

MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address:	118 Park Ave., Takoma Park	Meeting Date:	12/7/2022
Resource:	Non-Contributing Resource Takoma Park Historic District	Report Date:	11/30/2022
Applicant:	Brian Milligan	Public Notice:	11/23/2022
Review:	HAWP	Tax Credit:	n/a
Case No.:	1013194	Staff:	Dan Bruechert
Proposal:	Roof Mounted Solar Panels		

STAFF RECOMMENDATION

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

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Non-Contributing Resource to the Takoma Park Historic District
STYLE: Colonial Revival
DATE: c.1970

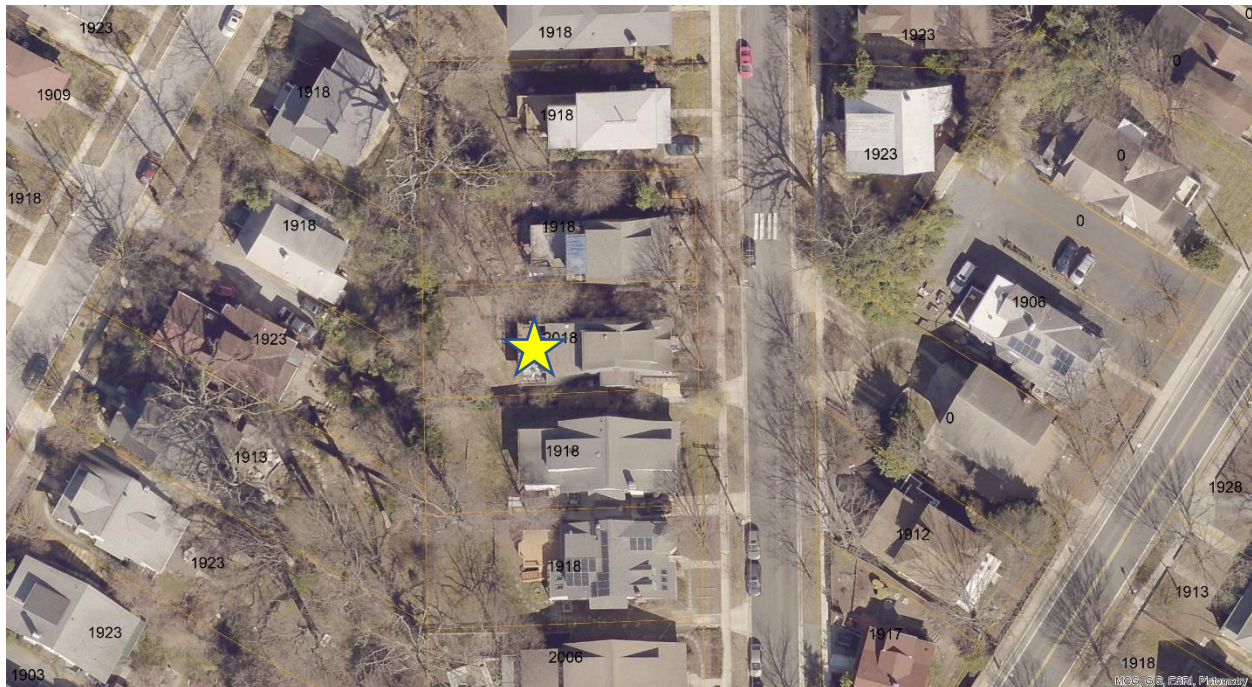


Figure 1: 118 Park Ave.

PROPOSAL

The applicant proposes to install twenty-eight (28) roof-mounted solar panels.

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)*, and the *Secretary of the Interior's Standards for Rehabilitation (Standards)* and *Historic Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS*. 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 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.

Montgomery County Code; Chapter 24A-8

- (a) 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
- (d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

Secretary of the Interior's Standards for Rehabilitation:

- 2. The historic character of a property 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 will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be

differentiated from the old and will be compatible with the historic materials, features, size, scale and proportions, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

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

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.

STAFF DISCUSSION

The applicant proposes to install twenty-eight (28) roof-mounted solar panels in three arrays. Eight are on the front shed roof dormer, eight are on the rear shed roof dormer, and twelve are on the rear roof slope.

Because the subject property is a ‘Non-contributing Resource,’ Staff finds that the primary consideration is the impact the proposal will have on the size and scale of the subject property and its impact on the character of the district as a whole. In this instance, Staff finds the work will not detract from the character of the surrounding district and should be approved as a matter of course. This review also addresses the Secretary of the Interior’s Standards #2, #9, and #10.

Staff also notes that the surrounding properties are Contributing with one exception: 7118 Carroll Avenue. That property is an Outstanding resource, however, the subject property faces the rear of 7118 Carroll (the rear yards of the Carroll Avenue properties front directly onto Park Avenue), so it will not have a visual impact on the significant features of that resource.

Finally, Staff notes that the arrays are arranged in three compact rectangles. The proposed arrangement is preferable to a more sprawling design that is engineered to capture more sunlight but is more visually jarring. Staff recommends the HPC approve the HAWP.

STAFF RECOMMENDATION

Staff recommends that the Commission **approve** the HAWP application under the Criteria for Issuance in Chapter 24A-8(b)(1), (2), and (d), and the *Takoma Park Historic District Guidelines*, and the *Historic*

Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS having found that the proposal 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, 9, and 10;

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

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

and with the general condition that the applicant shall notify the Historic Preservation Staff if they propose to make **any alterations** to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301-563-3400 or dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.



APPLICATION FOR
HISTORIC AREA WORK PERMIT
HISTORIC PRESERVATION COMMISSION
301.563.3400

FOR STAFF ONLY:
HAWP# 1013194
DATE ASSIGNED _____

APPLICANT:

Name: Brian Milligan
Address: 118 Park Avenue
Daytime Phone: 410-220-4738

E-mail: bmilligan@solarenergyworld.com
City: Takoma Park Zip: 20912
Tax Account No.: 01079257

AGENT/CONTACT (if applicable):

Name: Brian Milligan
Address: 5681 Main Street
Daytime Phone: 410-220-4738

E-mail: bmilligan@solarenergyworld.com
City: Elkridge Zip: 21075
Contractor Registration No.: MHIC #127353

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

Is the Property Located within an Historic District? X Yes/District Name Takoma Park H.D
____ 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: 118 Street: Park Avenue
Town/City: Takoma Park Nearest Cross Street: Carroll Avenue
Lot: 9 Block: 1 Subdivision: 0025 Parcel: 0000

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.

