EXPEDITED
MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address:	7114 Sycamore Ave., Takoma Park	**Meeting Date:**	3/13/2019
Resource:	Non-Contributing Resource **Takoma Park 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 Bruechert
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

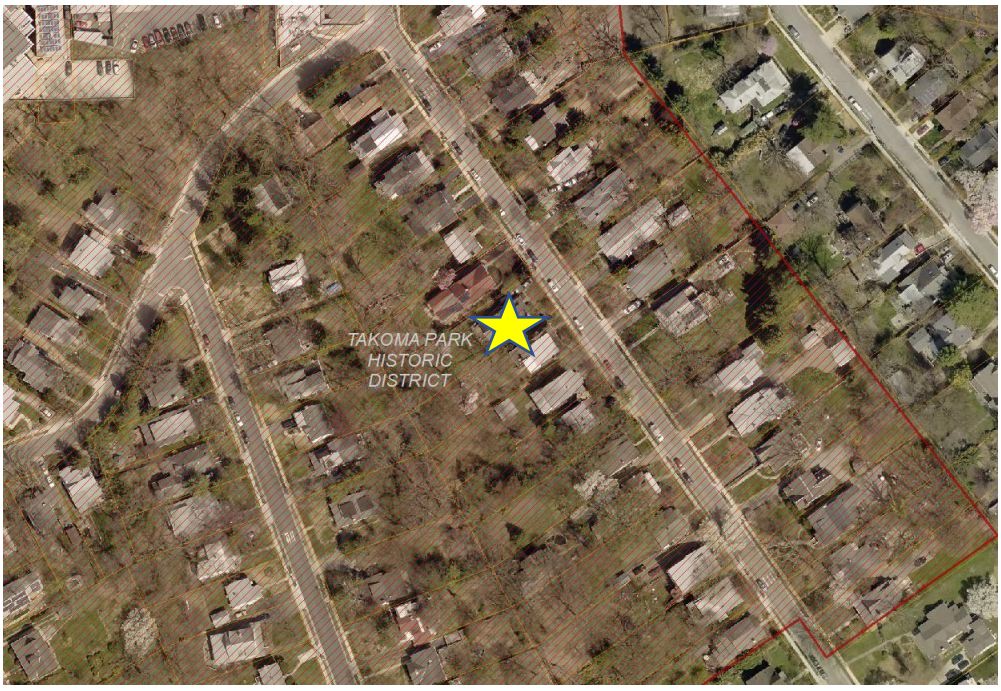

Figure 1: The solar installation at 7114 Sycamore will only be minimally visible from Poplar Ave. to the rear at a distance of nearly 300 ft. (three hundred feet).

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

[redacted]

DPS - #8

HISTORIC PRESERVATION COMMISSION
301/563-3400

APPLICATION FOR HISTORIC AREA WORK PERMIT

Contact Email: tlampros@solarenergyworld.com Contact Person: Tom Lampros
Daytime Phone No.: 410.579.5177

Tax Account No.: 13-01059410
Name of Property Owner: Frederick Feinstein Daytime Phone No.: 240.460.3893
Address: 7114 Sycamore Ave., Takoma Park, MD 20912
Street Number City Steet Zip Code
Contractor: Solar Energy World, LLC Phone No.: 410.579.2009
Contractor Registration No.:
Agent for Owner: Brent Cotton Daytime Phone No.: 410.241.7553

LOCATION OF BUILDING/PREMISE

House Number: 7114 Street: Sycamore Ave.
Town/City: Takoma Park Nearest Cross Street:
Lot: 10 Block: 21 Subdivision: 0025
Liber: 7510 Folio: 799 Parcel:

PART ONE: TYPE OF PERMIT ACTION AND USE

1A. CHECK ALL APPLICABLE:

☐ Construct ☐ Extend ☐ Alter/Renovate
☐ Move ☒ Install ☐ Wreck/Raze
☐ Revision ☐ Repair ☐ Revocable

CHECK ALL APPLICABLE:

☐ A/C ☐ Slab ☐ Room Addition ☐ Porch ☐ Deck ☐ Shed
☒ Solar ☐ Fireplace ☐ Woodburning Stove ☐ Single Family
☐ 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 EXTEND/ADDITIONS

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 FOR FENCE/RETAINING WALL

3A. Height feet inches
3B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:

☐ On party line/property line ☐ Entirely on land of owner ☐ On public right of way/easement

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.

