



FOR STAFF ONLY:
HAWP# _____
DATE ASSIGNED _____

APPLICATION FOR HISTORIC AREA WORK PERMIT

HISTORIC PRESERVATION COMMISSION
301.563.3400

APPLICANT:

Name: _____

E-mail: _____

Address: _____

City: _____ Zip: _____

Daytime Phone: _____

Tax Account No.: _____

AGENT/CONTACT (if applicable):

Name: _____

E-mail: _____

Address: _____

City: _____ Zip: _____

Daytime Phone: _____

Contractor Registration No.: _____

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

Is the Property Located within an Historic District? Yes/District Name _____

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 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.

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

Owner's Agent's mailing address

Adjacent and confronting Property Owners mailing addresses

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

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

Work Item 1: _____

Description of Current Condition:

Proposed Work:

Work Item 2: _____

Description of Current Condition:

Proposed Work:

Work Item 3: _____

Description of Current Condition:

Proposed Work:

PROJECT INFORMATION			SOLAR ARRAY PROPOSED								
OWNER	CARTER, REBECCA D RESIDENCE 7215 SPRUCE AVE, TAKOMA PARK, MD 20912 (301)346-4117		ARRAY #	MODS	TILT	AZIMUTH	MAX. HEIGHT				
SCOPE OF WORK	RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION JA SOLAR JAM54S31-405/MR SOLAR MODULES (30) X405W = 12.15 KWdc (30) S440 POWER OPTIMIZERS (1) SOLAREEDGE USE10000H-USMNB75 (240V) INVERTER		ARRAY #1	17	5.4:12 (24°)	209°	0'-7"				
			ARRAY #2	2	5.6:12 (25°)	209°	0'-7"				
			ARRAY #3	4	3:12 (14°)	119°	0'-7"				
			ARRAY #4	3	3:12 (14°)	299°	0'-7"				
			ARRAY #5	2	5.6:12 (25°)	29°	0'-7"				
BUILDING OCCUPANCY GROUP	R-3 (SINGLE-FAMILY RESIDENTIAL)		ARRAY #6	2	5.4:12 (24°)	29°	0'-7"				
CODES AND STANDARDS	2017 NATIONAL ELECTRICAL CODE 2021 INTERNATIONAL BUILDING CODE 2021 INTERNATIONAL FIRE CODE 2021 INTERNATIONAL RESIDENTIAL CODE		DRAWINGS INDEX								
			G-1	COVER SHEET							
			PV-1	SITE PLAN							
			PV-2	ROOF LAYOUT							
			PV-2.1	STRUCTURAL DETAILS							
MODULE SPECS	JA SOLAR JAM54S31-405/MR (L) 67.8" X (W) 44.6" X (H) 1.18" WEIGHT = 45.19 LBS COMBINED WEIGHT OF MODULES AND RACKING: 3.06 PSF ≤ 4.5 PSF		PV-3	ELECTRICAL PLAN							
			PV-4	SINGLE LINE DIAGRAM							
			PV-5	LABELS							
			SUPPORTING DOCUMENTS	DATA SHEETS, STRUCTURAL CALCULATIONS							
			EQUIPMENT CONTRACTOR	ADVANCED SOLAR 3321 75TH AVE, SUITE F LANDOVER, MD 20785 CONTACT: SCOTT JOHNSON PHONE: 301-456-4377							
SITE DETAILS	COMP. SHINGLE ROOF, 2X6 RAFTERS @ 24" O.C., DF#2 ROOF SLOPE(S): 5.4:12 (24°), 5.6:12 (25°) AND 3:12 (14°) AREA OF ROOF(PLAN VIEW)= 1700 SF AREA OF NEW ARRAY = 516 SF = 30% OF ROOF AREA (ARRAY <66% OF ROOF AREA) CLIMATE DATA SOURCE: WASHINGTON DC REAGAN AP, 38.87N, 77.03W ASHRAE EXTREME LOW: -12.3°C ASHRAE 2% HIGH: 36°C ASHRAE EXTREME HIGH: 40.9°C WIND SPEED: 115 MPH RISK CATEGORY: II WIND EXPOSURE CATEGORY: B GROUND SNOW LOAD: 35 PSF ROOF ASSEMBLY FIRE CLASS RATING: A HISTORIC DISTRICT: NONE FIRE SPRINKLES: NO		VICINITY MAP								
			ROOF								
			OFFICIAL USE								
			PE STAMP								
CONTRACTOR ADVANCED SOLAR 3321 75TH AVE, SUITE F LANDOVER MD 20785 Ph: (202) 505-5401 Contractor# 108569			CARTER, REBECCA D RESIDENCE RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION 7215 SPRUCE AVE, TAKOMA PARK, MD 20912 PH: (301)346-4117 PEPCO: 5502 2307 809			COVER SHEET					
			System AC Size @ STC: 10.0 kW System DC Size @ STC: 12.15 kW (30) JA SOLAR JAM54S31-405/MR SOLAR MODULES (1) SOLAREEDGE USE10000H-USMNB75 (240V) INVERTER RGM CERTIFIED				Page: G-1				
			Drawn by: LM				Date: 09/03/2025				
			Rev: PERMIT SET								

SOLAR ARRAY PROPOSED				
ARRAY #	MODS	TILT	AZIMUTH	MAX. HEIGHT
ARRAY #1	17	5.4:12 (24°)	209°	0'-7"
ARRAY #2	2	5.6:12 (25°)	209°	0'-7"
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ARRAY #5	2	5.6:12 (25°)	29°	0'-7"
ARRAY #6	2	5.4:12 (24°)	29°	0'-7"

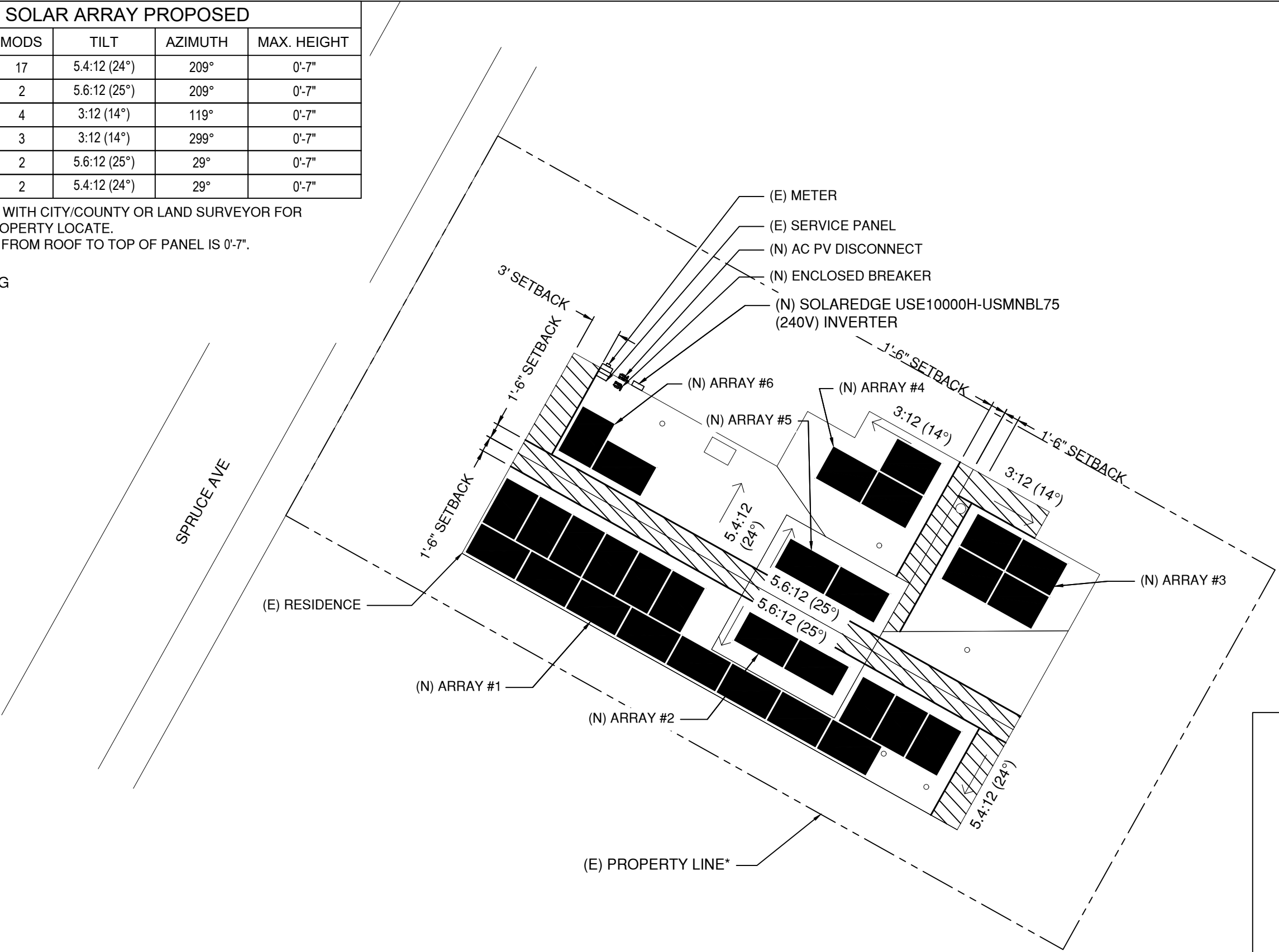
NOTE: *CHECK WITH CITY/COUNTY OR LAND SURVEYOR FOR ACCURATE PROPERTY LOCATE.

