



HISTORIC PRESERVATION COMMISSION

Marc Elrich
County Executive

Robert Sutton
Chairman

Date: August 1, 2023

MEMORANDUM

TO: Rabbiah Sabbakhan
Department of Permitting Services

FROM: Michael Kyne
Historic Preservation Section
Maryland-National Capital Park & Planning Commission

SUBJECT: Historic Area Work Permit: #1035454 - Solar panel installation.

The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **Approved with six (6) conditions** at the July 26, 2023 Historic Preservation Commission meeting.

Conditions:

1. The applicant shall submit specification sheets for the solar panels, railing system, utility disconnect, and electrical combiner.
2. The applicant shall include a drawing or annotated photograph that illustrates the location of all utility disconnects and electrical combiners.
3. The applicant shall submit a detailed drawing that demonstrates that the panels will match the slope of the roof and that the face of the panel will be equal to or less than six inches above the roof.
4. The applicant shall amend the drawings that show the setback of the panels from the eave on the southern slope of the rear roof.
5. The applicant shall clarify that all conduits will be in the interior (attic) or on secondary elevations with limited visibility from the public rights-of-way.
6. The applicant shall submit documentation that demonstrates that the placement of panels on the rear, one-story, screened-in porch to be infeasible (whether due to foliage, roof design/orientation, etc.).

The HPC staff has reviewed and stamped the attached construction drawings.

THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant: Haley Handelman, Agent (Solar Energy World)
Address: 7418 Maple Avenue, Takoma Park





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This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once work is complete the applicant will contact Michael Kyne at 301.563.3403 or michael.kyne@montgomeryplanning.org to schedule a follow-up site visit.





**APPLICATION FOR
HISTORIC AREA WORK PERMIT**
HISTORIC PRESERVATION COMMISSION
301.563.3400

FOR STAFF ONLY:
HAWP# _____
DATE ASSIGNED _____

APPLICANT:

Name: HAWY HANDELMAN
Address: 7418 MAPLE AVENUE
Daytime Phone: 443-345-3482

E-mail: PERMITTING@SOLARUNERGYWORLD.COM
City: TAKOMA PARK Zip: 20912
Tax Account No.: 01056473

AGENT/CONTACT (If applicable):

Name: HAWY HANDELMAN
Address: 14880 SWITZER LN.
Daytime Phone: 443-345-3482

E-mail: PERMITTING@SOLARUNERGYWORLD.COM
City: LANRUL Zip: 20707
Contractor Registration No.: MHIC 127353

LOCATION OF BUILDING/PREMISE: MIHP # of Historic Property 1035454

Is the Property Located within an Historic District? Yes/District Name _____
 No/Individual Site Name _____

Is there an Historic Preservation/Land Trust/Environmental Easement on the Property? If YES, include a map of the easement, and documentation from the Easement Holder supporting this application.

Are **REVIEWED** or Hearing Examiner Approvals / Reviews Required as part of this Application?
(Complete this section if Yes) By Michael Kyne at 3:25 pm, Aug 01, 2023 Include information on these reviews as supplemental information.

Building Number: 7418 Street: MAPLE
Town/City: TAKOMA PARK Nearest Cross Street: _____
Lot: 7C Block: 86 Subdivision: 0025

APPROVED
Montgomery County
Historic Preservation Commission

[Signature]

TYPE OF WORK PROPOSED: See the checklist on Page 4 to
for proposed work are submitted with this application. In
be accepted for review. Check all that apply:

- | | | |
|---|--|--|
| <input type="checkbox"/> New Construction | <input type="checkbox"/> Deck/Porch | <input checked="" type="checkbox"/> Solar |
| <input type="checkbox"/> Addition | <input type="checkbox"/> Fence | <input type="checkbox"/> Tree removal/planting |
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Hardscape/Landscape | <input type="checkbox"/> Window/Door |
| <input type="checkbox"/> Grading/Excavation | <input type="checkbox"/> Roof | <input type="checkbox"/> Other: _____ |

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

Signature of owner or authorized agent

8/23/23
Date

HAWP APPLICATION: MAILING ADDRESSES FOR NOTIFYING
 [Owner, Owner's Agent, Adjacent and Confronting Property Owners]

<p>Owner's mailing address JEFFREY BELL 7418 MAPLE AVENUE TAKOMA PARK, MD 20912</p>	<p>Owner's Agent's mailing address HALEY HANDELMAN 14880 SWEITZER LANE LAUREL, MD 20707</p>
<p align="center">Adjacent and confronting Property Owners mailing addresses</p>	
<p>NIKOLA TOKIC 7416 MAPLE AVENUE TAKOMA PARK, MD 20912</p>	<p>JAMES + ADRIANA KOCORINIK-MINKA 106 PHILADELPHIA AVENUE TAKOMA PARK, MD 20912</p>
<p>ADJACENT SONJA PRINCE 14101 KATHLUN LANE BRANDYWINE, MD 20613</p>	<p>BACKYARD CONFRONTING DAVID BOND + URIN MOHAN 7417 MAPLE AVENUE TAKOMA PARK, MD 20912</p>
<p>ADJACENT 7420 Maple Avenue, Takoma Park 20912</p>	<p>ADJACENT 1 Valley View Avenue, Takoma Park 20912</p>

REVIEWED
 By Michael Kyne at 3:25 pm, Aug 01, 2023

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 Montgomery County
 Historic Preservation Commission



Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:

SINGLE FAMILY HOME, BUILT IN 1948

Description of Work Proposed: Please give an overview of the work to be undertaken:

- INSTALL 17 ROOF-MOUNTED SOLAR PANELS

- MICRO-INVERTERS TO BE INSTALLED UNDER EACH PANEL

- UTILITY DISCONNECT TO BE INSTALLED NEXT TO UTILITY METER ALONG WITH ELECTRICAL COMBINER BOX FOR MICRO-INVERTERS

- PANELS PLACED ON ROOF FOR MAXIMUM EFFICIENCY

- GALVANIZED STEEL CONDUITS TO RUN FROM EQUIPMENT ALONG AND TAPPED INTO CHIMNEY LINE TO ATTIC

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

APPROVED

Montgomery County

Historic Preservation Commission



Historical Area Work Permit Application for Roof Mounted Solar
Jeffrey Bell, 7418 Maple Avenue, Takoma Park, MD 20912

Existing Property Condition Photographs



Front View

REVIEWED
By Michael Kyne at 3:25 pm, Aug 01, 2023

APPROVED
Montgomery County
Historic Preservation Commission
Ronald A. Norton



East View



West View



Utility Side Before Installation



Utility Side After Installation

City of Takoma Park

Housing and Community Development Department

Main Office 301-891-7119
Fax 301-270-4568
www.takomaparkmd.gov



7500 Maple Avenue
Takoma Park, MD 20912

MUNICIPALITY LETTER

June 23, 2023

To: Jeffrey Bell
7418 Maple Avenue, Takoma Park, MD 20912
jdeanbell@yahoo.com (410) 845 - 8712

To: Department of Permitting Services
2425 Reedie Drive, 7th floor
Wheaton, Maryland 20902

From: Planning and Development Services Division

THIS IS NOT A PERMIT – For Informational Purposes Only

VALID FOR ONE YEAR FROM DATE OF ISSUE

The property owner is responsible for obtaining all required permits from Montgomery County and the City of Takoma Park. If this property is in the Takoma Park Historic District, it is subject to Montgomery County Historic Preservation requirements.

