HISTORIC PRESERVATION COMMISSION

Marc Elrich
County Executive

Robert K. Sutton
Chairman

Date: December 14, 2022

MEMORANDUM

TO: Mitra Pedoeem
Department of Permitting Services
FROM: Dan Bruechert
Historic Preservation Section
Maryland-National Capital Park & Planning Commission
SUBJECT: Historic Area Work Permit #1013194 - Solar Installation

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The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **Approved** at the December 7, 2022 HPC meeting.

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

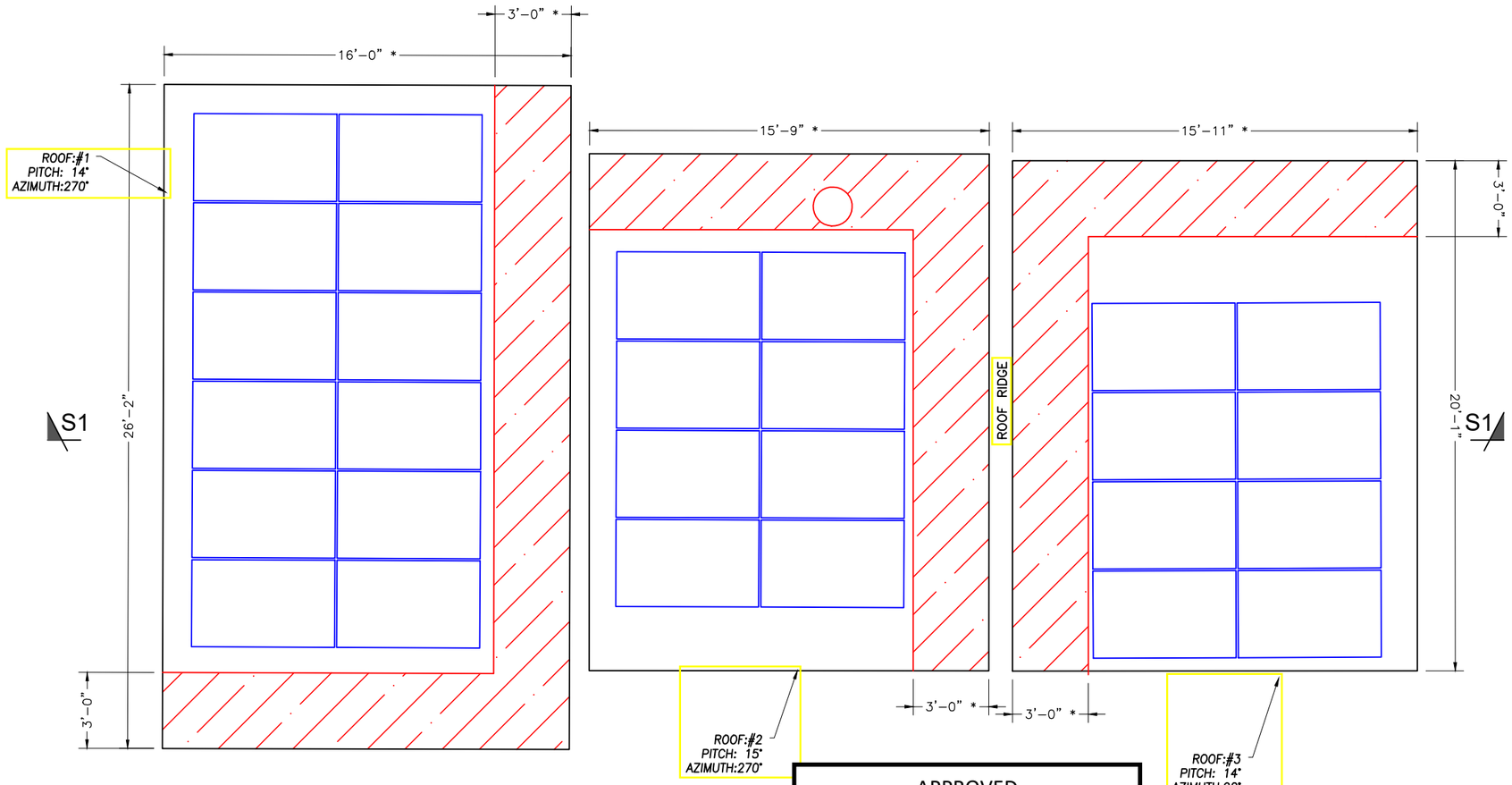
THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant: Brian Milligan
Address: 118 Park Ave., Takoma Park

This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once work is complete the applicant will contact Dan Bruechert at 301.563.3400 or dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.