Brian Milligan
Signature of owner or authorized agent

11-14-2022

Date

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

Owner's mailing address	Owner's Agent's mailing address
Miriam Szapiro 118 Park Avenue Takoma Park, MD 20912	Brian Milligan 5681 Main Street Elkridge, MD 21075
Adjacent and confronting Property Owners mailing addresses	
Jackie Braitman 120 Park Avenue Takoma Park, MD 20912 (Adjacent Property)	Sainguri Henkai 116 Park Avenue Takoma Park, MD 20912 (Adjacent Property)
Collin & Katie Lawson 117 Park Avenue Takoma Park, MD 20912 (Confronting / Adjacent)	

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

-Single Family Home built in 2018

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

- Install (28) roof mounted solar panels
- Microinverters to be installed underneath each panel
- Utility disconnect to be installed next to utility meter along with electrical combiner box for microinverters
- Panel layout designed for maximum efficiency
- Galvanized steel conduit to run from equipment tucked into corner line to attic.

HISTORICAL AREA WORK PERMIT APPLICATION FOR ROOF MOUNTED SOLAR PANELS
118 PARK AVENUE

Front View of House



West View

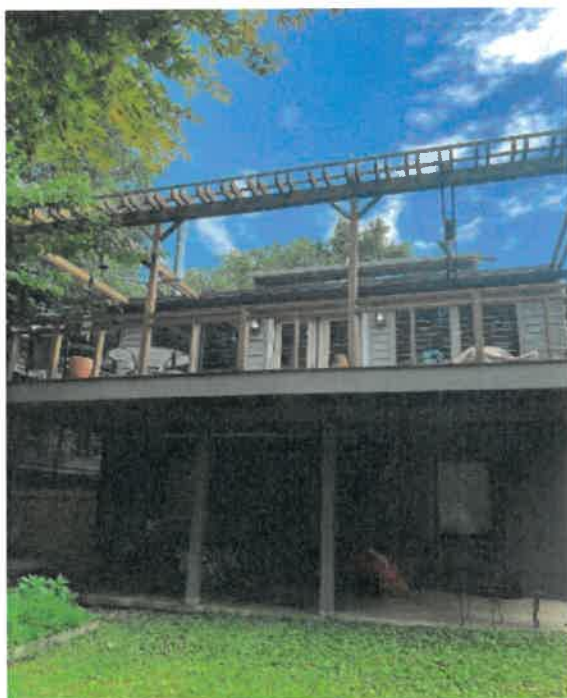


HISTORICAL AREA WORK PERMIT APPLICATION FOR ROOF MOUNTED SOLAR PANELS
118 PARK AVENUE

East View



Rear View



HISTORICAL AREA WORK PERMIT APPLICATION FOR ROOF MOUNTED SOLAR PANELS
