

**HISTORIC PRESERVATION COMMISSION STAFF REPORT**

<b>Address:</b>	18 Montgomery Ave., Takoma Park	<b>Meeting Date:</b>	02/08/17
<b>Resource:</b>	Non-Contributing Resource <b>Takoma Park Historic District</b>	<b>Report Date:</b>	02/01/17
<b>Applicant:</b>	Julian Mulvey	<b>Public Notice:</b>	01/25/17
<b>Review:</b>	HAWP	<b>Tax Credit:</b>	n/a
<b>Case Number:</b>	37/03-17H	<b>Staff:</b>	Dan Bruechert

**PROPOSAL:** Solar panel installation

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**STAFF RECOMMENDATION**

Staff recommends HPC **approve with conditions** the HAWP application.

**ARCHITECTURAL DESCRIPTION**

**SIGNIFICANCE:** Non-Contributing to the Takoma Park Historic District  
**STYLE:** Traditional  
**DATE:** 2013

The subject property is a modern, non-contributing, infill construction that the HPC approved in 2012. The property is a two-story, three-bay, Hardi-sided house employing many traditional design elements to match the character of the surrounding district. The front left corner and entrance are covered by a hipped-roof, wrap-around porch supported by square wood columns. The asphalt-shingled roof is an L-shaped gable with a flat section in the rear or the left side. To the rear there is a one-story, rear-gable outbuilding that was associated with 16 Montgomery Ave. that was rehabbed and integrated as part of the design and construction of 18 Montgomery Ave.

**BACKGROUND**

DPS issued permits for the installation of these solar panels prior to the issuance of a HAWP, inconsistent with chapter 24A-6 of the County Code. Apparently DPS was unaware that projects at this property within the Takoma Park Historic District required a HAWP. The applicants applied for a HAWP immediately upon learning that a HAWP was required. This application is retroactive.

**PROPOSAL**

The proposal calls for the approval of the 34 installed solar panels mounted flush to the roof. The panels are installed on several planes of the L-shaped roof. On the left side gable, five panels face the south. Two panels are on the western side of the front gable with 12 panels on the eastern side of the front gable toward the front of the house. An additional 14 panels are installed in two arrays to the rear of the house (Circle **23**).

**APPLICABLE GUIDELINES**

*Montgomery County Code, Chapter 24A Historic Resources Preservation*

(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.

### ***Takoma Park Historic District Design Guidelines***

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

The design review emphasis will be restricted to changes that are at 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 district.

Non-Contributing/Out-of-Period Resources should receive the most lenient level of design review. Most alterations and additions to Non-Contributing/Out-of-Period Resources should be approved as a matter of course. The only exceptions would be major additions and alterations to the scale and massing of Non-Contributing/Out-of-Period Resources which affect the surrounding streetscape and/or landscape and could impair character of the district as a whole.

### **STAFF DISCUSSION**

18 Montgomery Ave., Takoma Park, is a compatibly designed, Non-Contributing resource to the Takoma Park Historic District. Most changes to Non-Contributing or Out-of-Period resources in the district are to be approved as a matter of course. The exception to this guidance is where the change will negatively impact the streetscape and would impact the district as a whole. The installation of 34 solar panels – 24 of which are highly visible from the public right-of-way negatively impact the character of the surrounding district in several ways:

- The larger (right) side lot makes the long gable roof highly visible.
  - The solar array on this side of the roof extend almost all the way to the gable end of the roof.



*Figure 1: East Elevation*

- The south facing array has increased prominence due to the verticality of the house and roof slope and the solar panels extend to the edge of the side-facing gable.



*Figure 2: South-facing gable*

- The west facing array has a prominence equal to the array on the south facing façade and is also placed at the gable edge.



Figure 3: South and West-facing gable

Because the solar panels extend almost all the way to the edge of the roof closest to the street, the panels' different materials, their reflectivity, and appearance of the solar panels detract from the streetscape and should not, in this instance, be approved as a matter of course. These solar arrays deserve more scrutiny in evaluating their impact on surrounding district. Additionally, the tall, vertical proportions of the house and roofline make the appearance of the solar panels more prominent and detract from the form of the house which is what ties this house to the surrounding district, contra 2448-(b)(1). In order to better preserve the character of the surrounding district several of the solar panels should be relocated.

#### **NEIGHBOR COMMENTS**

A concerned neighbor submitted comments to staff (see attached e-mail and related documentation). This neighbor is not able to attend the HPC meeting due to work requirements. Specifically, this neighbor raises concerns over the impact this project would have on his house and the district in general, given their prominent visibility. More broadly, this neighbor is concerned about the appearance of traditional solar photovoltaic panels on not just this house, but every house within the historic district as being incongruous with the surrounding historic district. Additionally, the neighbor disapproves of HPC policy regarding solar panels as they impact neighboring properties and view sheds and feels that they should become a more important consideration in the HAWP review process. Finally, the neighbor strongly encourages the HPC to establish a moratorium on solar panels in the Takoma Park Historic District until such time as solar panels can more effectively blend with the historic fabric of a district developed in the first quarter of the 20<sup>th</sup> century. Staff has taken these comments into consideration in its review of the application.

Staff makes the following findings:

- The subject property is a Non-Contributing resource in the Takoma Park Historic District.
- Alterations to the subject property require a HAWP, consistent with Chapter 24A-6 of the County Code.
- In reviewing proposed alterations to Non-Contributing resources in the Takoma Park Historic District, the HPC must following the guidance for Non-Contributing resources included in the Approved and Adopted Amendment to the Master Plan for Historic Preservation in Montgomery County, Maryland: Takoma Park Historic District & Carroll Manor/Douglas House.
- The Guidelines specify that Non-Contributing resources should receive the most lenient level of design review, with most alterations approved as a matter of course, except for "... alterations to the scale and massing of Non-Contributing/Out-of-Period Resources which affect the surrounding streetscape and/or landscape and could impair character of the district as a whole".
- Fifteen of the proposed solar panels (described below) would be located in readily visible locations that alter the perceived massing of the resource and would have a detrimental effect on the surrounding streetscape and could impair the character of the district as a whole due to their visibility and incompatibility.
- The balance of the proposed panels would be installed in locations such that the impact on the streetscape and district would be minimal. These panels should be approved as a matter of course.

Having determined that the remaining panels are far enough removed from the streetscape to have a significant impact on the surrounding district and are appropriate in their current location, staff recommends that the Commission find them consistent with Chapter 24A-8(b)(1) & (2) and with the Takoma Park Historic District Guidelines. Staff encourages the applicant to investigate alternative locations where additional panels could be installed with minimal impact, and return to the Commission with a revised HAWP if appropriate locations can be identified.

#### **STAFF RECOMMENDATIONS**

Staff recommends that the Commission **approve** the HAWP application **with the condition** that:

The 15 solar panels installed to the south of the cross gable:

- The 4 south facing panels on the gable-L roof (fig. 3),
- The 2 west facing panels on the front-facing gable (fig. 3, and
- The front 6 panels on the east-facing side of the front-facing gable (fig. 1)

are not approved and directs the applicant to remove these panels

and with the general condition applicable to all Historic Area Work Permits that **the applicant will present 3 permit sets of drawings to HPC staff for review and stamping prior to submission for permits (if applicable)**. After issuance of the Montgomery County Department of Permitting Services (DPS) permit, the applicant will arrange for a field inspection by calling the DPS Field Services Office at 240-777-6370 prior to commencement of work **and** not more than two weeks following completion of work.

## Bruechert, Dan

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**From:** John Salmen <jsalmen@udconsultants.com>  
**Sent:** Tuesday, January 31, 2017 3:01 PM  
**To:** Bruechert, Dan  
**Cc:** Lorraine Piersall (ljpearsall@aol.com); julian mulvey; Ann Scher  
**Subject:** HAWP Application for solar installation on 18 Montgomery, Takoma Park  
**Attachments:** A Home For The Ages - Washington Post Article.pdf; IMG\_9265.JPG; IMG\_9268.JPG

Mr. Bruechert,

I am sending this letter via e-mail, asking that it be included in the file for the 18 Montgomery, Takoma Park HAWP application that is scheduled to be heard at the February 8m 2017 meeting of the Montgomery County Historic Preservation Commission. I had hoped to attend the Feb 8 hearing, but will be on business travel to the west coast that evening, and will be unable to attend in person.

First, as a tax payer, I am extremely disappointed in the way that the Montgomery County Department of Permitting Services mis-handled this matter, and allowed things to get to this point. It is truly regrettable when an aggressive sales force and an incomplete tracking system put homeowners like Julian Mulvey into this terrible position of unknowingly running afoul of historic district regulations, when they are just trying to be responsible global citizens.

Second, as an Architect and having traveled and studied residential communities around the world, I know that the beautiful peaked roofs and tree canopy of the Takoma Park Historic District are a unique treasure. I designed and built my home, (see attached article from the Washington Post), with clerestory windows to take advantage of the views of these beautiful trees and rooftops. I am certain that within the next few years we will see solar technology that truly blends in with roofing and siding. The solar panels being installed by Solar City stand out like a sore thumb, and on a house as tall as 18 Montgomery, they can be seen from all around the neighborhood, not just from the street in front of the house. (see attached photo 9268) Statistically, only ¼ of the views, are of the street sides of homes. The majority of the views (especially for residents who live in the historic district) are of the side and backyard spaces, in the middle of the blocks, that offer open views of houses from all sides. The residents' views should be considered and protected as being equally if not more important than the public street views.

Finally, as the next door neighbor on this project, I am bothered every morning when I open my eyes and look out my bedroom window to see if the sun's up yet. What I now see, less than 20 feet away, is an 8 panel array of solar collectors staring at me. (See attached photo 9265.) And I realize that since these panels aren't easily seen from the street, and the HAWP you approve will allow them to be there forever; that they are likely to stare at me every morning until I die. It's like the view I had of a pie factory from my seedy, student apartment 40 years ago. This is not the way it should be.

I urge you to do something to ensure that the Department of Permitting Services doesn't screw it up like this again.

And, moreover, I urge you not to approve solar panels anywhere in the Takoma Park Historic District, until there is a technology that can truly blend into the historic fabric of Craftsman and Victorian neighborhoods, and not ruin the reason many of us made our homes in the Takoma Park Historic District.

Please let me know if the Commission needs any further information or documentation.

I appreciate your consideration of my perspective and concerns.

John Salmen, FAIA  
16 Montgomery Avenue

# The Washington Post

SATURDAY, SEPTEMBER 24, 2011

## REAL ESTATE

INTRO

### *A home for the ages*

An architect and his wife renovate their Takoma Park bungalow with the future in mind, building in features to make growing old in place more comfortable and practical

BY KATHERINE SALANT

When John Salmen invited me to see the Takoma Park, Md., house where he and his wife, Ann Scher, “expect to spend the next 50 years,” I wasn’t sure what to expect. As both Salmen and his wife are already more than 50 years old, the house would eventually have to accommodate a person facing the frailties of advancing age.

