

**MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION**  
**STAFF REPORT**

<b>Address:</b>	6 Montgomery Avenue, Takoma Park	<b>Meeting Date:</b>	9/23/2020
<b>Resource:</b>	Non-Contributing Resource <b>Takoma Park Historic District</b>	<b>Report Date:</b>	9/16/2020
<b>Applicant:</b>	Elliott Andalman (Aaron Williams, Agent)	<b>Public Notice:</b>	9/9/2020
<b>Review:</b>	HAWP	<b>Tax Credit:</b>	No
<b>Case Number:</b>	37/03-20UUU	<b>Staff:</b>	Michael Kyne
<b>PROPOSAL:</b>	Solar panel installation		

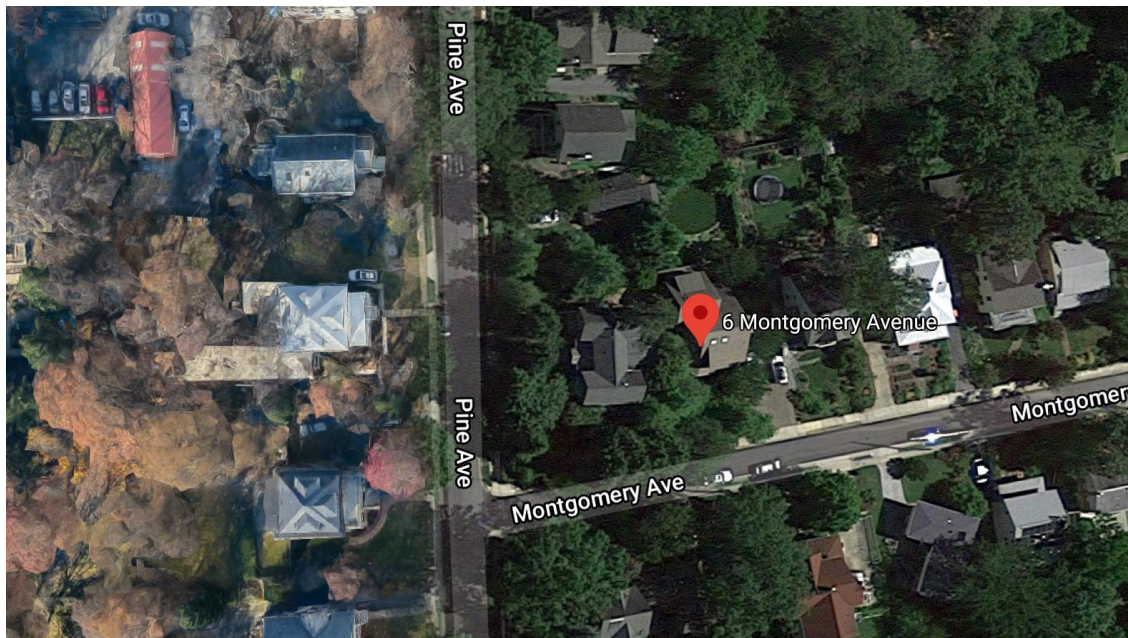
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**STAFF RECOMMENDATION**

Staff recommends that the HPC **approve** the HAWP application.

**ARCHITECTURAL DESCRIPTION**

**SIGNIFICANCE:** Non-Contributing Resource within the Takoma Park Historic District  
**STYLE:** Bungalow Revival  
**DATE:** 1980s



*Fig. 1: Subject property.*

**PROPOSAL**

The applicant proposes to install 10 roof-mounted solar panels at the subject property.

## **APPLICABLE GUIDELINES**

When reviewing alterations and new construction within the Takoma Park Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. 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)*, *Historic Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS (Policy No. 20-01)*, and *the Secretary of the Interior's Standards for Rehabilitation (Standards)*. The pertinent information in these documents is outlined below.

### ***Takoma Park Historic District 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 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.

### **NON-CONTRIBUTING /OUT-OF-PERIOD RESOURCES – RESIDENTIAL**

Non-Contributing/Out-of-Period Resources are either buildings that are of little or no architectural and historical significance to the historic district or are newer buildings that have been constructed outside of the district's primary periods of historical importance.

These types of 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 the character of the historic district as a whole.

Demolition of Non-Contributing/Out-of-Period Resources should be permitted. However, any new building constructed in the place of a demolished building should be reviewed under the guidelines for new construction that follow.

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

- (b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to 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; or

- (3) The proposal would enhance or aid in the protection, preservation and public or private utilization of the historic site or historic resource located within an historic district in a manner compatible with the historical, archeological, architectural or cultural value of the historic site or historic district in which an historic resource is located; or
  - (4) The proposal is necessary in order that unsafe conditions or health hazards be remedied; or
  - (5) The proposal is necessary in order that the owner of the subject property not be deprived of reasonable use of the property or suffer undue hardship; or
  - (6) In balancing the interests 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.
- (c) It is not the intent of this chapter to limit new construction, alteration or repairs to any 1 period or architectural style.
  - (d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

***Historic Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS***

On December 5, 2017, the Montgomery County Council adopted an Emergency Climate Mobilization resolution (Resolution No.: 18-974) which declared a climate emergency and charged the County Executive, Montgomery County Public Schools, and the Maryland-National Capital Park and Planning Commission to advise the Council on methods to reduce greenhouse gas emissions.

As a body established by the County Executive, it is incumbent on the Historic Preservation Commission (HPC) to undertake steps to achieve the goals of the Emergency Climate Mobilization resolution.

One method for reducing greenhouse gas emissions is to replace carbon-heavy methods of energy production, like coal and natural gas power plants, with renewable sources like wind and solar power. Current historic preservation best practice is to limit the locations solar panels may be installed to preserve the character of the building above all other considerations. Chapter 24A-8(b)(6) of County Code establishes a balancing test for approval of a HAWP where there is an apparent conflict between the desired impact on the historic resource compared to the public benefit of the proposal. Because the widespread use of solar panels, both for hot water and for electricity production, will reduce greenhouse gases in the county, it is the position of the HPC that solar panels may be installed on all roof elevations of historic sites or historic resources located within a historic district provided:

1. The identified preferred location (on the rear of the property, building additions, accessory structures, or ground-mounted arrays) is not feasible due to resource orientation or other site limitations and;

2. The roof is not either architecturally significant or a slate or tile roof unless it can be demonstrated that the solar array will be installed without damaging the historic character of the resource or historic fabric; and
3. A Historic Area Work Permit (HAWP) is required for all work referenced in this policy.

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.

***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 *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.

### **STAFF DISCUSSION**

The applicant proposes to install 10 roof-mounted solar panels at the subject property. The solar panels will be installed on the southern (front) roof slope of the main house.