118 PARK AVENUE

Utility Side Before Installation

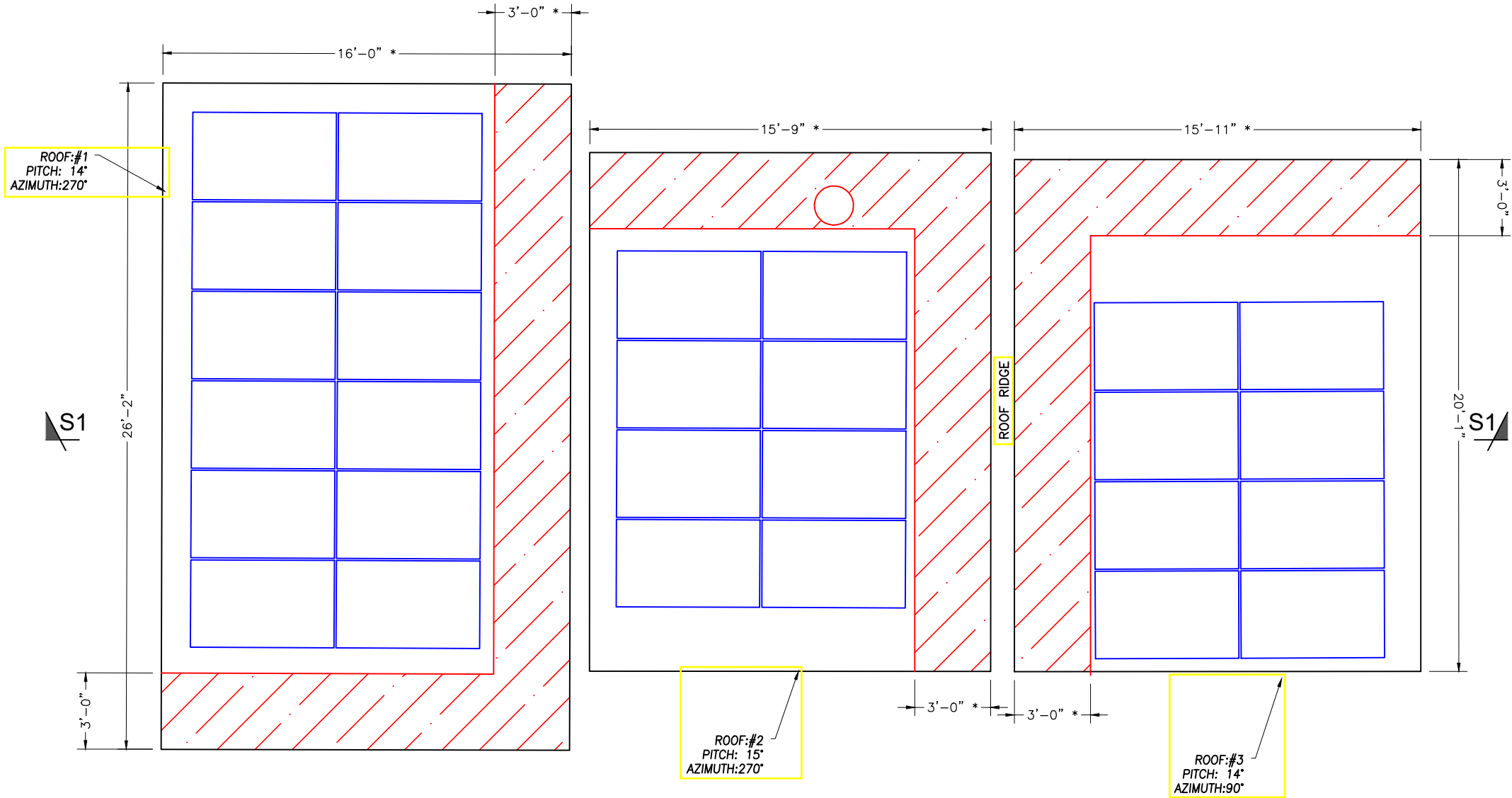


HISTORICAL AREA WORK PERMIT APPLICATION FOR ROOF MOUNTED SOLAR PANELS
118 PARK AVENUE


Utility Meter After Installation




Scanfly
IQ7+



KEY

 FIRE SAFETY ZONE



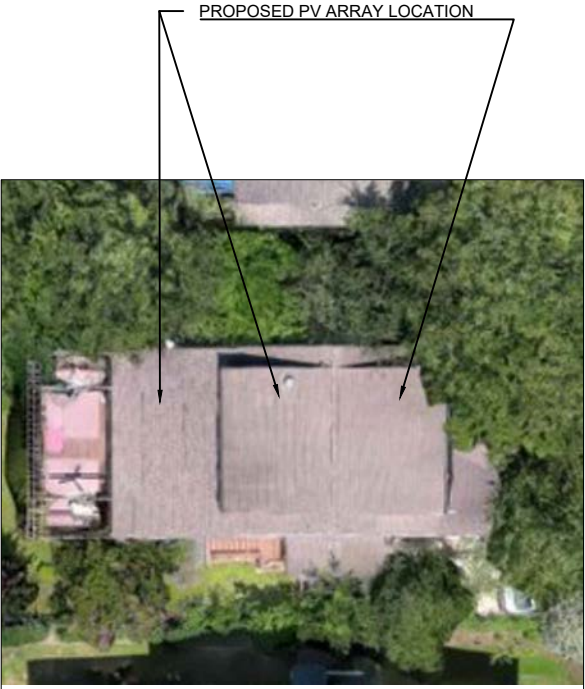
PLAN VIEW TOTAL ROOF AREA: 1365 SQFT

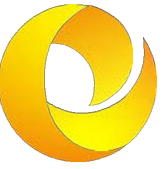
SOLAR ARRAY AREA: 551 SQFT

THE SOLAR ARRAY IS 40% OF THE PLAN VIEW TOTAL ROOF AREA

- NOTES:**
- THE SYSTEM SHALL INCLUDE [28] HANWHA Q,PEAK DUO BLK-G10+ 365W MODULES.
 - SNAPNRACK UR-40 RAIL WILL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
 - DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
 - REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.

SOLAR PANEL LAYOUT
Scale: 3/16" = 1'-0"

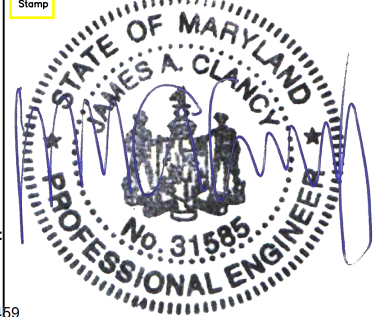




Solar Energy World
Because Tomorrow Matters

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

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

Stamp



DocuSigned by:

74454BC12527459...

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

*STAMPED AND SIGNED FOR STRUCTURES ONLY

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

Plotted By: Garrett Connors on 11/2/2022 10:43 AM

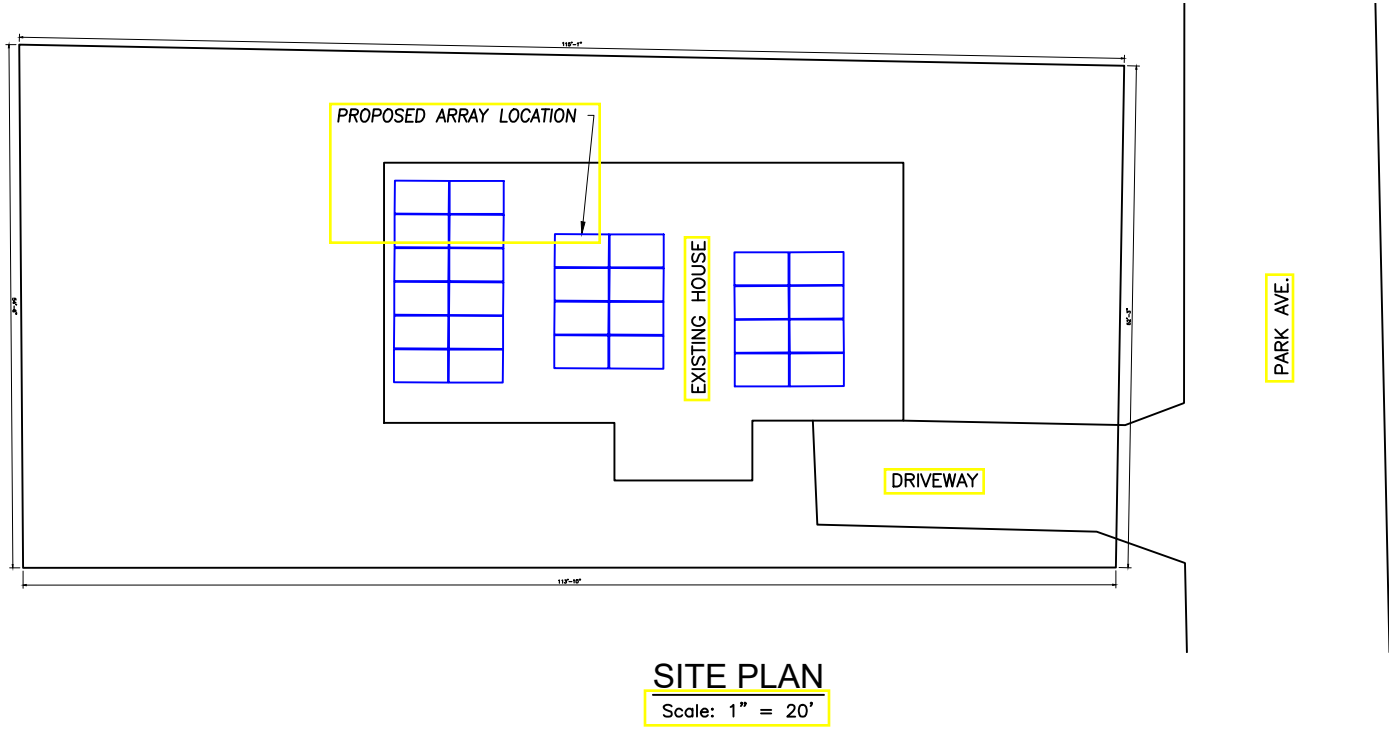
Project Name and Address
Miriam Szapiro
118 Park Ave
Takoma Park, MD 20912
10.22 kW
MD12412

