

MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address:	5 Columbia Avenue, Takoma Park	Meeting Date:	9/20/2023
Resource:	Contributing Resource Takoma Park Historic District	Report Date:	9/13/2023
Applicant:	Samuel Bryson	Public Notice:	9/6/2023
Review:	HAWP	Tax Credit:	N/A
Permit Number:	1040700	Staff:	John Liebertz
PROPOSAL:	Solar panel installation.		

STAFF RECOMMENDATION

Staff recommends that the Historic Preservation Commission (HPC) **approve** the HAWP application.

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Contributing Resource within the Takoma Park Historic District
STYLE: Vernacular
DATE: c. 1886

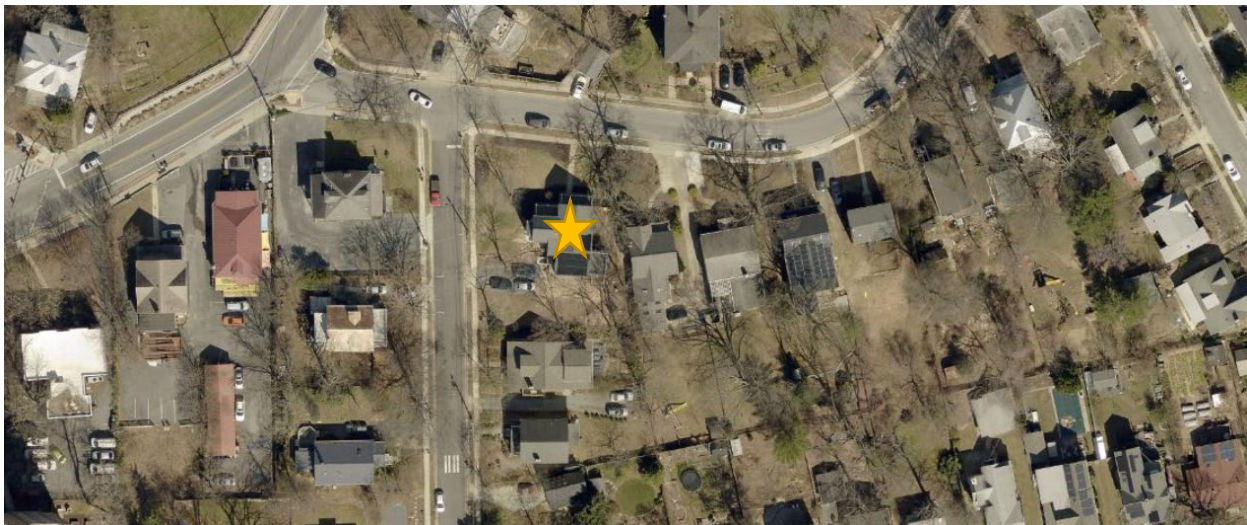


Figure 1: The subject property at 5 Columbia Avenue (noted with the yellow star).

PROPOSAL

The applicant proposes to install eighteen (18) roof-mounted solar panels in four arrays. One of the arrays is located on a non-historic two-story addition. The two arrays on the eastern and western roof slope consists of nine (9) and four (4) panels, respectively. A third array on the southern slope of the original cross-gable roof slope has three (3) panels. The smallest array on the southern slope of the non-historic, shed roof addition consists of two (2) panels. The system connects to the existing inverter located adjacent to the utility meter on the south (rear) elevation of the house.

APPLICABLE GUIDELINES

The Historic Preservation Office and Historic Preservation Commission (HPC) consult several documents when reviewing alterations and new construction within the Takoma Park Historic District. These documents include the historic preservation review guidelines in the approved and adopted amendment for the *Takoma Park Historic District (Guidelines)*, *Montgomery County Code Chapter 24A (Chapter 24A)*, and *the Secretary of the Interior's Standards for Rehabilitation (Standards)*, and the HPC's *Policy No. 20-01 ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS*. The pertinent information in these four documents is outlined below.

Takoma Park Historic District Guidelines

There are two broad planning and design concepts which apply to all categories. These are:

- The design review emphasis will be restricted to changes that are all visible from the public right-of-way, irrespective of landscaping or vegetation (it is expected that the majority of new additions will be reviewed for their impact on the overall district), and
- The importance of assuring that additions and other changes to existing structures act to reinforce and continue existing streetscape, landscape, and building patterns rather than to impair the character of the historic district.

A majority of the buildings in the Takoma Park Historic District have been assessed as being "Contributing Resources." While these buildings may not have the same level of architectural or historical significance as Outstanding Resources or may have lost some degree of integrity, collectively, they are the basic building blocks of the Takoma Park district. They are important to the overall character of the district and the streetscape due to their size, scale, and architectural qualities, rather than for their particular architectural features.

Contributing Resources should receive a more lenient level of design review than those structures that have been classified as Outstanding. This design review should emphasize the importance of the resource to the overall streetscape and its compatibility with existing patterns rather than focusing on a close scrutiny of architectural detailing. In general, however, changes to Contributing Resources should respect the predominant architectural style of the resource.

The following guidance which pertains to this project are as follows:

- All exterior alterations, including those to architectural features and details, should be generally consistent with the predominant architectural style and period of the resource and should preserve the predominant architectural features of the resource; exact replication of existing details and features is, however, not required.
- Minor alterations to areas that do not directly front on a public right-of-way such as vents, metal stovepipes, air conditioners, fences, skylights, etc. – should be allowed as a matter of course; alterations to areas that do not directly front on a public way-of-way which involve the replacement of or damaged to original ornamental or architectural features are discouraged, but may be considered and approved on a case-by-case basis.
- Alterations to features that are not visible from the public right-of-way should be allowed as a matter of course.

- All changes and additions should respect existing environmental settings, landscaping, and patterns of open space.

Montgomery County Code, Chapter 24A-8

The following guidance which pertains to this project are as follows:

- (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 ensure 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;
- (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

The Secretary of the Interior defines rehabilitation as “the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features, which convey its historical, cultural, or architectural values.” The applicable *Standards* are as follows:

- 2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- 9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- 10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Historic Preservation Commission Policy No. 20-01: Addressing Emergency Climate Mobilization Through The Installation of Roof-Mounted Solar Panels

Now, THEREFORE:

WHEREAS, Historic Area Work Permit decisions are guided by the criteria in Section 24A, The Secretary of the Interior’s Standards for Rehabilitation, and pertinent guidance from applicable master plan amendments and/or site or district-specific studies;

WHEREAS, The Secretary of the Interior’s Standards for Rehabilitation as interpreted by the National Park Service limit the placement of rooftop solar panels under Standards 2, 9, and 10 to less conspicuous locations;

WHEREAS, the County Council has established a Climate Emergency;

WHEREAS, the Historic Preservation is a body established by the County Executive and County Council;

WHEREAS, Section 24-8(b)(6) states, “In balancing the interest of the public in preserving the historic site or historic resource located within an historic district, with the interests of the public from the use and benefit of the alternative proposal, the general public welfare is better served by granting the permit;”

WHEREAS, the widespread use of solar panels, both for hot water and for electricity production, will reduce greenhouse gases in the county, in accordance with the aims of the Emergency Climate Mobilization resolution (Resolution No.: 18-974), it shall be the policy of the Historic Preservation Commission that:

1. The preferred locations for solar panel installation(s) on a designated historic site or an historic resource located within an historic district is a) on the rear of the property, b) on non-historic building additions, c) on accessory structures, or d) in ground-mounted arrays;
2. If it is not feasible to install solar panels in one of the identified preferred locations due to resource orientation or other site limitations; and,
3. The roof is determined to be neither architecturally significant, nor a character-defining feature of the resource, nor is it a slate or tile roof, that unless it can be demonstrated that the solar array will be installed without damaging the historic character of the resource or historic fabric; then
4. The public welfare is better served by approving a Historic Area Work Permit for solar panels on all visible side or front roof slopes under Section 24A-8(b)(6).
5. A Historic Area Work Permit (HAWP) is required for all work referenced in this policy.