Thomas M Lampros
Signature of owner or authorized agent

2/5/19
Date

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

Frederick Feinstein, 7114 Sycamore Ave., Takoma Park, MD 20912

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

Owner's mailing address	Owner's agent mailing address
Fredrick Feinstein 7114 Sycamore Ave. Takoma Park, MD 20912	Solar Energy World 5681 Main St. Elkridge, MD 21075
Adjacent and confronting property owners mailing addresses	
Lot 11, Block 21 Adjoining	Thomas LaLonde & Julia D Zito 7112 Sycamore Ave. Takoma Park, MD 20912
Lot 9, Block 21 Adjoining	David Navari & Sarah Lumbard 7116 Sycamore Ave. Takoma Park, MD 20912
Lot 9, Block 22 Confronting	Frances Burwell & James Meen 7113 Sycamore Ave. Takoma Park, MD 20912
Lot 51, Block 21 Rear-adjoining	Tesfu Tesfaye & Solomon Eyerusalem 7115 Poplar Ave. Takoma Park, MD 20912

Historic Area Work Permit Application for a Solar Electric System
on the home of
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Existing Property Condition Photographs

Front view

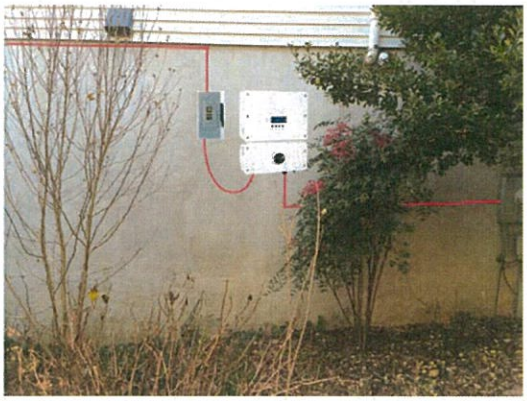
East view

West view

Historic Area Work Permit Application for a Solar Electric System

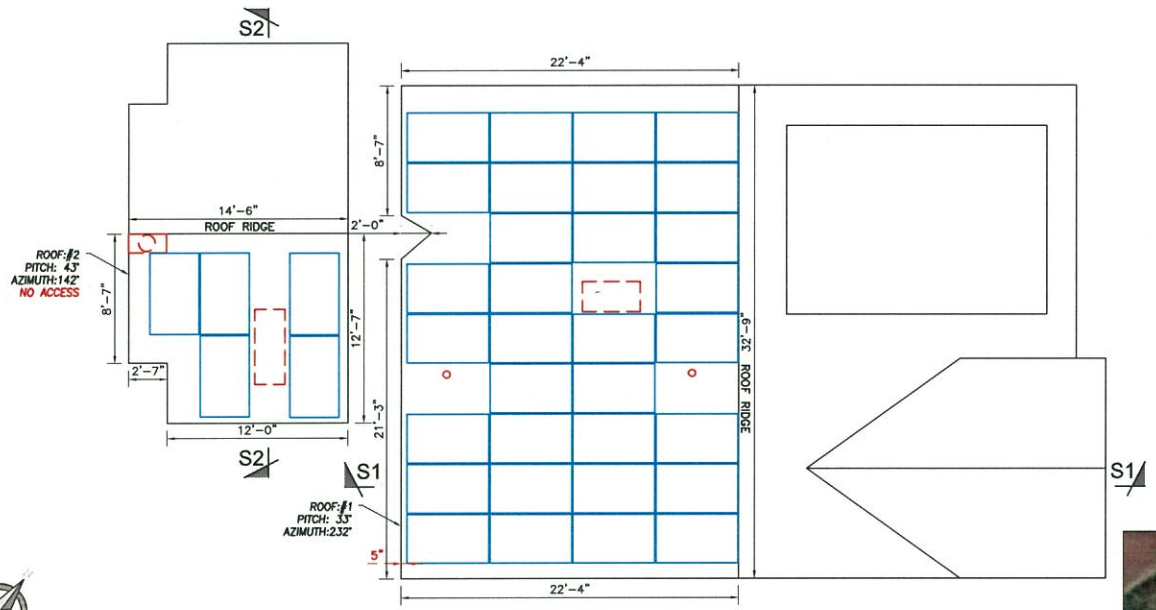
on the home of

Frederick Feinstein, 7114 Sycamore Ave., Takoma Park, MD 20912



Equipment Location, Before and After Installation

Proposed Conduit Locations



SOLAR PANEL LAYOUT

Scale: 1/8" =1'-0"

NOTES:

1. THE SYSTEM SHALL INCLUDE [37] SILFAB SLA–MONOCRYSTALLINE 300W MODULES.
2. SNAPNRACK SOLAR MOUNT RAIL WILL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.