Scanifly

IQ7+



APPROVED

Montgomery County

Historic Preservation Commission

KEY

FIRE SAFETY ZONE

N

S

PLAN VIEW TOTAL ROOF AREA: 1365 SQFT

SOLAR ARRAY AREA: 551 SQFT

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

REVIEWED

By Dan.Bruechert at 2:46 pm, Dec 14, 2022

SOLAR PANEL LAYOUT

Scale: 3/16" =1'–0"

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.

PROPOSED PV ARRAY LOCATION

Solar Energy World
Because Tomorrow Matters

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

Stamp

STATE OF MARYLAND
JAMES A. CLANCY
No. 31585
PROFESSIONAL ENGINEER

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: Coay Brehm

Date: 14–SEP–2022

Scale: AS NOTED

Sheet: A001

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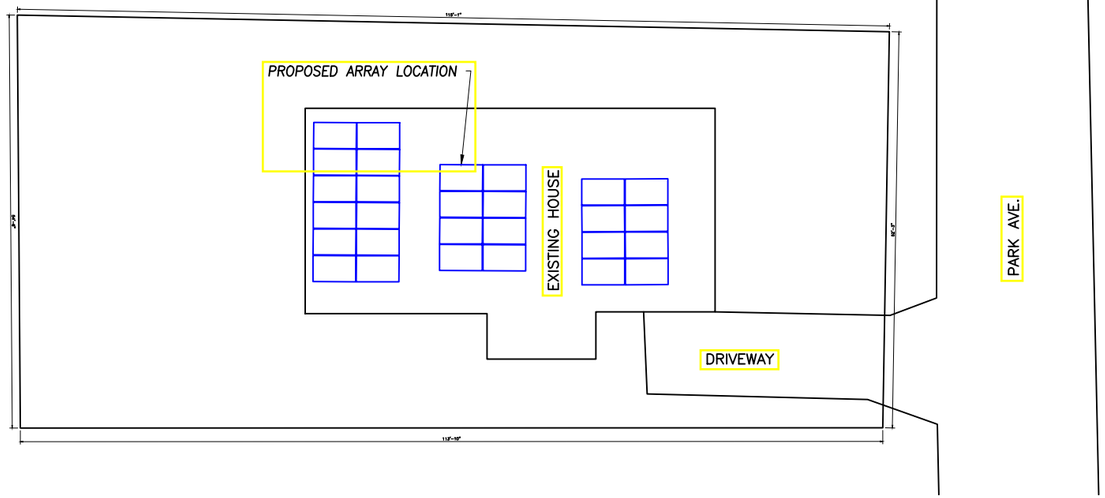
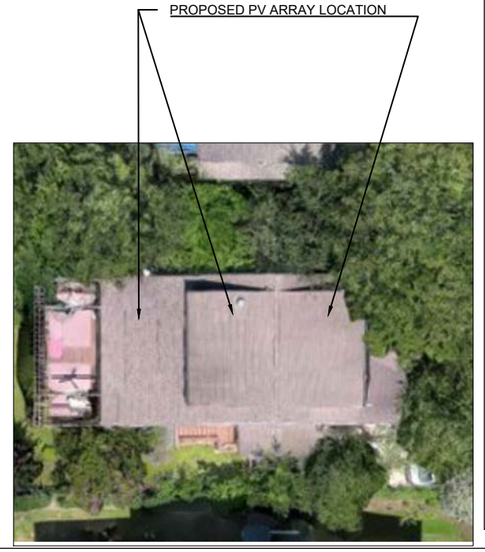
By Dan.Bruechert at 2:46 pm, Dec 14, 2022