STAFF DISCUSSION

The subject property is a Contributing Resource to the Takoma Park Historic District and features a two-story, front-gable, vernacular house (ca. 1886) with no particular stylistic influences. The front-gable house features a full-width front porch and a gable projection on its west elevation that creates its T-shaped floor plan. Character defining features include shiplap wood siding and two-over-two (simulated divided light), double-hung, wood-sash windows. The house has undergone numerous alterations since its construction.

In 2019, the Historic Preservation Commission (HPC) approved the demolition of two non-historic additions, construction of the present rear addition, and in-kind replacement of the original windows.¹ That same year, the HPC approved the installation of twenty-four (24) roof-mounted solar panels on the house. The panels were arranged in two arrays: sixteen (16) panels on the rear addition and eight (8) panels on the eastern slope of the front-gable house.²

¹ For more information, <https://montgomeryplanning.org/wp-content/uploads/2019/01/I.A-5-Columbia-Avenue-Takoma-Park.pdf> and <https://montgomeryplanning.org/wp-content/uploads/2019/07/I.J-5-Columbia-Avenue-Takoma-Park.pdf>.

² For more information, <https://montgomeryplanning.org/wp-content/uploads/2019/11/I.H-5-Columbia-Avenue-Takoma-Park.pdf>.



Figure 2: Views of the subject house looking south from Columbia Avenue (left) and northeast from Pine Avenue (right), 2023.

Source: Montgomery Planning.



Figure 3: Oblique view, 2023. The red arrow points to the locations of the two existing arrays (approved in 2019) and the yellow arrows to the locations of the four proposed arrays. *Source: Eagleview, ConnectExplorer.*

The HPC and staff utilize *Policy Guidance #20-01: Solar Technology (2021)* as the baseline for their review and to articulate their findings in the review of solar technology. The policy outlines the most to least preferred locations for solar arrays. The most preferred location for solar systems is a freestanding array in the rear yard, but this location is not feasible at the subject property due to the size of the lot and existing tree canopy. The second preferred location is a roof-mounted array on an accessory or non-historic building. There is a small shed in the southeast corner of the subject property, but this location was dismissed likely due to its small roof area and existing tree canopy (*Figure 3*).

The third and fourth preferred locations are roof-mounted arrays on a non-historic addition or on the original house, respectively. In 2019, the homeowners installed solar panels in these locations (*Figure 3*). At that time, the HPC found that the panels would not adversely affect the individual resource or the surrounding district. According to the applicants, these installed panels provide less than 25 percent of the household's current electricity. Therefore, the applicants have returned to augment their solar system with additional panels.

The property owners propose that two (2) panels be placed on the recently constructed non-historic addition. The solar panels would not be visible from the public rights-of-way due to the height of the addition, shallow pitch of the shed roof, and the slope of the roof. Therefore, staff recommends approval of these two (2) panels as they would not adversely affect the character of the historic house or streetscape and comply with *Policy Guidance #20-01: Solar Technology (2021)*.

The property owners propose that the remaining sixteen (16) panels be placed on the original roof. Staff finds that there are no other suitable locations for these panels. Four (4) panels would be located on the western slope of the front-gable section and three (3) panels on the southern slope of the gable projection (*Figure 4*). Due to its location on a corner lot, these seven panels would have limited visibility when looking northeast from Pine Avenue at the rear of the house (*Figure 4*). Furthermore, these panels all have a low profile, are mounted less than six inches above the surface of the roof, and are arranged in an organized fashion. The lack of visibility of the nearby proposed and existing panels avoids a disjointed appearance. Therefore, staff recommends approval of these two arrays (with a total of seven panels) as they would not adversely affect the character of the historic house or streetscape and comply with *Policy Guidance #20-01: Solar Technology (2021)*.

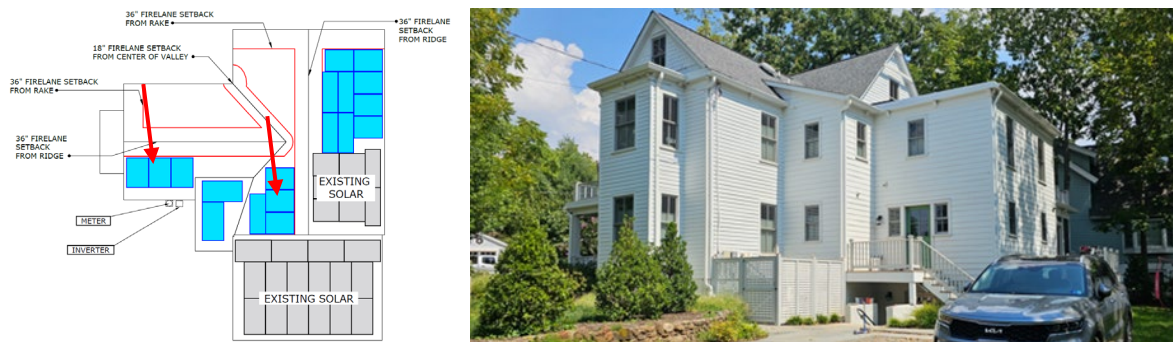


Figure 4: Roof plan showing the proposed solar arrays (left) and view of the rear of the house from Pine Avenue (right). The red arrows point to the proposed solar arrays on sections of the the original house visible from Pine Avenue.

The last array consisting of nine (9) panels would be located on the eastern slope of the front gable roof. While setback 3’ from the façade, these panels would be visible from Columbia Avenue. Views would be limited to oblique angles due to the spacing of the houses, low-profile of the panels, and the pitch of the roof (*Figure 5*). This view of the house is secondary to the primary view of the dwelling from the intersection of Columbia and Pine avenues. Therefore, staff recommends approval of this array as it would not adversely affect the character of the historic house or streetscape and complies with *Policy Guidance #20-01: Solar Technology (2021)*. The property owner (current or future) could remove the proposed solar panels at a later date without impairing the integrity of the historic house or district.



Figure 5: Roof plan showing the proposed solar array (left) and view of the facade from Columbia Avenue. The red arrow points to the proposed solar array visible from Columbia Avenue.