Staff finds the proposal to be consistent with the Commission's solar policy. The subject property is moderately forested, and the house is oriented with its front to the south, making it infeasible to install the proposed solar panels in a preferred location (on the rear of the property, building additions, accessory structures, or ground-mounted arrays). Also, because the resource is a c. 1980s Non-Contributing Resource, the roof is neither architecturally significant, nor a character-defining feature of the resource, nor is it a slate or tile roof.

The proposal is not a major addition or alteration to the scale and massing that will affect the surrounding streetscape and/or landscape or impair the character of the historic district as a whole. Therefore, in accordance with the *Guidelines* for Non-Contributing Resources, the proposal should receive the most lenient level of design review, and most alterations should be approved as a matter of course.

In accordance with *Standards #2* and *#9*, the proposal will not remove or alter character-defining features of the subject property or surrounding streetscape.

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

### **STAFF RECOMMENDATION**

Staff recommends that the Commission approve the HAWP application under the Criteria for Issuance in Chapter 24A-8(b), (1), (2) & (d) having found that the proposal 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 with the *Secretary of the Interior's Standards for Rehabilitation #2* and *#9*;

and with HPC Policy 20-01;

and with the general condition that the applicant shall present the 3 permit sets of drawings, if applicable, to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits;

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 michael.kyne@montgomeryplanning.org to schedule a follow-up site visit.



FOR STAFF ONLY:  
HAWP# 924640  
DATE ASSIGNED \_\_\_\_\_

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

**APPLICANT:**

Name: ELLIOTT ANDALMAN

E-mail: eandalman@gmail.com

Address: 6 MONTGOMERY AVE

City: TAKOMA PARK Zip: 20912

Daytime Phone: 301-980-4367

Tax Account No.: 01066791

**AGENT/CONTACT (if applicable):**

Name: AARON WILLIAMS

E-mail: awilliams@fusionss.net

Address: 3600 COMMERCE DR, #601

City: BALTIMORE Zip: 21227

Daytime Phone: 443-425-5988

Contractor Registration No.: MHIC 30991

**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: \_\_\_\_\_ Street: \_\_\_\_\_

Town/City: \_\_\_\_\_ Nearest Cross Street: \_\_\_\_\_

Lot: \_\_\_\_\_ Block: \_\_\_\_\_ Subdivision: \_\_\_\_\_ 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:**

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

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

Aaron Williams

8/27/2020

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**

6 MONTGOMERY AVE  
TAKOMA PARK, MD 20912

**Owner's Agent's mailing address**

3600 COMMERCE DR, # 601  
BALTIMORE, MD 21227

**Adjacent and confronting Property Owners mailing addresses**

POLLY DUNFORD  
8 MONTGOMERY AVE  
TAKOMA PARK, MD 20912

HUGH MORALES  
10 PINE AVE  
TAKOMA PARK, MD 20912

LEAH CURRY  
5 MONTGOMERY AVE  
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:

HOME IS IN EXCELLENT CONDITION. THERE ARE SEVERAL TREE IN THE FRONT YARD WHICH WILL HELP CONCEAL THE ADDITION OF SOLAR PANELS.

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

INSTALLING 10 ROOF MOUNTED SOLAR PANELS. 2 PANELS ARE GOING WHERE SKYLIGHTS USED TO BE, AND THERE WILL BE 4 PANELS ON EACH DORMER ON THE MAIN ROOF OF THE HOUSE.

Work Item 1: SOLAR INSTALLATION

Description of Current Condition:

HOME IS IN GREAT SHAPE AND DOES NOT NEED ANY ADDITIONAL WORK TO ALLOW FOR SOLAR PANELS

Proposed Work:

INSTALL 10 ROOF MOUNTED SOLAR PANELS

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/Exc avation/Land scaing	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*





DEPARTMENT OF PERMITTING SERVICES

Marc Elrich  
*County Executive*

Mitra Pedoeem  
*Director*

# HISTORIC AREA WORK PERMIT APPLICATION

Application Date: 8/25/2020

Application No: 924640  
AP Type: HISTORIC  
Customer No: 1308656

## Affidavit Acknowledgement

The Contractor is the Primary applicant authorized by the property owner  
This application does not violate any covenants and deed restrictions

## Primary Applicant Information

Address 6 MONTGOMERY AVE  
TAKOMA PARK, MD 20912

Othercontact Rice (Primary)

## Historic Area Work Permit Details

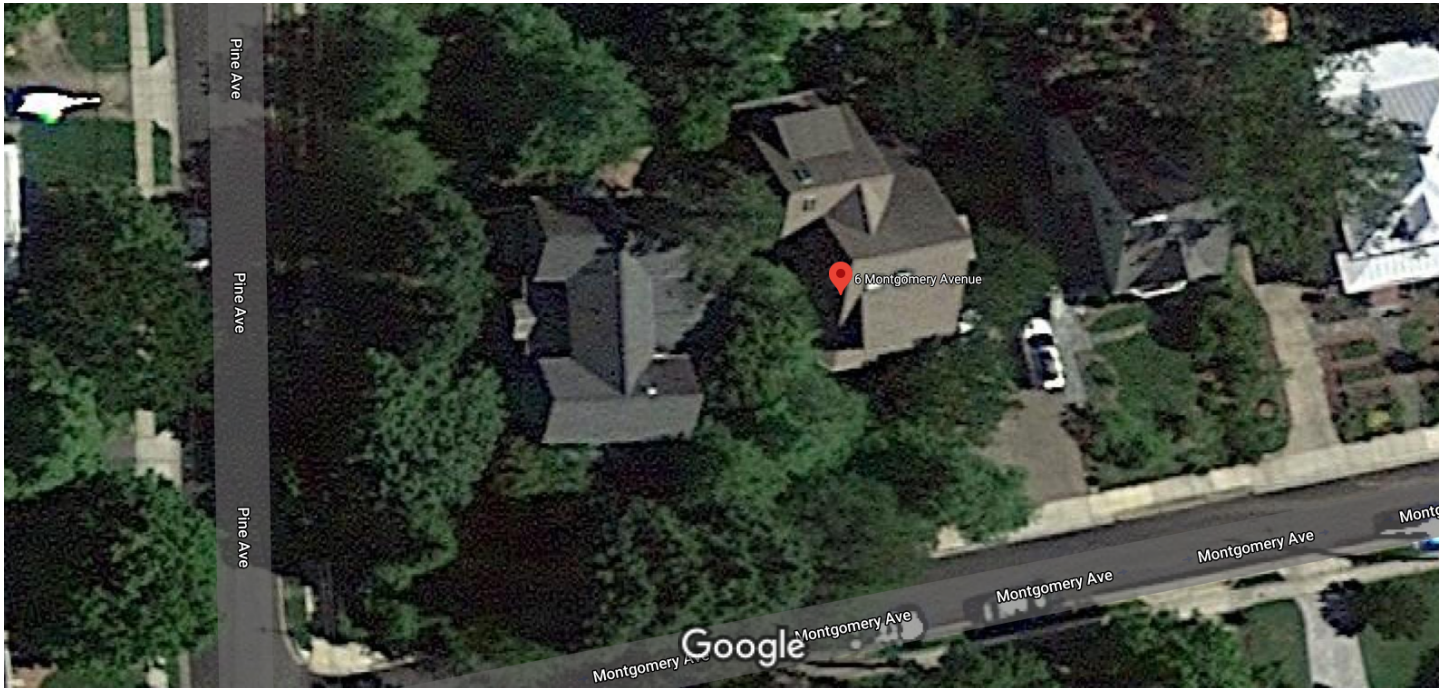
Work Type ALTER

Scope of Work INSTALL 10 ROOF MOUNTED SOLAR PANELS



## 6 Montgomery Ave

Street view is much older than satellite image. Old skylights are no longer there.