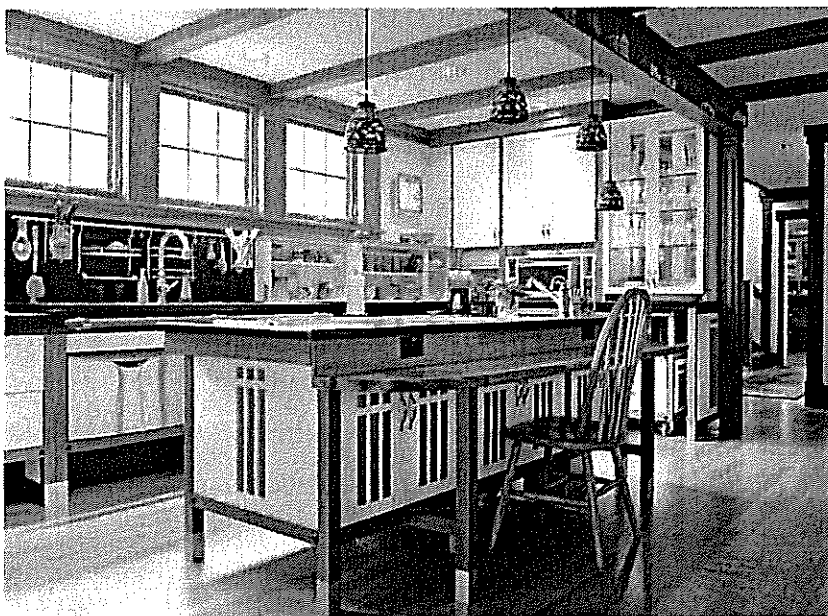
Would this be the centerpiece of the design? After all, Salmen has spent his architecture career specializing in barrier-free design that accommodates people with disabilities.

The answer was a resounding no.

Salmen has a playful manner, and so does his house. Nothing in it says “a place I can live when I’m frail and 90 years old.” Instead, most visitors will find it to be a delightful renovation of a 1900s bungalow with a newer addition on the back.

The exterior of the house conforms to Takoma Park’s historic district requirements and looks similar to the other modestly-sized, clapboard-sided, Craftsman-styled bungalows with front porches. The Craftsman-styled interior, however, is unique to the neighborhood. It features a color palette that is historically authentic but unusual in its hues and strong contrasts — cobalt blue, pumpkin orange and light-cream yellow.

The heart of the three-bedroom, 2,000 square-foot house is the eat-in kitchen/family room, which occupies the entire first-floor area of the new addition. In keeping with the Craftsman-style interiors, the space features abundant amounts of clear-stained cherry trim around doors and windows, an



BILL O'LEARY/THE WASHINGTON POST

**Architect John Salmen approached the renovation of his cottage-size home with an eye toward his and his wife’s needs in their later years. Setting kitchen countertops at various heights is one element he employed.**

exposed beamed ceiling, strategically placed cherry clad columns that hold it up, and multiple windows on three sides that flood the area with natural light.

Of greater interest to me, however, were the numerous, nearly invisible ways in which Salmen designed the main living area to be flexible, not in the sense of “multipurpose” but in “accommodating disabilities.” Cloaked in a Craftsman aesthetic, almost every detail

has been masterfully designed to help this couple navigate the shoals of old age.

Although neither spouse is disabled, Salmen’s years of designing for disabled people have made him acutely aware of how to modify a space so that an older person can comfortably “age in place.”

Many of Salmen’s design subtleties address diminished vision, which begins to affect almost everyone in their 40s and 50s and





BILL O'LEARY/THE WASHINGTON POST

becomes much more pronounced as we reach our 80s, said Mariana Figueiro, a professor at Rensselaer Polytechnic Institute in Troy, N.Y., and an expert in lighting issues for the elderly.

In choosing the color scheme for his main living area, Salmen went for bold contrast — light yellow walls play off against the rich red oak flooring and the darker cherry trim. Today, this contrast creates a visually lively space, but 30 years from now it can help Salmen and Scher to maintain their balance and prevent falls. When walls and floors are the same color — as is commonly the case in traditional senior housing — an elderly person with poor vision may be unable to distinguish between floor and wall, “lose the horizon” and fall, Salmen said.

Strategically placed lighting can also help a person with diminished vision to navigate through a space. The light source does not need to be a fixture. In this case, ambient light shining through a glass cabinet indicates the direction of the main living area from a central hallway.

The abundance of natural light that streams through the 12 windows in the kitchen/family room area will be increasingly appreciated over time. Compared to a person aged 20, a person aged 70 generally needs about three times as much light for tasks that require more acuity such as reading or peeling and chopping vegetables in the kitchen, Figueiro said. The high clerestory openings above the kitchen and living areas provide indirect lighting that reduces glare, another issue for older people with vision issues, she said.

Other details here will accommodate a person in a wheelchair. For example, recessed into a corner, the generously-sized, quarter-circle-shaped dining table backs up against two built-in benches, which Salmen and Scher currently use for dining. When they have guests, they add chairs to the rounded side, which can easily accommodate two wheelchairs because the table does not have table legs; it has a single pedestal support.

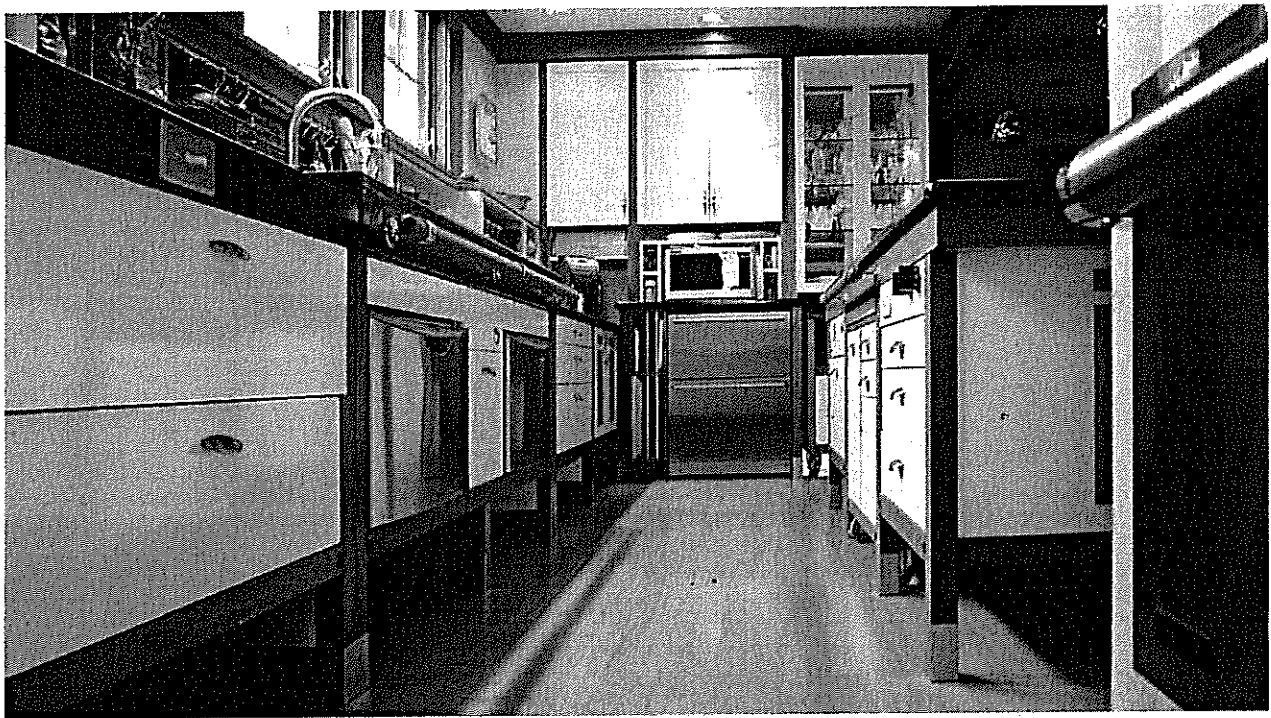
The 18-inch level of the raised hearth makes it easy for a person in a wheelchair to

operate the gas fireplace. The two large 36-inch-wide by 42-inch-high cherry panels that conceal Salmen's enormous flatscreened television and elaborate home entertainment system are so light-weight an individual in a wheelchair can easily move them using only one hand or even only one finger, Salmen said.

The counters in the kitchen are set at varying heights to accommodate children, very short and very tall adults and individuals in wheelchairs. For average-height adults, the different counter heights make some cooking tasks easier. For example, it's much more comfortable to knead bread and roll out pie crust on a 30-inch counter, six inches lower than the 36-inch standard height for kitchen counters, which are too high for most people, said Jane Langmuir, a Providence, R.I. architectural designer who designed the kitchen.

In this kitchen, the counter heights for the food-preparation areas are 33 and 34 inches. The 1.5-inch diameter grab bar in front of the sink currently functions as a





PHOTOS BY BILL O'LEARY/THE WASHINGTON POST

dish-towel rack, but its easily graspable shape is ideal for a person in a wheelchair to hold while reaching down to pick up something dropped on the floor or for opening a drawer or lower cabinet.

The everyday dishes and glassware are kept in open shelves only three inches above the counter instead of the usual 18 inches that separate standard wall-hung cabinets from countertops. The lower shelves are an easy reach for the average adult and a godsend for a child, a short person or person in a wheelchair.

Salmen also added touches of serendipity. In working out the Craftsmen details with designer and builder Alan Abrams of Abrams Design Build in Takoma Park, Salmen decided to expose the two steel I-beams that hold up the second floor. This provided an opportunity to display about 50 model houses that he and his now-grown daughters put together "on the innumerable rainy Saturdays of their childhood," he said.

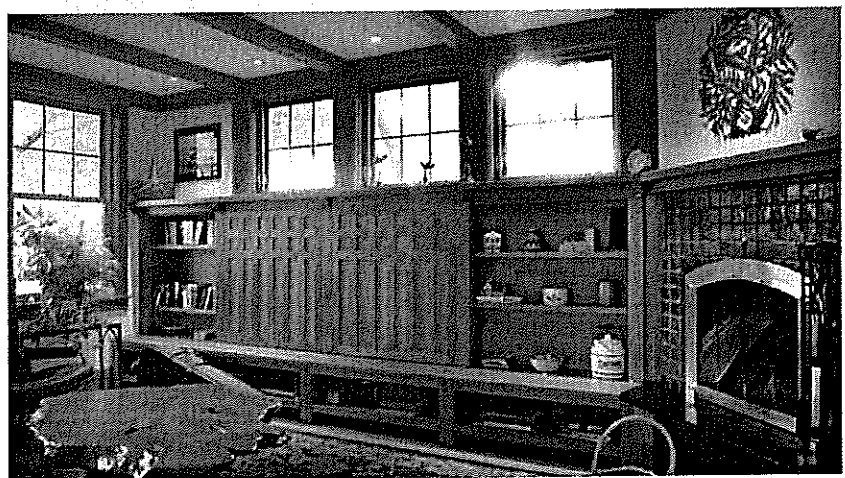
At the end of the tour, I asked the obvious: What led Salmen and his wife to embark on such a huge undertaking when they were 30 to 35 years away from needing most of the accommodations that they so seamlessly incorporated into their house? Salmen offered two reasons. The first and most compelling was that when their younger daughter graduated from high school they were ready for a "life change and a nice little house," Salmen said. They decided to make their new house their last house because he knew it would be