There are no nearby Outstanding Resources with views of the subject property or the proposed solar arrays.

After full and fair consideration of the applicant's submission, staff finds the proposal, as modified by the condition, consistent with the Criteria for Issuance in Chapter 24A-8(b), (1), (2), and (d), having found the proposal is consistent with the *Secretary of the Interior's Standards for Rehabilitation* #2, #9, and #10, and *Takoma Park Historic District Guidelines*, and the HPC's Policy No. 20-01 as outlined above.

STAFF RECOMMENDATION

Staff recommends that the Commission **approve** the HAWP under the Criteria for Issuance in Chapter 24A-8(b), (1), (2), and (d), having found that the proposal, as modified by the condition, is consistent with the *Takoma Park Historic District Guidelines*, 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 in conformance with HPC *Policy No.20-01*;

and with the *Secretary of the Interior's Standards for Rehabilitation* #2, #9, and #10.

and with the general condition that the applicant shall present an electronic set 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;

and with the general condition that final project design details, not specifically delineated by the Commission, shall be approved by HPC staff or brought back to the Commission as a revised HAWP application at staff's discretion;

and with the general condition that the applicant shall notify the Historic Preservation Staff if they propose to make any alterations to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301-563-3400 or john.liebertz@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# 1040700
DATE ASSIGNED

APPLICANT:

Name: Samuel Bryson
Address: 5 Columbia Ave
Daytime Phone: 202-340-2924

E-mail: sam.bryson@gmail.com
City: Takoma Park Zip: 20912
Tax Account No.: 01058893

AGENT/CONTACT (if applicable):

Name:
Address:
Daytime Phone:

E-mail:
City: Zip:
Contractor Registration No.:

LOCATION OF BUILDING/PREMISE: MIHP # of Historic Property

Is the Property Located within an Historic District? X Yes/District Name Takoma Park
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 other Planning and/or Hearing Examiner Approvals /Reviews Required as part of this Application? (Conditional Use, Variance, Record Plat, etc.?) If YES, include information on these reviews as supplemental information.

Building Number: 5 Street: Columbia Ave
Town/City: Takoma Park Nearest Cross Street: Pine Ave
Lot: P13 Block: 18 Subdivision: 0025 Parcel:

TYPE OF WORK PROPOSED: See the checklist on Page 4 to verify that all supporting items for proposed work are submitted with this application. Incomplete Applications will not be accepted for review. Check all that apply:

- Checklist items: New Construction, Addition, Demolition, Grading/Excavation, Deck/Porch, Fence, Hardscape/Landscape, Roof, Shed/Garage/Accessory Structure, Solar, Tree removal/planting, Window/Door, 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.

8/14/2023

Signature of owner or authorized agent

Date

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

Owner's mailing address
5 Columbia Ave
Takoma Park, MD 20912

Owner's Agent's mailing address
N/A

Adjacent and confronting Property Owners mailing addresses

5 Pine Ave
Takoma Park, MD 20912

7 Columbia Ave
Takoma Park, MD 20912

6 Pine Ave
Takoma Park, MD 20912

1 Columbia Avenue, Takoma Park MD 20912
8 Columbia Avenue, Takoma Park MD 20912

7105 Carroll Avenue, Takoma Park MD 20912

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

The existing structure is an historic farmhouse and is a contributing resource in the Takoma Park Historic District. The property underwent a significant renovation in 2019 & 2020 to restore it to habitability.

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

We seek to install new solar panels, expanding the existing array that is already on the roof. The additional panels will be added to the roof surfaces sloping South (facing Pine Ave) and East (facing the neighboring property at 7 Columbia Ave). No panels will be added to roof surfaces facing to the North (Columbia Ave).

Work Item 1: See attached

Description of Current Condition:

Proposed Work:

Work Item 2: _____

Description of Current Condition:

Proposed Work:

Work Item 3: _____

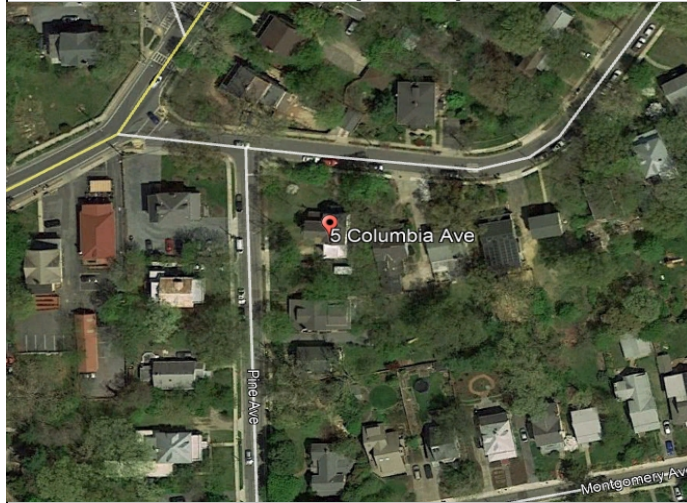
Description of Current Condition:

Proposed Work:

**HISTORIC AREA WORK PERMIT
CHECKLIST OF
APPLICATION REQUIREMENTS**

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/ Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/ Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/ Parking Area	*	*		*	*	*	*
Grading/Excavation/ Landscaping	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*

Vicinity Map



System Description

MODULE TYPE	SILFAB-400 HC+
QUANTITY	18
SYSTEM SIZE	7.2 kW
ROOF TYPE	SHINGLE
PITCH	45°, 42.5°, 18.4°
STRUCTURE	RAFTER/TRUSS
AZIMUTH	91°
MOUNTING SYSTEM	SNAP N' RACK
INVERTER(S)	SOLAR EDGE 6 kW HD