Map data ©2020, Map data ©2020

20 ft



## 6 Montgomery Ave

Takoma Park, MD 20912

Building



Directions



Save



Nearby



Send to your  
phone



Share

## Photos



SOLAR PV SYSTEM: 3.6 kWp

ANDALMAN RESIDENCE  
6 MONTGOMERY AVENUE TAKOMA PARK,  
MD UNITED STATES 20912

PROJECT INFORMATION

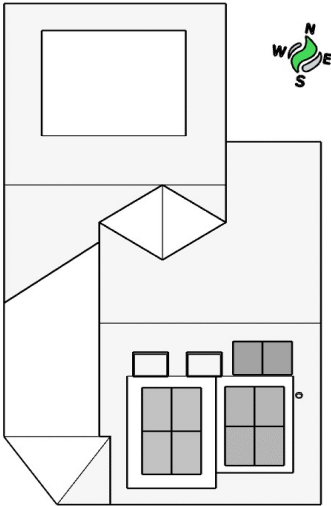
OWNER: ELLIOTT ANDALMAN  
ADDRESS: 6 MONTGOMERY AVENUE  
TAKOMA PARK, MD UNITED  
STATES 20912

AHJ: MONTGOMERY  
ADDRESS: 255 ROCKVILLE PIKE, 2ND  
FLOOR ROCKVILLE, MD 20850

ZONING: RESIDENTIAL  
BUILDING CODE: IBC 2018  
ELECTRICAL CODE: NEC 2017  
ASCE VERSION: ASCE 7-16

SNOW LOAD: 30 PSF  
WIND SPEED: 115 MPH  
WIND EXPOSURE: B

DC RATING: 3.6 kW  
AC RATING: 2.9 kW  
RACKING: UNIRAC SM LIGHT RAIL  
MODULE: (10) REC360AA  
INVERTER: (10) IQ7PLUS-72-2-US



PROJECT SCOPE

THIS PROJECT INVOLVES THE INSTALLATION OF (10) REC 360W SOLAR MODULES. THE SOLAR MODULES WILL BE RACKED USING A PRE-ENGINEERED RACKING SYSTEM. THE RACKED MODULES WILL BE ELECTRICALLY CONNECTED TO (10) ENPHASE DC TO AC POWER INVERTERS, AND INTERCONNECTED TO THE LOCAL UTILITY USING MEANS AND METHODS CONSISTENT WITH THE RULES ENFORCED BY THE LOCAL UTILITY AND PERMITTING JURISDICTION.

INDEX OF PAGES

Z001	COVER PAGE
A001	ATTACHMENT & SITE PLAN
S001	ASSEMBLY & LOAD CALCS
E001	ELECTRICAL - LINE DIAGRAM
E002	ELECTRICAL - WIRE CALCS
E003	STRING & CONDUIT LAYOUT
E004	EQUIP. RATINGS & SIGNAGE

APPENDIX

MODULE DATASHEET  
INVERTER DATASHEET  
RACKING DATASHEET  
ANCHOR DATASHEET

FOR PERMITTING USE ONLY

PROJECT ADDRESS:

ELLIOTT  
ANDALMAN  
6 MONTGOMERY AVENUE  
TAKOMA PARK, MD  
UNITED STATES 20912

CONTRACTOR INFO:



3600 COMMERCE DR  
SUITE 601  
BALTIMORE, MD 21227  
(443) 955-0779

LICENSE NUMBER:

MHIC-30991

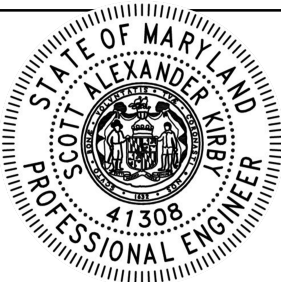
REV DATE

IFC 8/25/2020

COVER

Z001

DocuSigned by:



Professional Certification: I hereby certify that these documents were prepared or approved by me and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No.: 41308 Exp. Date: 01-06-2022  
STAMPED AND SIGNED FOR STRUCTURAL ONLY

8/18/2020

DocuSigned by:

Scott Kirby

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GENERAL NOTES

1) THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION (AHJ).

2) PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH 690.12(A) THROUGH (D).

3) THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM, AND THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE.

4) ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE AND AS REQUIRED BY THE NEC AND AHJ.

5) PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.