SolarEnergyWorld
Because Tomorrow Matters
Solar Energy World LLC.
5681 Main Street
Elkridge, MD 21075
(888) 497-3233

Stamp

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 50459, EXPIRATION DATE:January 12, 2021.
*STAMPED AND SIGNED FOR STRUCTURES ONLY.

Revisions

REV	DESCRIPTIONS	BY	DATE
01	--------	--	--

Project Name and Address

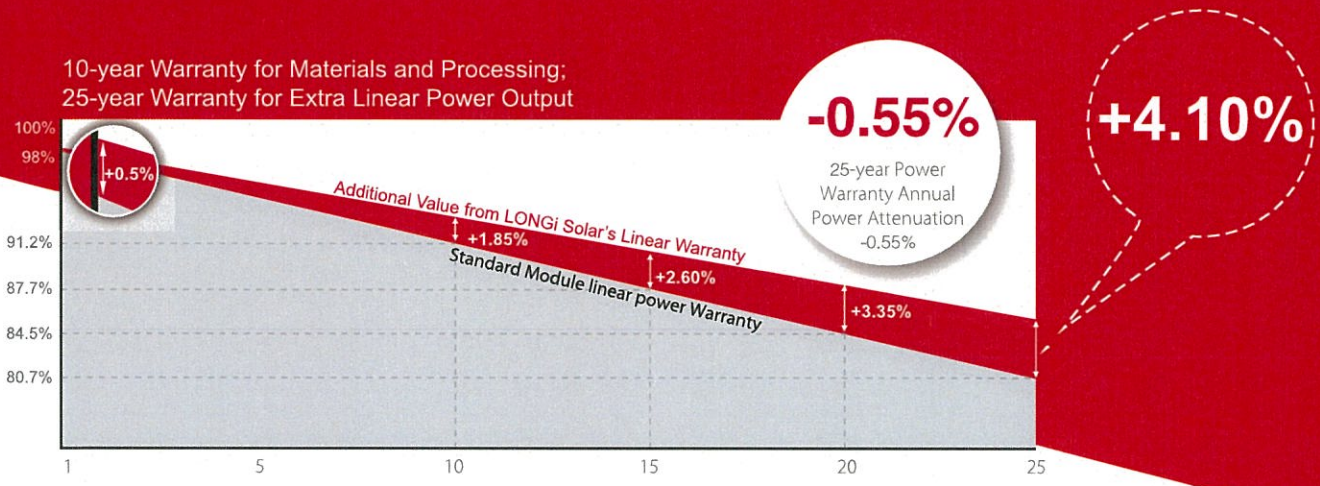
Fred Feinstein and Karen Collins
7114 Sycamore Ave.
Takoma Park, MD 20912
11.10 kW

Drawn by	Sheet
CBK	A001
Date: 19-DEC-2018	
Scale: AS NOTED	

LR6-60PB
295~315M

Hi-MO1 High Efficiency Low LID Mono PERC Technology (60C/All Black Module)

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



Complete System and Product Certifications

IEC 61215, IEC61730, UL1703

ISO 9001:2008: ISO Quality Management System

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 BOM selection

Adaptable to harsh environment: passed rigorous salt mist and ammonia tests

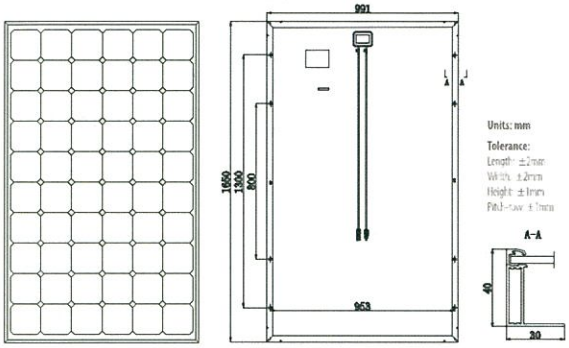
Robust frame (40mm) withstands mechanical loading of 5400Pa for snow load on front and 2400Pa for wind load on rear side

LONGi Solar

Room 201, Building 8, Sandhill Plaza, Lane 2290, 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

LR6-60PB **295~315M**

Design（mm）



Mechanical Parameters

Cell Orientation: 60（6×10）

Junction Box: IP67, three diodes

Output Cable: 4mm², 1000mm in length

Connector: MC4 or MC4 comparable

Weight: 18.5kg

Dimension: 1650×991×40mm

Packaging: 26pcs per pallet

Operating Parameters

Operational Temperature: -40℃ ~ +85℃

Power Output Tolerance: 0 ~ +5 W

Maximum System Voltage: DC1000V (IEC&UL)