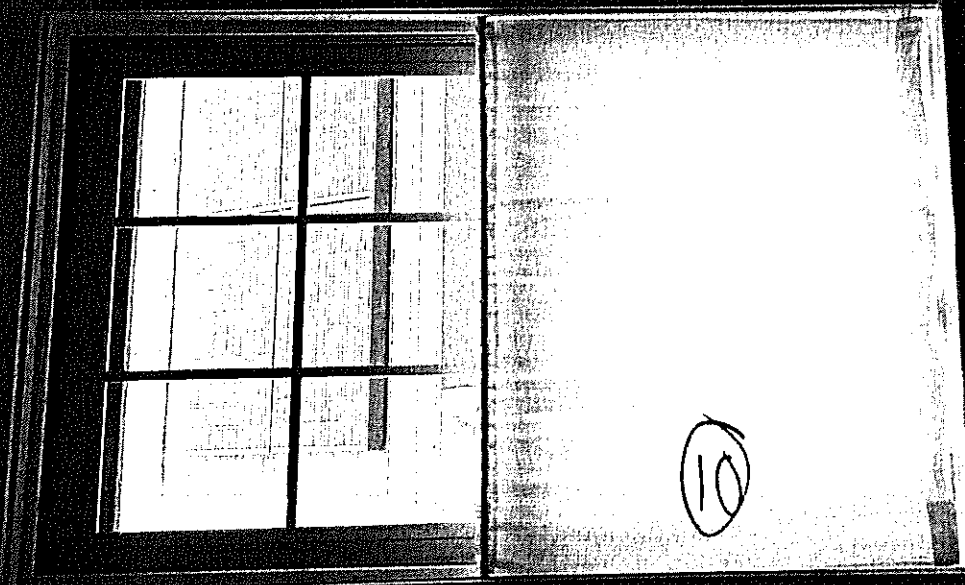
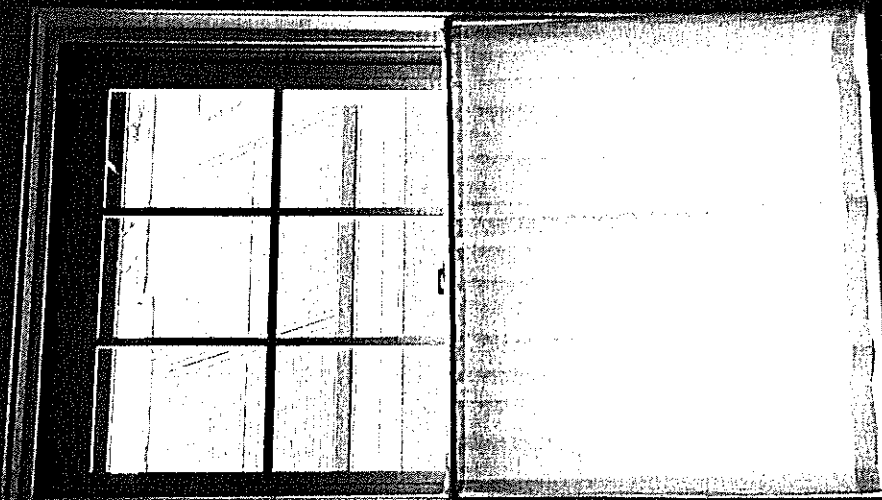
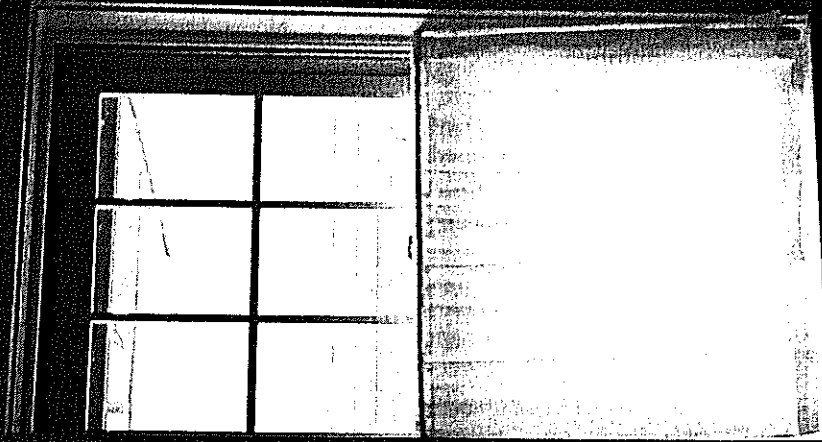
**Architect John Salmen renovated his Takoma Park home with an eye on the future, making it wheelchair-friendly with low kitchen counters, above, and a living room, bottom, with a gas fireplace and raised hearth for easy access, and clerestory windows for light—all while keeping the exterior's historic integrity.**

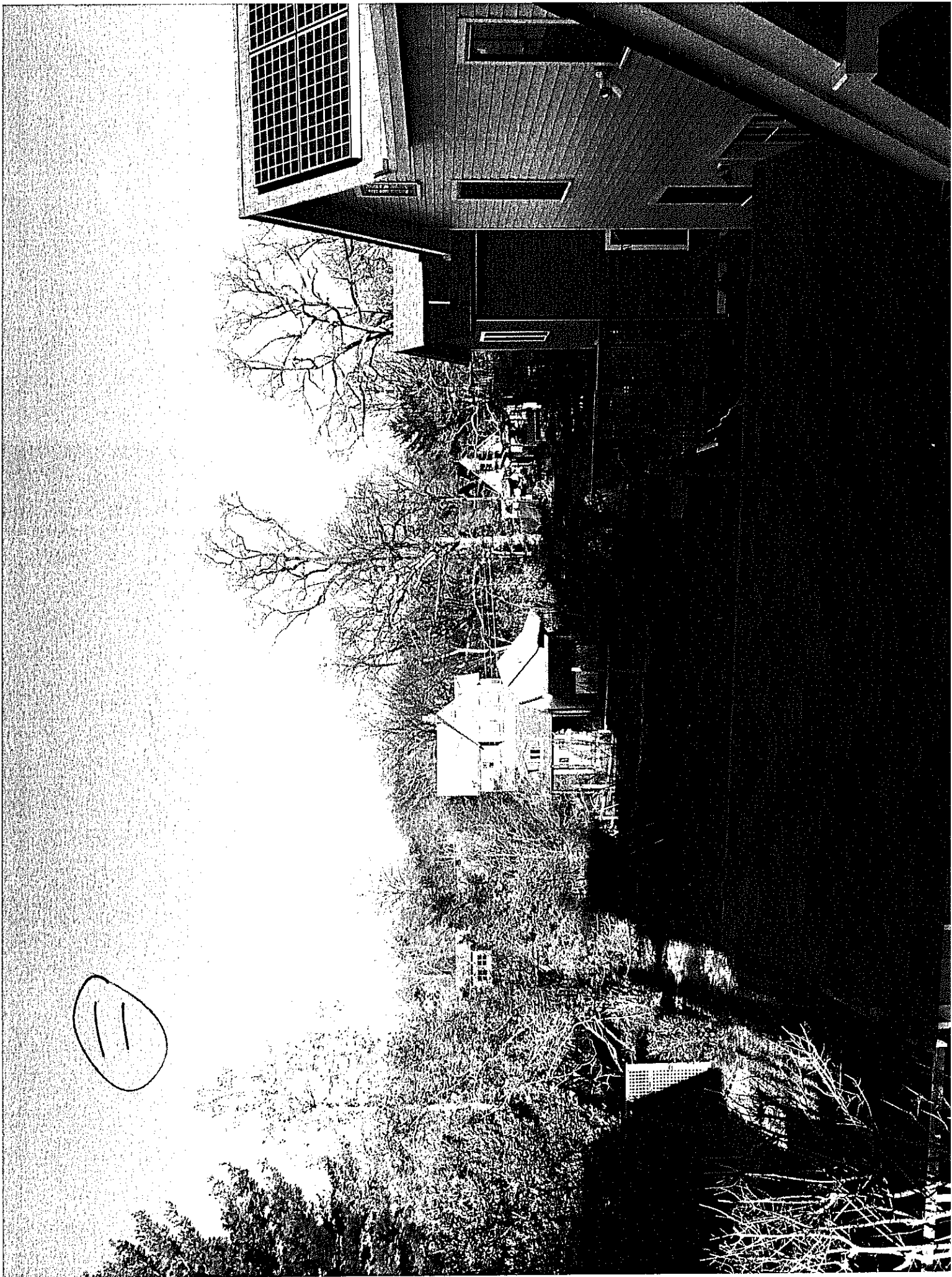
much easier to organize the project in middle age than if they waited until they were older and the need became more apparent.

In your 60s and 70s, "It's still doable but daunting physically and draining emotionally because you have one or two more decade's worth of associations with the house," he said. "In your 80s, you will very likely need other people to orchestrate everything, an unacceptable option for most elderly people who want to feel that they still have some control over their personal lives," he said.

Katherine Salant has an architecture degree from Harvard. A native Washingtonian, she grew up in Fairfax County and now lives in Michigan. If you have questions or would like to suggest topics for coverage, contact her by email at [katherinesalant@gmail.com](mailto:katherinesalant@gmail.com).









HISTORIC PRESERVATION COMMISSION  
301/563-3400

DPS - #8

# APPLICATION FOR HISTORIC AREA WORK PERMIT

Contact Email: MFISCH@SOLARCITY.COM Contact Person: MIKE FISCH OR TERESA  
OR TGERUSON@SOLARCITY.COM Daytime Phone No.: (202) 556-3797 GERUSI  
Tax Account No.: 13-03689048  
Name of Property Owner: JULIAN MULVEY Daytime Phone No.: (202) 321-1267  
Address: 18 MONTGOMERY AVE TAKOMA PARK MD 20912  
Street Number City State Zip Code  
Contractor: SOLARCITY CORPORATION Phone No.: (888) 765-2489  
Contractor Registration No.: 128948 (MHIC)  
Agent for Owner: MIKE FISCH Daytime Phone No.: (202) 556-3797

## LOCATION OF BUILDING/PROJECT

House Number: 18 Street: MONTGOMERY AVE  
Town/City: TAKOMA PARK Nearest Cross Street: HICKORY AVE  
Lot: 9 Block: 18 Subdivision: 0025  
Liber: 47994 Folio: 00361 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: \$ 2000

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

## PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTERIOR 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.

Mike Fisch

Signature of owner or authorized agent

01/11/17

Date

Approved: \_\_\_\_\_ For Chairperson, Historic Preservation Commission

Disapproved: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Application/Permit No.: \_\_\_\_\_ Date Filed: \_\_\_\_\_ Date Issued: \_\_\_\_\_

Edit 6/21/99

SEE REVERSE SIDE FOR INSTRUCTIONS

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**THE FOLLOWING ITEMS MUST BE COMPLETED AND THE  
REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION.**

**1. WRITTEN DESCRIPTION OF PROJECT**

- a. Description of existing structure(s) and environmental setting, including their historical features and significance:

2590 SF HOUSE BUILT IN 2013 LOCATED IN HISTORIC  
DISTRICT. 7500 SF PLOT OF LAND. HOME IS 2 STORIES  
W 3 FULL 1 HALF BATHS AND FINISHED BASEMENT.