FOR ENGINEERING USE ONLY

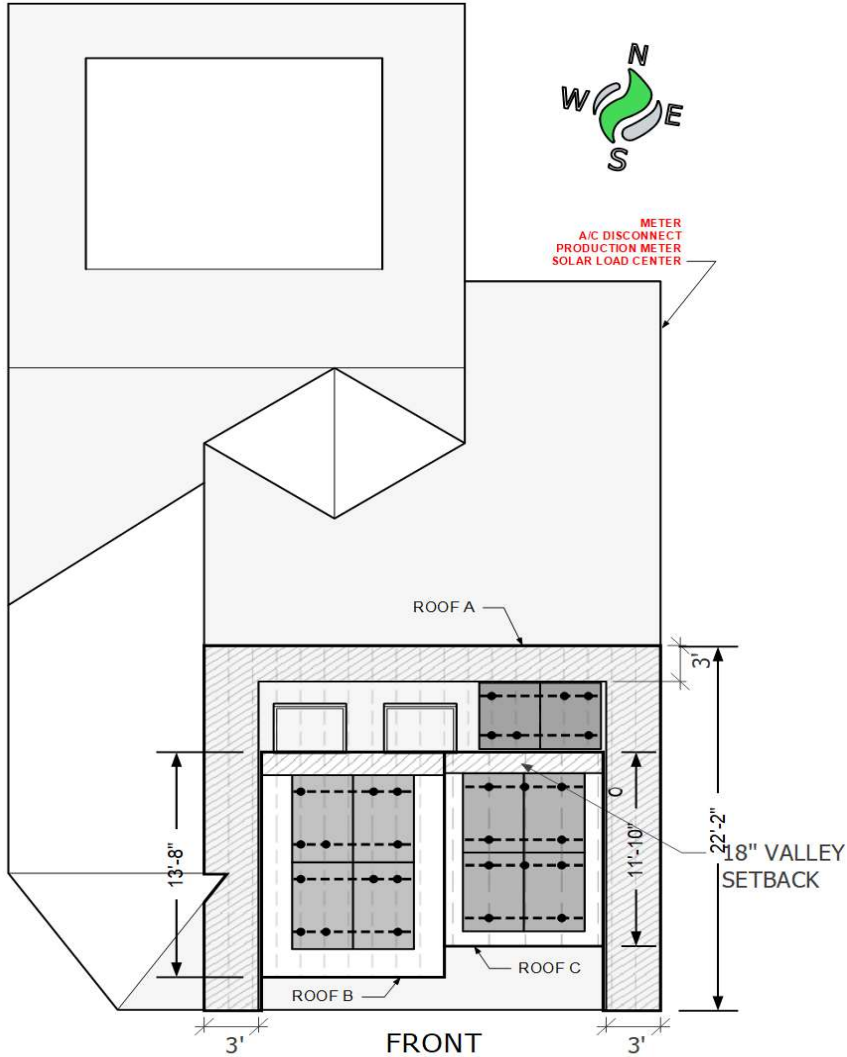


ROOF PROPERTIES	ROOF LABEL:	A	B	C
	MATERIAL:	Architectual Comp. Shingle	Architectual Comp. Shingle	Architectual Comp. Shingle
	PITCH:	45°	21°	32°
	AZIMUTH:	170°	170°	170°
	PRIMARY SUPPORT:	2x10 RAFTERS	2x8 RAFTERS	2x6 RAFTERS
	PRIMARY SUPPORT SPACING:	16"	16"	24"
	LEAST HORIZONTAL DIMENSION:	22'	13'	11'
	MEAN HEIGHT:	25'	20'	20'
	RACKING:	UNIRAC SM LIGHT RAIL	UNIRAC SM LIGHT RAIL	UNIRAC SM LIGHT RAIL
	STANDOFF:	UNIRAC FLASHLOC	UNIRAC FLASHLOC	UNIRAC FLASHLOC

- ALL SOLAR MODULES SUPPORTED BY ROOF ATTACHMENTS 48" O.C.

- SOLAR PHOTOVOLTAIC SYSTEM INSTALLED PARALLEL TO ROOF SURFACE

- SOLAR PHOTOVOLTAIC SYSTEM INSTALLED AT A MAXIMUM HEIGHT OF 6" ABOVE ROOF SURFACE



	ROOF SUPPORT
	MOUNTING RAIL
	ROOF ATTACHMENT
	PV ARRAY
	FIRECODE SETBACK

FOR PERMITTING USE ONLY

PROJECT ADDRESS:

ELLIOTT  
ANDALMAN  
6 MONTGOMERY AVENUE  
TAKOMA PARK, MD  
UNITED STATES 20912

CONTRACTOR INFO:



3600 COMMERCE DR  
SUITE 601  
BALTIMORE, MD 21227  
(443) 955-0779

LICENSE NUMBER:

MHIC-30991

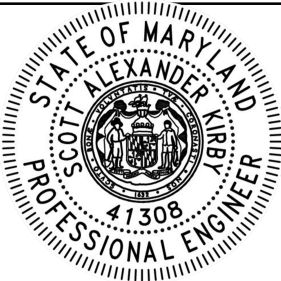
REV DATE

IFC 8/25/2020

ATTACHMENT &  
SITE PLAN

A001

DocuSigned by:



Professional Certification: I hereby certify that these documents were prepared or approved by me and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No.: 41308 Exp. Date: 01-06-2022  
STAMPED AND SIGNED FOR STRUCTURAL ONLY

8/18/2020

DocuSigned by:

Scott Kirby

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INSTALLATION NOTES

- 1) ALL RACKING SHALL BE INSTALLED PER MANUFACTUER SPECIFICATIONS
- 2) ALL ROOFING PENETRATIONS SHALL EMBED IN STRUCTURAL MEMBERS AND PROPER FLASHING SEALANT SHALL BE USED TO PROVIDE WATERTIGHT ASSEMBLY
- 3) WHEN POSSIBLE, ALL RACKING STANDOFFS WILL BE STAGGERED AMONGST THE ROOF SUPPORT MEMBERS

4) REFER TO PAGE S001 FOR MAXIMUM ALLOWABLE RAIL SPAN AND MODULE OVERHANG, AND ATTACHMENT DETAILS

5) ALL RACKING AND STRUCTURAL WORK FOR THIS PROJECT SHALL COMPLY WITH BUILDING CODE, IBC 2018 AND ASCE 7-16

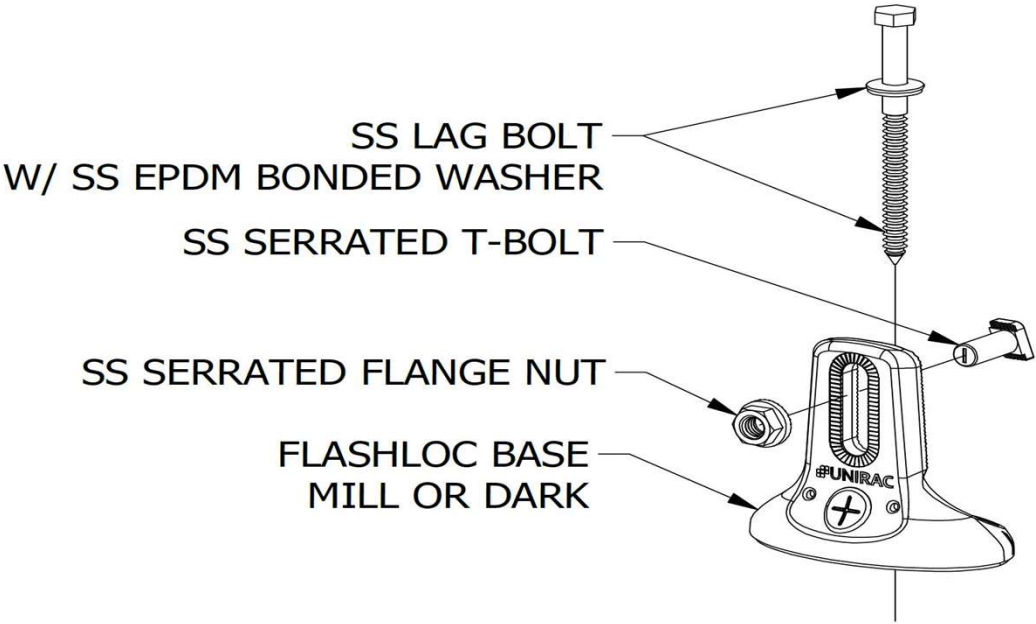
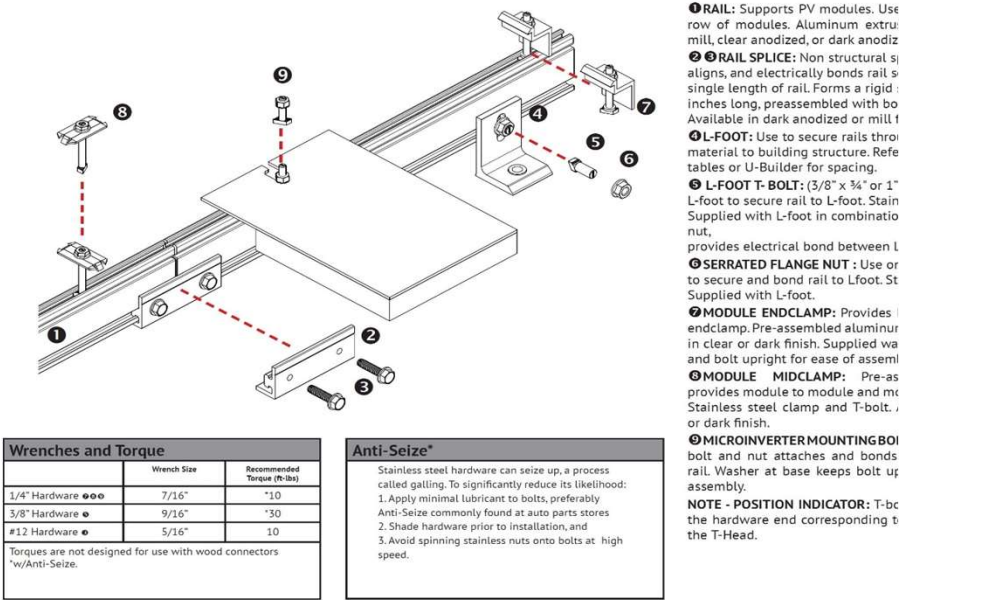
FOR ENGINEERING USE ONLY