MATERIAL LIST

MODULE	(18) SILFAB 400 HC+
INVERTER	(1) SOLAREEDGE 6kW
OPTIMIZER	(18) SOLAREEDGE S440s

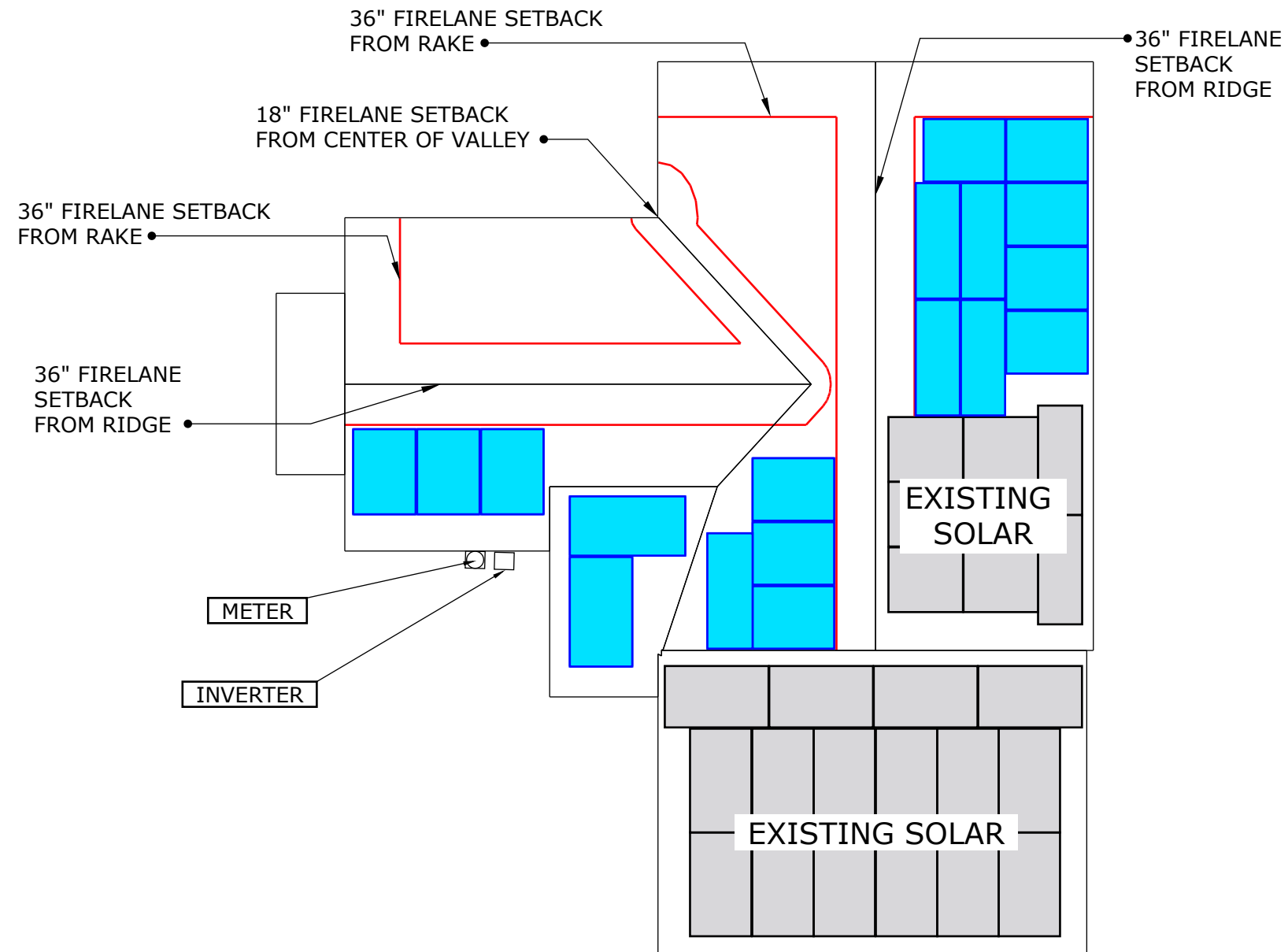
Structural Notes:

1. All work is to be done in a professional manner and in accordance with standard practice and shall be in strict compliance with manufacturers specifications and/or recommendations.

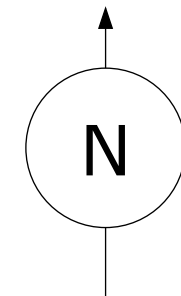
2. The general and sub-contractors shall carefully examine the drawings, inspect the site, and acquaint themselves with all governing ordinances, laws, and otherwise familiarize themselves with all matters that may affect performance of the work.

Data
 IBC 2018
 Snow design load 30 psf
 Wind load 115 mph ultimate @ 3 second gusts
 Seismic Category B

Applicable Codes:
 -INTERNATIONAL BUILDING CODE / 2018
 -INTERNATIONAL FIRE CODE / 2018
 -NATIONAL ELECTRIC CODE / 2020



NOT TO SCALE



REVISIONS	REMARKS
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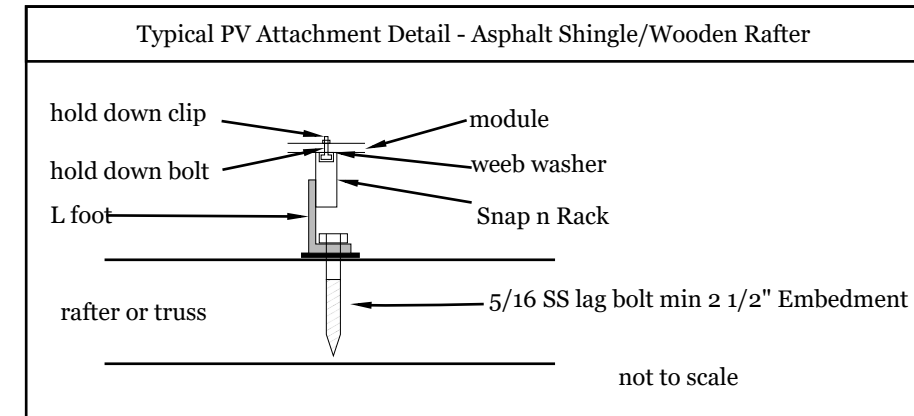
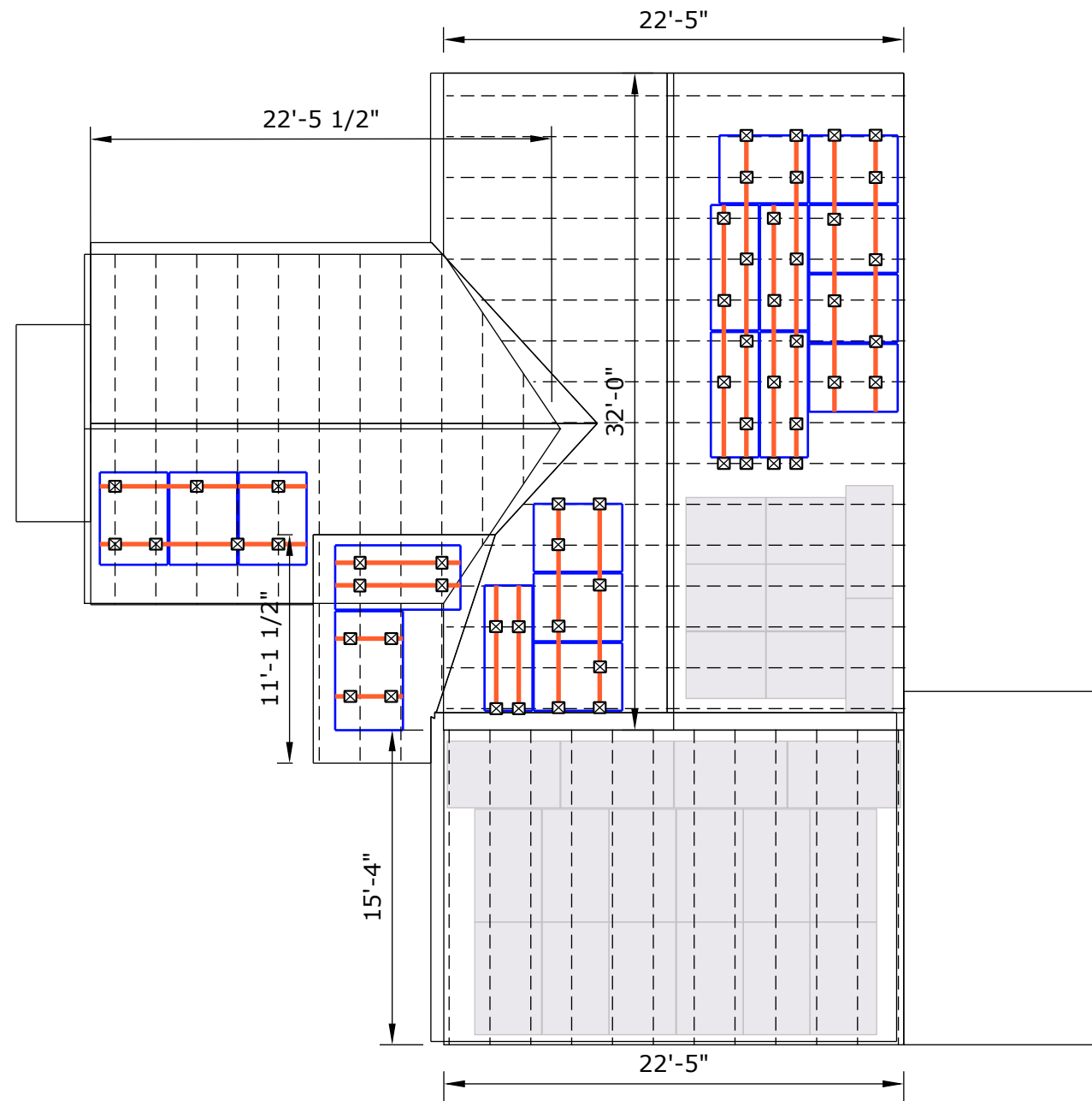