Maximum Series Fuse Rating: 20A

Nominal Operating Cell Temperature: 45±2℃

Application Class: Class A

Electrical Characteristics

Test uncertainty for Pmax: ±3%

Model Number	LR6-60PB-295M		LR6-60PB-300M		LR6-60PB-305M		LR6-60PB-310M		LR6-60PB-315M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	295	218.5	300	222.2	305	225.9	310	229.6	315	233.4
Open Circuit Voltage (Voc/V)	39.9	37.2	40.1	37.4	40.2	37.5	40.3	37.6	40.5	37.8
Short Circuit Current (Isc/A)	9.69	7.81	9.81	7.91	9.94	8.01	9.98	8.04	10.10	8.14
Voltage at Maximum Power (Vmp/V)	32.6	30.1	32.8	30.3	33.0	30.5	33.2	30.7	33.4	30.9
Current at Maximum Power (Imp/A)	9.05	7.26	9.15	7.34	9.24	7.41	9.35	7.50	9.43	7.56
Module Efficiency(%)	18.0		18.3		18.7		19.0		19.3	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20℃, Spectra at AM1.5, Wind at 1m/S

Temperature Ratings（STC）

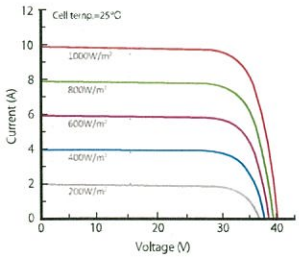
Temperature Coefficient of Isc	+0.057%/℃
Temperature Coefficient of Voc	-0.286%/℃
Temperature Coefficient of Pmax	-0.370%/℃

Mechanical Loading

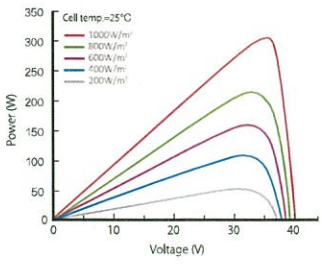
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

I-V Curve

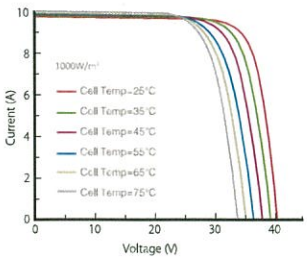
Current-Voltage Curve (LR6-60PB-305M)



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



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



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Facebook: www.facebook.com/LONGi Solar

INVERTERS

Single Phase Inverter
with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US /
SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

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)

www.solaredge.us

Single Phase Inverter
with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US /
SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400	VA
Max. AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400	VA
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	-	Vac
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current 208V	-	16	-	24	-	-	-	A
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	-	
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current 208V	-	9	-	13.5	-	-	-	
Maximum Input Current @240V	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99							%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional[2]							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG					3/4" minimum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4	26.2 / 11.9		38.8 / 17.6		lb / kg
Noise	< 25				<50			dBA
Cooling	Natural Convection				Natural convection			
Operating Temperature Range	-13 to +140 / -25 to +60[3] (-40˚F / -40˚C option)[4]							˚F / ˚C
Protection Rating	NEMA 3R (Inverter with Safety Switch)							

[1] For other regional settings please contact SolarEdge support
[2] Revenue grade inverter P/N: SExxxxH-US000NNC2
[3] For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
[4] -40 version P/N: SExxxxH-US000NNU4

RoHS

SolarEnergyWorld
Because Tomorrow Matters

Project Feinstein, Fred & Collins, Karen Residence Property Owner Feinstein, Fred & Collins, Karen

Address 714 Sycamore Avenue, Takoma Park, MD

■ 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

DocuSigned by:
Seal
EDF2264F6BD1457...

Signature

Must be submitted with plans

SolarEnergyWorld
Because Tomorrow Matters

Roof Evaluation for Solar Panel Installation

Ali Shariati, Ph.D., P.E.
Chief Structural Engineer
Solar Energy World
5681 Main St,
Elkridge, MD 21075
Cell:443-449-1414
alish@udel.edu

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

Ali Shariati, Ph.D., P.E.
Chief Structural Engineer
Solar Energy World
5681 Main St,
Elkridge, MD 21075
Cell:443-449-1414
alish@udel.edu

- 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

DocuSigned by:
EDF2264F6BD1457...

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.