- b. General description of project and its effect on the historic resource(s), the environmental setting, and, where applicable, the historic district:

INSTALLATION OF (34) SOLAR PANELS MOUNTED FLUSH  
TO ROOF.

\* INSTALLATION ALREADY COMPLETED <sup>ON THE</sup> MONTGOMERY COUNTY  
NEVER NOTIFIED PERMIT APPLICANT THAT HAWP WOULD BE REQ  
WERE NOTIFIED BY HOMEOWNER'S NEIGHBOR.

**2. SITE PLAN**

Site and environmental setting, drawn to scale. You may use your plot. Your site plan must include:

- a. the scale, north arrow, and date;
- b. dimensions of all existing and proposed structures; and
- c. site features such as walkways, driveways, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.

**3. PLANS AND ELEVATIONS**

You must submit 2 copies of plans and elevations in a format no larger than 11" x 17". Plans on 8 1/2" x 11" paper are preferred.

- a. Schematic construction plans, with marked dimensions, indicating location, size and general type of walls, window and door openings, and other fixed features of both the existing resource(s) and the proposed work.
- b. Elevations (facades), with marked dimensions; clearly indicating proposed work in relation to existing construction and, when appropriate, context. All materials and fixtures proposed for the exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.

**4. MATERIALS SPECIFICATIONS**

General description of materials and manufactured items proposed for incorporation in the work of the project. This information may be included on your design drawings.

**5. PHOTOGRAPHS**

- a. Clearly labeled photographic prints of each facade of existing resource, including details of the affected portions. All labels should be placed on the front of photographs.
- b. Clearly label photographic prints of the resource as viewed from the public right-of-way and of the adjoining properties. All labels should be placed on the front of photographs.

**6. TREE SURVEY**

If you are proposing construction adjacent to or within the dripline of any tree 6" or larger in diameter (at approximately 4 feet above the ground), you must file an accurate tree survey identifying the size, location, and species of each tree of at least that dimension.

**7. ADDRESSES OF ADJACENT AND CONFRONTING PROPERTY OWNERS**

For ALL projects, provide an accurate list of adjacent and confronting property owners (not tenants), including names, addresses, and zip codes. This list should include the owners of all lots or parcels which adjoin the parcel in question, as well as the owner(s) of lot(s) or parcel(s) which lie directly across the street/highway from the parcel in question.

PLEASE PRINT (IN BLUE OR BLACK INK) OR TYPE THIS INFORMATION ON THE FOLLOWING PAGE.  
PLEASE STAY WITHIN THE GUIDES OF THE TEMPLATE, AS THIS WILL BE PHOTOCOPIED DIRECTLY ONTO MAILING LABELS.

13

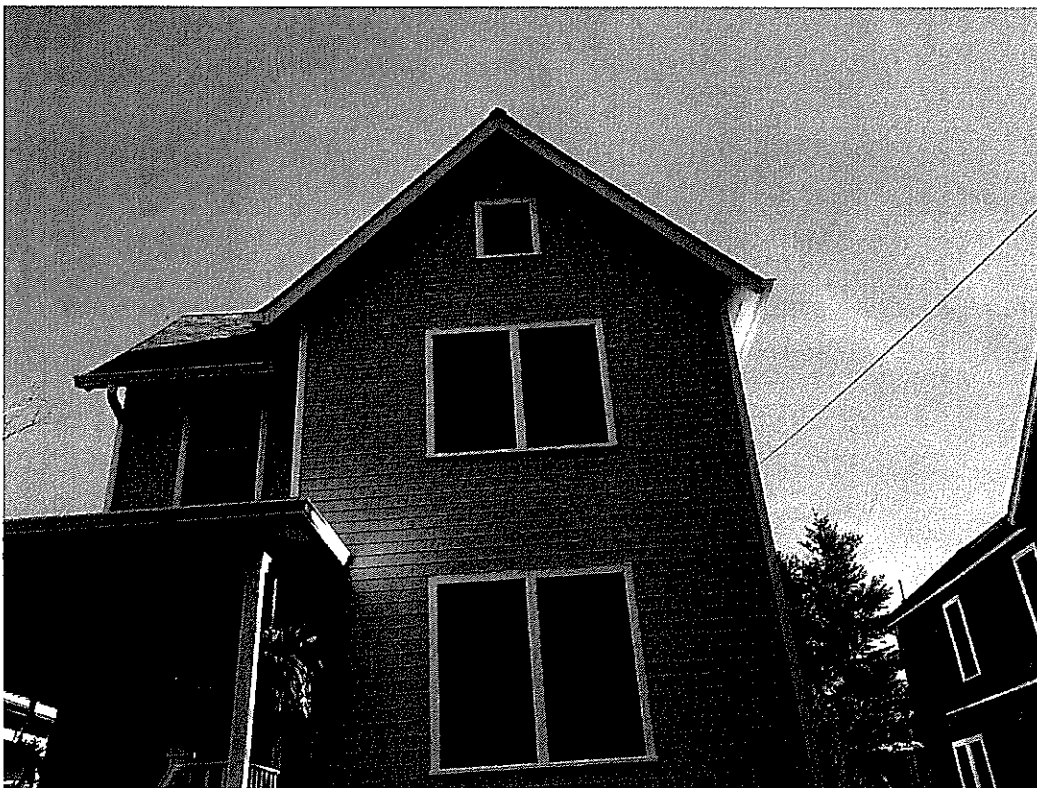
**HAWP APPLICATION: MAILING ADDRESSES FOR NOTIFYING**  
[Owner, Owner's Agent, Adjacent and Confronting Property Owners]

<b>Owner's mailing address</b> 18 MONTGOMERY AVE TAKOMA PARK, MD 20912	<b>Owner's Agent's mailing address</b> 9005 VIRGINIA MANOR RD BELTSVILLE, MD 20705
<b>Adjacent and confronting Property Owners mailing addresses</b>	
16 MONTGOMERY AVE TAKOMA PARK, MD 20912	20 MONTGOMERY AVE TAKOMA PARK, MD 20912
15 MONTGOMERY AVE TAKOMA PARK, MD 20912	17 MONTGOMERY AVE TAKOMA PARK, MD 20912
19 MONTGOMERY AVE TAKOMA PARK, MD 20912	