Solar Energy Services, Inc.
 1514 Jabez Run, Suite # 103 Millersville Maryland, 21108

Kneedler Residence
 5 Columbia Ave.
 Takoma Park, MD

S 001

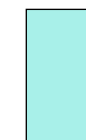
ROOF LAYOUT
SCALE: 1/8" = 1'



Notes:
 Modules scaled to roof pitch
 Azimuth: 93°, 183°, 273°
 Pitch: 45°, 42.5°, 18.4°
 Rafter spacing: 24"
 Attachment points: =/< every 4' on sloped roof, =/< every 6' on flat roof.
Setbacks as per code: 3'

	Snap n Rack 100
	Rafter (2x6 sloped roof) (2x12 flat roof)
	Attachment point /asphalt roof

(18) SILFAB 400 HC+
PV Module



1914mm x 1036mm x 35mm

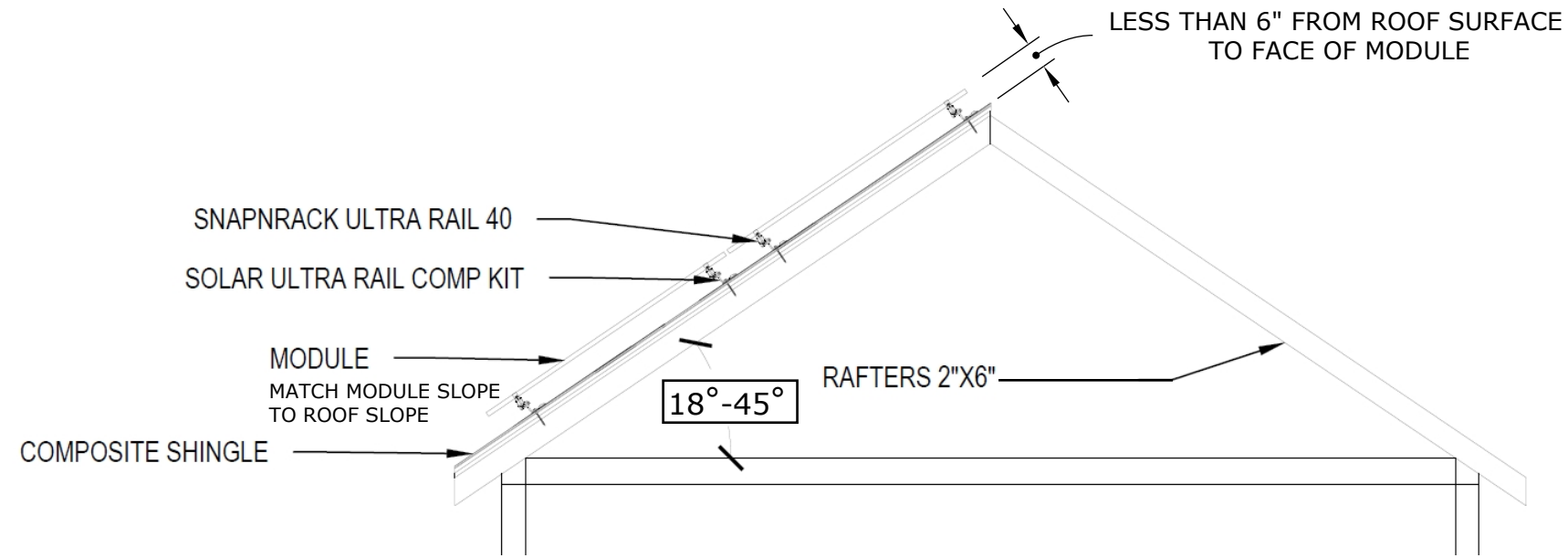
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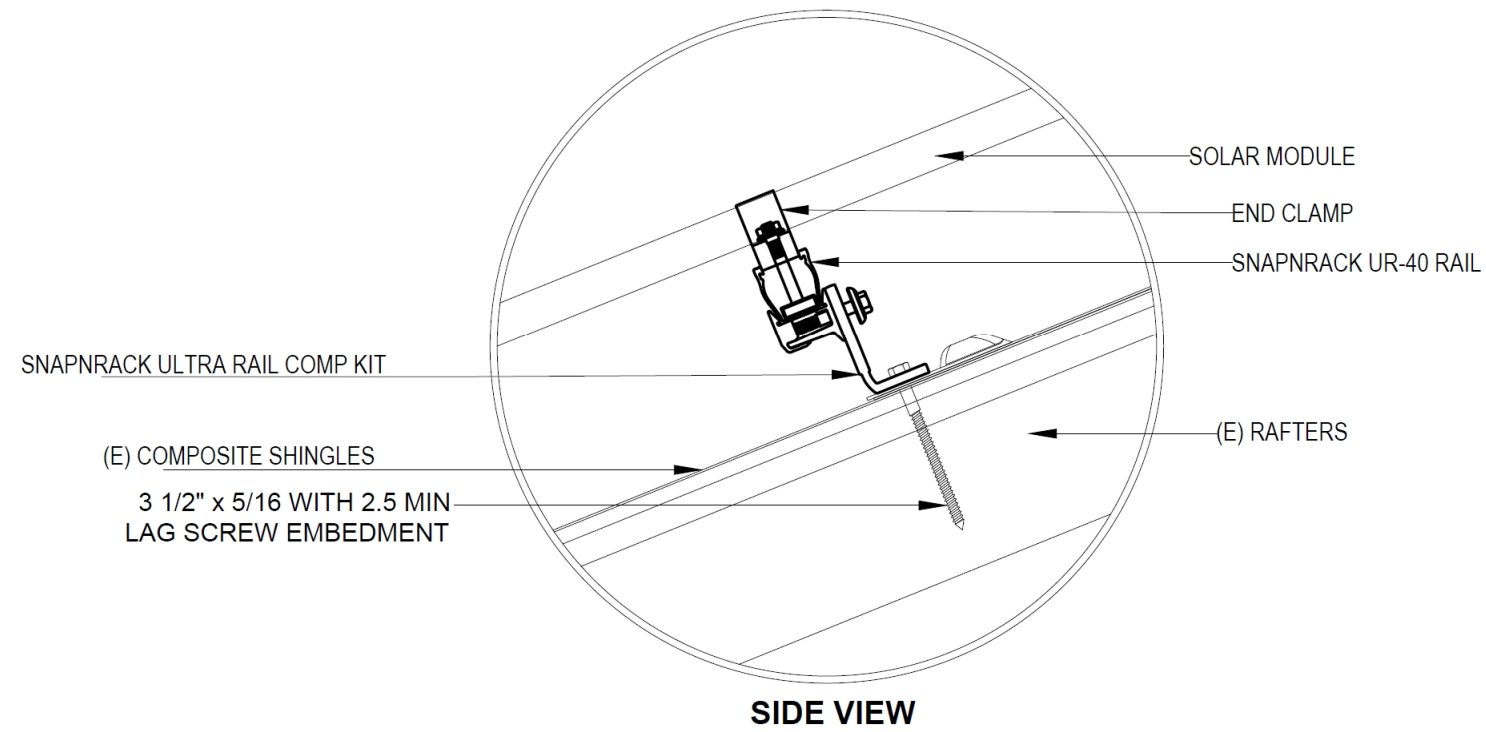
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Kneedler Residence
5 Columbia Ave.
Takoma Park, MD