Drawn by
Cody Brehm

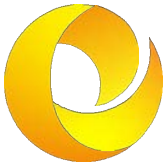
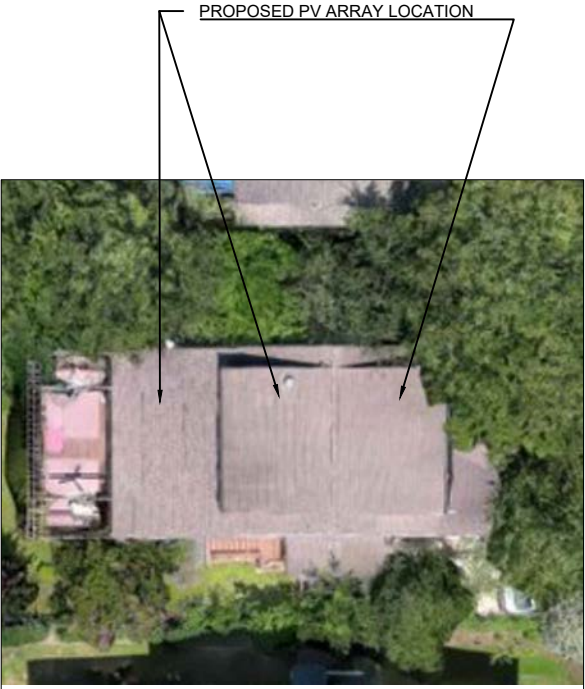
Date
14-SEP-2022

Scale
AS NOTED

Sheet
A001
13



- NOTES:**
1. THE SYSTEM SHALL INCLUDE [28] HANWHA Q,PEAK DUO BLK-G10+ 365W MODULES.
 2. SNAPNRACK UR-40 RAIL WILL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
 3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
 4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.



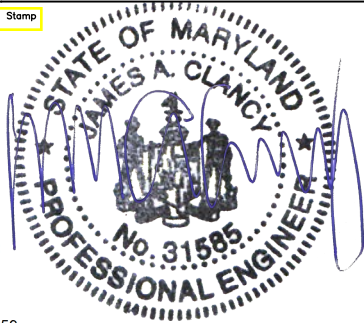
Solar Energy World
Because Tomorrow Matters

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

Disclaimer:

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

Stamp



DocuSigned by:

[Signature]

74454BC12527459...