NOTE: HEIGHT FROM ROOF TO TOP OF PANEL IS 0'-7".

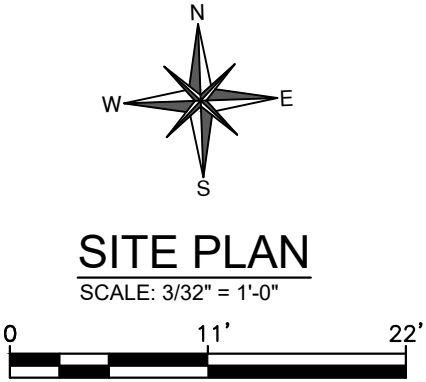
LEGEND:

(E) = EXISTING

(N) = NEW



OFFICIAL USE



SITE PLAN

SCALE: 3/32" = 1'-0"

PE STAMP

CONTRACTOR

ADVANCED SOLAR
3321 75TH AVE, SUITE F
LANDOVER MD 20785
Ph: (202) 505-5401
Contractor# 108569



CARTER, REBECCA D RESIDENCE

RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION
7215 SPRUCE AVE, TAKOMA PARK, MD 20912
PH: (301)346-4117
PEPCO: 5502 2307 809

SITE PLAN

System AC Size @ STC: 10.0 kW System DC Size @ STC: 12.15 kW
(30) JA SOLAR JAM54S31-405/MR SOLAR MODULES
(1) SOLAREGE USE10000H-USMNB75 (240V) INVERTER RGM CERTIFIED

Drawn by:
LM

Rev: PERMIT SET

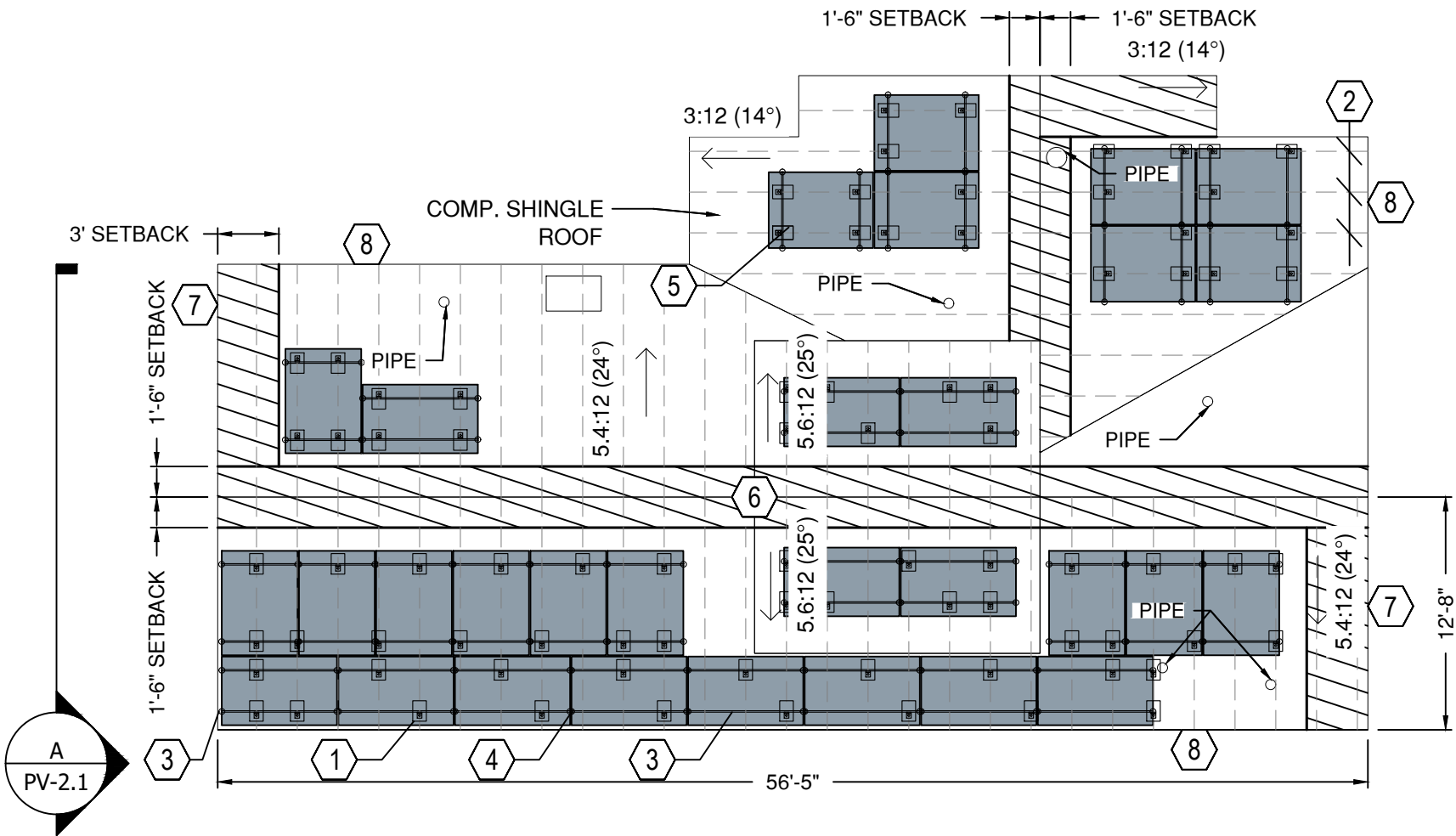
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09/03/2025

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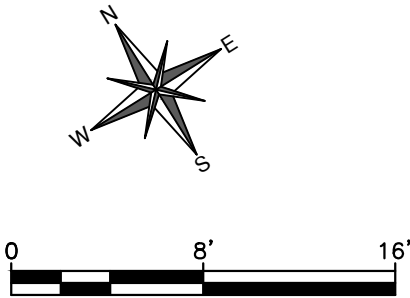
PV-1

KEYED NOTES:

- 1
- IRONRIDGE FLASH FOOT 2, TYP. OF 84
- 2
- 2X6 RAFTERS @ 24" O.C., TYP.
- 3
- IRONRIDGE XR100 168-B US RAIL, TYP.
- 4
- IRONRIDGE MID CLAMP, TYP. OF 38
- 5
- IRONRIDGE END CLAMP, TYP. OF 44
- 6
- RIDGE (SETBACK 18")
- 7
- RAKE (SETBACK 36")
- 8
- EAVE
- 9
- PV MODULE



OFFICIAL USE



ROOF LAYOUT
SCALE: 1/8" = 1'-0"

PE STAMP

ROOF PROPERTIES

ROOF MATERIAL	COMP. SHINGLE
ROOF SLOPE	5.4:12 (24°), 5.6:12 (25°) AND 3:12 (14°)
MEAN ROOF HEIGHT	~23 FT
DECK SHEATING	$\frac{7}{16}$ " OR THICKER OSB OR PLYWOOD
CONSTRUCTION	RAFTERS 2X6 @ 24" O.C.