ELEVATION DETAIL
SCALE: NOT TO SCALE



ELEVATION DETAIL



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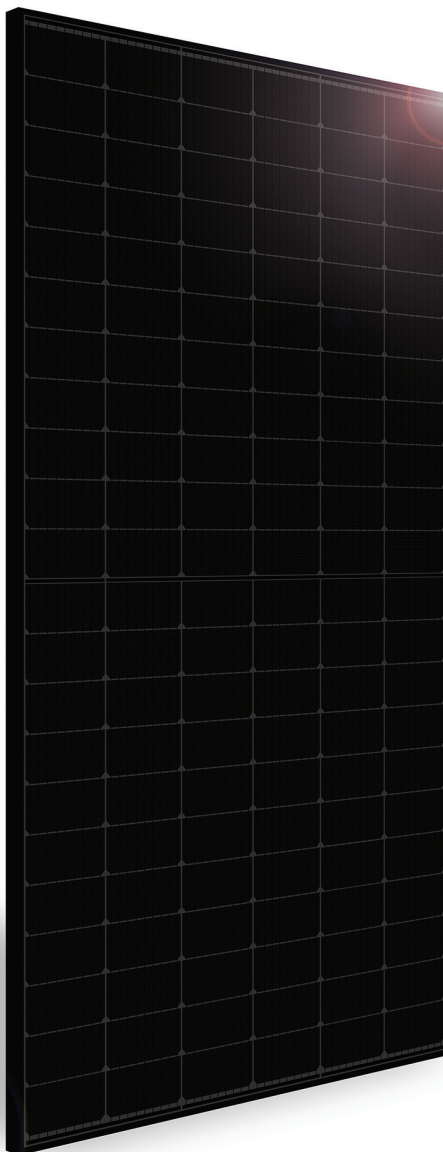


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Kneedler Residence
5 Columbia Ave.
Takoma Park, MD

SILFAB PRIME

SIL-400 HC+



RELIABLE ENERGY. DIRECT FROM THE SOURCE.

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.

Silfab Solar performance puts you on top.

With over 40 years of experience in solar, Silfab continues to be the leader in North American solar manufacturing. Incorporating premium materials, strict quality controls, leading-edge automation and world-class customer service, Silfab Prime solar panels are the perfect combination of quality, performance and aesthetics.

SILFAB PRIME SIL - 400 HC+

High-Efficiency Premium Mono-Perc PV Module designed and engineered exclusively for North American homeowners.

AMERICA'S CHOICE

Join thousands of homeowners who are choosing Silfab Solar for their solar needs every day!

SUPERIOR TECHNOLOGY. STRONGER PERFORMANCE. TOTAL RELIABILITY.

Silfab Prime panels are designed for homeowners seeking a premium, high-quality solar solution you can count on. Precision engineering combined with strict quality controls in our fully automated ISO certified facilities ensures quality panels you can trust. Featuring 9-bus bar technology that maximizes energy collection and conversion while high-efficiency half-cell design improves performance and durability.

Manufactured and compliant with the Buy America Act, Silfab modules have been installed by the US State Department, US military and FAA.

SLEEK, ELEGANT AND DURABLE

A sleek all black aesthetic that will look elegant and compliment any roof. Exclusively designed for wide-ranging racking compatibility, durability and ease of installation.

LOCAL CUSTOMER SERVICE

Our North American team is available to provide customer service that is direct, efficient and local.

INDUSTRY-LEADING WARRANTY

An industry-leading 25-year workmanship and 30-year performance warranty backed by a company that has been perfecting solar products for over four decades.



SILFAB SOLAR INC.

800 Cornwall Ave, Bellingham WA 98225 USA
T +1 360.569.4733 | info@silfabsolar.com

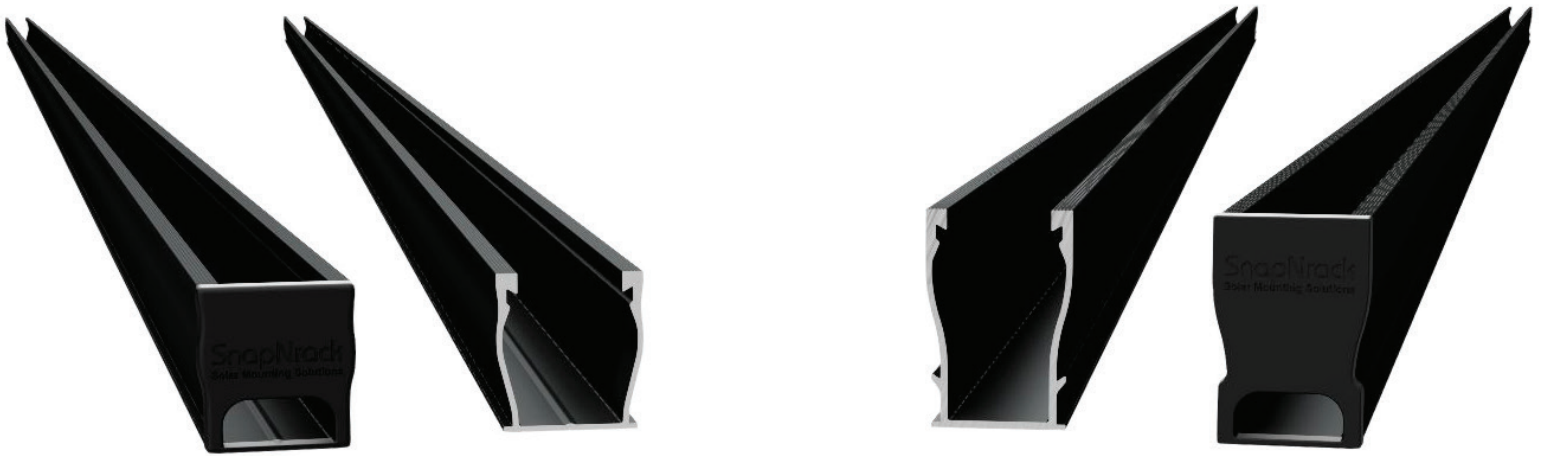
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T +1 360.569.4733