SITE PLAN

Scale: 1" = 20'



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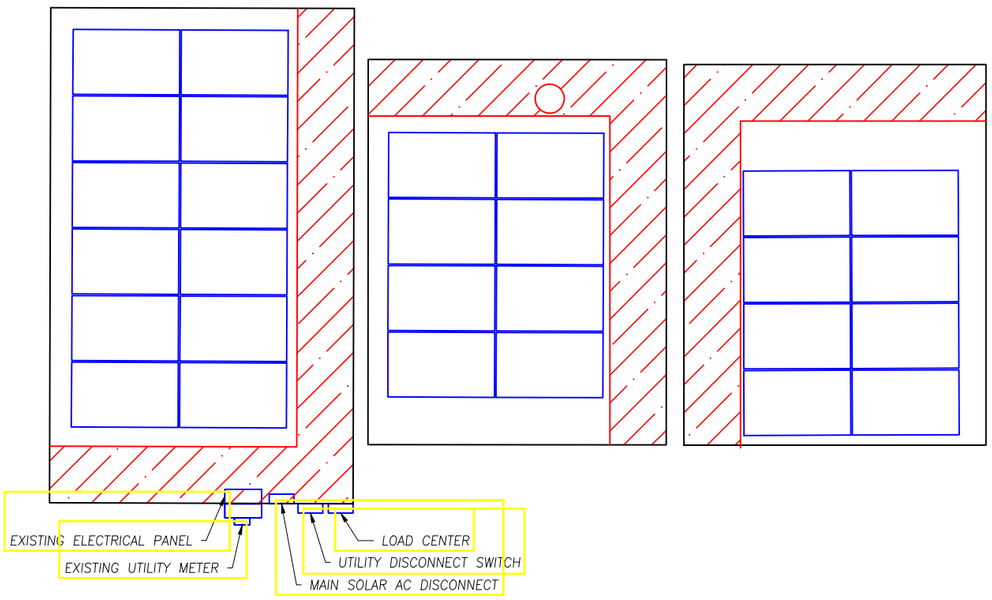

EQUIPMENT LOCATION PLAN

Scale: NTS

NOTE:

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

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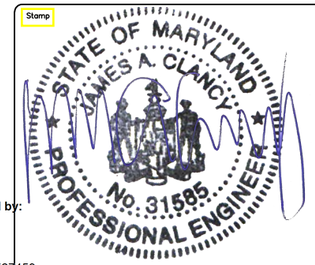

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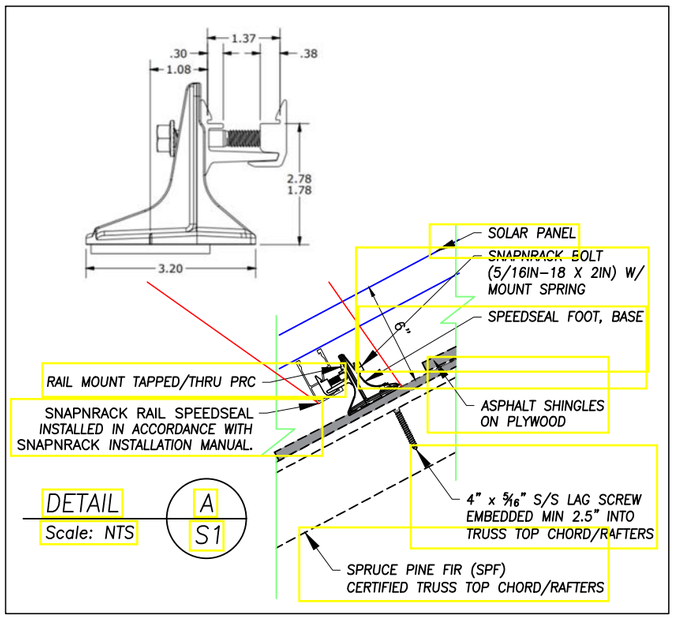