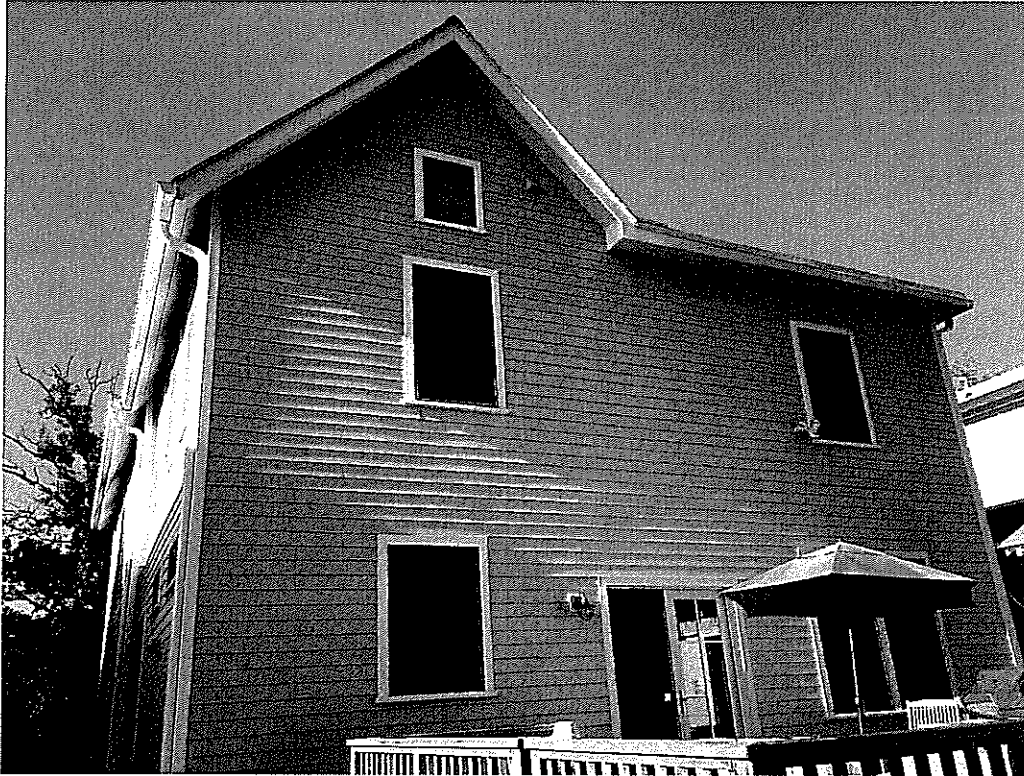
Description: Front of house from road



Description: Front of house showing roof

15



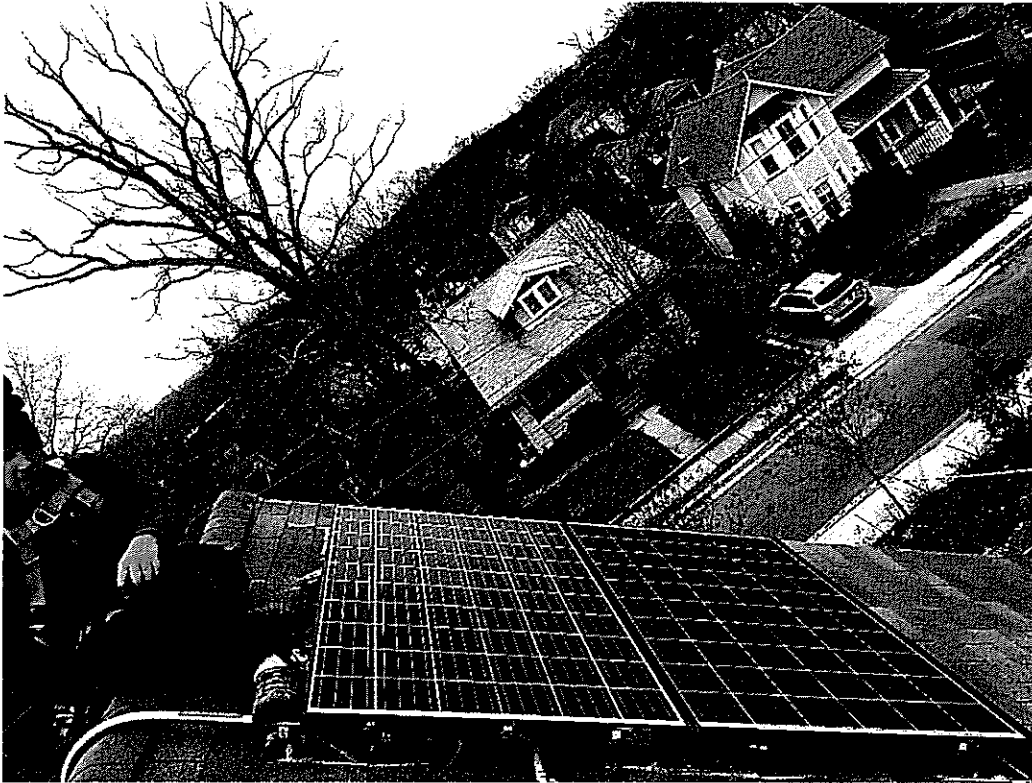


Description: Back of house

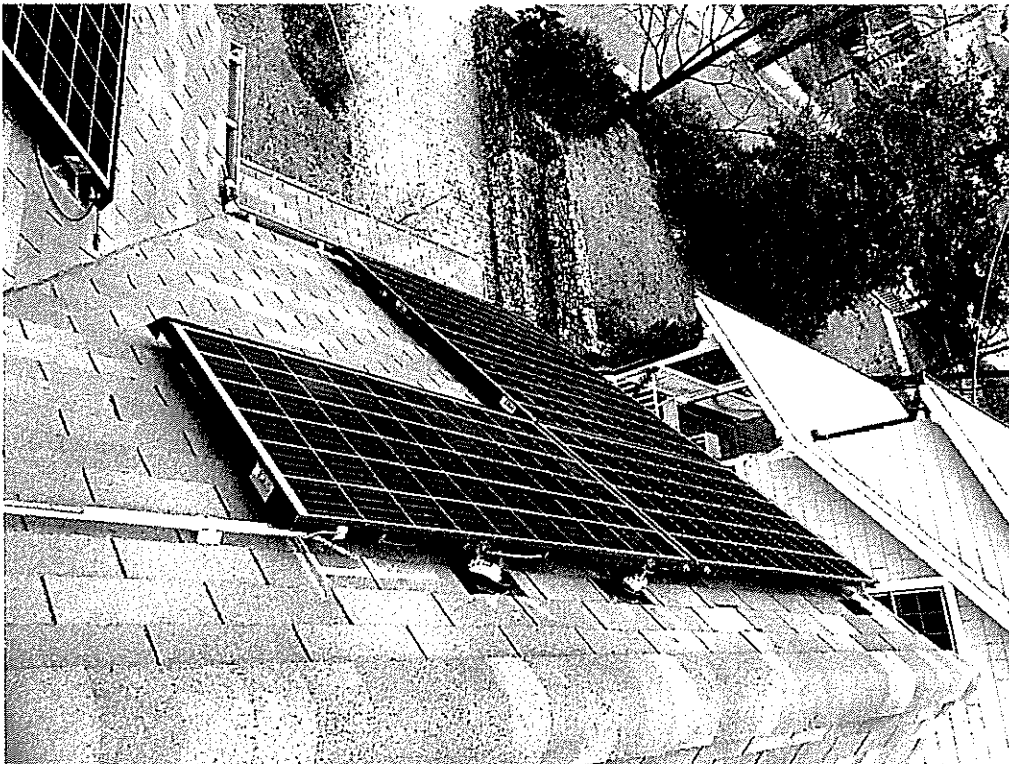


Description: East side of house (most panels are located on this portion of the roof)

16

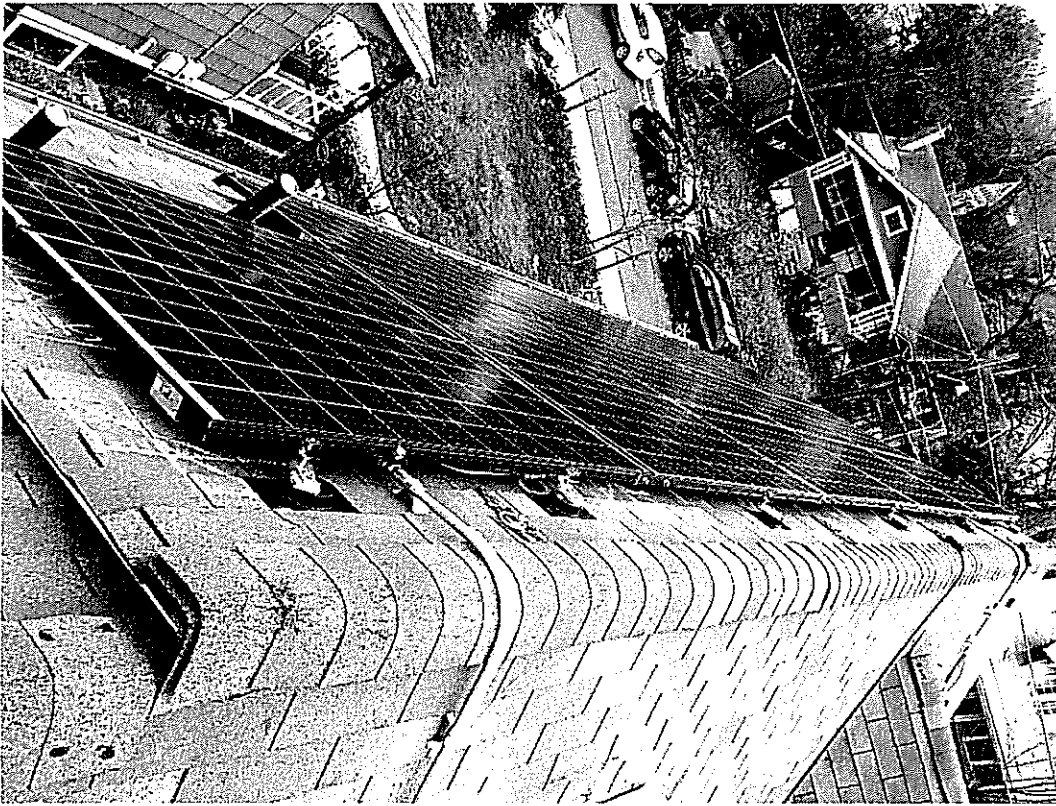


Description: 2 panels, east side of front of house

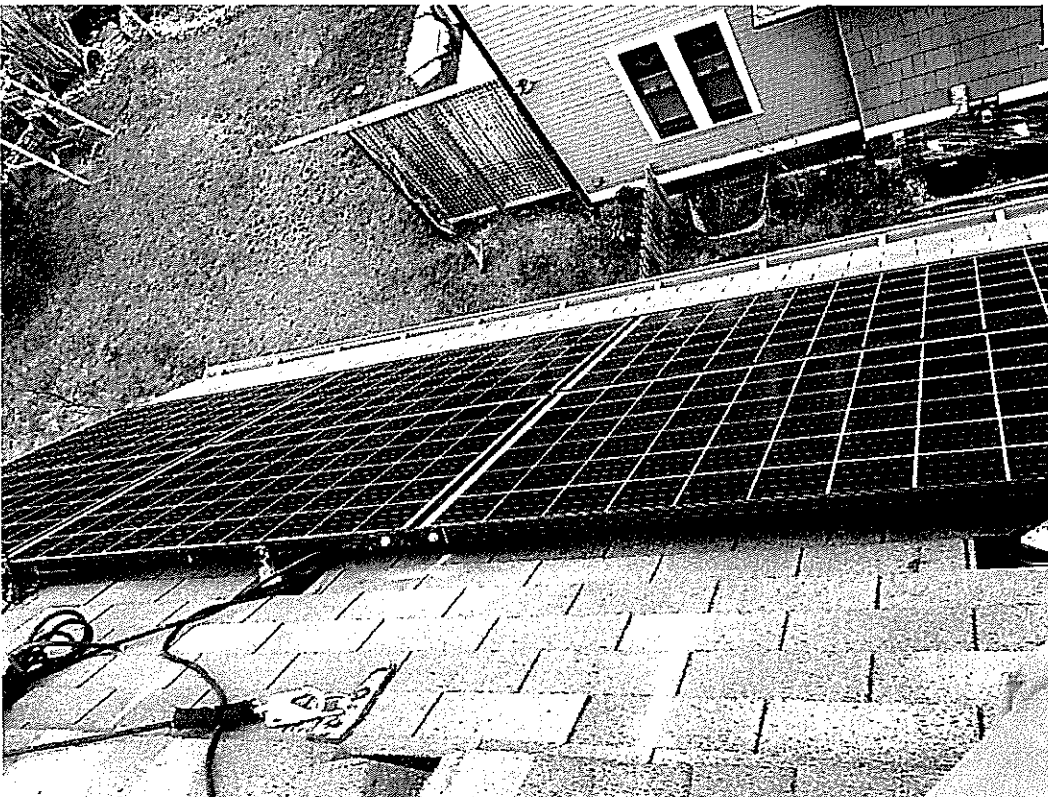


Description: 4 panels, front of house, greatest visibility

17



Description: All photos on east side of house, from back



Description: back of house

18



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett  
County Executive

Diane R Schwartz Jones  
Director

## BUILDING PERMIT

Issue Date: 07/27/2016

Permit No: 764717  
AP Type: BUILDING  
Expires: 07/27/2017  
X Ref:  
Rev. No:  
ID: EB6889

THIS IS TO CERTIFY THAT: - SOLARCITY CORPORATION  
9000 VIRGINIA MANOR ROAD,  
SUITE: 250  
BELTSVILLE, MD 20705

HAS PERMISSION TO: ALTER SINGLE FAMILY DWELLING

PERMIT CONDITIONS: 18 MONTGOMERY AVETAKOMA PARK, MD

MODEL NAME:

PREMISE ADDRESS: 18 MONTGOMERY AVETAKOMA PARK, MD

LOT - BLOCK: -

ZONE:

ELECTION DISTRICT:

BOND NO:

BOND TYPE:

PS NUMBER:

PERMIT FEE: \$210.00

SUBDIVISION:

The permit fee is calculated based on the approved Executive Regulations multiplied by the Enterprise Fund Stabilization Factor for the current fiscal year.

TRANSPORTATION IMPACT TAX DUE:

SCHOOLS IMPACT TAX DUE:

SCHOOLS FACILITY PAYMENT DUE:

**MUST BE KEPT AT THE JOB SITE  
AN APPROVED FINAL INSPECTION IS REQUIRED TO PRIOR USE OR OCCUPANCY**

Every new one- or two-family dwelling, every townhouse and any attached accessory structure must be equipped with a fire sprinkler system. A separate sprinkler permit is required for the installation of the fire sprinkler system.

Many subdivisions and neighborhoods within Montgomery County have private deed restrictions and covenants regulating building construction. Obtaining a building permit does not relieve the property owner of responsibility for complying with applicable covenants.

**NOTICE**

THIS APPROVAL DOES NOT  
INCLUDE PLUMBING, GAS PIPING  
OR ELECTRICAL OR  
CONSTRUCTION IN ANY  
DEDICATED RIGHT-OF-WAY.

**NOTE**

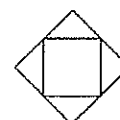
THIS PERMIT DOES NOT INCLUDE  
APPROVAL FOR ANY ELECTRICAL  
WORK. YOU MUST HAVE A SEPARATE  
ELECTRICAL PERMIT TO DO ANY  
ELECTRICAL WORK.

Director, Department of Permitting Services



Site Plan

SEE PAGE 2 OF ATTACHED PLANS FOR SITE PLAN.



