EXPEDITED
MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address: 7114 Sycamore Ave., Takoma Park  
Meeting Date: 3/13/2019

Resource: Non-Contributing Resource  
Montgomery County Historic District  
Report Date: 3/6/2019

Applicant: Frederick Feinstein  
Brent Cotton, Agent  
Public Notice: 2/27/2019

Review: HAWP  
Tax Credit: n/a

Case Number: 37/03-19G  
Staff: Dan Bruecher

PROPOSAL: Solar Panel Installation

STAFF RECOMMENDATION:

☑ Approve
☐ Approve with conditions

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Non-Contributing Resource to the Takoma Park Historic District
STYLE: Craftsman
DATE: 1988

Figure 1: The solar installation at 7114 Sycamore will only be minimally visible from Poplar Ave. to the rear at a distance of nearly 300 ft. (three hundred feet).
**PROPOSAL**

The applicant proposes to install 37 (thirty-seven) flush-mounted solar panels on the rear slope of the roof. The electrical conduit will be installed to the rear of an existing down spout to limit its visibility. Due to the narrow setbacks of the houses along Poplar Ave., to the rear, this array will be minimally visible from the public right-of-way, nearly 300 ft. (three hundred feet) away.

**APPLICABLE GUIDELINES:**

The Expedited Staff Report format may be used on the following type of cases:

2. Modifications to a property, which do not significantly alter its visual character.

**Montgomery County Code; Chapter 24A-8**

(b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to insure conformity with the purposes and requirements of this chapter, if it finds that:

(1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or

(2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; or

(c) It is not the intent of this chapter to limit new construction, alteration or repairs to any 1 period or architectural style.

(d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

**Secretary of the Interior’s Standards for Rehabilitation**

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, space and spatial relationships that characterize a property will be avoided.

**STAFF RECOMMENDATION**

Staff recommends that the Commission approve the HAWP application under the Criteria for Issuance in Chapter 24A-8(b)(1) and (2) and sections (c) and (d) having found that the proposal is consistent with the Secretary of the Interior’s Standards for Rehabilitation (specifically, Standard 2), and therefore will not substantially alter the exterior features of the historic resource and is compatible in character with the district and the purposes of Chapter 24A; and with the general condition that the applicant shall present the 3 permit sets of drawings, if applicable to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits.
Historic Area Work Permit Application for a Solar Electric System
on the home of
Frederick Feinstein, 7114 Sycamore Ave., Takoma Park, MD 20912

HISTORIC PRESERVATION COMMISSION
301/563-3400

APPLICATION FOR HISTORIC AREA WORK PERMIT

Contact Email: tlampros@solarenergyworld.com
Contact Person: Tom Lampros
Daytime Phone: 410.579.5177

Tax Account No.: 13-01059410

Name of Property Owner: Frederick Feinstein
Daytime Phone: 240.460.3893

Address: 7114 Sycamore Ave., Takoma Park, MD 20912
City: Street: Zip Code:
Street Number: City: Zip Code:
Contractor: Solar Energy World, LLC
Contractor Phone: 410.579.2009

Agent for Owner: Brent Cotton
Daytime Phone: 410.241.7553

LOCATION OF WORK

Lot: 10 Block: 21 Subdivision: 0025
City: Street: Nearest Cross Street:
Liber: 7510 Folio: 799 Parcel:

PART ONE: STATEMENT OF FACTS AND USE

1A. CHECK ALL APPLICABLE:
☐ Construct ☐ Extend ☐ Alter/Remove ☐ A/C ☐ Add ☐ Room Addition ☐ Porch ☐ Deck ☐ Shed
☐ Move ☐ Install ☐ Remove ☐ Solar ☐ Fireplace ☐ Woodburning Stove ☐ Single Family
☐ Revision ☐ Repair ☐ Removable ☐ Fence/Wall (complete Section 4) ☐ Other:

1B. Construction cost estimate: $

1C. If this is a revision of a previously approved active permit, see Permit #

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTENSIONS

2A. Type of sewage disposal: 01 ☐ WSSC 02 ☐ Septic 03 ☐ Other:

2B. Type of water supply: 01 ☐ WSSC 02 ☐ Well 03 ☐ Other:

PART THREE: COMPLETE ONLY IF NAKED TERRACED MASONRY WALL

3A. Height: feet inches

3B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:
☐ On property line/property line ☐ Entirely on land of owner ☐ On public right of way/assessment

I hereby certify that I have the authority to make the foregoing application, that the application is correct, and that the construction will comply with plans approved by all agencies listed and I hereby acknowledge and accept this to be a condition for the issuance of this permit.

Signature of owner or authorized agent

2/5/19

Approved: ____________________________ For Chairperson, Historic Preservation Commission

Disapproved: __________________________ Signature: __________________________ Date:

Application/Permit No.: __________________________ Date Filed: __________________________ Date issued: __________________________
Historic Area Work Permit Application for a Solar Electric System
on the home of
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1. Written description of the project
   a. The existing structure is a Craftsman-style bungalow, one-story in front and two-story in the rear. It was constructed in 1988. The home was designed to work with the neighborhood, which is vintage 1920s.
   b. The proposed solar system will be flush-mounted to the rear (south- and southeast-facing) roofs on the primary sections of the home. The majority of the solar panels will be on the south roof of the building. The height and tilt of the roof will pose little disruption to the environment of the neighborhood, as it will be virtually unnoticeable from the street level. Conduit can be run from the roof to ground by tucking it behind a downspout in the rear of the home. We have had issues with painting conduit in the past, as it is galvanized and does not accept paint well. As a result, we typically either bring the conduit to the basement inside the home, when possible, or physically hide the conduit as best as we can.

2. Site Plan
   a. Please see attached Solar Panel Layout
   b. 2 copies, 11“x17”

3. Plans & Elevations
   a. N/A

4. Materials Specifications
   a. Please see attached spec sheets for module and inverter

5. Photographs
   a. Please see photos below

6. Tree Survey – no trees will be disturbed or removed as part of this work

7. Addresses of Adjacent and Confronting Property Owners

<table>
<thead>
<tr>
<th>Owner’s mailing address</th>
<th>Owner’s agent mailing address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fredrick Feinstein</td>
<td>Solar Energy World</td>
</tr>
<tr>
<td>7114 Sycamore Ave.</td>
<td>5681 Main St.</td>
</tr>
<tr>
<td>Takoma Park, MD 20912</td>
<td>Elkridge, MD 21075</td>
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</table>

Adjacent and confronting property owners mailing addresses

<table>
<thead>
<tr>
<th>Adjoining</th>
<th>Thomas LaLonde &amp; Julia D Zito</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot 11, Block 21</td>
<td>7112 Sycamore Ave.</td>
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<tr>
<td>Adjoining</td>
<td>Takoma Park, MD 20912</td>
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<tr>
<td>Lot 9, Block 21</td>
<td>David Navari &amp; Sarah Lumbard</td>
</tr>
<tr>
<td>Adjoining</td>
<td>7116 Sycamore Ave.</td>
</tr>
<tr>
<td>Takoma Park, MD 20912</td>
<td></td>
</tr>
<tr>
<td>Lot 9, Block 22</td>
<td>Frances Burwell &amp; James Meen</td>
</tr>
<tr>
<td>Confronting</td>
<td>7113 Sycamore Ave.</td>
</tr>
<tr>
<td>Takoma Park, MD 20912</td>
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<tr>
<td>Lot 51, Block 21</td>
<td>Tesfu Tesfaye &amp; Solomon Eyerusalem</td>
</tr>
<tr>
<td>Rear-adjointing</td>
<td>7115 Poplar Ave.</td>
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<td>Takoma Park, MD 20912</td>
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</table>
Historic Area Work Permit Application for a Solar Electric System
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Existing Property Condition Photographs