MODULE MECHANICAL PROPERTIES

MODEL	JA SOLAR JAM54S31-405/MR
DIMENSIONS	(L) 67.8" X (W) 44.6" X (H) 1.18"
WEIGHT	45.2 LB

GENERAL NOTES:

- A. RAFTERS LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS MAY DIFFER AND CONTRACTOR MAY NEED TO ADJUST MOUNT LOCATIONS. IN NO CASE SHALL THE MOUNT SPACING EXCEED OF 48", MAX. CANTILEVER IS $\frac{1}{2}$ MOUNT SPACING OR 24". TYPICAL MOUNT SPACING OF 4' FOR MODULES IN PORTRAIT POSITION AND 6' FOR MODULES IN LANDSCAPE POSITION.
- B. THE MEMBRANE COVERING THE ROOF HAS A MINIMUM FIRE CLASS C RATING.
- C. THE ATTACHMENT ASSEMBLIES INSTALLED FIREPLACE RATING IS A MINIMUM OF C.
- D. HEIGHT FROM ROOF TO TOP OF PANEL IS 0'-7".
- E. FOR STRUCTURAL DETAILS REFER TO THE STRUCTURAL CALCULATION BY THE EOR.

CONTRACTOR

ADVANCED SOLAR
3321 75TH AVE, SUITE F
LANDOVER MD 20785
Ph: (202) 505-5401
Contractor# 108569



CARTER, REBECCA D RESIDENCE

RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION
7215 SPRUCE AVE, TAKOMA PARK, MD 20912
PH: (301)346-4117
PEPCO: 5502 2307 809

ROOF LAYOUT

System AC Size @ STC: 10.0 kW System DC Size @ STC: 12.15 kW
(30) JA SOLAR JAM54S31-405/MR SOLAR MODULES
(1) SOLAREDGE USE10000H-USMNB75 (240V) INVERTER RGM CERTIFIED

Drawn by:
LM

Rev: PERMIT SET

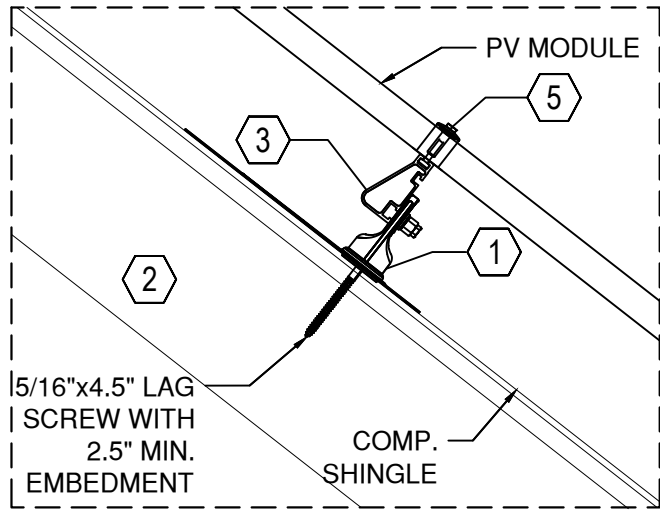
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09/03/2025

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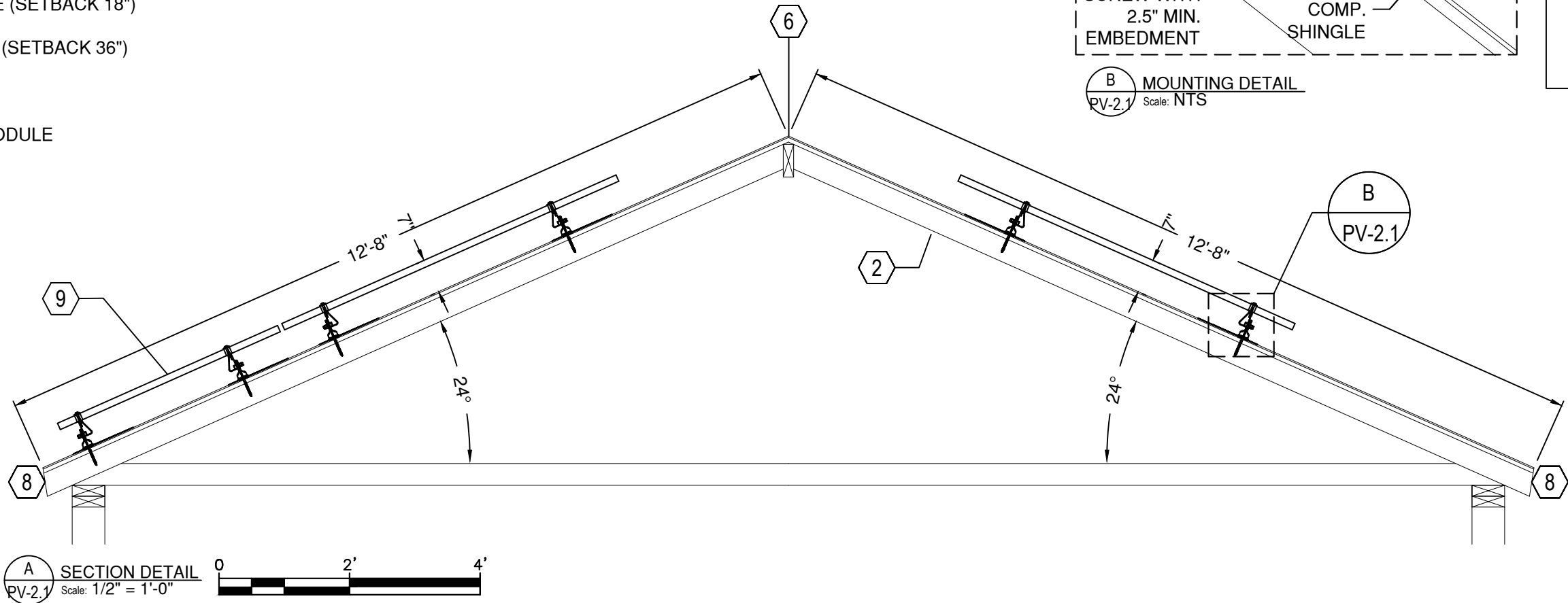
PV-2

KEYED NOTES:

- 1 IRONRIDGE FLASH FOOT 2, TYP. OF 84
2 2X6 RAFTERS @ 24" O.C., TYP.
3 IRONRIDGE XR100 168-B US RAIL, TYP.
4 IRONRIDGE MID CLAMP, TYP. OF 38
5 IRONRIDGE END CLAMP, TYP. OF 44
6 RIDGE (SETBACK 18")
7 RAKE (SETBACK 36")
8 EAVE
9 PV MODULE



OFFICIAL USE



PE STAMP

GENERAL NOTES:

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B. THE MEMBRANE COVERING THE ROOF HAS A MINIMUM FIRE CLASS C RATING.
C. THE ATTACHMENT ASSEMBLIES INSTALLED FIREPLACE RATING IS A MINIMUM OF C.
D. HEIGHT FROM ROOF TO TOP OF PANEL IS 0'-7".
E. FOR STRUCTURAL DETAILS REFER TO THE STRUCTURAL CALCULATION BY THE EOR.