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

Representative Name: Haley Handelman
Location of Project: 7418 Maple Avenue, Takoma Park, MD 20912
permitting@solarenergyworld.com (443) 345 - 3482

Proposed Scope of Work: Install (17) roof - mounted solar panels, 6.29kW

The purpose of this municipality letter is to inform you that the City permit requirements that may apply to your project. This municipality addition to all Montgomery County requirements, you are required requirements, including:

- Tree Impact Assessment/Tree Protection Plan
- Stormwater management
- City Right of Way

Failure to comply with these requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law. Details of Takoma Park's permit requirements are attached on page 2.

The issuance of this letter does not indicate approval of the project nor does it authorize the property owner to proceed with the project. The City retains the right to review and comment on project plans during the Montgomery County review process.



City Of Takoma Park

The City of Takoma Park permits for the following issues:

Tree Impact Assessment/Tree Protection Plan/Tree Removal Application:

Construction activities that occur within 50 feet of any urban forest tree (7 and 5/8" in trunk diameter or greater), located on the project property or on an adjacent property, may require a Tree Impact Assessment and possibly a Tree Protection Plan Permit. Make sure to submit a request for a Tree Impact Assessment and schedule a site visit with the City's Urban Forest Manager if any urban forest tree is in the vicinity of proposed construction activities. See the Tree Permits section of the City website for the specific conditions in which a Tree Impact Assessment is required. Depending on the Urban Forest Manager's conclusion following the Tree Impact Assessment, you may need to prepare a full Tree Protection Plan and apply for a Tree Protection Plan Permit as well. Separately, the removal of any urban forest tree will require a Tree Removal Permit application. The tree ordinance is detailed in the City Code, section 12.12. For permit information check: <https://takomaparkmd.gov/services/permits/tree-permits>. The City's Urban Forest Manager can be reached at 301-891-7612 or urbanforestmanager@takomaparkmd.gov.

Stormwater Management:

If you plan to develop or redevelop property, you may be required to provide appropriate stormwater management measures to control or manage runoff, as detailed in City Code section 16.04. All commercial or institutional development in the city must apply for a Stormwater Management Permit regardless of the size of the land disturbance. Additions or modifications to existing detached single-family residential properties do not require a Stormwater Management permit if the project does not disturb more than 5,000 square feet of land area. For more information on visit: <https://takomaparkmd.gov/government/public-works/stormwater-management-program/>. The City Engineer should be contacted to determine if a City permit is required. The City Engineer can be reached at 301-891-7620.

City Engineer

REVIEWED

- **By Michael Kyne at 3:25 pm, Aug 01, 2023** To place a construction dumpster or storage container temporarily on a City right of way (usually an adjacent road), you will need to obtain a permit. A permit is not required if the dumpster is placed in a privately-owned driveway or parking lot.
- If you plan to install a new **driveway apron**, or enlarge or modify an existing Driveway Apron, you will need to obtain a Driveway Apron Permit.
- If you plan to construct a **fence** in the City right of way, you will need to obtain a Fence Permit. If approved, the Agreement will be recorded in the Land Records Office.

For more information and applications for City permits, see: <https://takomaparkmd.gov/permits/> or contact the Department of Public Works at 301-891-7633.



Failure to comply with the City's permitting requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law.

eSigned via SeamlessDocs.com
[Signature]
Key: 38bf2056e22713c0b979ea7ee94776a

Haley Handelman

06-23-2023

eSigned via SeamlessDocs.com
Takoma Park Planning Division
Key: 19fe84f123e98a3ff4576219059d5fbc