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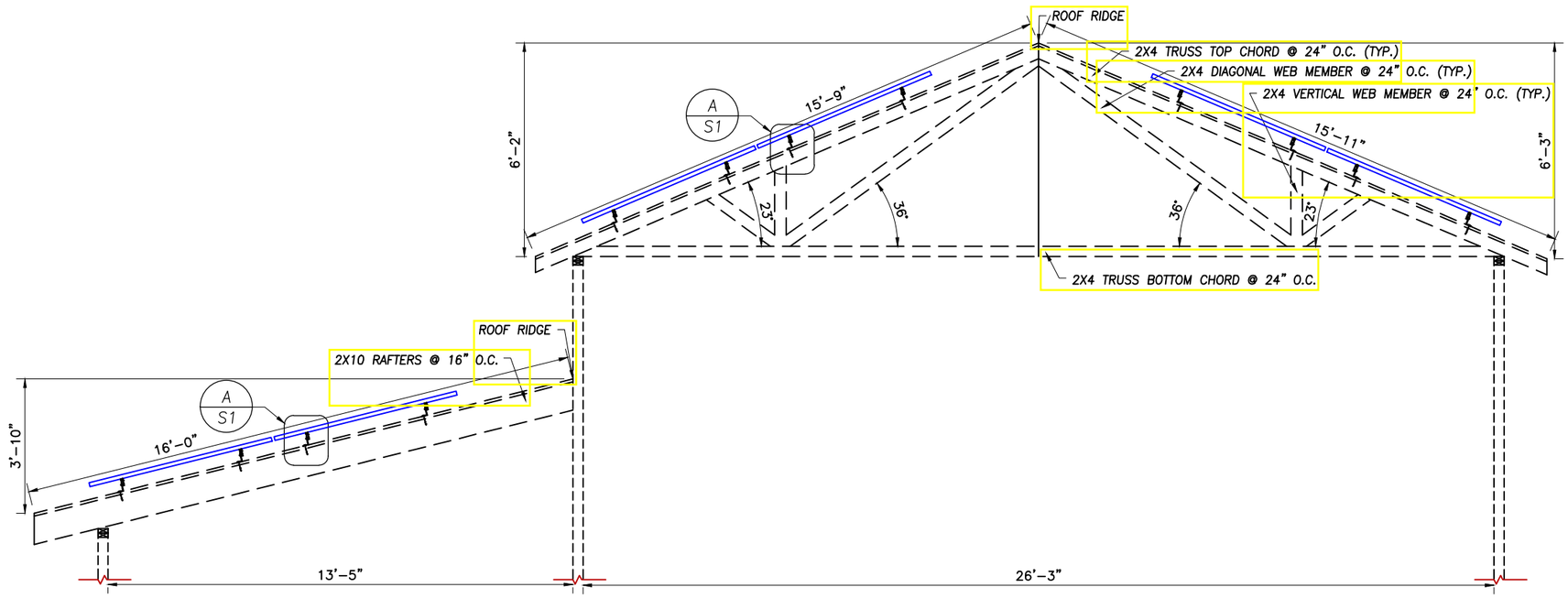

STRUCTURAL SECTION S1

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

NOTES:

1. 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.
2. LOAD CRITERIA PER :
   - EXPOSURE CATEGORY "B"
   - GROUND SNOW LOAD, Pg = 30 PSF
   - LATERAL LOAD RISK CATEGORY "II"
   - ULTIMATE DESIGN WIND SPEED = 115 MPH
3. SOLAR PANELS AND RACKING SYSTEMS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.
4. FOLLOW ALL LOCAL AND FEDERAL SAFETY REQUIREMENTS.