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STRUCTURAL DETAILS

System AC Size @ STC: 10.0 kW System DC Size @ STC: 12.15 kW
(30) JA SOLAR JAM54S31-405/MR SOLAR MODULES
(1) SOLAREGE USE10000H-USMNB75 (240V) INVERTER RGM CERTIFIED

Drawn by:
LM

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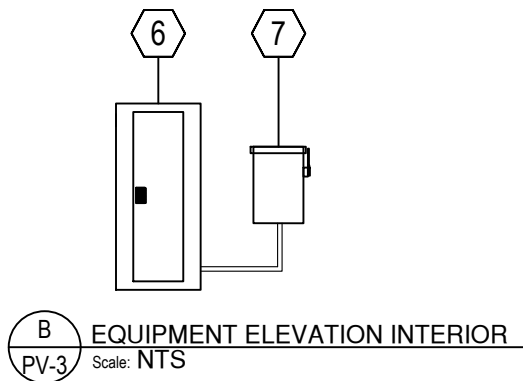
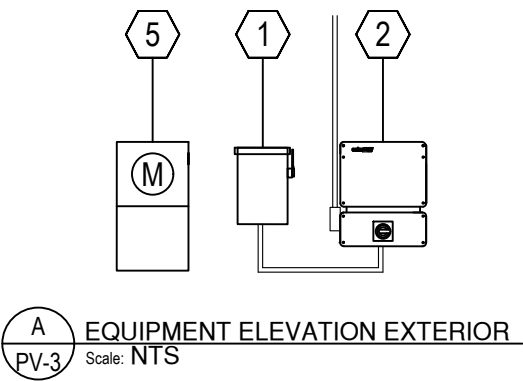
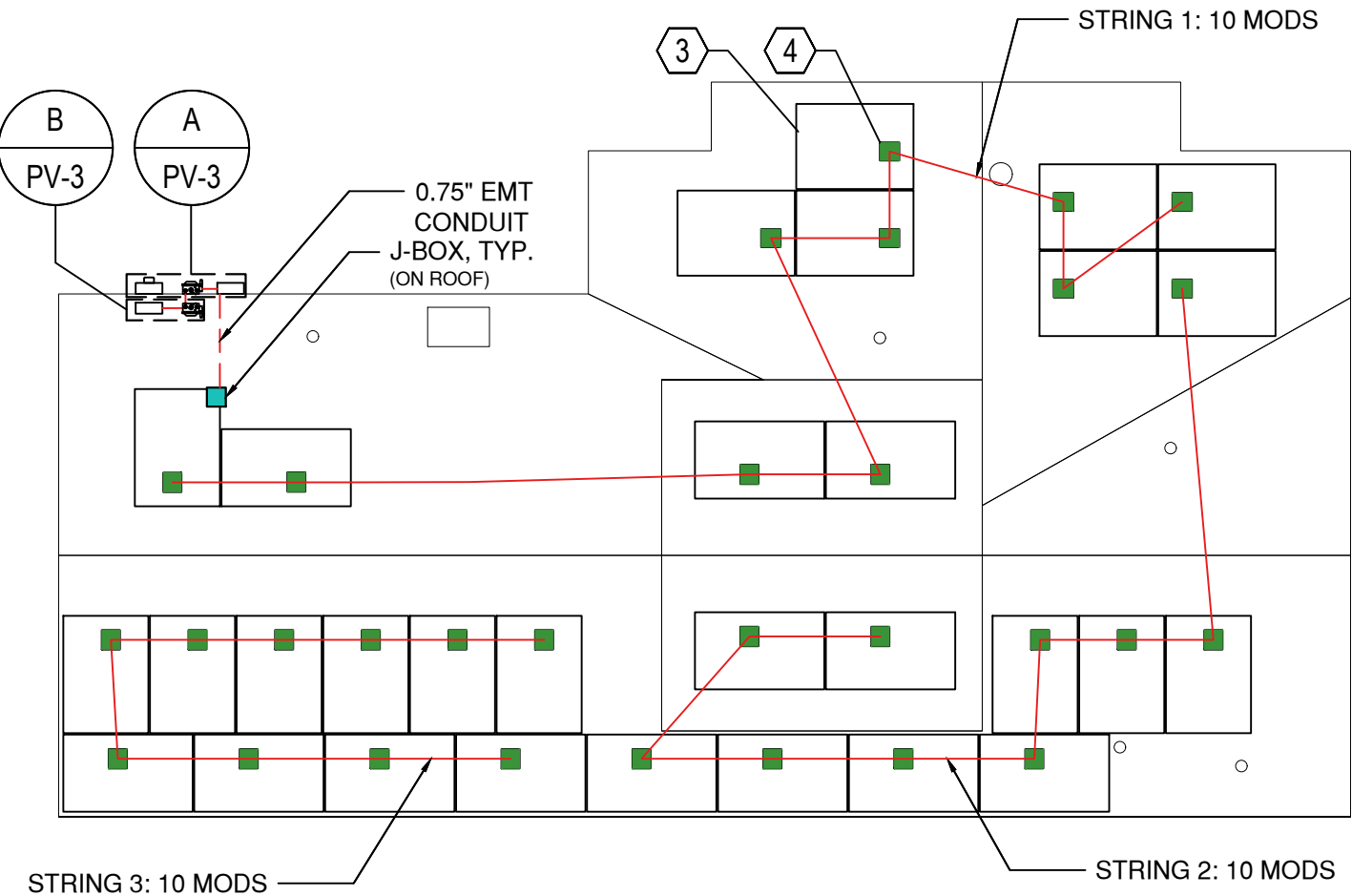
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PV-2.1

GENERAL NOTES:

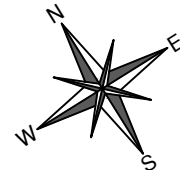
A. CONDUIT AND WIRING IS
DIAGRAMMATIC. FINAL
ROUTING TO BE DETERMINED
BY INSTDALLER.



KEYED NOTES:

- 1 (N) AC DISCONNECT
- 2 (N) SOLAREGE USE10000H-USMNB75 (240V) INVERTER
- 3 (N) PV MODULE
- 4 (N) S440 POWER OPTIMIZER
- 5 (E) METER
- 6 (E) SERVICE PANEL
- 7 (N) ENCLOSED BREAKER

OFFICIAL USE



ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"
0 8' 16'

PE STAMP

CONTRACTOR

ADVANCED SOLAR
3321 75TH AVE, SUITE F
LANDOVER MD 20785
Ph: (202) 505-5401
Contractor# 108569



CARTER, REBECCA D RESIDENCE

RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION
7215 SPRUCE AVE, TAKOMA PARK, MD 20912
PH: (301)346-4117
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ELECTRICAL PLAN

System AC Size @ STC: 10.0 kW System DC Size @ STC: 12.15 kW
(30) JA SOLAR JAM54S31-405/MR SOLAR MODULES
(1) SOLAREGE USE10000H-USMNB75 (240V) INVERTER RGM CERTIFIED