06-23-2023

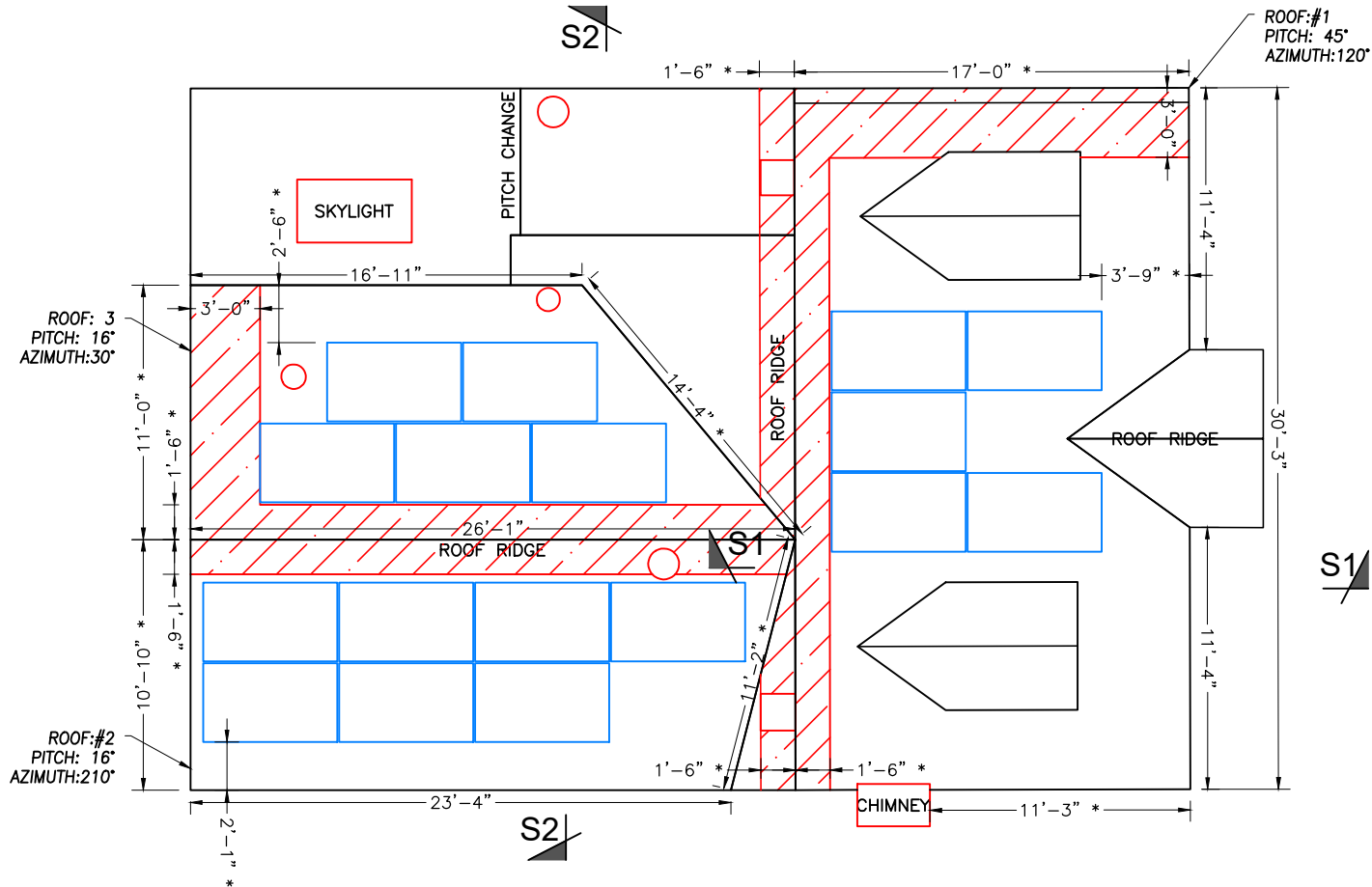
IQ8+

Conduit to be run internally

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

APPROVED
 Montgomery County
 Historic Preservation Commission

KEY



PLAN VIEW TOTAL ROOF AREA: 1337.11 SQFT
 SOLAR ARRAY AREA: 334.39 SQFT
 THE SOLAR ARRAY IS 25% OF THE PLAN VIEW TOTAL ROOF AREA

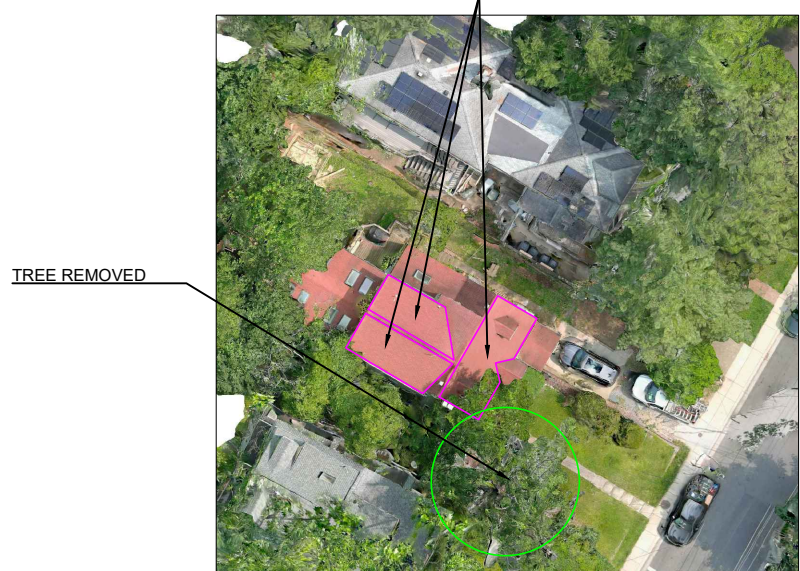
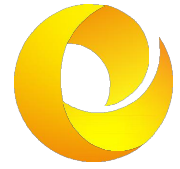
SOLAR PANEL LAYOUT

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

NOTES:

1. THE SYSTEM SHALL INCLUDE [17] SILFAB PRIME SIL-370 HC.
2. SNAPNRACK UR-40 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.

PROPOSED PV ARRAY LOCATION

Solar Energy World
 Because Tomorrow Matters

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

Disclaimer:
 This drawing is the property of Solar Energy World Inc. The information herein contained shall be used for the sole benefit of Solar Energy World. It shall not be disclosed to others outside the recipient's organization, in whole or in part, without the written permission of Solar Energy World, except in connection with the sale and use of the respective Solar Energy equipment.

Stamp

*STAMPED AND SIGNED FOR STRUCTURES ONLY

Revisions

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

Plotted By: Colin Altman on 7/28/2023 3:15 PM

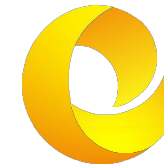
Project Name and Address
Jeffrey Bell
 7418 Maple Ave
 Takoma Park, MD 20912
 6.29 kW
 MD14963

Drawn by AT	A001
Date 14-JUN-2023	
Scale AS NOTED	

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

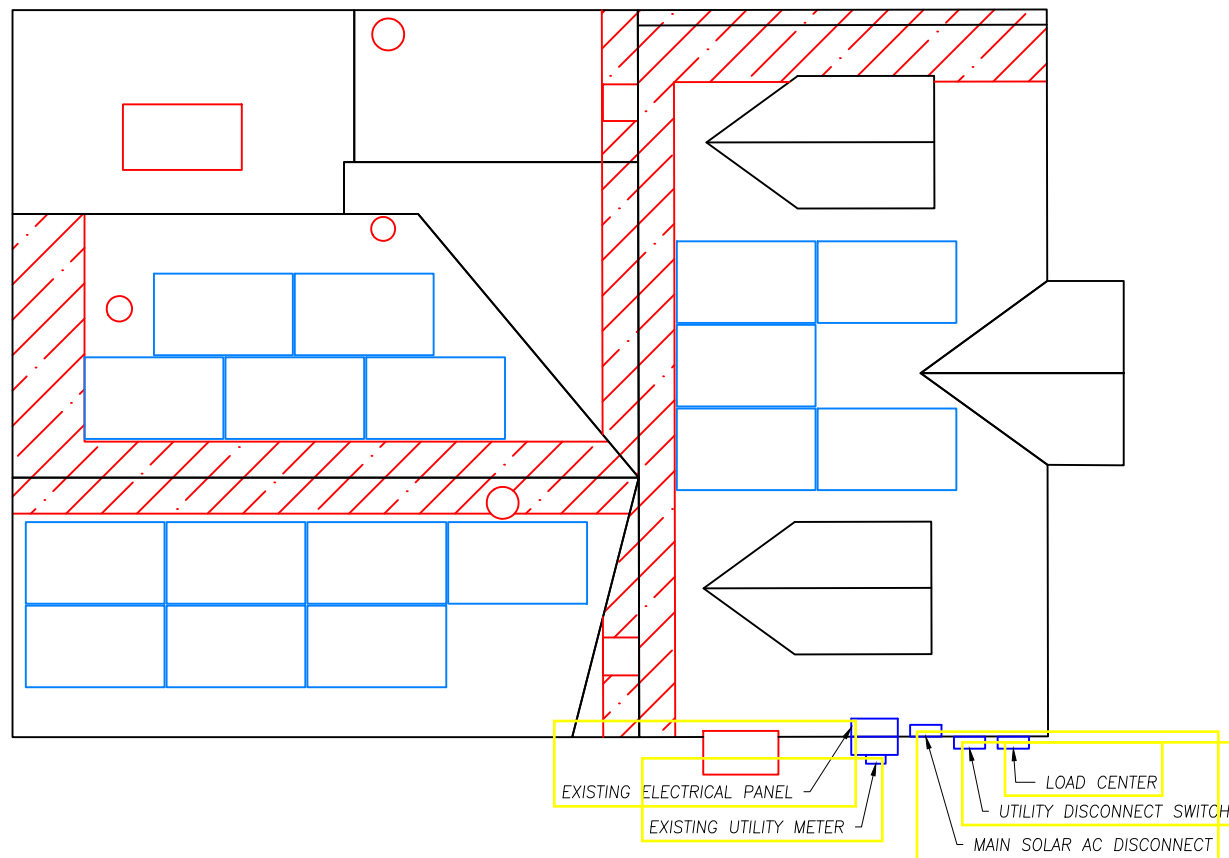
APPROVED
 Montgomery County
 Historic Preservation Commission

Solar Energy World
 Because Tomorrow Matters

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

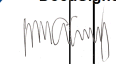
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EQUIPMENT LOCATION PLAN
 Scale: NTS

NOTE:
 EQUIPMENT LOCATION PLAN IS APPROXIMATE, EXACT LOCATION TO BE VERIFIED WITH INSTALLATION CREW AND HOME OWNER AT THE TIME OF INSTALLATION.