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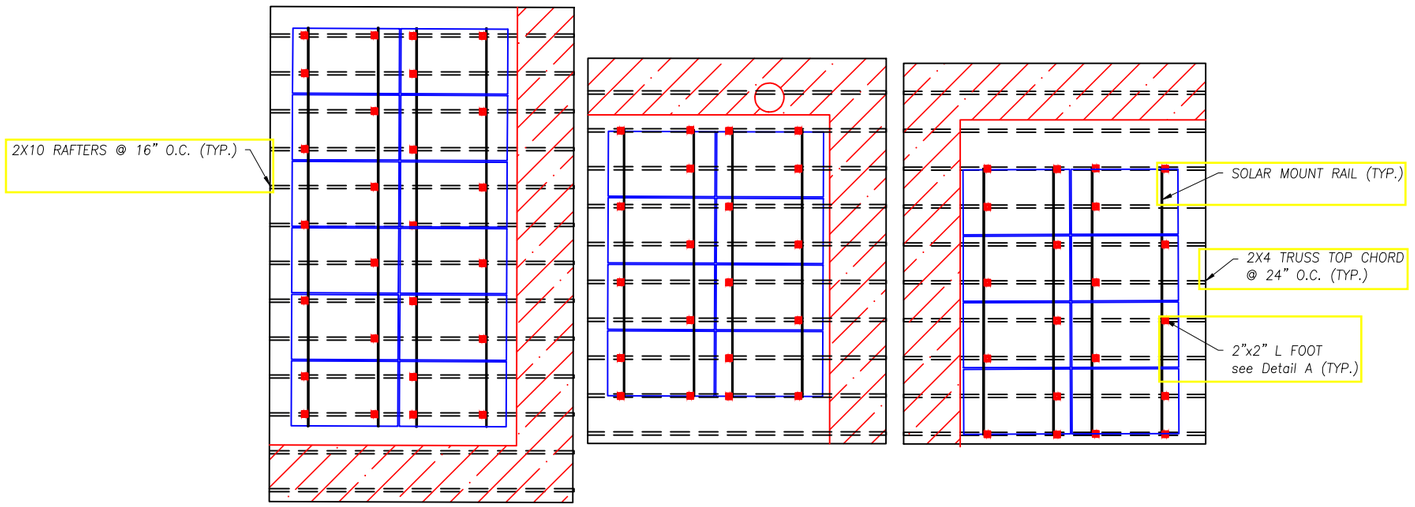

SOLAR PANEL FOOTING PLAN

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.