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

*STAMPED AND SIGNED FOR STRUCTURES ONLY

Revisions

REV	DESCRIPTIONS	BY	DATE
01			

Plotted By: Garrett Connors on 11/2/2022 10:43 AM

Project Name and Address

Miriam Szapiro
118 Park Ave
Takoma Park, MD 20912
10.22 kW
MD12412

Drawn by

Cody Brehm

Date

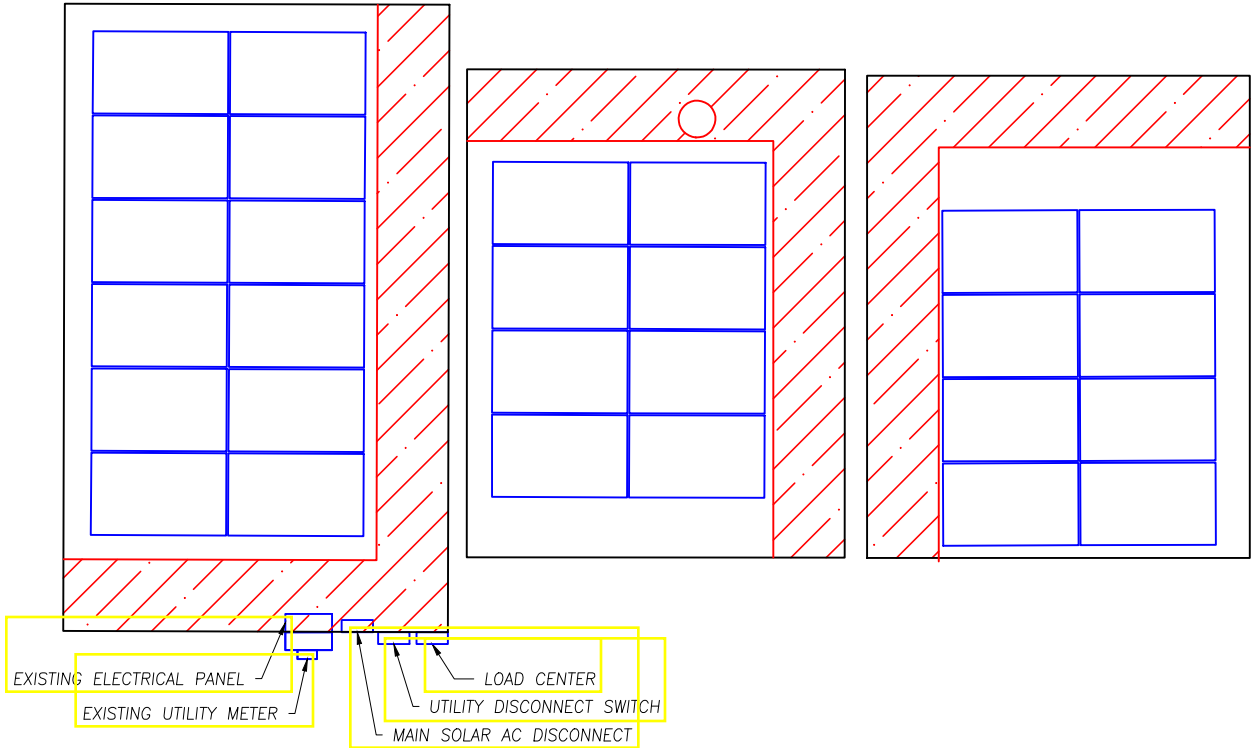
14-SEP-2022

Scale

AS NOTED

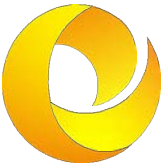
Sheet

A002



EQUIPMENT LOCATION PLAN
Scale: NTS

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



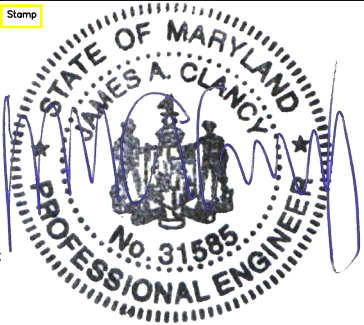
Solar Energy World
Because Tomorrow Matters

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

Disclaimer:

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

Stamp



DocuSigned by:

74454BC12527459

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

*STAMPED AND SIGNED FOR STRUCTURES ONLY

Revisions

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

Plotted By: Garrett Connors on 11/2/2022 10:43 AM

Project Name and Address

Miriam Szapiro
118 Park Ave
Takoma Park, MD 20912
10.22 kW
MD12412

Drawn by

Cody Brehm

Date

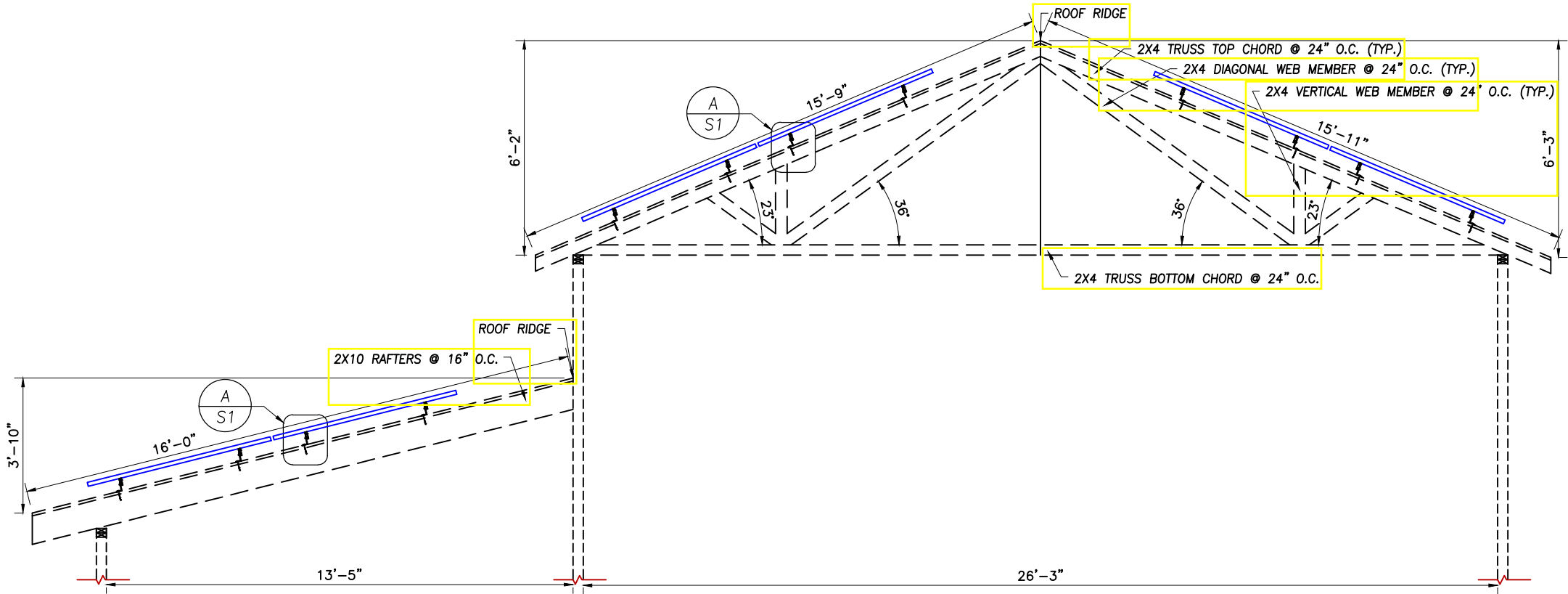
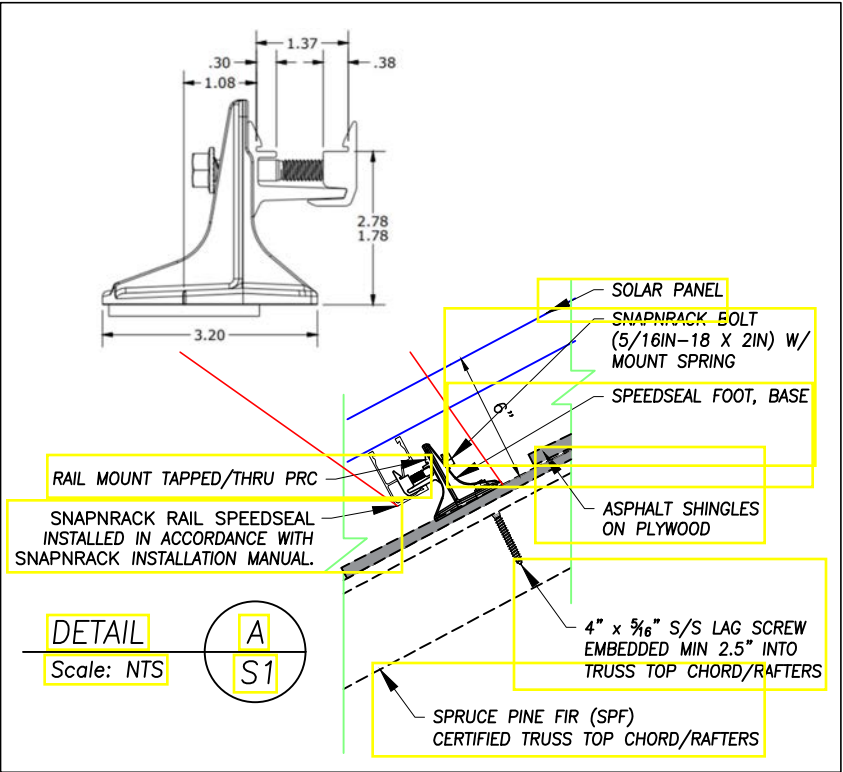
14-SEP-2022