Front view

East view

West view
Historic Area Work Permit Application for a Solar Electric System
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Equipment Location, Before and After Installation

Proposed Conduit Locations
NOTES:
1. THE SYSTEM SHALL INCLUDE [37] Sfrica Sila-Monocrystalline 320w Modules.
2. Snaptrack Solar Mount Rail will be installed in accordance with Snaptrack Installation Manual.
3. Dimensions marked (*) are along roof slope.
4. Refer to structural drawing for sections marked and additional notes.

Solar Panel Layout
Scale: 1/8" = 1'-0"
LR6-60PB
295~315M
Hi-MO1 High Efficiency Low LID Mono PERC Technology (60C/All Black Module)

Aesthetic appearance with black frame and backsheets, best suited for rooftop installation

10-year Warranty for Materials and Processing;
25-year Warranty for Extra Linear Power Output

-0.55%
25-year Power Warranty Annual Power Attenuation -0.55%

+4.10%

Complete System and Product Certifications
IEC 61215, IEC61730, UL1703
ISO 14001: 2004: ISO Environment Management System
TS62941: Guideline for module design qualification and type approval
OHSAS 18001: 2007 Occupational Health and Safety

* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

Positive power tolerance (0 ~ +5W) guaranteed
High module conversion efficiency (up to 19.3%)
Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25
Better energy yield with excellent low irradiance performance and temperature coefficient
Solid PID resistance ensured by solar cell process optimization and careful module BGM selection
Adaptable to harsh environment: passed rigorous salt mist and ammonia tests
Robust frame (40mm) withstands mechanical loading of 5400Pa for snow load on front and 24000Pa for wind load on rear side

ROOMI Solar

Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi Solar have the sole right to make such modification at anytime without further notice. Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.
LR6-60PB 295~315M

**Design (mm)**

Cell Orientation: 60 (6x10)
Junction Box: IP67; three diodes
Output Cable: 4mm², 1000mm in length
Connector: MC4 or MC4 comparable
Weight: 18.5kg
Dimension: 1650x991x40mm
Packaging: 26pcs per pallet

**Mechanical Parameters**

Operational Temperature: -40°C ~ +85°C
Power Output Tolerance: 0 ~ +5 W
Maximum System Voltage: DC1000V (IEC&UL)
Maximum Series Fuse Rating: 20A
Nominal Operating Cell Temperature: 45±2°C
Application Class: Class A

**Electrical Characteristics**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>LR6-60PB-295M</th>
<th>LR6-60PB-300M</th>
<th>LR6-60PB-305M</th>
<th>LR6-60PB-310M</th>
<th>LR6-60PB-315M</th>
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<tr>
<td>Testing Condition</td>
<td>STC</td>
<td>NOCT</td>
<td>STC</td>
<td>NOCT</td>
<td>STC</td>
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<td>Maximum Power (Pmax/W)</td>
<td>295</td>
<td>218.5</td>
<td>300</td>
<td>222.2</td>
<td>305</td>
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<td>Open Circuit Voltage (Voc/V)</td>
<td>39.9</td>
<td>37.2</td>
<td>40.1</td>
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<td>Short Circuit Current (Isc/A)</td>
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<td>7.81</td>
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<td>7.91</td>
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<td>Voltage at Maximum Power (Vmp/V)</td>
<td>32.6</td>
<td>30.1</td>
<td>32.8</td>
<td>30.3</td>
<td>33.0</td>
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<tr>
<td>Current at Maximum Power (Imp/A)</td>
<td>9.05</td>
<td>7.26</td>
<td>9.15</td>
<td>7.34</td>
<td>9.24</td>
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<td>Module Efficiency (%)</td>
<td>18.0</td>
<td>18.3</td>
<td>18.7</td>
<td>19.0</td>
<td>19.3</td>
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</table>