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Stamp

STATE OF MARYLAND · JAMES A. CLANCY · No. 31585 · PROFESSIONAL ENGINEER

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Drawn by: Cody Brehm

Date: 14-SEP-2022

Scale: AS NOTED

Sheet: S002

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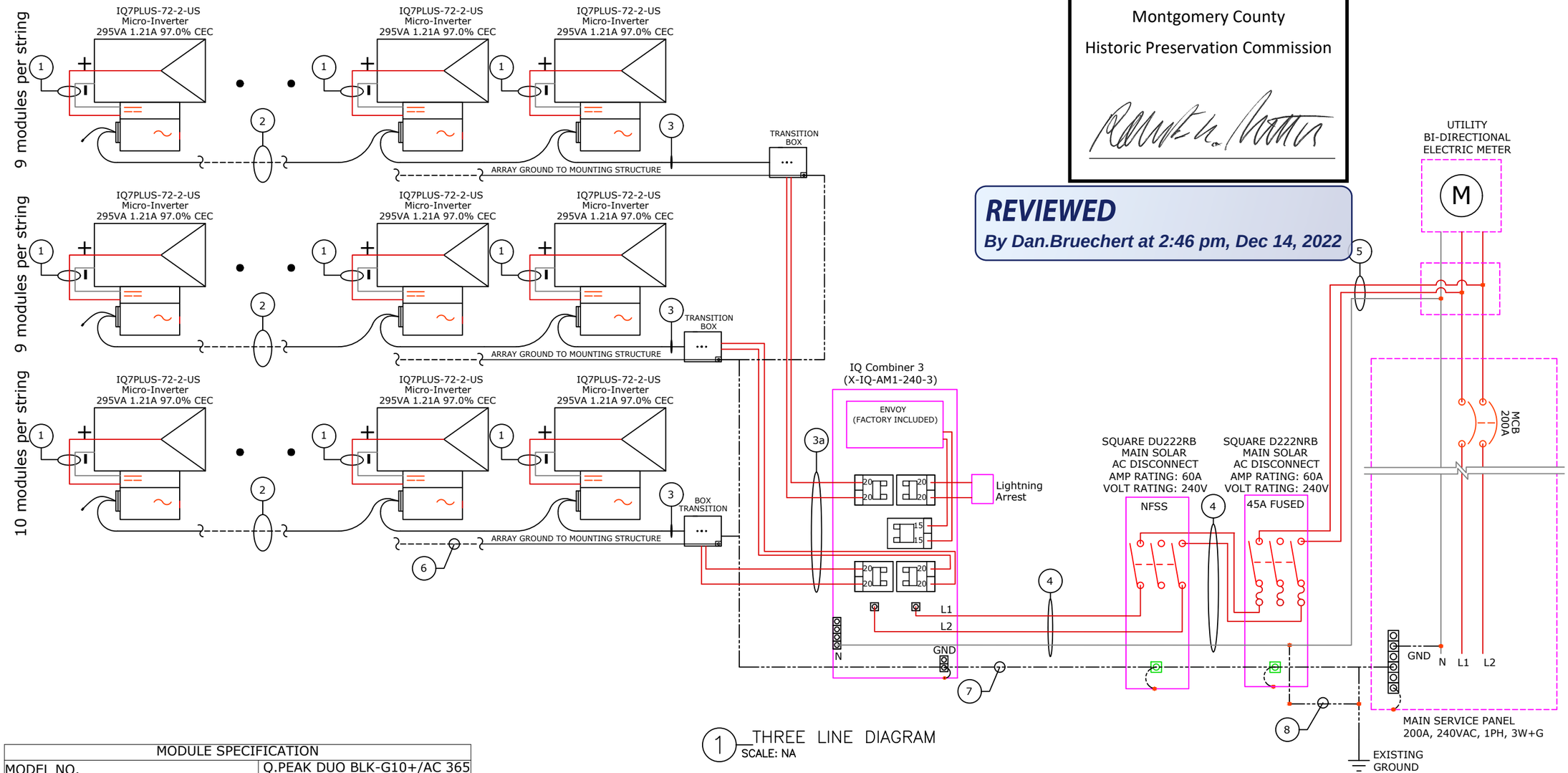

1 THREE LINE DIAGRAM
SCALE: NA

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 invter	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

1. EQUIPMENT USED SHALL BE NEW, UNLESS OTHERWISE NOTED.
2. EQUIPMENT USED SHALL BE UL LISTED, UNLESS OTHERWISE NOTED.
3. EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
4. COPPER CONDUCTORS SHALL BE USED AND SHALL HAVE INSULATION RATING 600V, 90°C, UNLESS OTHERWISE NOTED.
5. CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE INCREASE, CONDUIT FILL AND VOLTAGE DROP.
6. ALL CONDUCTORS, EXCEPT PV WIRE, SHALL BE INSTALLED IN APPROVED CONDUITS OR RACEWAY. CONDUITS SHALL BE ADEQUATELY SUPPORTED AS PER NEC.
7. AC DISCONNECT SHOWN IS REQUIRED IF THE UTILITY REQUIRES VISIBLE-BLADE SWITCH.
8. EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AS PER NEC.
9. LINE SIDE INTER-CONNECTION SHALL COMPLY WITH NEC
10. SMS MONITORING SYSTEM AND IT'S CONNECTION SHOWN IS OPTIONAL. IF USED, REFER TO SMS INSTALLATION MANUAL FOR WIRING METHODS AND OPERATION PROCEDURE.
11. ASHRAE FUNDAMENTAL OUTDOOR DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE U.S. (PHOENIX, AZ or PALM SPRINGS, CA)
12. FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF MOUNTED SUNLIGHT CONDUIT USING THE OUTDOOR TEMPERATURE OF 47°C
    12.1. 10AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 9.6 AMPS WITH A 15 AMP FUSE.

Wire sizing for OCPD
Ex(Isc*(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

REVISIONS

REV	QUOTE #	DESCRIPTION	DATE	DB	CB
**	I	02			

OPPORTUNITY	
PROJECT	MD12412
DATE DRAWN	09/14/22
DRAWN BY	DTK
DMS #:	REV. **

SHEET
E1
18

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

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