DocuSigned by:

 74454BC12527459...

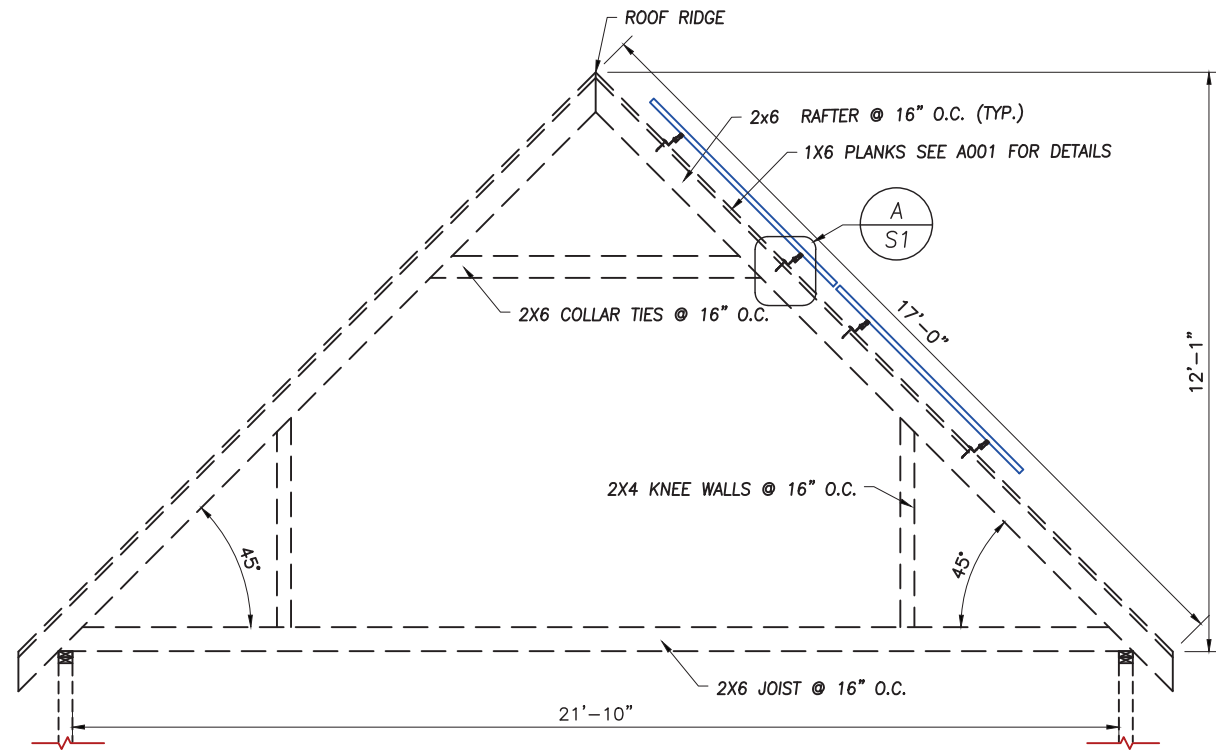
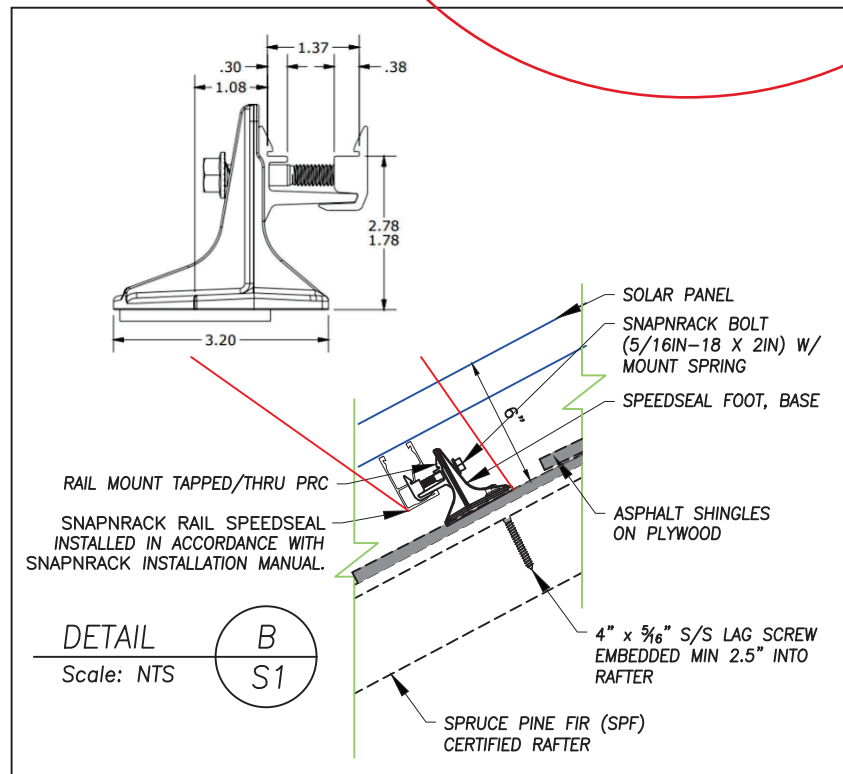
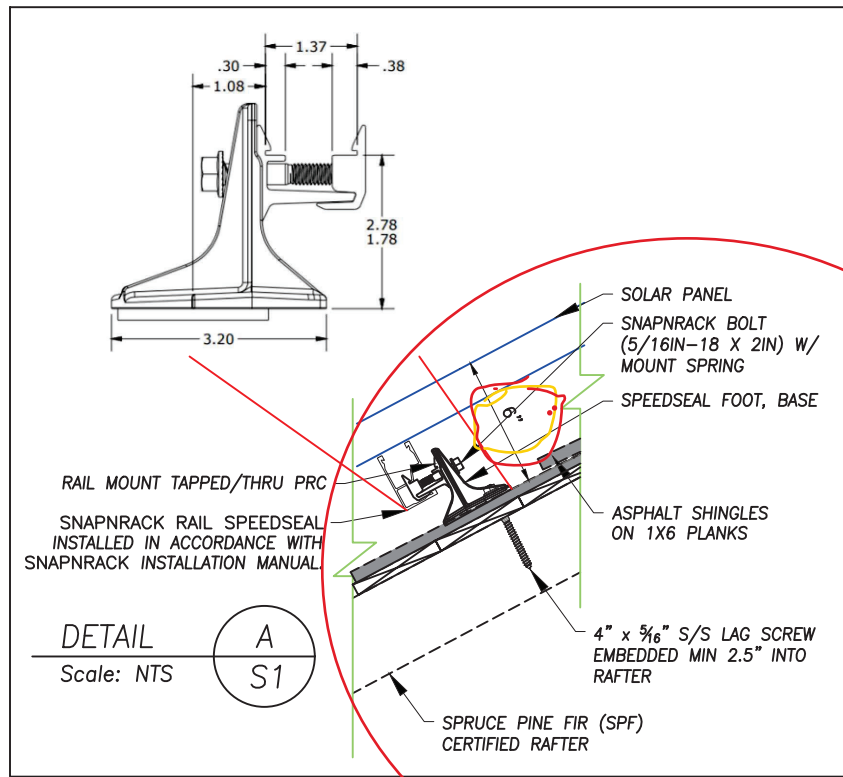
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, license No. 31585, expiration date: JULY 18, 2023. Stamped and signed for structures only
 *STAMPED AND SIGNED FOR STRUCTURES ONLY