MOUNTING SYSTEM PROPERTIES	
RACKING	UNIRAC SM LIGHT RAIL
STANDOFF	UNIRAC FLASHLOC
FASTENING DETAILS	SEE NOTE 3
MAX. RAIL SPAN	48"
MIN. FASTENER DEPTH	2.25"
MAX. RAIL CANTILEVER	16"
MAX. ARRAY HEIGHT	6"

SITE CONDITIONS	
WIND SPEED	115 MPH
SNOW LOAD	30 PSF
ROOF ZONE (TYP.)	3
BUILDING CODE	IBC 2018
ELECTRICAL CODE	NEC 2017
ASCE VERSION	ASCE 7-16

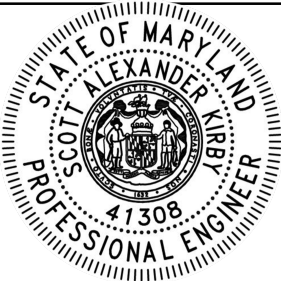
DEAD LOAD CALCULATION			
LOAD	QTY. OR LIN. FT.	WEIGHT PER (LB)	TOTAL LBS.
MODULES	10	43	430.00
M.L.E.'S	10	2.38	23.80
RACKING	71.9	0.81	58.22
STANDOFF	35	0.5	17.50
TOTAL ARRAY WEIGHT (LBS)			529.5
TOTAL ARRAY AREA (SQ.FT.)			188.2
DISTRIBUTED LOAD (PSF)			2.81

POINT LOAD CALCULATION	
TOTAL ARRAY WEIGHT (LBS)	529.52
TOTAL NUMBER OF STANDOFFS (TYP.)	35
POINT LOAD (LBS/STANDOFF)	15.13



FOR PERMITTING USE ONLY	
<b>PROJECT ADDRESS:</b>  ELLIOTT ANDALMAN  6 MONTGOMERY AVENUE TAKOMA PARK, MD UNITED STATES 20912	
<b>CONTRACTOR INFO:</b>   <b>FUSION</b> SOLAR SERVICES  3600 COMMERCE DR SUITE 601 BALTIMORE, MD 21227 (443) 955-0779  <b>LICENSE NUMBER:</b>  MHIC-30991	
<b>REV</b>	<b>DATE</b>
IFC	8/25/2020
<b>ASSEMBLY &amp; LOAD CALCS</b>	
<b>S001</b>	

DocuSigned by:



Professional Certification: I hereby certify that these documents were prepared or approved by me and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No.: 41308 Exp. Date: 01-06-2022  
STAMPED AND SIGNED FOR STRUCTURAL ONLY

DocuSigned by:  
*Scott Kirby*  
8/18/2020  
CAD180010D814CD...

FOR ENGINEERING USE ONLY

**RACKING AND STRUCTURAL NOTES**

- 1) ALL RACKING SHALL BE INSTALLED PER MANUFACTUER SPECIFICATIONS
- 2) M.L.E.'S = MODULE LEVEL ELECTRONICS (IE, POWER OPTIMIZERS, MICRO-INVERTERS, CABELS, ETC)
- 3) USE 5/16" X 4"HEX HEAD STAINLESS STEEL LAG SCREWS

4) ALL RACKING AND STRUCTURAL WORK FOR THIS PROJECT SHALL COMPLY WITH BUILDING CODE, IBC 2018 AND ASCE 7-16

FOR PERMITTING USE ONLY

PROJECT ADDRESS:

ELLIOTT  
ANDALMAN  
6 MONTGOMERY AVENUE  
TAKOMA PARK, MD  
UNITED STATES 20912

CONTRACTOR INFO:



3600 COMMERCE DR  
SUITE 601  
BALTIMORE, MD 21227  
(443) 955-0779

LICENSE NUMBER:

MHIC-30991

REV DATE

IFC 8/25/2020

ELECTRICAL -  
LINE DIAGRAM

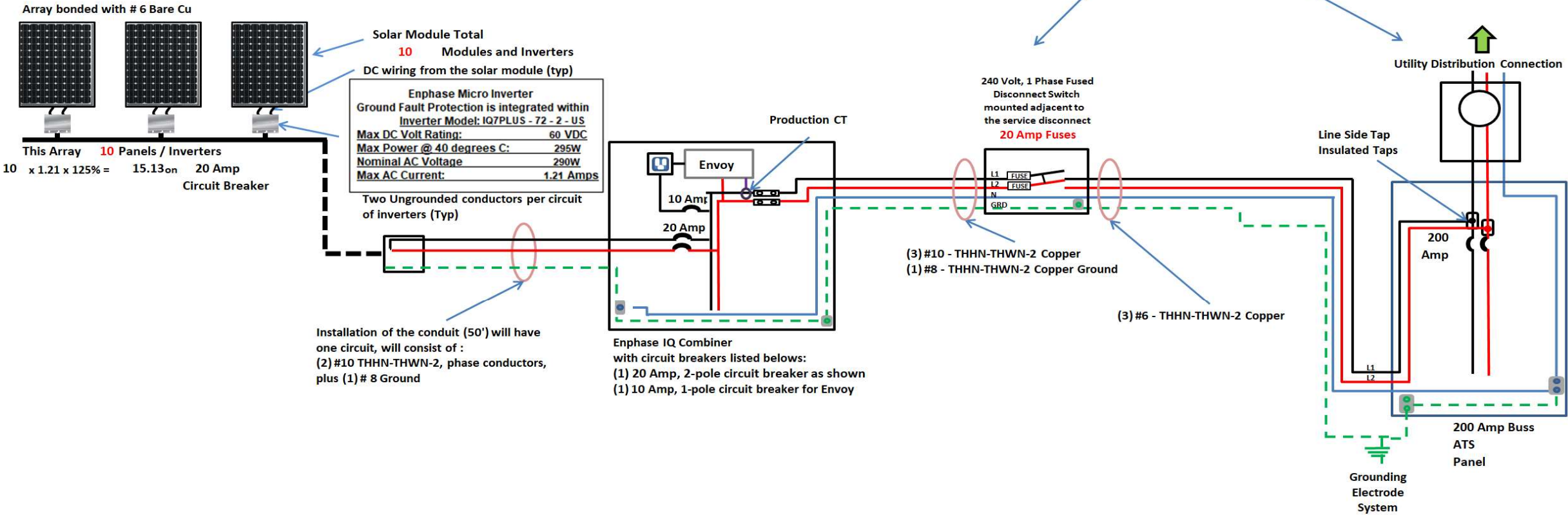
E001

When the AC utility source is removed from the inverter output circuits via any means, such as an AC breaker, AC disconnect or removal of the solar or main utility service meter, this equipment performs the rapid shutdown function per 690.12.

All conduit sizing will be in accordance to the NEC, Chapter #9

Elliott Andalman and Martha Bergmark  
6 Montgomery Avenue  
Takoma Park, MD 20912

AC Disconnect within 6' of the Utility Meter



ELECTRICAL NOTES

1) ALL EQUIPMENT TO BE LISTED AND LABELED FOR ITS APPLICATION

2) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC110.26

3) IF USED, PV POWER SOURCE BREAKER TO BE LOCATED AT BOTTOM OF BUS PER NEC690.64(b)(7)

4) LISTING AGENCY NAME AND NUMBER TO BE INDICATED ON INVERTERS AND MODULES PER NEC110.3(b)

5) AC COMBINER PANELS SHALL BE LABELED AS "INVERTER AC COMBINER PANEL"

5) PV POWER SOURCE TO BE SUITABLE FOR BACKFEED PER NEC690.64(b)(5)



Interconnection  
Line Side Tap  
Wire Size #10 AWG

WIRE SIZING CALCULATION  
2011/2014 NEC Article 310

Full Load Amperage ..... : 12.1  
Source Voltage ..... : 240  
Length of Run (Feet) ..... : 30  
Load Duty ..... : Continuous  
Conductor Type ..... : THWN-2  
Conductor Material..... : Copper  
Conductor Location ..... : Dry or Wet  
Conductor Insulation Temperature : 90 °C  
Ambient Temperature ..... : 26-30 °C = 78-86 °F  
Terminal Temperature Rating .... : 60 °C  
Circuit Type : Single Phase 2 Wire (2 phase conductors, or phase & neutral)  
Qty. of Circuit Current-Carrying Conductors : 2  
Conductor Requirement:  
Full Load Amps ..... : 12.1  
Load Duty Multiplier ..... : 1.25  
Ambient Temp. Multiplier . : 1.15  
Qty. Conductors Multiplier : 1.0  
-----  
Required Conductor Ampacity: 17.39  
Terminal Requirement:  
Full Load Amps ..... : 12.1  
Load Duty Multiplier ..... : 1.25  
-----  
Required Terminal Ampacity : 15.13  
Selected Conductor:  
Conductor Ampacity ..... : 40.0  
Ambient Temp. Derate ..... : 0.87  
Qty. Conductors Derate ... : 1.0  
-----  
Adjusted Ampacity ..... : 34.8  
SELECTED CONDUCTOR SIZE : 10 Awg  
2 x Ohms/MilFt x Length x Amps 2 x 1.24 x 30 x 17.39  
VD = ----- = ----- = 0.9  
1000 x Qty Wires per Phase 1000 x 1  
Volts At Load Terminals..... : 239.1  
Actual Percent Voltage Drop . : 0.38

Combiner to Array  
Wire Length 50'  
Wire Size #10 AWG

WIRE SIZING CALCULATION  
2011/2014 NEC Article 310

Full Load Amperage ..... : 12.1  
Source Voltage ..... : 240  
Length of Run (Feet) ..... : 50  
Load Duty ..... : Noncontinuous  
Conductor Type ..... : THWN-2  
Conductor Material..... : Copper  
Conductor Location ..... : Dry or Wet  
Conductor Insulation Temperature : 90 °C  
Rooftop Installation: NEC 310.15(B)(3)(c)  
Distance Above Roof ..... : 23mm (7/8 inch) or greater above rooftop  
Average Outside Temp ..... : 90 Deg. F 32.2 Deg. C  
Temperature Adder ..... : 60 Deg. F 33 Deg. C  
-----  
Adjusted Ambient Temperature ... : 150.0 Deg. F 65.2 Deg. C  
Terminal Temperature Rating .... : 60 °C  
Circuit Type : Single Phase 3 Wire (2 phase conductors & neutral)  
Qty. of Circuit Current-Carrying Conductors : 2  
Conductor Requirement:  
Full Load Amps ..... : 12.1  
Load Duty Multiplier ..... : 1.0  
Ambient Temp. Multiplier . : 1.72  
Qty. Conductors Multiplier : 1.0  
-----  
Required Conductor Ampacity: 20.81  
Terminal Requirement:  
Full Load Amps ..... : 12.1  
Load Duty Multiplier ..... : 1.0  
-----  
Required Terminal Ampacity : 12.1  
Selected Conductor:  
Conductor Ampacity ..... : 40.0  
Ambient Temp. Derate ..... : 0.58  
Qty. Conductors Derate ... : 1.0  
-----  
Adjusted Ampacity ..... : 23.2  
SELECTED CONDUCTOR SIZE : 10 Awg  
2 x Ohms/MilFt x Length x Amps 2 x 1.24 x 50 x 20.81  
VD = ----- = ----- = 1.5  
1000 x Qty Wires per Phase 1000 x 1  
Volts At Load Terminals..... : 238.5  
Actual Percent Voltage Drop . : 0.63

CALCULATION FOR PV BREAKER					
CALCULATION FOR MAIN PV BREAKER & CIRCUITS					
SYSTEM CURRENT:	1.21	x	10	=	12.1 A
DESIGN AMPERAGE:	12.1	x	125%	=	15.125 A
MAIN BUSS RATING:	200	x	120%	=	240 A
EXISTING MAIN BREAKER:					200 A
MAX SOLAR BREAKER:	240	-	200	=	40 A
CIRCUIT #1 =	10	x	1.21 x 125% =		15.13 A

- ELECTRICAL NOTES**

1) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 90°C AND WET ENVIRONMENT, UNLESS OTHERWISE NOTED.

2) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.

3) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER MANUFACTURER'S INSTRUCTION.
- 4) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER GEC VIA WEEB LUG PER NEC690.4(c)

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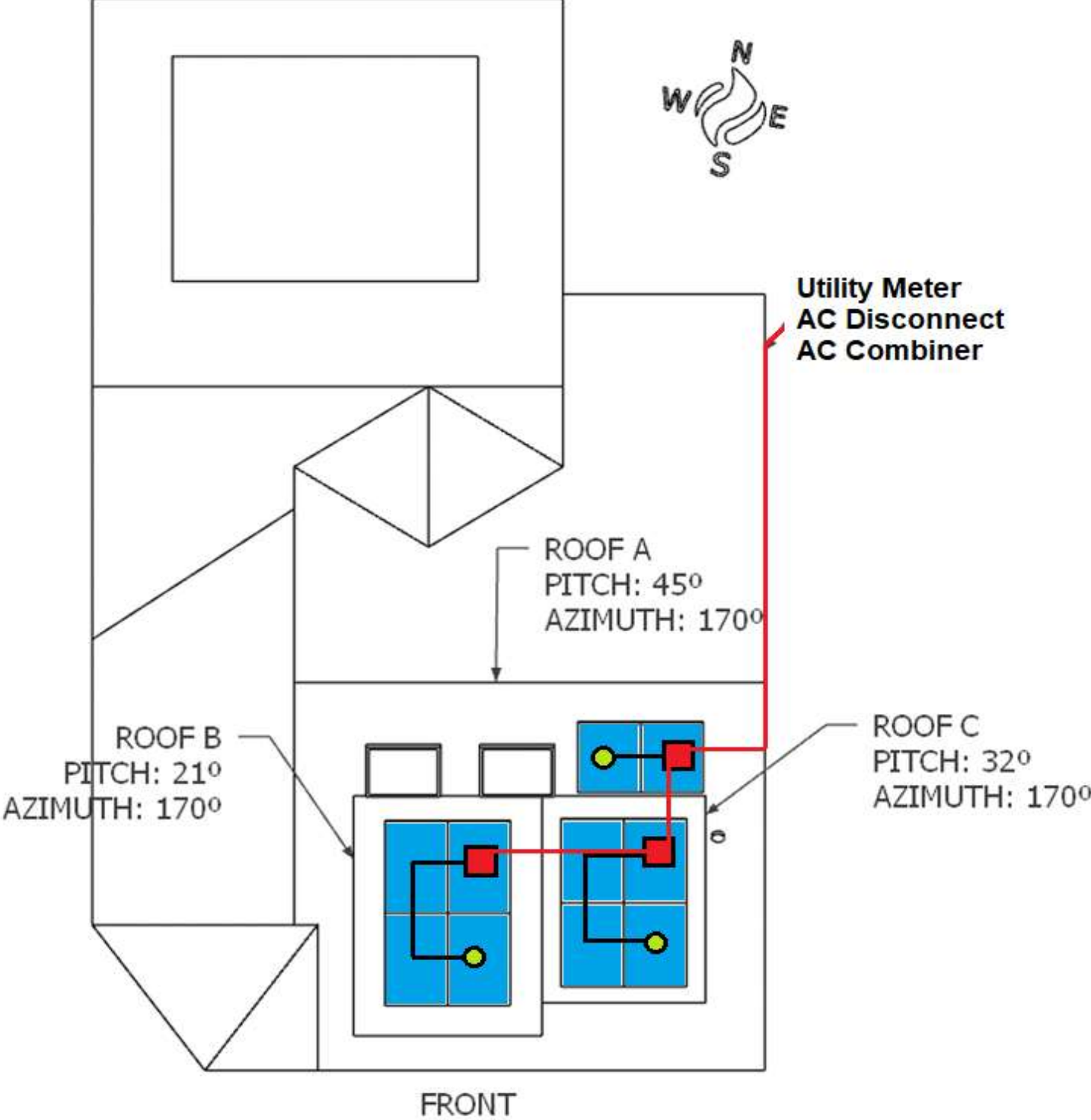
**FUSION**  
SOLAR SERVICES

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**LICENSE NUMBER:**  
MHIC-30991

REV	DATE
IFC	8/25/2020
<b>ELECTRICAL - WIRE CALCS</b>	
<b>E002</b>	

-  Circuit 1 (10)
-  Junction Box
-  End Cap
-  Trunk Cable
-  Exterior Conduit



**ELECTRICAL NOTES**

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**STRING & CONDUIT  
LAYOUT**

**E003**



SOLAR MODULE RATINGS		
REC 360 Specifications		
Length:	67.75	in
Width:	40	in
Thickness:	1.18	in
Weight:	43	lbs
Imp:	9.55	A
Vmp:	37.7	V
Voc:	44.3	V
Isc:	10.16	A
OCPD:	25	A
Pmax:	360	W
Vmax:	1000	V
Temp. Coefficient:	-0.24	%Voc/°C

INVERTER 1 RATINGS		
IQ7PLUS-72-2-US Specifications		
Max # Per String:	13	
I <sub>max</sub> (ac):	1.21	A
V <sub>max</sub> (dc):	60	V
P <sub>max</sub> :	290	W
Nom. AC Voltage:	240	V
OCPD:	20	A
Weight (Optimizer):	2.38	lbs
I <sub>max</sub> (Input):	15	A
P <sub>max</sub> (dc) Input:	N/A	V

WARNING: PHOTOVOLTAIC  
POWER SOURCE

LABEL TO BE INSTALLED AT EXPOSED  
RACEWAYS, CABLE TRAYS, AND OTHER WIRING  
METHODS; SPACED AT MAXIMUM 10FT SECTION  
OR WHERE SEPARATED BY ENCLOSURES,  
WALLS, PARTITIONS, CEILINGS, OR FLOORS.  
[NEC 690.31(G)]  
LETTERS AT LEAST 3/8 INCH; WHITE ON RED  
BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

PHOTOVOLTAIC  
DC DISCONNECT

LABEL TO BE INSTALLED AT EACH DC  
DISCONNECTING MEANS [NEC 690.13(B)]

PHOTOVOLTAIC  
AC DISCONNECT

LABEL TO BE INSTALLED AT EACH AC  
DISCONNECTING MEANS [NEC 690.13(B)]

