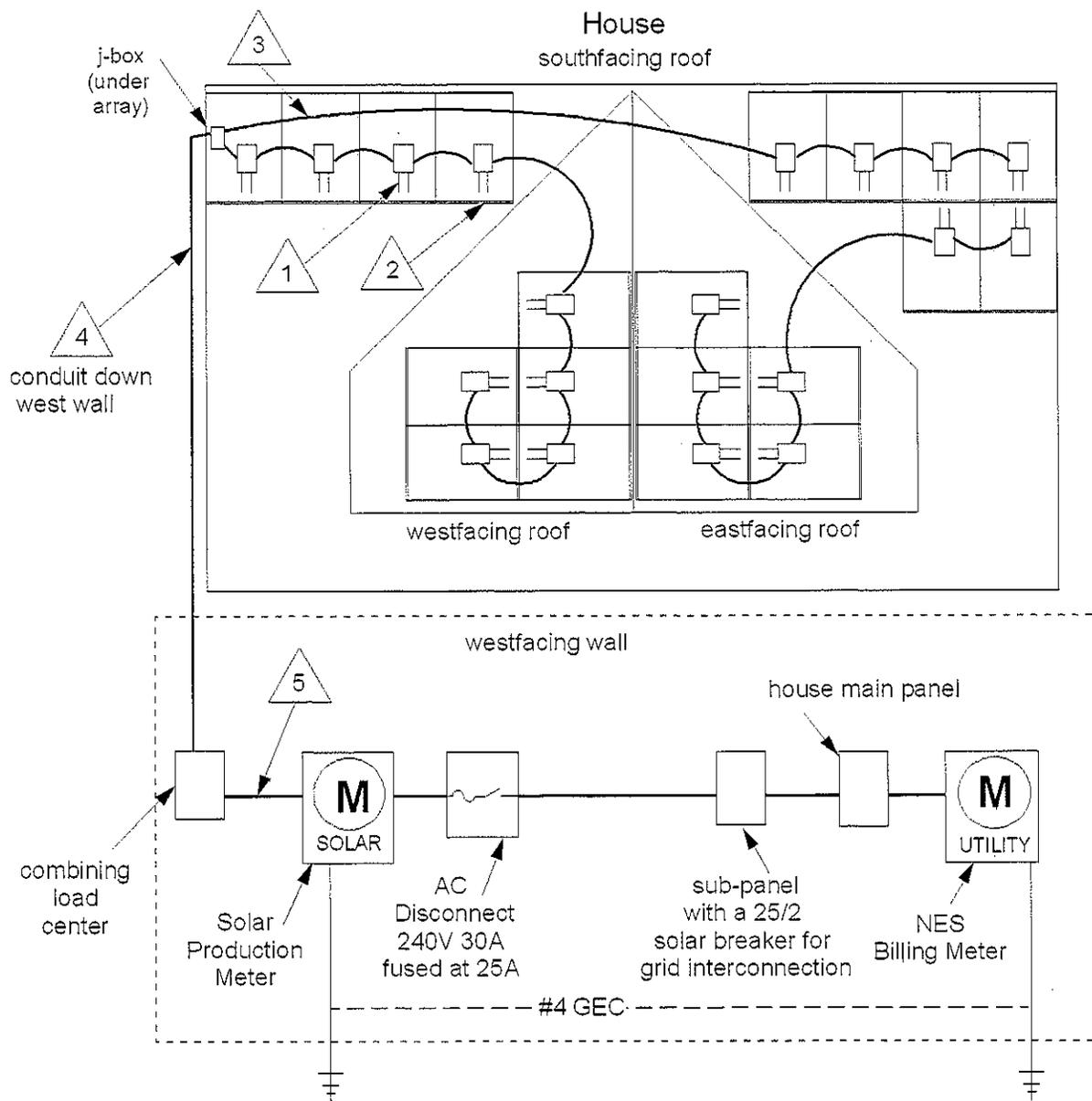
Preferably, solar panels would be installed on a secondary or side-facing roof plane, or on the roof of an accessory building. However, the front slope of the roof is the only available location that would not be shaded by several large trees nearby. Installation of the solar panels will have a minimal effect on the historic home as there are few penetrations and the system can easily be removed without affecting the historic form. Staff finds that this is a compatible addition under guideline II.B.1.

Recommendation:

Staff recommends approval of the application to install solar panels on the front slope of the roof of 1716 Sweetbriar Avenue, finding the proposal to meet guidelines II.B.1 and II.B.2, and that the appearance and location will have minimal effect on the form of the historic house.



Locations of new Solar Panels



Wire Schedule

KEY	1	2
Wire	#12/MC4 Module leads	#8 bare solid equipment ground (not shown)
Conduit	N/A	N/A

AC Wiring

	3	4	5
Engage Cable System		6-#10 THWN-2 w/ #10 ground	3-#6 THWN-2 1-#8 THWN-2 ground
	N/A	3/4" EMT	1" EMT

SYSTEM VALUES

ARRAY

- 5.0 kW
- 20 - 250w solar modules
- 20 - M-215 microinverters
- 2 strings (9 and 11) - 250w panels

PV SOURCE CIRCUIT

(solar module leads only)

- Short-circuit Current: 8.9 Adc
- Max. Power Current: 8.3 Adc
- Max. Power Voltage: 30.1 Vdc
- Open Circuit Voltage: 37.2 Vdc

AC OUTPUT

- 20 Enphase M-215 Microinverters (in two parallel strings)
- Nominal Operating Voltage: 240 Vac
- Nom. Output Current: 0.9A each 18 Aac (UL 1741, IEEE 1547 Compliant)

SUNDOG SOLAR
Tenn. Electrical Cont. Lic. # 64350

Solar Site Plan
Bill Harkey, 1716 Sweetbriar, Nashville, TN 37212
Roof mounted Solar Array - 5.0 kWdc

Not to Scale

NES Utility Meter

Drawing by R. C.

Designed by G. W.

CERTIFIED
NORTH AMERICAN BOARD OF ELECTRICAL MANUFACTURING PRACTITIONERS
NABCEP # 091209-195

Proposed panel locations

Harkey-May
1716 Sweetbriar Ave.
Nashville 37212