(21)

Shade portion to indicate North

Applicant: MIKE FISCH

Page: 10

ABBREVIATIONS		ELECTRICAL NOTES		JURISDICTION NOTES									
A AMPERE AC ALTERNATING CURRENT BLDG BUILDING CMCC CONCRETE DC DIRECT CURRENT EGC EQUIPMENT GROUNDING CONDUCTOR (E) EXISTING ENT ELECTRICAL METALLIC TUBING FSB FIRE SET-BACK GALV GALVANIZED GEC GROUNDING ELECTRODE CONDUCTOR GND GROUND HDG HOT DIPPED GALVANIZED I CURRENT Imp CURRENT AT MAX POWER Isc SHORT CIRCUIT CURRENT KVA KILOVOLT AMPERE KW KILOWATT LBW LOAD BEARING WALL MIN MINIMUM (N) NEW NEUT NEUTRAL NTS NOT TO SCALE OC ON CENTER PL PROPERTY LINE POI POINT OF INTERCONNECTION PV PHOTOVOLTAIC SCH SCHEDULE S STAINLESS STEEL STC STANDARD TESTING CONDITIONS TYP TYPICAL UPS UNINTERRUPTIBLE POWER SUPPLY V VOLT Vmp VOLTAGE AT MAX POWER Voc VOLTAGE AT OPEN CIRCUIT W WATT 3R NEMA 3R, RAINIGHT	1. THIS SYSTEM IS GRID-INTERFERED VIA A UL-LISTED POWER-CONDITIONING INVERTER. 2. THIS SYSTEM HAS NO BATTERIES, NO UPS. 3. A NATIONALLY-RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH ART. 110.3. 4. WHERE ALL TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A SIGN WILL BE PROVIDED WARNING OF THE HAZARDS PER ART. 690.17. 5. EACH UNGROUNDED CONDUCTOR OF THE MULTIWIRE BRANCH CIRCUIT WILL BE IDENTIFIED BY PHASE AND SYSTEM PER ART. 210.5. 6. CIRCUITS OVER 250V TO GROUND SHALL COMPLY WITH ART. 250.97, 250.92(B). 7. DC CONDUCTORS EITHER DO NOT ENTER BUILDING OR ARE RUN IN METALLIC RACEWAYS OR ENCLOSURES TO THE FIRST ACCESSIBLE DC DISCONNECTING MEANS PER ART. 690.31(E). 8. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY INTO BOXES AS REQUIRED BY UL LISTING. 9. MODULE FRAMES SHALL BE GROUNDED AT THE UL-LISTED LOCATION PROVIDED BY THE MANUFACTURER USING UL LISTED GROUNDING HARDWARE. 10. MODULE FRAMES, RAIL, AND POSTS SHALL BE BONDED WITH EQUIPMENT GROUND CONDUCTORS.	STRUCTURAL DESIGN FOR THE SUPPORTING STRUCTURE OF THE HOUSE WAS PERFORMED IN ACCORDANCE WITH IRC/IBC 2015 - STRUCTURAL DESIGN FOR THE RACK SYSTEM AND MOUNTING HARDWARE WAS PERFORMED IN ACCORDANCE WITH IRC/IBC 2015.  STRUCTURAL DESIGN FOR THE SUPPORTING STRUCTURE OF THE HOUSE WAS PERFORMED IN ACCORDANCE WITH IRC/IBC 2015 - STRUCTURAL DESIGN FOR THE RACK SYSTEM AND MOUNTING HARDWARE WAS PERFORMED IN ACCORDANCE WITH IRC/IBC 2015.	<div style="text-align: center;"> <h3>JURISDICTION NOTES</h3> </div>										
<div style="text-align: center;"> <h3>GENERAL NOTES</h3> </div>		<div style="text-align: center;"> <h3>VICINITY MAP</h3> </div>											
<div style="text-align: center;"> <h3>LICENSE</h3> </div>		<div style="text-align: center;"> <h3>INDEX</h3> </div>											
#1805 MASTER ELECTRICIAN Nicholas Meyers		PV1 COVER SHEET PV2 SITE PLAN PV3 STRUCTURAL VIEWS PV4 STRUCTURAL VIEWS PV5 THREE LINE DIAGRAM Outsheets Attached											
MODULE GROUNDING METHOD: ZEP SOLAR AHJ: Montgomery County		<table border="1"> <thead> <tr> <th>REV</th> <th>BY</th> <th>DATE</th> <th>COMMENTS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Niko Contrell</td> <td>8/30/2016</td> <td></td> </tr> </tbody> </table>				REV	BY	DATE	COMMENTS	1	Niko Contrell	8/30/2016	
REV	BY	DATE	COMMENTS										
1	Niko Contrell	8/30/2016											
UTILITY: PEPCO (MD)		<table border="1"> <thead> <tr> <th>REV</th> <th>BY</th> <th>DATE</th> <th>COMMENTS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Niko Contrell</td> <td>8/30/2016</td> <td></td> </tr> </tbody> </table>				REV	BY	DATE	COMMENTS	1	Niko Contrell	8/30/2016	
REV	BY	DATE	COMMENTS										
1	Niko Contrell	8/30/2016											
PROJECT ORDER: JB-2092744 00 JULIAN MULVEY 18 MONTGOMERY AVE TAKOMA PARK, MD 20912		DESCRIPTION: Julian Mulvey RESIDENCE 8.84 KW PV ARRAY COVER SHEET											
JOB NUMBER: JB-2092744 00 DRAWING SYSTEM: CONTO-MEYERS Page 6 WORKS: (34) Hanwha Q-Cells #0:PRO G41/SC 260 INVERTER: SOLAREDGE # SE7600A-US002SNU2		PROJECT ORDER: JB-2092744 00 JULIAN MULVEY 18 MONTGOMERY AVE TAKOMA PARK, MD 20912											

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MP1	PITCH: 45 AZIMUTH: 259 MATERIAL: Comp Shingle STORY: 2 Stories
MP2	PITCH: 45 AZIMUTH: 79 MATERIAL: Comp Shingle STORY: 2 Stories
MP3	PITCH: 45 AZIMUTH: 79 MATERIAL: Comp Shingle STORY: 2 Stories
MP4	PITCH: 45 AZIMUTH: 169 MATERIAL: Comp Shingle STORY: 2 Stories

### LEGEND

(E) UTILITY METER & WARNING LABEL

INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS

DC DISCONNECT & WARNING LABELS

AC DISCONNECT & WARNING LABELS

DC JUNCTION/COMBINER BOX & LABELS

DISTRIBUTION PANEL & LABELS

LOAD CENTER & WARNING LABELS

DEDICATED PV SYSTEM METER

RAPID SHUTDOWN

STANDOFF LOCATIONS

CONDUIT RUN ON EXTERIOR

CONDUIT RUN ON INTERIOR

GATE/FENCE

HEAT PRODUCING VENTS ARE RED

INTERIOR EQUIPMENT IS DASHED

### SITE PLAN

Scale: 3/32" = 1'

0' 1' 10' 21'

Front Of House

(E) DRIVEWAY

18 Montgomery Ave

Digitally signed by Ryan Hillstrom  
Date: 2016.08.30 17:37:26 -06'00'

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JOB NUMBER: JB-2092744 00	PREMISE OWNER: JULIAN MULVEY	DESCRIPTION: Julian Mulvey Residence 8.84 KW PV ARRAY
WARNING SYSTEM: Comp Mount Type C	18 MONTGOMERY AVE	
WORKS: (34) Hanwha Q-Cells #Q-PRO G4.1/SC 260	TAKOMA PARK, MD 20912	
INVERTER: SOLAREDGE # SE760DA-US0025NL12		

DESIGN: Niko Contrell

SHEET: PV 2 of 8/30/2016

DATE: 8/30/2016

TIME: 17:37:26

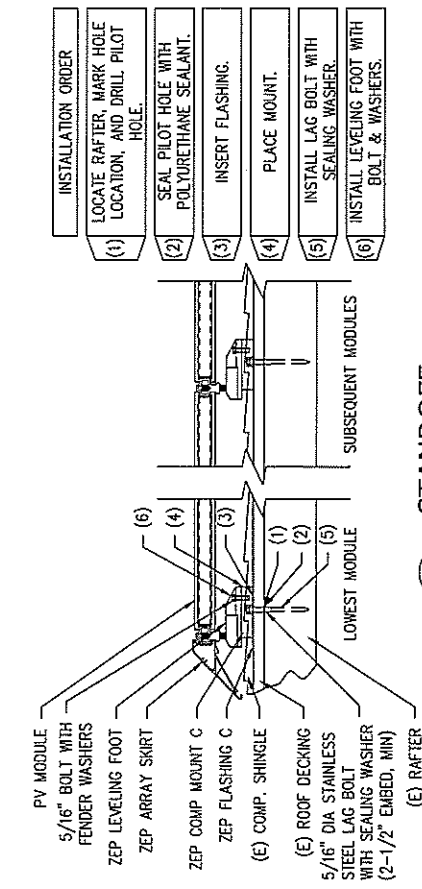
LOCATION: 18 MONTGOMERY AVE, TAKOMA PARK, MD 20912

SolarCity

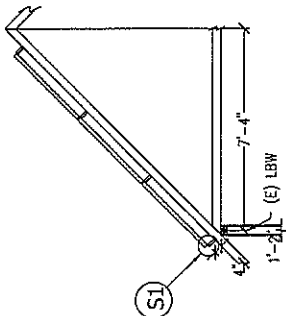
3055 Quince Orchard Way  
Gaithersburg, MD 20878  
(888) 501-0777 (765-2468) www.solarcity.com

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**S1** STANDOFF  
Scale: 1 1/2" = 1'



**E** SIDE VIEW OF MP4 NTS

MP4	X-SPACING	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	72"	24"	24"	STAGGERED
PORTRAIT	48"	20"		
TOP CHORD 2x4 @ 24" OC			ROOF AZI 169	PITCH 45
BOT CHORD 2x4 @ 24" OC			ARRAY AZI 169	PITCH 45
				STORIES: 2
				Comp Shingle



Digitally signed by Ryan Hillstrom  
Date: 2016.08.30 17:40:19 -06'00'

JOB NUMBER: JB-2092744 00 DRAWING SYSTEM: Comp Mount Type C NOTES: (34) Hanwha Q-Cells #Q.PRO C4.1/SC 260 INVERTER: SOLAREEDGE # SE7600A-US002SNU2		PROJECT OWNER: JULIAN MULVEY 18 MONTGOMERY AVE TAKOMA PARK, MD 20912		DESCRIPTION: Julian Mulvey RESIDENCE 8.84 KW PV ARRAY		DESIGN: Niko Contrall SHEET: PV 4 REV: 4 DATE: 8/30/2016		<b>SolarCity</b> 3055 Greenway Hwy San Jose, CA 94102 TEL: (415) 650-6300 (888) 554-CITY (725-4198) www.solarcity.com	
CONFIDENTIAL - THE INFORMATION HEREIN CONTAINED SHALL NOT BE USED FOR THE BENEFIT OF ANYONE EXCEPT SOLARITY INC. NOR SHALL IT BE DISCLOSED IN WHOLE OR IN PART TO OTHERS OUTSIDE THE RESIDENT'S HOME WITHOUT THE WRITTEN PERMISSION OF SOLARITY INC.									