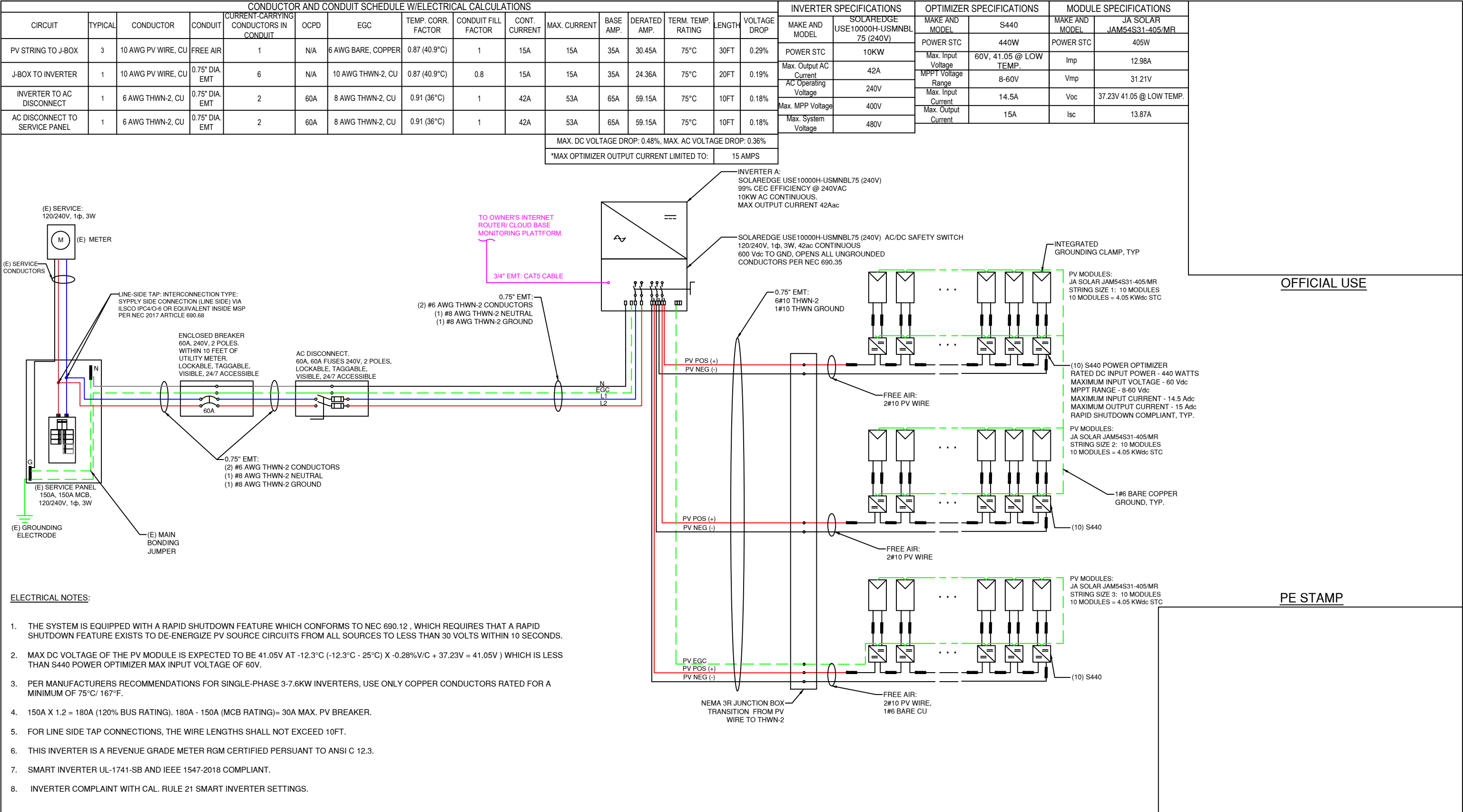
Drawn by:
LM

Rev: PERMIT SET

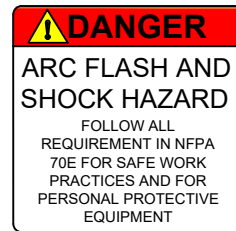
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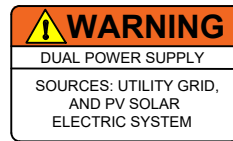
PV-3



MAIN SERVICE PANEL



ON PANEL COVER

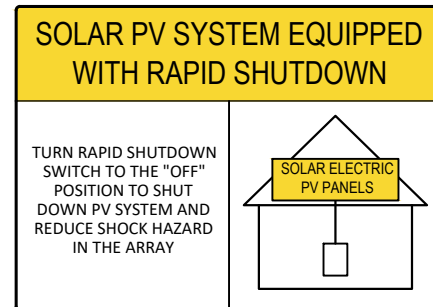


NEXT TO THE MAIN CIRCUIT BREAKER



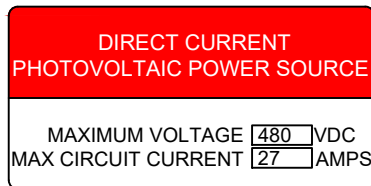
ON PANEL COVER FOR LINE SIDE TAPS ONLY

STRING INVERTER



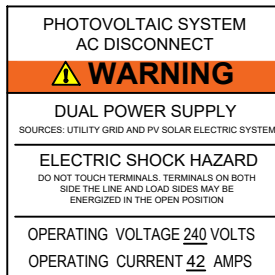
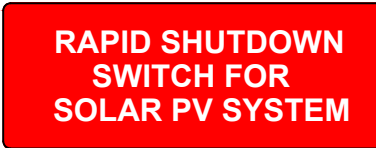
**LABEL 6: FOR PV SYSTEMS THAT SHUT DOWN THE
ARRAY AND THE CONDUCTORS LEAVING THE ARRAY.**

THE LABEL SHALL UTILIZE CAPITALIZED CHARACTERS WITH A MINIMUM HEIGHT OF 3/8" IN BLACK ON YELLOW BACKGROUND, AND THE REMAINING CHARACTERS SHALL BE CAPITALIZED WITH A MINIMUM HEIGHT OF 3/16" IN BLACK ON WHITE BACKGROUND.

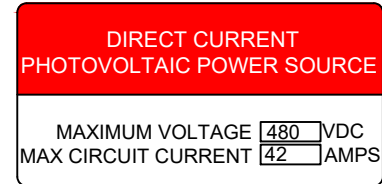


NEXT TO DC DISCONNECT

AC DISCONNECT

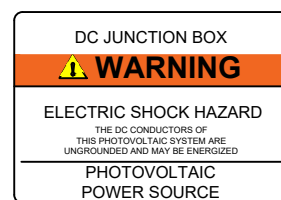


INVERTER



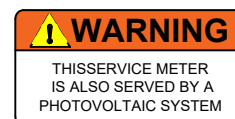
ON INVERTER

JUNCTION OR PULL BOXES



2-3/4" X 2-1/4"
DC JUNCTION BOXES (STRING INVERTERS) ONLY

UTILITY METER



EXTERIOR CONDUITS



OFFICIAL USE

PE STAMP

CONTRACTOR

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LABELS

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Drawn by:
LM

Rev: PERMIT SET

Date:
09/03/2025

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HISTORIC AREA WORK PERMIT CHECKLIST OF APPLICATION REQUIREMENTS

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



9/4/2025

ADVANCED SOLAR
3321 75TH AVE, SUITE F
LANDOVER MD 20785

Attn.: To Whom It May Concern

re job: CARTER, REBECCA D RESIDENCE
7215 SPRUCE AVE
TAKOMA PARK, MD 20912

The following calculations are for the structural engineering design of the photovoltaic panels and are valid only for the structural info referenced in the stamped plan set. The verification of such info is the responsibility of others.

After review, I certify that the roof structure has sufficient structural capacity for the applied PV loads.

All mounting equipment shall be designed and installed per manufacturer's approved installation specifications.