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Spectra at AM1.5
NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/S

**Temperature Ratings (STC)**

Temperature Coefficient of Isc: +0.057%/°C
Temperature Coefficient of Voc: -0.286%/°C
Temperature Coefficient of Pmax: -0.370%/°C

**Mechanical Loading**

Front Side Maximum Static Loading: 5400Pa
Rear Side Maximum Static Loading: 2400Pa
Hallstone Test: 25mm Hallstone at the speed of 23m/s

**I-V Curve**

Current-Voltage Curve (LR6-60PB-305M)
Power-Voltage Curve (LR6-60PB-305M)
Current-Voltage Curve (LR6-60PB-305M)

### Notes

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LONGI Solar

Room 201, Building 8, Sandhill Plaza, Lane 2190, Zuchongzhi Road, Pudong District, Shanghai, 201203
Tel.: +86-21-61047332 Fax: +86-21-61047377 E-mail: module@longi-silicon.com
Facebook: www.facebook.com/LONGI Solar
Single Phase Inverter with HD-Wave Technology for North America

Optimized installation with HD-Wave technology
- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)
# Single Phase Inverter with HD-Wave Technology for North America

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<td>Rated AC Power Output</td>
<td>3000</td>
<td>3800 @ 240V</td>
<td>5000</td>
<td>6000 @ 240V</td>
<td>7600</td>
<td>10000</td>
<td>11400</td>
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<td>Max. AC Power Output</td>
<td>3000</td>
<td>3800 @ 280V</td>
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<td>Maximum Continuous Output Current @208V</td>
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<td>24</td>
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<td>Maximum Continuous Output Current &amp; 240V</td>
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<td>Utility Monitoring, Islanding Protection, Country Configurable Thresholds</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Maximum DC Power @240V</td>
<td>4650</td>
<td>5100</td>
<td>7750</td>
<td>9300</td>
<td>11800</td>
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<td>Maximum DC Power @208V</td>
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<td>Transformer-less, Ungrounded</td>
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<td>CEC Weighted Efficiency</td>
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<td>Nighttime Power Consumption</td>
<td>&lt; 2.5</td>
<td>&lt; 2.5</td>
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<td><strong>ADDITIONAL FEATURES</strong></td>
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<td>Supported Communication Interfaces</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
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<td><strong>STANDARD COMPLIANCE</strong></td>
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<td>Safety</td>
<td>UL1741, UL1741 5A, UL1699B, CAN/UL2, Canadian AFCI according to T.I.L. M-07</td>
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<td><strong>INSTALLATION SPECIFICATIONS</strong></td>
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<tr>
<td>AC Output Cord Size / AWG Range</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
<td>3/4&quot; minimum / 14-6 AWG</td>
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<td>DC Input Cord Size / AWG Range</td>
<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
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<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4&quot; minimum / 1-2 strings / 14-6 AWG</td>
</tr>
<tr>
<td>Dimensions with Safety Switch (HxWxD)</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
</tr>
<tr>
<td>Weight with Safety Switch</td>
<td>22 / 10</td>
<td>25.1 / 11.4</td>
<td>26.2 / 11.9</td>
<td>26.2 / 11.9</td>
<td>26.2 / 11.9</td>
<td>26.2 / 11.9</td>
<td>26.2 / 11.9</td>
</tr>
<tr>
<td>Noise</td>
<td>75 dB A</td>
<td>75 dB A</td>
<td>75 dB A</td>
<td>75 dB A</td>
<td>75 dB A</td>
<td>75 dB A</td>
<td>75 dB A</td>
</tr>
<tr>
<td>Cooling</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
<td>-13 to +140 / -25 to +60°C</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
<td>NEMA 3R (Inverter with Safety Switch)</td>
</tr>
</tbody>
</table>

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| Note | 11 |

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11
I reviewed the design of the photovoltaic (PV) system, as designed by the manufacturer, and the design criteria utilized for the mounting equipment and panel mounting assembly (rack system) for the installation of ___ (#) ___ panels supported by the rack system, as shown on the drawings prepared for the above referenced address. I certify that the configurations and design criteria meet the standards and requirements of the International Residential Code (IRC) and International Existing Building Code (IEBC) adopted by Montgomery County in COMCOR 08.00.02.