GROUND SPECS	MAIN PANEL SPECS	GENERAL NOTES	INVERTER SPECS	MODULE SPECS	LICENSE
BOND (N) #8 GEC TO (N) GROUND ROD AT PANEL WITH IRREVERSIBLE CRIMP	Panel Number: BX30C Meter Number: 11959242 Underground Service Entrance	Inv 1: DC Ungrounded Tie-In: Supply Side Connection	INV 1 — (1) SOLAREDGE # SE7600A-US002SNU2 Inverter: 7600W, 240V, 97.5% w/Unified Uiso and ZB, AFCI	— (34) Hanwha Q-Cells #Q-PRO G4.1/SC 280 PV Module: 250W, 236.6W PTC, 40mm, BK Frame, MC4, ZEP, 1000V V <sub>oc</sub> : 37.7 V <sub>mp</sub> : 30.74 I <sub>sc</sub> AND I <sub>mp</sub> ARE SHOWN IN THE DC STRINGS IDENTIFIER	#1805 MASTER ELECTRICIAN Nicholas Meyers
<p><b>Diagram:</b></p> <p><b>Notes:</b></p> <p>CONDUIT RUNS MAY BE CONDENSED DUE TO SITE CONDITIONS AND/OR INSTALLATION EASE. ALL CONDUIT FILL DERATES AND PROPER CALCULATIONS HAVE BEEN COMPLETED PER NEC CHAPTER 9, TABLE 4</p> <p>CONDUIT RUNS MAY BE CONDENSED DUE TO SITE CONDITIONS AND/OR INSTALLATION EASE. ALL CONDUIT FILL DERATES AND PROPER CALCULATIONS HAVE BEEN COMPLETED PER NEC CHAPTER 9, TABLE 4</p>					
<p><b>Legend:</b></p> <p><b>POI</b> — (1) 10 AWG THHN-2, Black — (2) 10 AWG THHN-2, Red — (3) 10 AWG THHN-2, White — (4) 10 AWG THHN-2, Green — (5) 10 AWG THHN-2, Ground — (6) 10 AWG THHN-2, Ground — (7) 10 AWG THHN-2, Ground — (8) 10 AWG THHN-2, Ground — (9) 10 AWG THHN-2, Ground — (10) 10 AWG THHN-2, Ground — (11) 10 AWG THHN-2, Ground — (12) 10 AWG THHN-2, Ground — (13) 10 AWG THHN-2, Ground — (14) 10 AWG THHN-2, Ground — (15) 10 AWG THHN-2, Ground — (16) 10 AWG THHN-2, Ground — (17) 10 AWG THHN-2, Ground — (18) 10 AWG THHN-2, Ground — (19) 10 AWG THHN-2, Ground — (20) 10 AWG THHN-2, Ground — (21) 10 AWG THHN-2, Ground — (22) 10 AWG THHN-2, Ground — (23) 10 AWG THHN-2, Ground — (24) 10 AWG THHN-2, Ground — (25) 10 AWG THHN-2, Ground — (26) 10 AWG THHN-2, Ground — (27) 10 AWG THHN-2, Ground — (28) 10 AWG THHN-2, Ground — (29) 10 AWG THHN-2, Ground — (30) 10 AWG THHN-2, Ground — (31) 10 AWG THHN-2, Ground — (32) 10 AWG THHN-2, Ground — (33) 10 AWG THHN-2, Ground — (34) 10 AWG THHN-2, Ground</p>					
<p><b>DC</b></p> <p>— (1) SOLAREDGE # SE7600A-US002SNU2 Inverter: 7600W, 240V, 97.5% w/Unified Uiso and ZB, AFCI</p> <p>— (2) 10 AWG THHN-2, Black — (3) 10 AWG THHN-2, Red — (4) 10 AWG THHN-2, White — (5) 10 AWG THHN-2, Green — (6) 10 AWG THHN-2, Ground — (7) 10 AWG THHN-2, Ground — (8) 10 AWG THHN-2, Ground — (9) 10 AWG THHN-2, Ground — (10) 10 AWG THHN-2, Ground — (11) 10 AWG THHN-2, Ground — (12) 10 AWG THHN-2, Ground — (13) 10 AWG THHN-2, Ground — (14) 10 AWG THHN-2, Ground — (15) 10 AWG THHN-2, Ground — (16) 10 AWG THHN-2, Ground — (17) 10 AWG THHN-2, Ground — (18) 10 AWG THHN-2, Ground — (19) 10 AWG THHN-2, Ground — (20) 10 AWG THHN-2, Ground — (21) 10 AWG THHN-2, Ground — (22) 10 AWG THHN-2, Ground — (23) 10 AWG THHN-2, Ground — (24) 10 AWG THHN-2, Ground — (25) 10 AWG THHN-2, Ground — (26) 10 AWG THHN-2, Ground — (27) 10 AWG THHN-2, Ground — (28) 10 AWG THHN-2, Ground — (29) 10 AWG THHN-2, Ground — (30) 10 AWG THHN-2, Ground — (31) 10 AWG THHN-2, Ground — (32) 10 AWG THHN-2, Ground — (33) 10 AWG THHN-2, Ground — (34) 10 AWG THHN-2, Ground</p>					

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# CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN:  
- Address: 18 Montgomery Ave

INVERTER AND DC DISCONNECT

AC DISCONNECT

UTILITY SERVICE

[ SOLAR PHOTOVOLTAIC ARRAY(S) ]

**PHOTOVOLTAIC BACK-FED CIRCUIT BREAKER IN MAIN ELECTRICAL PANEL IS AN A/C DISCONNECT PER NEC 690.17**

OPERATING VOLTAGE = 240V

JB-2092744-00

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<small>JOB NUMBER:</small> JB-2092744 00 <small>INVERTER:</small> SunPower <small>COMPONENTS:</small> Comp Mount Type C <small>WOMES:</small> (34) Hanwha Q-Cells #Q-PRO G4.1/SC 260 <small>INVERTER:</small> SOLAREDDO # SE7600A-US0025N12		<small>DESCRIPTION:</small> JULIAN MULVEY 18 MONTGOMERY AVE TAKOMA PARK, MD 20912 JULIAN MULVEY RESIDENCE 8.84 KW PV ARRAY PV 6 a 8/30/2016 SITE PLAN PLACARD		

WARNING: PHOTOVOLTAIC POWER SOURCE

Label Location:  
(C)(CB)  
Per Code:  
NEC 690.31, G.3

PHOTOVOLTAIC DC  
DISCONNECT

Label Location:  
(DC) (INV)  
Per Code:  
NEC 690.14, C.2

MAXIMUM POWER:  
POINT CURRENT (Imp)   
MAXIMUM POWER:  
POINT VOLTAGE (Vmp)   
MAXIMUM SYSTEM  
VOLTAGE (Voc)   
SHORT-CIRCUIT  
CURRENT (Isc)

Label Location:  
(DC) (INV)  
Per Code:  
NEC 690.53

WARNING  
ELECTRIC SHOCK HAZARD  
IF A GROUND FAULT IS INDICATED  
CONDUCTORS MAY BE  
UNGROUNDING AND ENERGIZED

Label Location:  
(DC) (INV)  
Per Code:  
NEC 690.5(C)

WARNING  
ELECTRICAL SHOCK HAZARD  
DO NOT TOUCH TERMINALS  
TERMINALS ON BOTH LINE AND  
LOAD SIDES MAY BE ENERGIZED  
IN THE OPEN POSITION  
DC VOLTAGE IS  
ALWAYS PRESENT WHEN  
SOLAR MODULES ARE  
EXPOSED TO SUNLIGHT

Label Location:  
(DC) (CB)  
Per Code:  
NEC 690.17(4)

PHOTOVOLTAIC AC  
DISCONNECT

Label Location:  
(AC) (POI)  
Per Code:  
NEC 690.14, C.2

MAXIMUM AC  
OPERATING CURRENT   
MAXIMUM AC  
OPERATING VOLTAGE

Label Location:  
(AC) (POI)  
Per Code:  
NEC 690.54

WARNING  
ELECTRIC SHOCK HAZARD  
DO NOT TOUCH TERMINALS  
TERMINALS ON BOTH LINE AND  
LOAD SIDES MAY BE ENERGIZED  
IN THE OPEN POSITION

Label Location:  
(AC)(POI)  
Per Code:  
NEC 690.17, E

PHOTOVOLTAIC POINT OF  
INTERCONNECTION  
WARNING: ELECTRIC SHOCK  
HAZARD: DO NOT TOUCH  
TERMINALS OR TERMINALS ON  
BOTH LINE AND LOAD SIDES  
MAY BE ENERGIZED IN THE OPEN  
POSITION FOR SERVICE  
DE-ENERGIZE BOTH SOURCE  
AND MAIN BREAKER  
PV POWER SOURCE  
MAXIMUM AC  
OPERATING CURRENT  A  
MAXIMUM AC  
OPERATING VOLTAGE  V

Label Location:  
(POI)  
Per Code:  
NEC 690.17, 4; NEC 690.54

CAUTION  
DUAL POWER SOURCE  
SECOND SOURCE IS  
PHOTOVOLTAIC SYSTEM

Label Location:  
(POI)  
Per Code:  
NEC 690.64, B.4

CAUTION  
PHOTOVOLTAIC SYSTEM  
CIRCUIT IS BACKED

Label Location:  
(D) (POI)  
Per Code:  
NEC 690.64, B.4

WARNING  
INVERTER OUTPUT  
CONNECTION  
DO NOT RELOCATE  
THIS OVERCURRENT  
DEVICE

Label Location:  
(POI)  
Per Code:  
NEC 690.64, B.7

WARNING  
ELECTRIC SHOCK HAZARD  
THE DC CONDUCTORS OF THIS  
PHOTOVOLTAIC SYSTEM ARE  
UNGROUNDING AND  
MAY BE ENERGIZED

Label Location:  
(DC) (INV)  
Per Code:  
NEC 690.35(F)  
TO BE USED WHEN  
INVERTER IS  
UNGROUNDING

(AC): AC Disconnect  
(C): Conduit  
(CB): Combiner Box  
(D): Distribution Panel  
(DC): DC Disconnect  
(IC): Interior Run Conduit  
(INV): Inverter With Integrated DC Disconnect  
(LC): Load Center  
(M): Utility Meter  
(POI): Point of Interconnection

3055 Clearview Way  
San Mateo, CA 94403  
Tel: (650) 593-8483 Fax: (650) 593-8439  
(888) 562-5177 (762-5488) www.solarcity.com



Label Set

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OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION  
SYSTEM, WITHOUT THE WRITTEN PERMISSION OF SOLAR CITY INC.



January 12, 2013

SolarCity  
3055 Clearview Way  
San Mateo, CA 94402

To whom it may concern:

The SolarCity SleekMount™ Comp photovoltaic module and module mounting assembly has been designed by Zep Solar specifically for asphalt/composition shingle roofs. The design of the entire assembly has been reviewed and it was determined that, for the configurations and criteria below, it is in compliance with the structural requirements of the 2009 and 2012 International Building Code, ASCE 7-05, ASCE 7-10, and NDS-2005. The system has also been evaluated for conformance with the 2010 California Building Code where more stringent requirements may apply.