Scale

AS NOTED

Sheet

E001

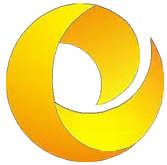


NOTES:

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

STRUCTURAL SECTION S1

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



Solar Energy World
Because Tomorrow Matters

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

Disclaimer:

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

Stamp



DocuSigned by:

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

*STAMPED AND SIGNED FOR STRUCTURES ONLY

Revisions

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

Plotted By: Garrett Connors on 11/2/2022 10:43 AM

Project Name and Address

Miriam Szapiro
118 Park Ave
Takoma Park, MD 20912
10.22 kW
MD12412

Drawn by

Cody Brehm

Date

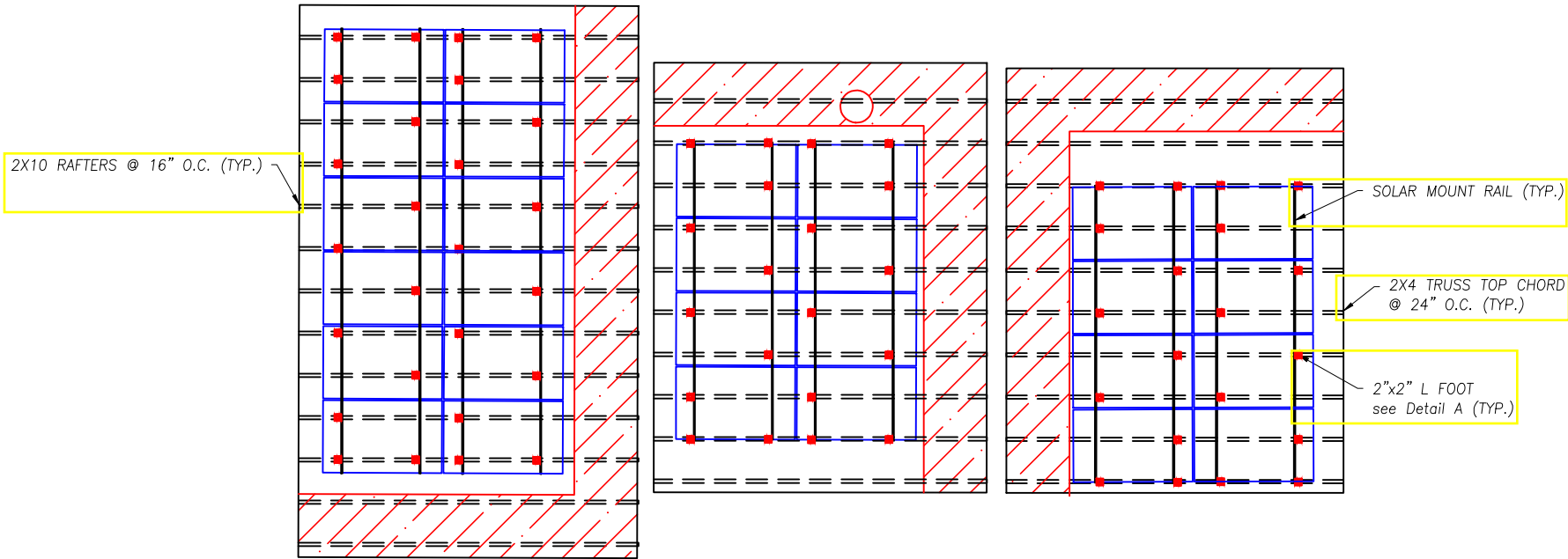
14-SEP-2022

Scale

AS NOTED

Sheet

S001

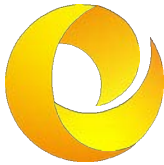


SOLAR PANEL FOOTING PLAN

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

NOTES:

1. SNAPNRACK SOLAR MOUNT RAIL SHALL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
2. "L" FEET SHALL BE SPACED AT A MAXIMUM OF 4' O/C.
3. AN "L" FOOT SHALL BE PLACED WITHIN 25% OF MAXIMUM "L" FOOT SPACING (16" MAX.) AT THE CANTILEVERED END OF EACH SECTION OF RAIL.