PHOTOVOLTAIC SYSTEM  
EQUIPPED WITH RAPID  
SHUTDOWN

LABEL TO BE INSTALLED AT RAPID SHUTDOWN  
SWITCH  
[NEC 690.56(C)]  
LETTERS AT LEAST 3/8 INCH; WHITE ON RED  
BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

SOLAR PV SYSTEM DISCONNECT

RATED AC OUTPUT CURRENT: 12.1 A

NOMINAL OPERATING AC VOLTAGE: 240 V

LABEL TO BE INSTALLED AT AN ACCESSIBLE LOCATION AT THE DISCONNECTING MEANS  
AS A POWER SOURCE  
[NEC 690.54]

WARNING

ELECTRICAL SHOCK HAZARD

DO NOT TOUCH TERMINALS!  
TERMINALS ON BOTH LINE AND  
LOAD SIDES MAY BE ENERGIZED  
IN THE OPEN POSITION

LABEL TO BE INSTALLED AT EACH DISCONNECTING MEANS FOR  
PHOTOVOLTAIC EQUIPMENT [NEC 690.13 AND 690.15]

WARNING

ELECTRICAL SHOCK HAZARD

IF GROUND FAULT IS INDICATED  
NORMALLY GROUNDED  
CONDUCTORS MAY BE  
UNGROUND AND ENERGIZED

LABEL TO BE INSTALLED AT EACH DISCONNECTING MEANS FOR  
PHOTOVOLTAIC EQUIPMENT [NEC 690.13 AND 690.15]

WARNING

DUAL POWER SOURCE SECOND SOURCE IS  
PHOTOVOLTAIC SYSTEM

LABEL TO BE INSTALLED ON EXTERIOR OF MAIN  
ELECTRICAL PANEL

WARNING

INVERTER OUTPUT CONNECTION. DO NOT  
RELOCATE THIS OVERCURRENT DEVICE

LABEL TO BE APPLIED TO THE DISTRIBUTION  
EQUIPMENT [NEC 690.64(B)(7)]

INTERACTIVE PHOTOVOLTAIC  
SYSTEM CONNECTED

LABEL TO BE INSTALLED AT UTILITY METER  
[NEC 690.56(B)]

SOLAR PV LOADCENTER  
3.6 kW DC SOLAR ARRAY  
240 VOLT AC SYSTEM

INSTALLED COMPONENTS

(10) REC 360W Modules  
(10) IQ7PLUS-72-2-US Inverters

CIRCUIT CALCULATIONS					
SYSTEM CURRENT:	1.21	x	10	=	12.1 A
DESIGN AMPERAGE:	12.1	x	125%	=	15.125 A
CIRCUIT #1 =	10	x	1.21 x 125% =		15.13

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EQUIP. RATINGS  
& SIGNAGE

E004

SIGNAGE NOTES

- 1) ALL PLAQUES AND LABELS SHALL HAVE A RED BACKGROUND (OR AS SHOWN HERE)
- 2) ALL LETTERING SHALL BE WHITE AND HAVE A MINIMUM HEIGHT OF 3/8" (OR AS SHOWN HERE)
- 3) FONT SHALL BE ARIAL (OR SIMILAR ) AND ALL LETTERING SHALL BE CAPITALIZED
- 4) ALL PLAQUES AND LABELS SHALL BE OF A MATERIAL SUITABLE FOR THE ENVIRONMENT INSTALLED

## Real Property Data Search

## Search Result for MONTGOMERY COUNTY

[View Map](#) [View GroundRent Redemption](#) [View GroundRent Registration](#)

**Special Tax Recapture: None****Account Identifier:** District - 13 Account Number - 01066791

## Owner Information

<b>Owner Name:</b>	ANDALMAN ELLIOTT & MARHTA BERGMARK	<b>Use:</b>	RESIDENTIAL
<b>Mailing Address:</b>	6 MONTGOMERY AVE TAKOMA PARK MD 20912-4615	<b>Principal Residence:</b>	YES
		<b>Deed Reference:</b>	/15190/ 00634

## Location &amp; Structure Information

<b>Premises Address:</b>	6 MONTGOMERY AVE TAKOMA PARK 20912-0000	<b>Legal Description:</b>	B F G
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<b>Map:</b>	<b>Grid:</b>	<b>Parcel:</b>	<b>Neighborhood:</b>	<b>Subdivision:</b>	<b>Section:</b>	<b>Block:</b>	<b>Lot:</b>	<b>Assessment Year:</b>	<b>Plat No:</b>
JN51	0000	0000	13052502.16	0025		18	3	2019	<b>Plat Ref:</b>

**Town:** TAKOMA PARK

<b>Primary Structure Built</b>	<b>Above Grade Living Area</b>	<b>Finished Basement Area</b>	<b>Property Land Area</b>	<b>County Use</b>
1982	2,310 SF	350 SF	7,500 SF	111

<b>Stories</b>	<b>Basement</b>	<b>Type</b>	<b>Exterior</b>	<b>Quality</b>	<b>Full/Half Bath</b>	<b>Garage</b>	<b>Last Notice of Major Improvements</b>
2	YES	STANDARD UNIT	FRAME/	5	2 full/ 1 half		

## Value Information

	<b>Base Value</b>	<b>Value</b>	<b>Phase-in Assessments</b>	
		As of 01/01/2019	As of 07/01/2020	As of 07/01/2021
<b>Land:</b>	343,700	343,700		
<b>Improvements</b>	468,300	577,100		
<b>Total:</b>	812,000	920,800	884,533	920,800
<b>Preferential Land:</b>	0			0

## Transfer Information

<b>Seller:</b> PAUL TRESEDER & <b>Type:</b> ARMS LENGTH IMPROVED	<b>Date:</b> 09/29/1997 <b>Deed1:</b> /15190/ 00634	<b>Price:</b> \$394,000 <b>Deed2:</b>
<b>Seller:</b> <b>Type:</b> ARMS LENGTH IMPROVED	<b>Date:</b> 07/28/1982 <b>Deed1:</b> /05903/ 00301	<b>Price:</b> \$125,000 <b>Deed2:</b>
<b>Seller:</b> <b>Type:</b>	<b>Date:</b> <b>Deed1:</b>	<b>Price:</b> <b>Deed2:</b>

## Exemption Information

<b>Partial Exempt Assessments:</b>	<b>Class</b>	07/01/2020	07/01/2021
<b>County:</b>	000	0.00	
<b>State:</b>	000	0.00	
<b>Municipal:</b>	000	0.00 0.00	0.00 0.00

**Special Tax Recapture: None**

## Homestead Application Information

**Homestead Application Status:** Approved 11/12/2014

## Homeowners' Tax Credit Application Information

**Homeowners' Tax Credit Application Status:** No Application **Date:**