SolarCity SleekMount™ Comp attachment spacing requirements are determined based on wind exposure category, wind speed, roof zone, roof slope, and snow load. Attachment spacing is calculated based on allowable upward, downward, and lateral load values. These load values are determined from code calculations, manufacturer provided test data for independently manufactured products, first principle calculations, and from tests conducted on November 18<sup>th</sup>, and 19<sup>th</sup>, 2010 at Applied Materials Engineering in Oakland, California under ICC AC-13 guidelines. The allowable loads for the attachments are listed in the table below:

Attachment Type	Load Duration	Allowable Loads (lbs)			Deflection at Allowable		
		Uplift	Down Force	Lateral	Uplift	Down Force	Lateral
Comp Mount Type C	10 minutes (Wind)	637	900	358	0.374"	0.277"	0.461"
	2 months (Snow)	N/A	850	292	N/A	0.302"	0.353"

Sincerely,

Jeremy Rogelstad

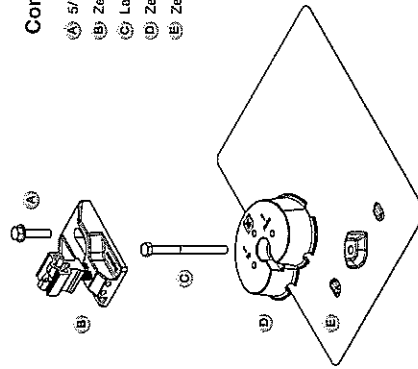




## SolarCity SleekMount™ – Comp

The SolarCity SleekMount hardware solution is optimized to achieve superior strength and aesthetics while minimizing roof disruption and labor. The elimination of visible rail ends and mounting clamps, combined with the addition of array trim and a lower profile all contribute to a more visually appealing system. SleekMount utilizes modules with strengthened frames that attach directly to Zep standoffs, effectively eliminating the need for rail and reducing the number of standoffs required. In addition, composition shingles are not required to be cut for this system, allowing for minimal roof disturbance.

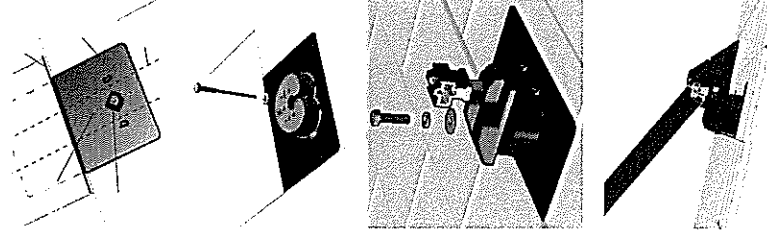
- Utilizes Zep hardware and Zep compatible modules.
- Interlock ETL listed to UL 1703 as ground bond means
- Ground Zep UL and ETL listed to UL 467 as grounding and bonding device
- Full system listed to UL 2703 for grounding
- Galvanized aluminum waterproof flashing
- Anodized components for corrosion resistance
- Applicable for vent spanning functions



### Components

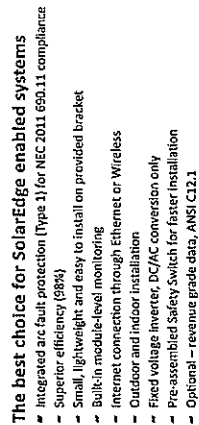
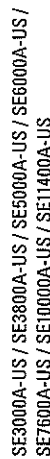
- (A) 5/16" Machine Screw
- (B) Zep Leveling Foot
- (C) Lag Screw
- (D) Zep Comp Mount
- (E) Zep Comp Mount Flashing

## SolarCity SleekMount™ – Comp



### Installation Instructions

- 1 Drill Pilot Hole of Proper Diameter for Fastener Size Per NDS Section 11.3.2
- 2 Seal pilot hole with roofing sealant
- 3 Insert Comp Mount flashing under upper layer of shingle
- 4 Place Comp Mount centered upon flashing
- 5 Install lag pursuant to NDS Section 11.3 with sealing washer.
- 6 Secure Leveling Foot to the Comp Mount using machine screw
- 7 Place module



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[www.solaredge.us](http://www.solaredge.us)

**solar**edge  
Single Phase Inverters for North America  
SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US /  
SE7500A-US / SE10000A-US / SE1400A-US

OUTPUT	SE1800A-US	SE1800A-US	SE2000A-US	SE6000A-US	SE7600A-US	SE1000A-US	SE1300A-US
Rated AC Power Output	3000	3900	5000	6000	7600	9500 @ 208V 10000 @ 240V	11400
Max. AC Power Output	3200	4150	5000 @ 208V 5500 @ 240V	6000	8350	10800 @ 208V 10950 @ 240V	12000
AC Output Voltage Min.-Max. <sup>iii</sup>	181-208 V	181-208 V	✓	✓	✓	✓	✓
AC Output Voltage Min.-Max. <sup>iii</sup>	211-240 Vdc	✓	✓	✓	✓	✓	✓
AC Frequency Min.-Max. <sup>iii</sup>	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Max. Continuous Output Current	12.5	16	24 @ 208V 21.6 @ 240V	25	32	48 @ 208V 47.5 @ 240V	47.5
Ground Threshold	100V	100V	100V	100V	100V	100V	100V
Input Monitoring, Handling Protection, Country Configurable Thresholds	✓	✓	✓	✓	✓	✓	✓
INPUT	0-500	5100	6750	8100	10500	13300	15300
Maximum DC Power (SIC)	500	500	500	500	500	500	500
Transformer Isolation	✓	✓	✓	✓	✓	✓	✓
Max. Input Voltage	240V	240V	240V	240V	240V	240V	240V
Max. DC Input Voltage	9.5	13	16.5 @ 208V 15.5 @ 240V	18	23	31 @ 208V 30.5 @ 240V	34.5
Max. Input Current	9.5	13	16.5 @ 208V 15.5 @ 240V	18	23	31 @ 208V 30.5 @ 240V	34.5
Max. Input Short-Circuit Current	95	95	95	95	95	95	95
Reverse-Polarity Protection	✓	✓	✓	✓	✓	✓	✓
Ground Fault Isolation Detection	✓	✓	✓	✓	✓	✓	✓
Maximum Inverter Efficiency	97.7	98.2	98.3	98.3	98.3	98.3	98.3
CEC Weighted Efficiency	97.7	98	97.5 @ 208V 97.5 @ 240V	97.5	97.5	97.5 @ 208V 97.5 @ 240V	97.5
Inhalation Power Consumption	1.5	1.5	1.5	1.5	1.5	1.5	1.5
ADDITIONAL FEATURES	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*	AS435, IS2315 (Ethernet, 240Vdc (optional)) Option 1 Functionality enabled when Solenoid rapid shutdown is installed*
STANDARD COMPLIANCE	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2	UL1741, UL1693B, UL958, CSA 22.2
Safety	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547
Ground Connection Standards	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547	IEEE 1547
INSTALLATION SPECIFICATIONS	3/4" minimum / 16.6 AWG AC output conduct size / AWG range DC input conduct size / AWG range Dimensions with Safety Switch Weights with Safety Switch	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2	3/4" minimum / 16.6 AWG 3/4" minimum / 1.2 in / 16.6 AWG 30.5 x 12.5 x 7.7 / 7.7 x 3.15 x 28.4 51.2 / 23.2
Cooling	Natural Convection	Natural Convection	Natural Convection	Natural Convection	Natural Convection	Natural Convection	Natural Convection
Min-Max. Operating Temperature	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Reliability	100,000 hours	100,000 hours	100,000 hours	100,000 hours	100,000 hours	100,000 hours	100,000 hours
Warranty	3 years	3 years	3 years	3 years	3 years	3 years	3 years

\* If higher power source than the listed is used, the maximum output current must be limited to the value listed.  
<sup>iii</sup> Input power source must be UL1741, UL1693B, UL958, CSA 22.2, IEEE 1547, and NEMA 3B.  
<sup>iv</sup> Input power source must be UL1741, UL1693B, UL958, CSA 22.2, IEEE 1547, and NEMA 3B.  
<sup>v</sup> Input power source must be UL1741, UL1693B, UL958, CSA 22.2, IEEE 1547, and NEMA 3B.



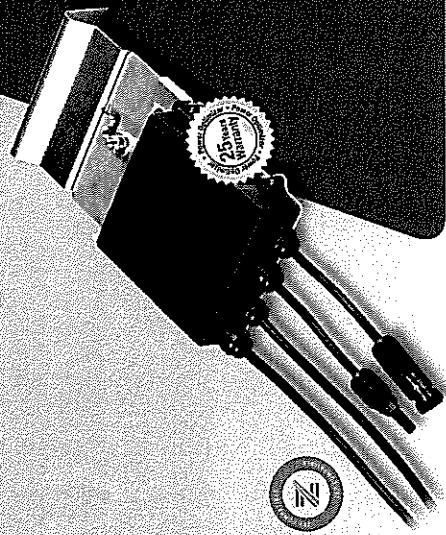
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# SolarEdge Power Optimizer - Zep Compatible™ Module Add-On For North America P300-ZEP

## POWER OPTIMIZER



### Compatible with Zep Groove framed modules

- Certified Zep Compatible™ bracket
- Attaches to module frame without screws - reduces on-roof labor and mounting costs
- Power optimizer equipment grounded through the bracket
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Next generation maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety

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[www.solaredge.us](http://www.solaredge.us)



# SolarEdge Power Optimizer - Zep Compatible™ Module Add-On For North America P300-ZEP

P300-ZEP (for 60-cell PV modules)	
<b>INPUT</b>	
Rated Input DC power <sup>1)</sup>	300 W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48 Vdc
MPPT Operating Range	8 - 48 Vdc
Maximum Short Circuit Current (Isc)	10 A
Maximum DC Input Current	12.5 A
Maximum Efficiency	99.5 %
Weighted Efficiency	98.8 %
Overvoltage Category	II
<b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING INVERTER)</b>	
Maximum Output Current	15 A
Maximum Output Voltage	60 Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)</b>	
Standby Output Voltage per Power Optimizer	1 Vdc
<b>STANDARD COMPLIANCE</b>	
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, IEC62109-1 (class II safety), UL1741
Safety	Yes
RoHS	Yes
<b>INSTALLATION SPECIFICATIONS</b>	
Maximum Allowed System Voltage	1000 Vdc
Dimensions including mounting bracket (W x L x H)	141 x 256 x 40.5 / 5.55 x 10.08 x 1.59
Dimensions excluding mounting bracket (W x L x H)	141 x 212 x 40.5 / 5.55 x 8.34 x 1.59
Weight (including cables and mounting brackets)	1170 / 2.54 kg / lb
Input Connector	MC4 / Ampheno / Tyco
Output Connector	Double-insulated Ampheno
Operating Temperature Range	0.95 / 3.0 m / ft
Protection Rating	-40 ~ +85 / -40 ~ +185 °C / °F
Relative Humidity	IP65 / NEMA4
	0 ~ 100 %

<sup>1)</sup> Based on 1000 W power of the module. Module of up to 175 W power (class II safety) allowed.

PV SYSTEM DESIGN USING A SOLAREGE INVERTER	
SINGLE PHASE	
Minimum String Length (Power Optimizers)	8
Maximum String Length (Power Optimizers)	25
Maximum Power per String	\$250 W
Parallel Strings of Different Lengths or Orientations	Yes
THREE PHASE	
208V	480V
10	18
25	50
6000	12750
Yes	



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