REV	DESCRIPTIONS	BY	DATE
01			

Plotted By: Garrett Connors on 6/20/2023 11:52 AM

Project Name and Address
 Jeffrey Bell
 7418 Mapie Ave
 Takoma Park, MD 20912
 6.29 kW
 MD14963

Drawn by AT	Sheet E001
Date 14-JUN-2023	
Scale AS NOTED	

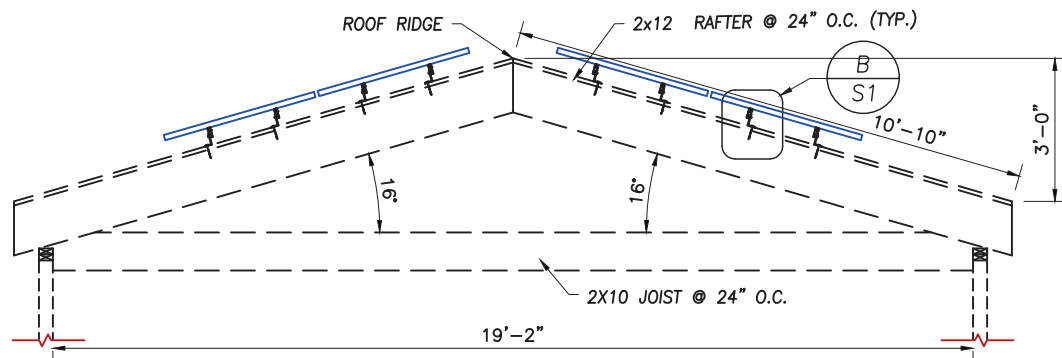


STRUCTURAL SECTION S1

Scale: 1/4" = 1'-0"

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023



STRUCTURAL SECTION S2

Scale: 1/4" = 1'-0"



Solar Energy World
Because Tomorrow Matters

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

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DocuSigned by:

[Signature]

74454BC12527459...

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. 31585, expiration date: JULY 18, 2023. Stamped and signed for structures only

*STAMPED AND SIGNED FOR STRUCTURES ONLY

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

Plotted By: Garrett Connors on 6/20/2023 11:52 AM

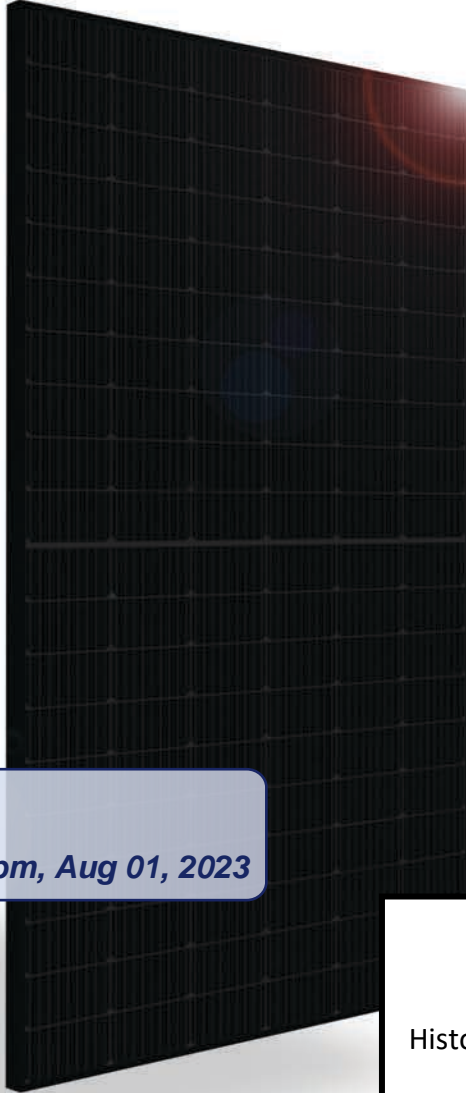
Project Name and Address
Jeffrey Bell
7418 Maple Ave
Takoma Park, MD 20912
6.29 kW
MD14963

Drawn by AT	Sheet S001
Date 14-JUN-2023	
Scale AS NOTED	

- NOTES:**
- ALL WORK SHALL COMPLY WITH REQUIREMENTS OF INTERNATIONAL RESIDENTIAL CODE (IRC 2018), LOADING CODE (ASCE 7-16), WOOD DESIGN CODE (NDS 2015), AND LOCAL REQUIREMENTS.
 - LOAD CRITERIA PER :
 - EXPOSURE CATEGORY "B"
 - GROUND SNOW LOAD, Pg = 30 PSF
 - LATERAL LOAD RISK CATEGORY "II"
 - ULTIMATE DESIGN WIND SPEED = 115 MPH
 - SOLAR PANELS AND RACKING SYSTEMS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.
 - FOLLOW ALL LOCAL AND FEDERAL SAFETY REQUIREMENTS.

SILFAB PRIME

SIL-370 HC



REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

APPROVED
Montgomery County
Historic Preservation Commission

❖ **RELIABLE ENERGY.
DIRECT FROM THE SOURCE.**

Introducing Silfab Prime.

Designed to outperform.

Dependable, durable, high-performance solar panels
engineered for North American homeowners.

SILFABSOLAR.COM



CHUBB®

* Chubb provides error and omission insurance to Silfab Solar Inc.