The attachment of the rack system to the building at the above address, including the location, number, and type of attachment points; the number of fasteners per attachment point; and the specific type of fasteners (size, diameter, length, minimum embedment into structural framing, etc.) meets the standards and requirements of the IRC and IEBC adopted by Montgomery County in COMCOR 08.00.02.

I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. I certify that no structural modifications of the existing roof structure are required. The existing roof structure meets the standards and requirements of the IRC and IEBC, adopted by Montgomery County in COMCOR 08.00.02, necessary to support the PV system.

I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. Structural modifications of the existing roof structure are required. I certify that the roof structure, as modified on the drawings for this project, will support the additional loads imposed by the PV system. I further certify that design of the modified roof structure meets the standards and requirements of the IRC and IEBC, adopted by Montgomery County in COMCOR 08.00.02.

I prepared or approved the construction documents for the mounting equipment, rack system, roof structure for this project.

50459
Maryland PE License Number

Date 1/10/2019

Signature

Must be submitted with plans
Thursday, January 10, 2019

To: Montgomery County, Permitting Department

Subject: Structural Certification for Solar Panels Installation at
Feinstein, Fred & Collins, Karen Residence
714 Sycamore Avenue, Takoma Park, MD

To whom it may concern,

An analysis of the existing specified roofs for code consistency of their supporting frame system was performed at the subject residence for the installation of solar panels. According to the field measurements / inspections of the roof support framing system that was performed by the Solar Energy World site assessment personnel, the roof supporting system is as follows:

The roof structure consists of asphalt shingles on ½" thick OSB supported on 2"x10" timbers spaced at 24" O.C. The roof section “S1” has a maximum projected horizontal span of 34'-2" between load bearing walls, and a roof slope of 33 degrees. The maximum unsupported projected horizontal span of the roof top chords is approximately 17 ft.

The roof section “S2” has a maximum projected horizontal span of 16'-4" between load bearing walls, and a roof slope of 43 degrees. The maximum unsupported projected horizontal span of the roof top chords is approximately 8 ft.

The above existing roof support framing systems “S1” and “S2” are adequate subject to all code specified design loads and additional loading imposed by the installation of the solar panels, without implementation of reinforcement. No reinforcement is required.

The spacing of the solar “L Feet” should be as specified in drawing titled “Solar Panel Footing Plan”, with a staggered pattern to ensure proper distribution of imposed loads.

I further certify that all applicable loads required by the current codes and design criteria listed below were applied and analyzed. Furthermore, the installation crews have been thoroughly trained to install the solar panels following all the installation recommendations specified by SNAPNRACK for the racking system and for connecting to the roof. Finally, I accept the certifications provided by the solar panel manufacturer for the ability of the panels to withstand design wind and snow loads.

Design Criteria:

- Applicable Design Codes = 2015 IBC / IRC, ASCE 7-10, and NDS-2015
- Roof Dead Load = 8.6 psf
• Ultimate Design Wind Speed = 115 mph, Exposure B

• Ground Snow Load = 30 psf

If any condition is found to be different from what is shown on the drawings or there appears to be any damage to the structure, the installers should halt the solar panel installation and notify the structural engineer.

Should you have any question or concerns regarding this project, please feel free to contact me.

Sincerely,

Ali Shariati, PhD, P.E.
Chief Structural Engineer
Solar Energy World

[Signature]

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1/10/2019

Professional Certification: I hereby certify that these plans were prepared or approved by me, and I am duly licensed professional engineer under the laws of the State of Maryland. License No. 50459. Expiration Date: January 12, 2021.