Design Criteria:

Code:	2021 IRC		
	ASCE 7-16		
Live Load:	20	psf	
Ult Wind Speed:	115	mph	
Exposure Cat:	B		
Ground Snow:	35	psf	Min Roof Snow: 30

AHZ Consulting Engineers Inc.
Professional Engineer
projects@ahzengineers.com

Roof Properties:

	Roof 1	Roof 2	Roof 3
Roof Type =	Shingle	Shingle	Shingle
Roof Pitch (deg) =	24	25	14
Mean Roof Height (ft) =	23	23	23
Attachment Trib Width (ft) =	2.75	2.75	2.75
Attachment Spacing (ft) =	4	4	4
Framing Type =	Rafter	Rafter	Rafter
Framing Size =	2x6	2x6	2x6
Framing OC Spacing (in.) =	16	16	16
Section Thickness, b (in.) =	1.5	1.5	1.5
Section Depth, d (in.) =	5.5	5.5	5.5
Section Modulus, S _x (in. ³) =	7.6	7.6	7.6
Moment of Inertia, I _x (in. ⁴) =	20.8	20.8	20.8
Framing Span (ft) =	13	13	13
Deflection Limit D+L (in.) =	2.6	2.6	2.6
Deflection Limit S or W (in.) =	1.73	1.73	1.73
Attachments Pattern =	Fully Staggered	Fully Staggered	Fully Staggered
Framing Upgrade =	Adequate	Adequate	Adequate
Sister Size =	NA	NA	NA
Wood Species =	DF #2	DF #2	DF #2
Wood Fb (psi) =	900	900	900
Wood Fv (psi) =	180	180	180
Wood E (psi) =	1600000	1600000	1600000
C _D (Wind) =	1.6	1.6	1.6
C _D (Snow) =	1.15	1.15	1.15
C _{LS} =	1.20	1.20	1.20
C _M = C _t = C _L = C _i =	1.0	1.0	1.0
C _F =	1.3	1.3	1.3
C _{fu} =	1.00	1.00	1.00
C _r =	1.15	1.15	1.15
F'b _{wind} (psi) =	2583	2583	2583
F'b _{snow} (psi) =	1857	1857	1857
F'v _{wind} (psi) =	288	288	288
F'v _{snow} (psi) =	207	207	207
M _{allowable_wind} (lb-ft) =	1628	1628	1628
M _{allowable_snow} (lb-ft) =	1170	1170	1170
V _{allowable_wind} (lbs) =	1584	1584	1584
V _{allowable_snow} (lbs) =	1139	1139	1139



E' (psi) = 1600000 1600000 1600000

Load Calculation:

Dead Load Calculations:

Panels Dead Load (psf) =	2.7		
	Roof 1	Roof 2	Roof 3
Roofing Weight (psf) =	3.0	3.0	3.0
Decking Weight (psf) =	2.0	2.0	2.0
Framing Weight (psf) =	1.4	1.4	1.4
Misc. Additional Weight (psf) =	1.0	1.0	1.0
Existing Dead Load (psf) =	7.4	7.4	7.4
Total Dead Load (psf) =	10.1	10.1	10.1

Snow Load Calculations:

Ground Snow Load, pg (psf) =	35		
Min Flat Snow, pf_min (psf) =	30		
Min Sloped Snow, ps_min (psf) =	NA		
Snow Importance Factor, Ic =	1.0		
Exposure Factor, Ce =	0.9		
	Roof 1	Roof 2	Roof 3
Thermal Factor, Ct =	1.2	1.2	1.2
Flat Roof Snow, pf (psf) =	30	30	30
Slope Factor, Cs =	1.00	1.00	1.00
Sloped Roof Snow, ps (psf) =	30	30	30

Wind Load Calculations:

Ultimate Wind Speed (mph) =	115		
Directionality Factor, kd =	0.85		
Topographic Factor, kzt =	1.0		
	Roof 1	Roof 2	Roof 3
Velocity Press Exp Factor, kz =	0.70	0.70	0.70
Ground Elevation Factor, ke =	1.00		
Velocity Pressure, qz (psf) =	20.2	20.2	20.2
Array Edge Factor, γE =	1.25		
Solar Equalization Factor, γa =	0.64	0.64	0.64
External Pressure Up, GCp_1 =	-1.5	-1.5	-2
External Pressure Up, GCp_2 =	-2.2	-2.2	-2.6
External Pressure Up, GCp_3 =	-2.3	-2.3	-3.1
External Pressure Down, GCp =	0.6	0.6	0.6
Design Pressure Up, p_1 (psf) =	-24.4	-24.4	-32.5
Design Pressure Up, p_2 (psf) =	-35.7	-35.7	-42.2



Design Pressure Up, p_3 (psf) =	-37.4	-37.4	-50.4
Design Pressure Down, p (psf) =	16.0	16.0	16.0

Hardware Checks:

Lag Screw Checks:

	Roof 1	Roof 2	Roof 3
Ref. Withdrawal Value, W (lb/in) =	266	266	266
$(C_M = C_t = C_{eg} = 1.0) C_D =$	1.6	1.6	1.6
Adjusted Withdrawal Value, W' (lb/in) =	426	426	426
Lag Penetration, p (in.) =	2.5	2.5	2.5
Allowable Withdrawal Force, $W'p$ (lbs) =	1064	1064	1064
Applied Uplift Force (lbs) =	-177	-177	-240
Uplift DCR =	0.17	0.17	0.23
Ref. Lateral Value, Z (lbs) =	270	270	270
$(C_M = C_t = C_{\Delta} = C_{eg} = 1.0) C_D =$	1.15	1.15	1.15
Adjusted Lateral Value, Z' (lbs) =	311	311	311
Applied Lateral Force (lbs) =	146	152	87
Angle of Resultant Force, α (deg) =	50	49	70
Adjusted Interaction Lateral Value, Z'_α (lbs) =	536	524	830
Lateral DCR =	0.27	0.29	0.10

Roof Framing Checks:

Force Checks:

	Roof 1	Roof 2	Roof 3
LC1: D+S			
Applied Moment (lb-ft) =	1130	1130	1130
Applied Shear (lbs) =	348	348	348
Allowable Moment (lb-ft) =	1170	1170	1170
Allowable Shear (lbs) =	1139	1139	1139
Moment DCR =	0.97	0.97	0.97
Shear DCR =	0.31	0.31	0.31
LC2: D+0.6W			
Applied Moment (lb-ft) =	555	555	555
Applied Shear (lbs) =	171	171	102
Allowable Moment (lb-ft) =	1628	1628	1628
Allowable Shear (lbs) =	1584	1584	1584
Moment DCR =	0.34	0.34	0.34
Shear DCR =	0.11	0.11	0.06

LC3: D+0.75(S+0.6W)

Applied Moment (lb-ft) =	1122	1122	1122
Applied Shear (lbs) =	345	345	293
Allowable Moment (lb-ft) =	1628	1628	1628
Allowable Shear (lbs) =	1584	1584	1584
Moment DCR =	0.69	0.69	0.69
Shear DCR =	0.22	0.22	0.19

LC4: 0.6D+0.6W

Applied Moment (lb-ft) =	241	241	378
Applied Shear (lbs) =	74	74	116
Allowable Moment (lb-ft) =	1628	1628	1628
Allowable Shear (lbs) =	1584	1584	1584
Moment DCR =	0.15	0.15	0.23
Shear DCR =	0.05	0.05	0.07

Deflection Checks (Service Level):

	Roof 1	Roof 2	Roof 3
LC1: D+L			
Deflection (in.) =	0.39	0.39	0.39
Deflection Limit (in.) =	3.12	3.12	3.12
Deflection DCR =	0.13	0.13	0.13
LC2: S			
Deflection (in.) =	0.77	0.77	0.77
Deflection Limit (in.) =	2.08	2.08	2.08
Deflection DCR =	0.37	0.37	0.37
LC3: W (Down)			
Deflection (in.) =	0.17	0.17	0.17
Deflection Limit (in.) =	2.08	2.08	2.08
Deflection DCR =	0.08	0.08	0.08
LC4: W (Up)			
Deflection (in.) =	-0.26	-0.26	-0.35
Deflection Limit (in.) =	2.08	2.08	2.08
Deflection DCR =	0.13	0.13	0.17

Seismic Check:

Existing Weight:

Wall Weight (psf) =	17
Tributary Wall Area (ft ²) =	2100
Total Wall Weight (lbs) =	35700
Roof Weight (psf) =	7



Roof Area (ft²) = 1200
Total Roof Weight (lbs) = 8902
Total Existing Weight (lbs) = 44602

Additional PV Weight:

PV Panel Weight (lbs) = 49
Number of Panels = 30
Total Additional PV Weight (lbs) = 1470

Weight Increase:

$$(\text{Existing W} + \text{Additional W})/(\text{Existing W}) = 1.03$$

The increase in weight as a result of the solar system is less than 10% of the existing structure and therefore no further seismic analysis is required.