ELECTRICAL SPECIFICATIONS		370	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	370	276
Maximum power voltage (Vpmax)	V	34.95	32.48
Maximum power current (Ipmax)	A	10.60	8.50
Open circuit voltage (Voc)	V	41.75	39.16
Short circuit current (Isc)	A	11.25	9.07
Module efficiency	%	20.2%	18.9%
Maximum system voltage (VDC)	V		1000
Series fuse rating	A		20
Power Tolerance	Wp		0 to +10

Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
 Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	19.5kg ±0.2kg	43lbs ±0.4lbs
Dimensions (H x L x D)	1762 mm x 1037 mm x 35 mm	69.4 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*	5400 Pa rear load / 5400 Pa front load	112.8 lb/ft ² rear load / 112.8 lb/ft ² front load
Hail impact resistance	ø 25 mm at 83 km/h	ø 1 in at 51.6 mph
Cells	120 Half cells - Si mono PERC 9 busbar - 83 x 166 mm	120 Half cells- Si mono PERC 9 busbar - 3.26 x 6.53 in
Glass	3.2 mm high transmittance, tempered, DSM antireflective coating	0.126 in high transmittance, tempered, DSM antireflective coating
Cables and connectors (refer to installation manual)	1350 mm, ø 5.7 mm, MC4 from Staubli	53.15 in, ø 0.22 in (12AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	
Frame	Anodized Aluminum (Black)	
Bypass diodes	3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated	

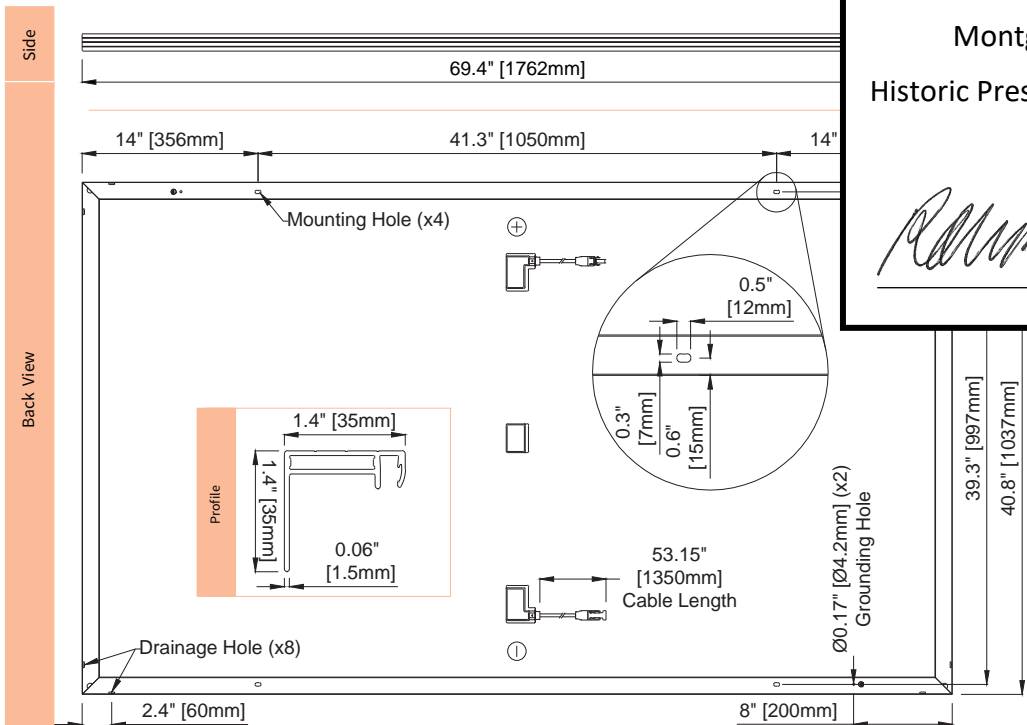
TEMPERATURE RATINGS		WARRANTIES	
Temperature Coefficient Isc	+0.064 %/°C	Module product workmanship warranty	25 years**
Temperature Coefficient Voc	-0.28 %/°C	Linear power performance guarantee	30 years
Temperature Coefficient Pmax	-0.36 %/°C		≥ 97.1% end 1st yr
NOCT (± 2°C)	45 °C		≥ 91.6% end 12th yr
Operating temperature	-40/+85 °C		≥ 85.1% end 25th yr
			≥ 82.6% end 30th yr

CERTIFICATIONS	SHIPPING SPECS
Product: ULC ORD C1703, UL1703, CEC listed, UL 61215-1/-1-1/-2, UL 61730-1/-2, IEC 61215-1/-1-1/-2, IEC 61730-1/-2, CSA C22.2 No. 61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2	Modules Per Pallet: 26 or 26 (California)
Factory: ISO9001:2015	Pallets Per Truck 34 or 32 (California)
	Modules Per Truck 884 or 832 (California)

REVIEWED

By Michael Kyne at 3:25 pm, Aug 01, 2023

* See installation manual for details on installing and operating modules.
 ** 25 year warranty extendable to 25 years subject to registration and conditions outlined under "Warranty" at silfab.com
 *** Certification in progress.
 PAN files generated from 3rd party performance data are available for download at: silfab.com/downloads



240 Courtney Park Drive East
 Mississauga ON L5T 2Y3 Canada
 T +1 905.255.2501
 F +1 905.696.0267

Silfab - SIL-370-HC-20210803
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IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

* Only when installed with IQ System Controller 2, meets UL 1741.
 ** IQ8 and IQ8Plus supports split phase, 240V installations only.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings ¹	W	235 – 350	235 – 440
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell
MPPT voltage range	V	27 – 37	29 – 45
Operating range	V	25 – 48	25 – 58
Min/max start voltage	V	30 / 48	30 / 58
Max input DC voltage	V	50	60
Max DC current ² [module Isc]	A		15
Overvoltage class DC port			II
DC port backfeed current	mA		0
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	

OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Peak output power	VA	245	300
Max continuous output power	VA	240	290
Max continuous output voltage/range ³	V		240 / 211 – 264
Max continuous output current	A	1.0	1.21
Nominal frequency	Hz		
Extended frequency range	Hz		
AC short circuit fault current over 3 cycles	Arms		
Max units per 20 A (L-L) branch circuit ⁴		16	
Total harmonic distortion			
Overvoltage class AC port			
AC port backfeed current	mA		
Power factor setting			
Grid-tied power factor (adjustable)			
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night-time power consumption	mW		60

REVIEWED
 By Michael Kyne at 3:26 pm, Aug 01, 2023



MECHANICAL DATA	
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)
Relative humidity range	4% to 100% (condensing)
DC Connector type	MC4
Dimensions (HxWxD)	212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection – no fans
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environ. category / UV exposure rating	NEMA Type 6 / outdoor

COMPLIANCE

CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01

Certifications
 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's Instructions.