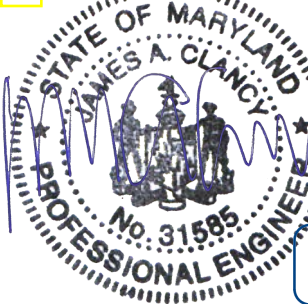
Solar Energy World
Because Tomorrow Matters

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

Disclaimer:

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

Stamp



DocuSigned by:

74454BC12527459

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

*STAMPED AND SIGNED FOR STRUCTURES ONLY

Revisions

REV	DESCRIPTIONS	BY	DATE
01		--	--

Plotted By: Garrett Connors on 11/2/2022 10:43 AM

Project Name and Address

Miriam Szapiro
118 Park Ave
Takoma Park, MD 20912
10.22 kW
MD12412

Drawn by

Cody Brehm

Date

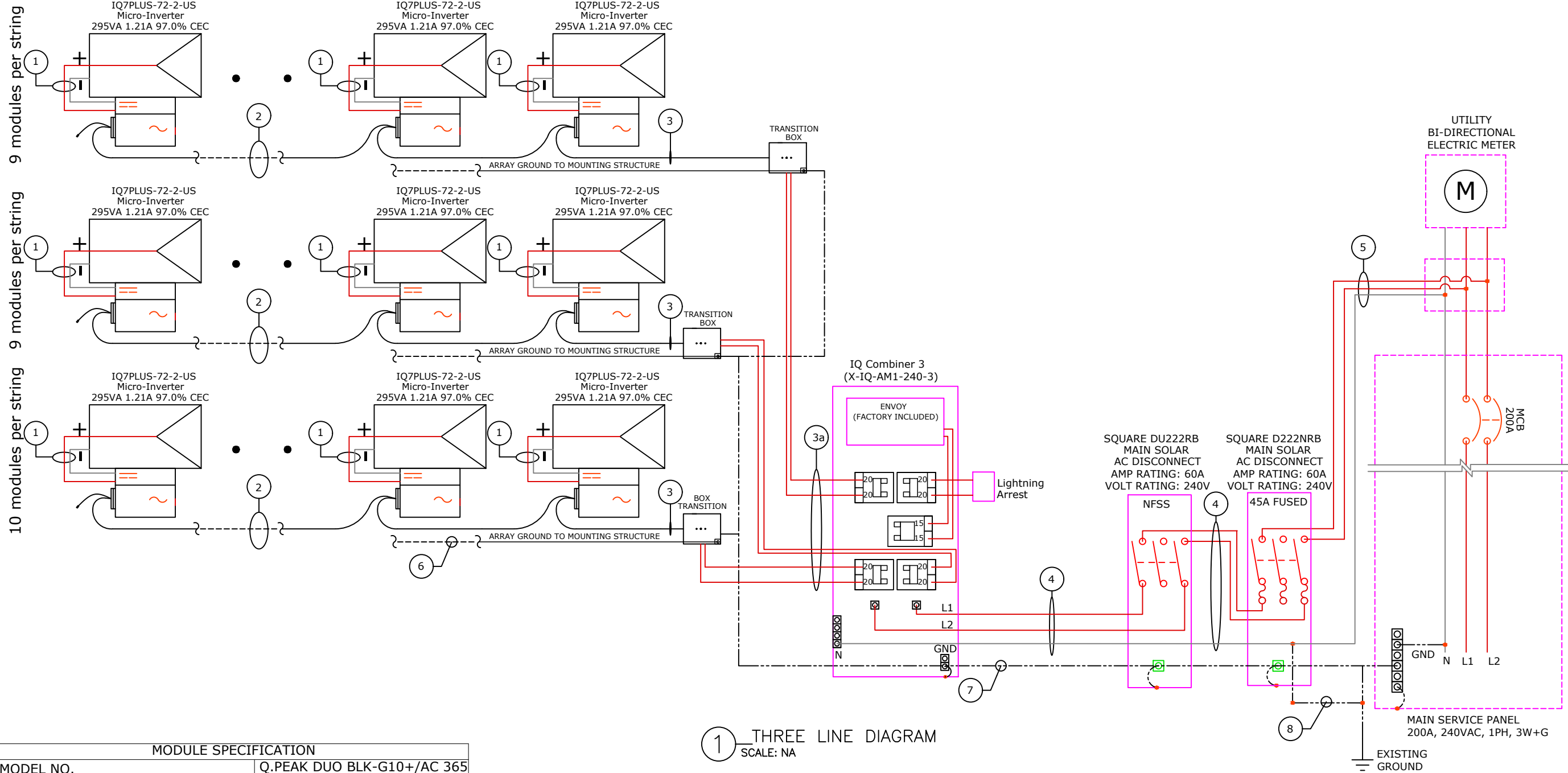
14-SEP-2022

Scale

AS NOTED

Sheet

S002



MODULE SPECIFICATION			
MODEL NO.	Q.PEAK DUO BLK-G10+/AC 365		
PEAK POWER	365 W		
RATED VOLTAGE (Vmpp)	34.58 V		
RATED CURRENT (Imp)	10.56 A		
OPEN CIRCUIT VOLTAGE (Voc)	41.21 V		
SHORT CIRCUIT CURRENT (Isc)	11.07 A		
MAXIMUM SYSTEM VOLTAGE	1000VDC		
Inverter Specifications			
INVERTER MODEL	IQ7PLUS-72-M-US		
MAXIMUM DC VOLTAGE	60 V		
MAXIMUM CONT. OUTPUT POWER	290VA		
NOMINAL AC VOLTAGE	240 VAC		
MAXIMUM AC CURRENT	1.21 A		
ARRAY DETAILS			
NO. OF MODULES PER STRINGS	9	9	10
NO. OF STRINGS	1	1	1
ARRAY WATTS AT STC	3285	3285	3650
MAX. VOLTAGE	240	240	240


WIRE/CONDUIT SCHEDULE ARRAY			
TAG	DESCRIPTION	WIRE SIZE/TYPE	NOTES
1	Panel to Micro inverter	PV-WIRE (Factory Made)	Integrated
2	Micro Inverter to Micro Inverter	Pre-Manufactured Cable(~2' length)	12.1
3	Micro Inverter to Transition Box	Pre-Manufactured Cable(~5' length)	4 , 5 , 6
3A	Transition Box to Load Center	#10 Cu THHN/THWN-2 IN ¾" EMT (~25' length)	4 , 5 , 6
4	Load Center to AC disconnect	#8 Cu THHN/THWN-2 IN ¾" EMT (~5' length)	4 , 5 , 6
5	AC disconnect to Interconnection Point	#6 Cu THHN/THWN-2 IN ¾" EMT (~5' length)	4 , 5 , 6 , 9
6	Equipment Grounding Conductor	#8 Cu Bare Copper Wire	6 , 7 , 8
7	Equipment Grounding Conductor	#8 Cu THHN/THWN-2	6 , 7 , 8
8	Grounding Electrode Conductor	#8 Cu	6 , 7 , 8