240 Courtneypark Drive East, Mississauga ON L5T 2Y3 Canada
T +1 905.255.2501 | F +1 905.696.0267



Ultra Rail



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

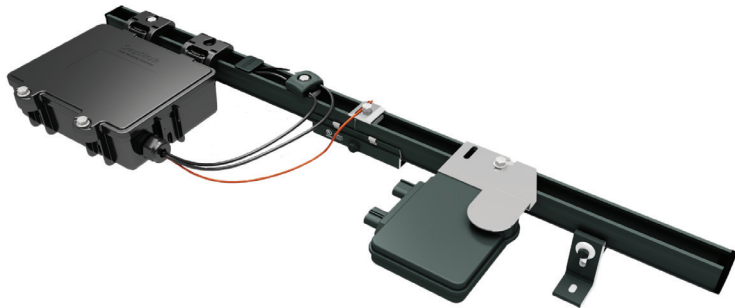
snapnrack.com/resources
snapnrack.com/configurator
snapnrack.com/where-to-buy

SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

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

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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SolarEdge System Overview



SolarEdge provides next generation solar power harvesting and monitoring solutions that effectively remove all known system constraints across the photovoltaic energy space. Our Smart DC ASIC technology and active electronics enable increased production of clean, grid-ready energy at a lower cost.

Traditional photovoltaic installations suffer from a broad range of limitations that prevent them from reaching their full potential. Module mismatch and partial shading prevent systems from achieving their optimum. System design is made complex due to numerous constraints, such as the inability to leverage full roof real estate, to combine strings of different lengths, or to easily address differing roof facets. Traditional systems lack monitoring and analysis capabilities, as well as critical safety features. The systems can pose risks to workers installing or maintaining the system, as well as to firefighters dealing with fires in the vicinity of a PV installation.

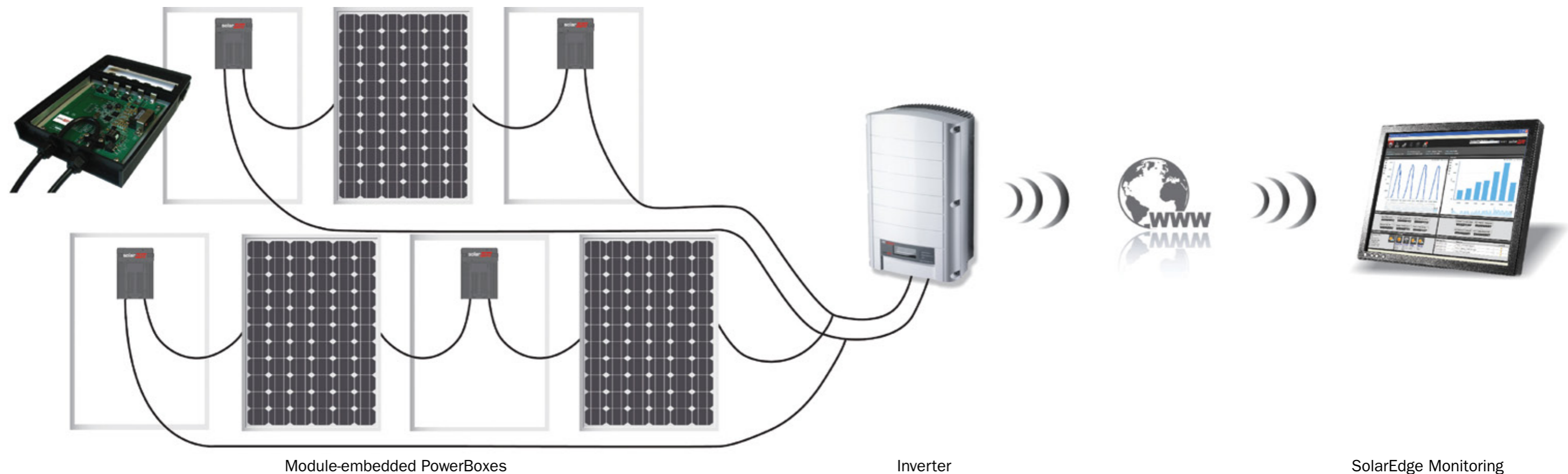
SolarEdge Technologies presents a unique, patent-pending distributed power harvesting system, combining more efficient power harvesting, a highly reliable inverter, and comprehensive module level monitoring.

The SolarEdge technology marries traditional photovoltaic workflows and installation methods with a groundbreaking holistic system approach. It is a quiet revolution that is disruptive because of its profound benefits in changing the manner in which energy is harvested, deployed, managed and delivered and at the same time complementary because it fits into the current photovoltaic workflow.

We believe the PV delivery chain is ultimately only as strong as its weakest link. By adopting a "system first" philosophy that identifies and eliminates the Achilles heel at each step of the process, we enable a constraint-free delivery of sun harvested energy.

THE SOLAREEDGE SYSTEM IS COMPRISED OF THREE KEY ELEMENTS:

- **SolarEdge PowerBox™:** The SolarEdge PowerBox is a DC-DC power optimizer that is integrated into each module, replacing the traditional junction box. The PowerBox optimizes energy output and enables performance monitoring for each module. Further, the PowerBoxes automatically maintain a fixed string voltage, giving installers greater flexibility to design optimal PV systems, and providing higher fault tolerance.
- **SolarEdge Inverter:** The SolarEdge Inverter is a highly reliable PV inverter. Because MPPT and voltage management are handled separately for each module, the inverter is only responsible for DC to AC inversion. Consequently, it is a less complicated, more reliable device. The fixed string voltage ensures operation at the highest efficiency (>97%) at all times, independent of string length and temperature. The inverter is small, lightweight and easy to install.
- **SolarEdge Monitoring Portal:** A web-based application provides module-level, string-level and system-wide monitoring. The software automatically provides alerts to a wide range of issues affecting energy generation and to safety events, visually pinpointed on a site layout map. Module performance is communicated over existing power lines, so no extra wiring is needed. SolarEdge monitoring can be deployed in conjunction with the PowerBox, or separately to monitor existing solar installations.