(1) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility>
 (2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

SnapNrack SpeedSeal™ Foot

Patent Pending Lag Driven Sealant Solution for Ultra Rail



A New Generation of Roof Attachments

- Innovative design incorporates reliability into a single roof attachment
- 100% waterproof solution
- Sealing cavity with compressible barrier secures sealant in place & fills voids

REVIEWED

By Michael Kyne at 3:27 pm, Aug 01, 2023

Maintain the Integrity of the Roof by Eliminating Disruption

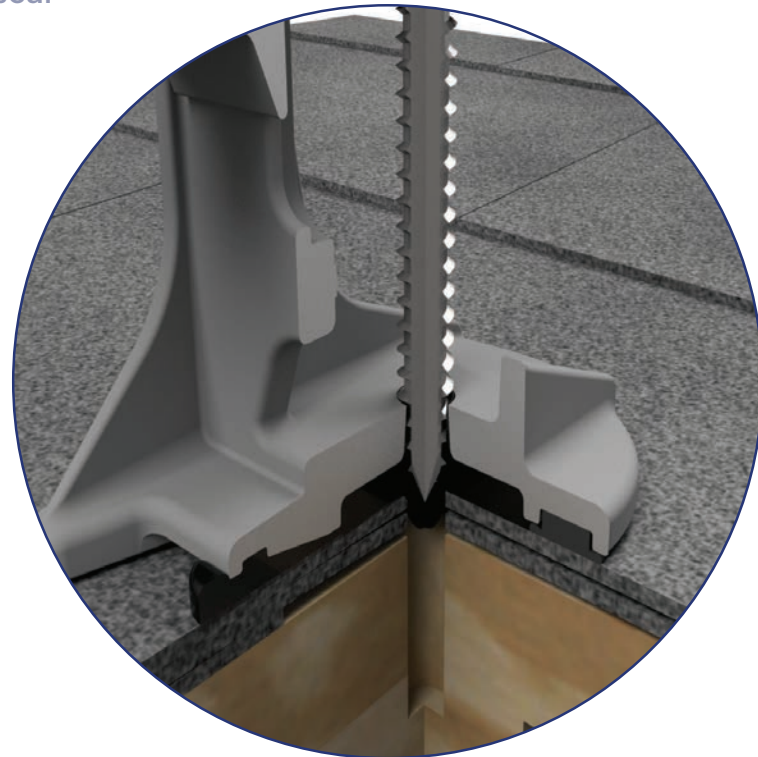
- Zero prying of shingles
- Zero removal of nails leaving holes in the roof
- Roof remains installed the way manufacturer meant it to be

Lag Driven Sealant Waterproofing

- Time Tested Roof Sealant provides lasting seal
- Sealant is compressed into cavity and lag hole as attachment is secured to rafter
- Active sealant solidifies bond if ever touched by liquid
- Technology passes UL 2582 Wind Driven Rain Test and ASTM E2140 Water Column Testing standards. Patent Pending.

Single Tool Installation

- SnapNrack was the first in the industry to develop a complete system that only requires a single tool. That tradition is continued as a ½" socket is still the only tool necessary to secure the mount as well as all other parts of the system.



Note: Sealant shown in white for illustration purposes only.

SnapNrack SpeedSeal™ Foot

Fastest Roof Attachment in Solar

- Lag straight to a structural member, no in-between components such as flashings or bases.
- Simply locate rafter, fill sealant cavity & secure to roof.

It's that simple!

Integrated Flashings. No Questions.

- Sealant fills around lag screw & structure sealed and intact
- No added holes from ripping up screws holding shingles on roof

Less Time. Less Parts. Less Tools.

- No more need for a pry bar to lift up shingles
- No more proprietary lag screws
- Single Tool installation with ½" socket

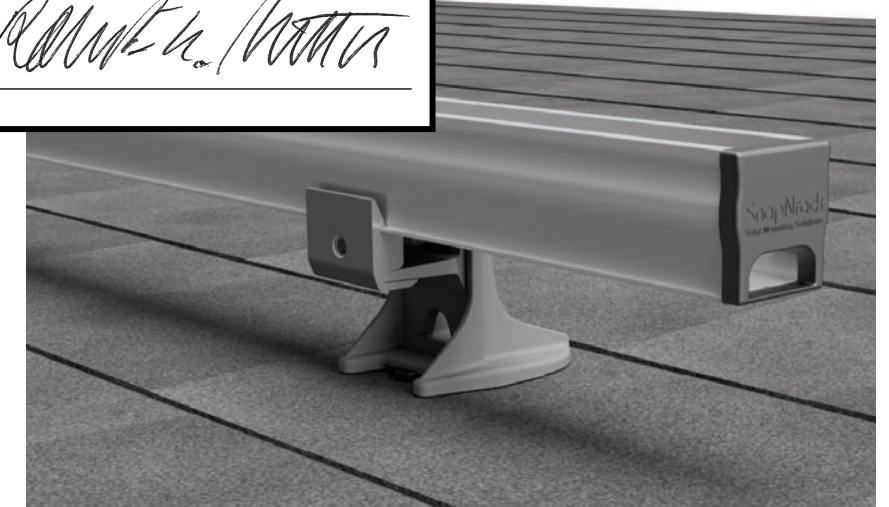
Total System Solution

One Tool. One Warranty.

- SnapNrack Ultra Rail is a straightforward intuitive install experience on the roof without compromising quality, aesthetics & safety, all supported by a 25 year warranty.
- Built-in Wire Management & Aesthetically pleasing features designed for Ultra Rail result in a long-lasting quality install that installers and homeowners love.

Certifications

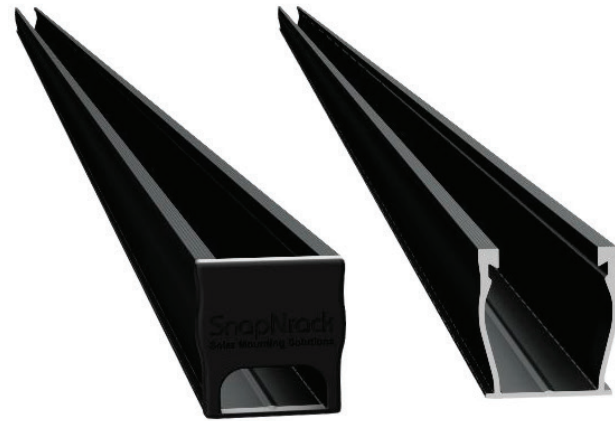
SnapNrack Ultra Rail System has been evaluated by Underwriters Laboratories (UL) and Listed to UL/ANSI Standard 2703 for Mechanical Loading and Fire. Additionally it is listed to UL 2582 for wind-driven rain and ASTM 2140.