Limits of Scope of Work and Liability:

Existing structure is assumed to have been designed and constructed following appropriate codes at time of erection, and assumed to have appropriate permits. The calculations produced are only for the roof framing supporting the proposed PV installation referenced in the stamped planset and were completed according to generally recognized structural analysis standards and procedures, professional engineering and design experience, opinions and judgements. Existing deficiencies which are unknown or were not observable during time of inspection are not included in this scope of work. All PV modules, racking, and mounting equipment shall be designed and installed per manufacturer's approved installation specifications. The Engineer of Record and the engineering consulting firm assume no responsibility for misuse or improper installation. This analysis is not stamped for water leakage. Framing was determined based on information in provided plans and/or photos, along with engineering judgement. Prior to commencement of work, the contractor shall verify the framing sizes, spacings, and spans noted in the stamped plans, calculations, and cert letter (where applicable) and notify the Engineer of Record of any discrepancies prior to starting construction. Contractor shall also verify that there is no damaged framing that was not addressed in stamped plans, calculations, and cert letter (where applicable) and notify the Engineer of Record of any concerns prior to starting construction.



111 Rodeo
Irvine, CA 92602

Project CARTER, REBECCA D RESIDENCE Property Owner CARTER, REBECCA D RESIDENCE

Address 7215 SPRUCE AVE, TAKOMA PARK, MD 20912

☒ I reviewed the design of the photovoltaic (PV) system, as designed by the manufacturer, and the design criteria utilized for the mounting equipment and panel mounting assembly (rack system) for the installation of 30 (#) panels supported by the rack system, as shown on the drawings prepared for the above referenced address. I certify that the configurations and design criteria meet the standards and requirements of the International Residential Code (IRC) in COMCOR 08.00.02.

☒ The attachment of the rack system to the building at the above address, including the location, number, and type of attachment points; the number of fasteners per attachment point; and the specific type of fasteners (size, diameter, length, minimum embedment into structural framing, etc.) meets the standards and requirements of the IRC adopted by Montgomery County in COMCOR 08.00.02.

☒ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. I certify that no structural modifications of the existing roof structure are required. The existing roof structure meets the standards and requirements of the IRC, adopted by Montgomery County in COMCOR 08.00.02, necessary to support the PV system.

☐ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. Structural modifications of the existing roof structure are required. I certify that the roof structure, as modified on the drawings for this project, will support the additional loads imposed by the PV system. I further certify that design of the modified roof structure meets the standards and requirements of the IRC, adopted by Montgomery County in COMCOR 08.00.02.

☒ I prepared or approved the construction documents for the mounting equipment, rack system, roof structure for this project.

Re-installations:

☐ I certify that the reinstallation of the photovoltaic system (PV) as shown on the approved drawings for permit _____ (show original permit #) does not alter the approval under the permit or make the PV system, attachment to the building, and roof framing unsafe.

53954

Maryland PE License Number

9/4/2025

Date _____

Seal

Signature _____



9/4/2025

ADVANCED SOLAR, 3321 75TH AVE, SUITE F, LANDOVER MD 20785

Subject: Structural Certification for Installation of Residential Solar

re job: CARTER, REBECCA D RESIDENCE, 7215 SPRUCE AVE, TAKOMA PARK, MD 20912

Attn.: To Whom It May Concern

A field observation was performed to document the existing framing of the above mentioned address. From the field observation, the existing roof structure was observed as:

ROOF 1: Shingle roofing supported by 2x6 Rafter @ 16 in. OC spacing. The roof is sloped at approximately 24 degrees and has a max beam span of 13 ft between supports.

ROOF 2: Shingle roofing supported by 2x6 Rafter @ 16 in. OC spacing. The roof is sloped at approximately 25 degrees and has a max beam span of 13 ft between supports.

ROOF 3: Shingle roofing supported by 2x6 Rafter @ 16 in. OC spacing. The roof is sloped at approximately 14 degrees and has a max beam span of 13 ft between supports.

Design Criteria:

Code: 2021 IRC (ASCE 7-16)

Ult Wind Speed: 115 mph

Ground Snow: 35 psf

Exposure Cat: B

Min Roof Snow: 30 psf

After review of the field observation report and based on our structural capacity calculations in accordance with applicable building codes, the existing roof framing supporting the proposed solar panel layout has been determined to be:

ROOF 1: adequate to support the imposed loads. Therefore, no structural upgrades are required.

ROOF 2: adequate to support the imposed loads. Therefore, no structural upgrades are required.

ROOF 3: adequate to support the imposed loads. Therefore, no structural upgrades are required.

AHZ Consulting Engineers Inc.

Professional Engineer

projects@ahzengineers.com

September 23, 2025

Re: **Solar System Design Summary for 7215 Spruce Ave**

To whom it may concern,

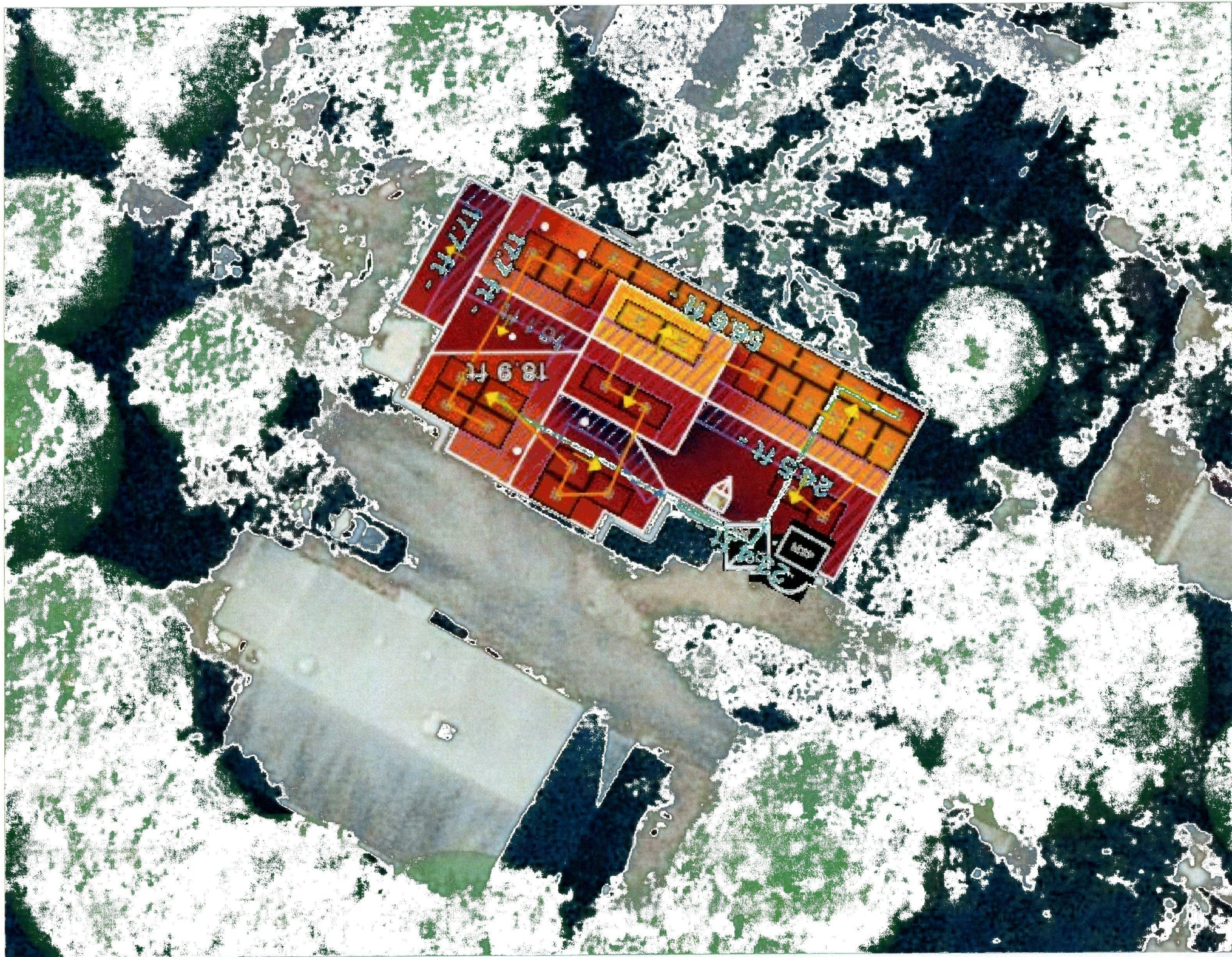
The solar system at 7215 Spruce Ave is strategically designed to maximize solar access, with the main array positioned on the South roof and four (4) smaller arrays on the North. All conduit and equipment are discreetly placed, and surrounding tree coverage helps minimize visibility from public areas.