Good design always requires a holistic viewpoint. Take a step back, consider all the details from above, and you get a better perspective on how to deal with problems up close. That's precisely how SolarEdge developed its system-centric approach which maximizes Solar PV performance.

SOLAREGE SYSTEM BENEFITS

Maximum Power Harvesting (up to 25% More Power)

- No partial shading sensitivity
- No module mismatch losses
- No under/over voltage losses
- Improved MPP tracking performance

Simple, Plug and Play, Error-Free System Design & Installation

- Removes traditional design constraints with SolarEdge flexible architecture
- Simplifies installation by connecting strings of different lengths to a single inverter
- Allows for multi-facet installation with a single inverter
- Scalable installation for future needs

Next Generation Maintenance with Module-level Monitoring & Troubleshooting

- Real time monitoring revolutionizes installation feedback and troubleshooting
- In-module monitoring system continuously tracks module power and status
- Communication over the existing power lines, without additional wires
- Data analysis software automatically detects and locates faults and presents them on a physical layout map

Unprecedented Installer & Firefighter Safety

- Electrocutation risk eliminated due to low module voltage during installation
- Maximizes safety by enabling module shutdown during service
- Protects firefighters by automatic module shutdown

Extraordinary Reliability

- Designed for extreme outdoor conditions - IP65 / NEMA 3R
- Module-level reliability
- 25 year warranty for PowerBox, 12 year warranty for inverter

Cost Savings on Wiring, Diodes, Fuses and Other Hardware

- Longer strings allowing for less cabling and hardware

Advanced Anti-theft Capability

- Real time theft detection
- Module immobilization

MODULE MANUFACTURERS

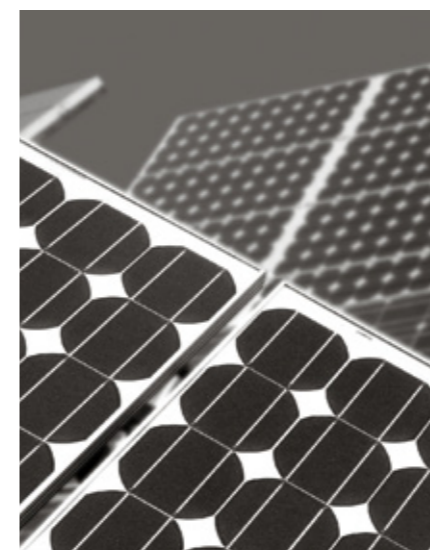
- Create a superior PV module - key differentiator
- Added value to increase market penetration and revenues
- Module production line improvement enables higher currents from existing modules
- Remove manufacturing limitations - temperature variance, module mismatch and manufacturing variations no longer affect power harvesting
- Simplifies module inventory considerations by avoiding unnecessary stockpiling of specific models. Enables the design and delivery of a system per customer with speed and efficiency
- Easier vertical integration to the BoS market segment

INTEGRATORS, INSTALLERS AND MAINTENANCE PROVIDERS

- Ideal for residential, commercial and large field installers
- Lower installation costs with faster design, less wiring, diodes, fuses and better maintenance
- Simple installation – use the same installation methods as exist today with all the SolarEdge added benefits
- Immediate installation feedback for faster site commissioning
- Scalable installation – adding modules to existing installations is simple and straightforward
- Create maintenance reports and log maintenance progress
- Full safety solution – electrocution and fire risks are eliminated with automatic module voltage shutdown during installation and maintenance

SYSTEM OWNERS

- Up to 25% more energy due to reduced power losses, for faster ROI
- Optimal roof area utilization
- Effective remote monitoring – easier maintenance that costs less
- Enhanced system troubleshooting
- Theft prevention mechanism
- Better fire safety – reduce insurance premiums



SolarEdge
PowerBoxes



SolarEdge
Single Phase Inverters



SolarEdge
Single Phase Inverters US



SolarEdge
Three Phase Inverters



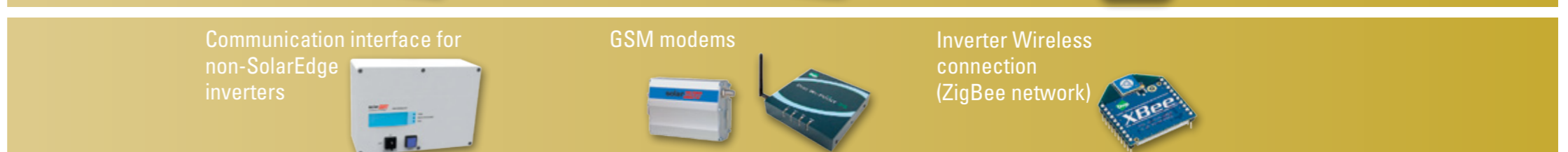
SolarEdge
Three Phase Inverters US



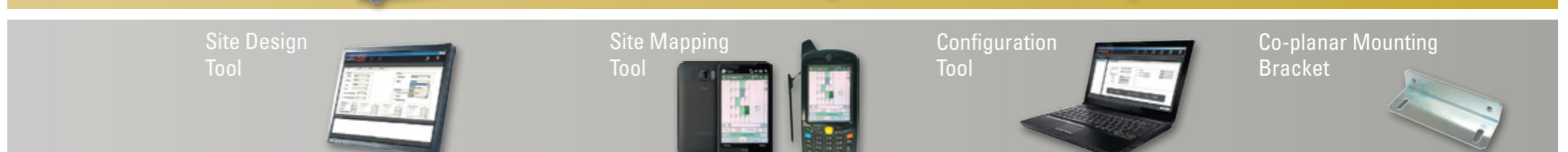
SolarEdge
Monitoring



SolarEdge
Communication Accessories



SolarEdge
Installer Tools





About SolarEdge

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Date: 06/2010



DEPARTMENT OF PERMITTING SERVICES

Marc Elrich
County Executive

Rabbiah Sabbakhan
Director

HISTORIC AREA WORK PERMIT APPLICATION

Application Date: 8/14/2023

Application No: 1040700
AP Type: HISTORIC
Customer No: 1374901

Affidavit Acknowledgement

The Homeowner is the Primary applicant
This application does not violate any covenants and deed restrictions

Primary Applicant Information

Address 5 COLUMBIA AVE
TAKOMA PARK, MD 20912

Homeowner Bryson (Primary)

Historic Area Work Permit Details

Work Type ADD

Scope We seek to install new solar panels, expanding the existing array that is already on the roof. The additional panels will be added to the roof surfaces of sloping South (facing Pine Ave) and East (facing the neighboring property at 7 Columbia Ave. No panels will be added to roof surfaces facing to the North (Columbia Ave).

WEST ELEVATION – FACING PINE AVENUE



SOUTHWEST ELEVATION – FACING PINE AVENUE



SOUTH ELEVATION – FACING 8 PINE AVENUE