Ultra Rail

REVIEWED

By Michael Kyne at 3:27 pm, Aug 01, 2023



APPROVED
Montgomery County
Historic Preservation Commission

Ronald W. Patton

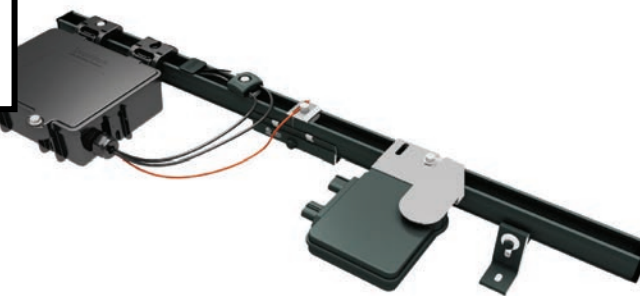
The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard



The Ultimate Value in Rooftop Solar



Industry leading Wire Management Solutions



Mounts available for all roof types



Single Tool Installation



All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

Start Installing Ultra Rail Today

RESOURCES
DESIGN
WHERE TO BUY

snapnrack.com/resources
snapnrack.com/configurator
snapnrack.com/where-to-buy

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



Quality. Innovative. Superior.

SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860

www.snapnrack.com

contact@snapnrack.com

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SnapNrack UL 2703 Fire Classification

March 2019

As of January 1st, 2015 many jurisdictions are now enforcing codes based upon updates to the International Building Code (IBC) and UL Standards 1703 (modules) and 2703 (mounting systems). The language included in the 2012 IBC requires that the combination of roof mounted solar modules and racking components is to be considered a system (IBC Section 1509.7.2). Additionally, it requires that this system shall meet or exceed the fire classification of the roof assembly.

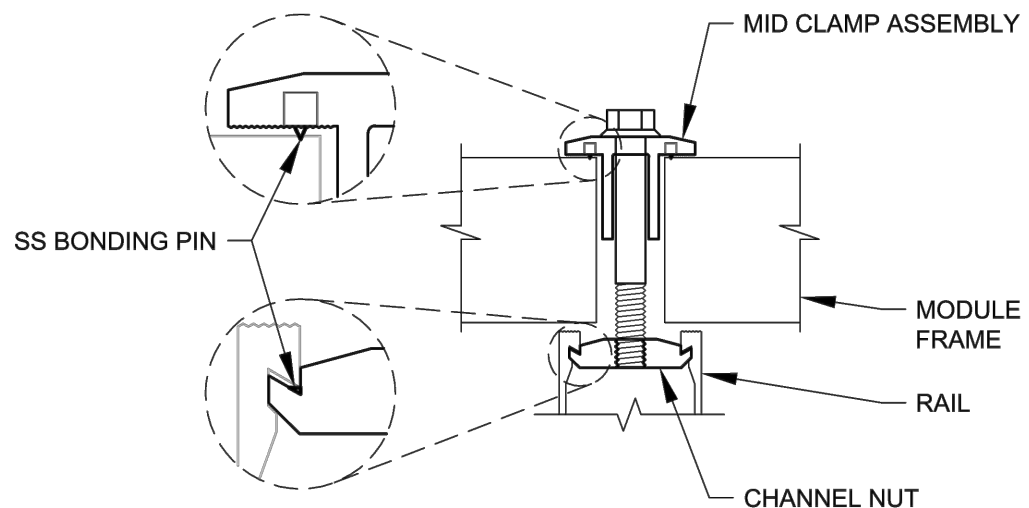
The objective is to ensure that the PV system does not adversely affect the fire rating of the roof. Roof surface fire ratings are classified either A, B, or C; Class A being the most resistant to the spread of flame.



Since the physical characteristics of the PV module (material, thickness of glass, etc) also potentially affect how a fire will act, modules are now tested and assigned a "type" based upon these characteristics and spread of flame test results. There are 15 total module types, Types 1, 2 and 3 represent differences in the module composition and Types 4 - 15 are the same module compositions as Types 1 - 3 with differing fire test performance.

SnapNrack Series 100, Ultra Rail and RL systems have been Certified for a Class A fire rating with Type 1 and Type 2 modules, in accordance with the standards set forth in UL1703/2703 and IBC 2012. In order to maintain this classification, the SnapNrack mounting systems must be installed per the UL-approved [Installation Manuals](#). Because the test was conducted with the modules at 5 inches from the roof surface (worst case scenario), there is no restriction to the standoff height.

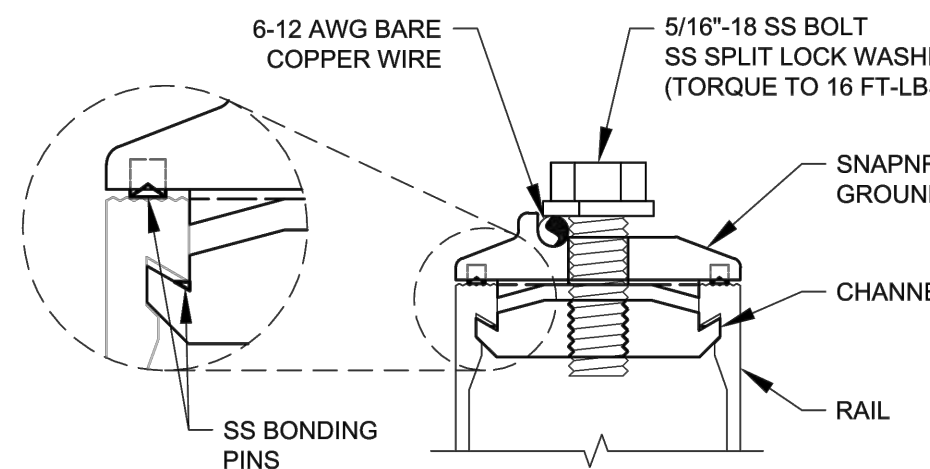
Attachment 1 is the SnapNrack QIMS File which is accessed through the UL Online Certification Directory, or available here: [SnapNrack QIMS File](#).



REVIEWED
By Michael Kyne at 3:28 pm, Aug 01, 2023

NOTE:

1. ADJUSTABLE END CLAMPS USE SAME BONDING PIN DESIGN TO BOND MODULES TO RAIL



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Historic Preservation Commission
[Signature]

NOTE:

1. ALL HARDWARE IS INCLUDED FROM MANUFACTURER
2. A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
3. GROUND LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
4. GROUND LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
5. ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE

ASSEMBLER:

INSPECTOR:

DESCRIPTION: SNAPNRACK MOUNTING SYSTEM GROUNDING DETAILS		DRAWN BY: <u>MIKE WATKINS</u>	<p>Sunrun South LLC 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA PHONE (415) 580-6900 • FAX (415) 580-6902</p> <p><small>THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.</small></p>
PART NUMBER:		APPROVED BY: <u>CODY NORMAN</u>	
SCALE: DNS		REVISION: G <u>1/11/2016</u> <u>NEW ITEM</u>	

An aerial photograph of a residential street. The street is paved and has a crosswalk. On the left side of the street, there are several trees and a white car parked. On the right side, there are several houses. The houses are surrounded by lush green trees. One house in the middle has a red roof and a green exterior. Another house above it has a grey roof and a light blue exterior. A third house below the red-roofed house has a grey roof and a white exterior. There are also some construction materials visible in the yard of the red-roofed house.

REVIEWED

By Michael Kyne at 3:28 pm, Aug 01, 2023

APPROVED

Montgomery County

Historic Preservation Commission

Robert H. Adams