GENERAL ELECTRICAL NOTES: NEC2017

- EQUIPMENT USED SHALL BE NEW, UNLESS OTHERWISE NOTED.
- EQUIPMENT USED SHALL BE UL LISTED, UNLESS OTHERWISE NOTED.
- EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
- COPPER CONDUCTORS SHALL BE USED AND SHALL HAVE INSULATION RATING 600V, 90°C, UNLESS OTHERWISE NOTED.
- CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE INCREASE, CONDUIT FILL AND VOLTAGE DROP.
- ALL CONDUCTORS, EXCEPT PV WIRE, SHALL BE INSTALLED IN APPROVED CONDUITS OR RACEWAY. CONDUITS SHALL BE ADEQUATELY SUPPORTED AS PER NEC.
- AC DISCONNECT SHOWN IS REQUIRED IF THE UTILITY REQUIRES VISIBLE-BLADE SWITCH.
- EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AS PER NEC.
- LINE SIDE INTER-CONNECTION SHALL COMPLY WITH NEC
- SMS MONITORING SYSTEM AND IT'S CONNECTION SHOWN IS OPTIONAL. IF USED, REFER TO SMS INSTALLATION MANUAL FOR WIRING METHODS AND OPERATION PROCEDURE.
- ASHRAE FUNDAMENTAL OUTDOOR DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE U.S. (PHOENIX, AZ or PALM SPRINGS, CA)
- FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF MOUNTED SUNLIGHT CONDUIT USING THE OUTDOOR TEMPERATURE OF 47°C
1. 10AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN I_{sc} OF 9.6 AMPS WITH A 15 AMP FUSE.

Wire sizing for OCPD

Ex(I_{sc}*(1.25)(1.25)(# of strings in parallel))= wire ampacity or using NEC 690.8



SOLAR ENERGY WORLD LLC.
5681 Main Street
Elkridge, MD 21075
888-497-3233
301-497-3251.F

ENGINEER'S STAMP

Miriam Szapiro
10.22 kW
118 Park Ave,
Takoma Park, MD 20912
Three Line Electrical Drawing

REV	QUOTE	#	DATE	DB	CB
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

OPPORTUNITY

PROJECT

DATE DRAWN

DRAWN BY

DMS #:

REV. **

SHEET

E18

ARC DESIGN

409 N. MAIN STREET
ELMER, NJ 08318
(856) 712-2166 FAX: (856) 358-1511

Date: November 2, 2022

Re: Structural Roof Certification

Subj: Szapiro Residence, 118 Park Ave., Takoma Park, MD, 20912

We have provided a review of the house roof construction of the above named property in regards to verifying the capacity of the existing roof for installation of a new Solar Panel Array.

We have found the residence to be of wood frame construction bearing walls with a wood framed roof system. Array 1 (Main) is of 2x4 @ 24" o.c. truss and is sheathed with ½" ext-ply sheathing and a single layer of asphalt shingle roofing. Array 1 (Dormer) is of 2x10 @ 16" o.c. rafters and is sheathed with ½" ext-ply sheathing and a single layer of asphalt shingle roofing.

The wood framed roof structure bears directly upon the framed exterior wall system. The existing members as installed meet the required IRC-2018 design span ratings with sufficient capacity to carry the 4#/sf additional load imposed by the proposed solar array per the details below.

Installation of solar rack systems shall be as follows:

Each panel row shall be supported upon 2 mounting rails. Rails shall be screw anchored through roof and directly to rafters below.

Rail attachment points to rafters shall be staggered each row with exception to the first fastener row from the gable end which is attached to two adjacent rafters.

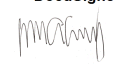
A roofing compatible sealant or shingle flashing kit shall be utilized at each mtg. foot location.

Solar panel mounting systems installed parallel to the plane of a roof shall be no more than 12" above the roof when measured perpendicular to the roof surface.

When installed per the above specifications the system shall meet the required 115 MPH wind load and 30 PSF ground snow load requirements.

Should you have any further question or comment please feel free to contact our office.

Respectfully,

DocuSigned by:

74454BC12527459...

James A. Clancy
Professional Engineer
MD License # 31585

License expiration date: 7/18/2023

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



City of Takoma Park

Housing and Community Development Department

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



7500 Maple Avenue
Takoma Park, MD 20912

MUNICIPALITY LETTER

November 08, 2022

To: Miriam Szapiro
mszapiro@gmail.com 301-219-2418

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

From: Planning and Development Services Division

THIS IS NOT A PERMIT – For Informational Purposes Only

VALID FOR ONE YEAR FROM DATE OF ISSUE

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

Representative Name: Brian Milligan

bmilligan@solarenergyworld.com 410-220-4738

Location of Project: 118 Park Avenue Takoma Park, MD 20912

Proposed Scope of Work: Install (28) roof mounted solar panels, 10.22kW

The purpose of this municipality letter is to inform you that the City of Takoma Park has regulations and city permit requirements that may apply to your project. This municipality letter serves as notification that, in addition to all Montgomery County requirements, you are required to comply with all City permitting requirements, including:

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

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

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

City Of Takoma Park

The City of Takoma Park permits for the following issues:

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

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

Stormwater Management:

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

City Right of Way:

- To place a **construction dumpster or storage container** temporarily on a City right of way (usually an adjacent road), you will need to obtain a permit. A permit is not required if the dumpster is placed in a privately-owned driveway or parking lot.
- If you plan to install a new **driveway apron**, or enlarge or replace an existing driveway apron, you need a Driveway Apron Permit.
- If you plan to construct a **fence** in the City right of way, you need to request a Fence Agreement. If approved, the Agreement will be recorded in the Land Records of Montgomery County.

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

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

eSigned via SeamlessDocs.com
Brian Milligan
Key: 38bf2056622713c0b979ea7ee94779a

Brian Milligan

11-08-2022

eSigned via SeamlessDocs.com
Planning Division
Key: 19fe84f123e68a3ff4576219059d5fb4

11-08-2022