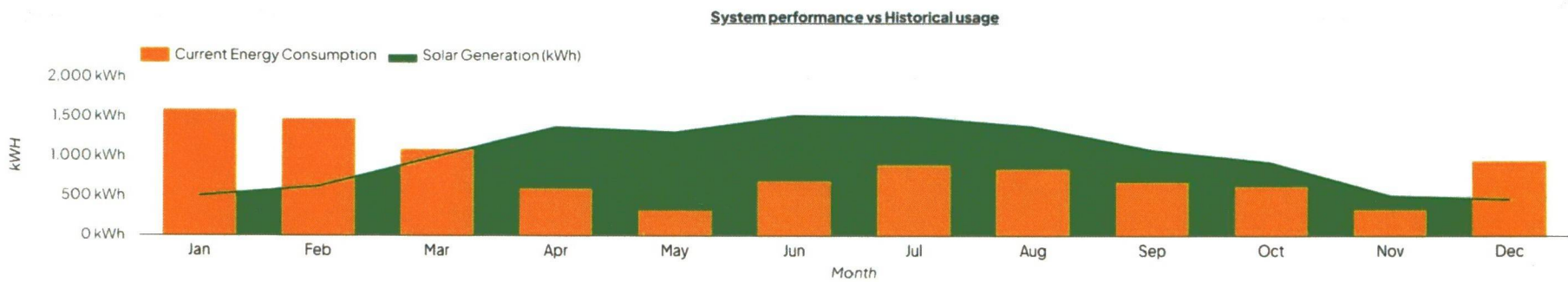
With a projected annual yield of 12,163 KWH and a 2024 consumption of 10,170 KWH, the system provides a modest surplus of 1,993 KWH. This allows for future energy needs (e.g., EV charger) and accounts for standard system degradation. The system is appropriately sized to meet, not exceed, the homeowner's energy requirements.

Thank you for your consideration.

Kindly,

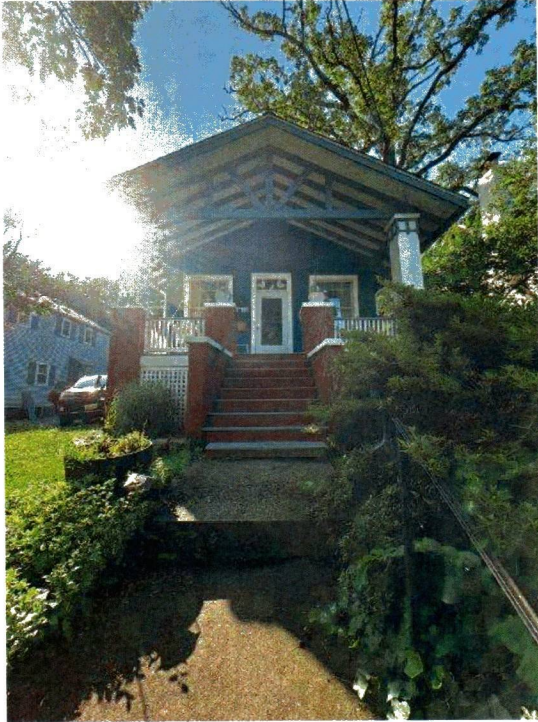
Advanced Solar



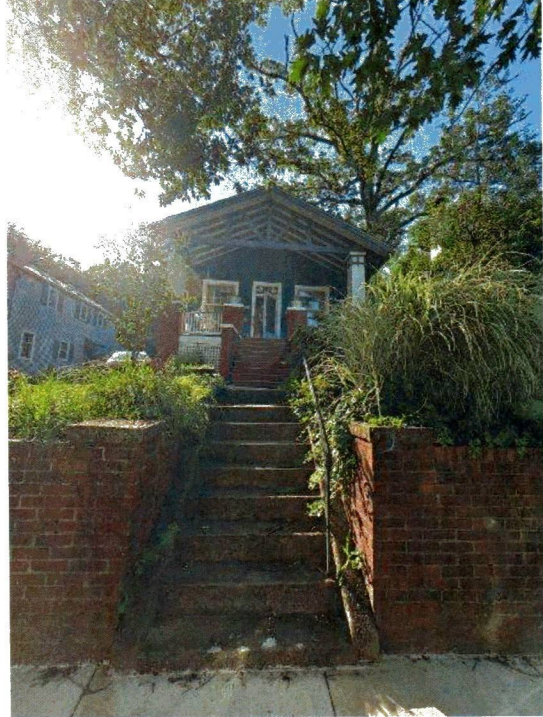


Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Current Energy Consumption	1,600	1,480	1,100	600	330	700	900	850	680	630	340	960	10,170
Solar Generation (kWh)	503	621	1,003	1,370	1,305	1,516	1,499	1,374	1,082	923	505	462	12,163
Net	1,097	859	97	-770	-975	-816	-599	-524	-402	-293	-165	498	-1,993

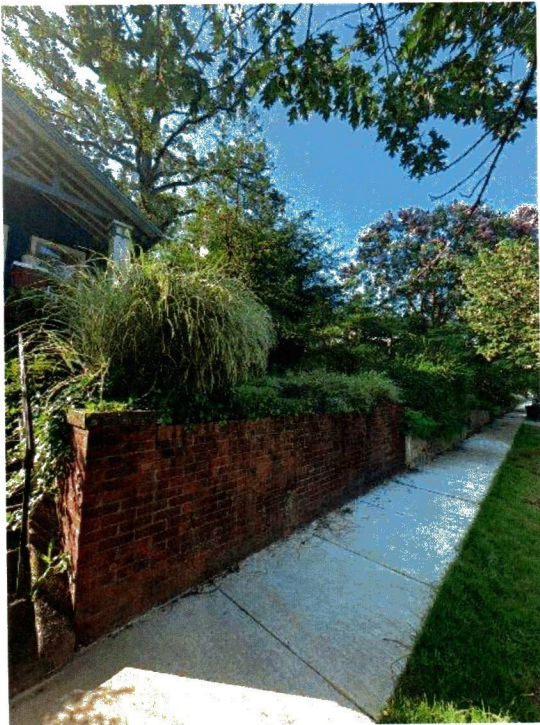
Home Photos / 360 of the house



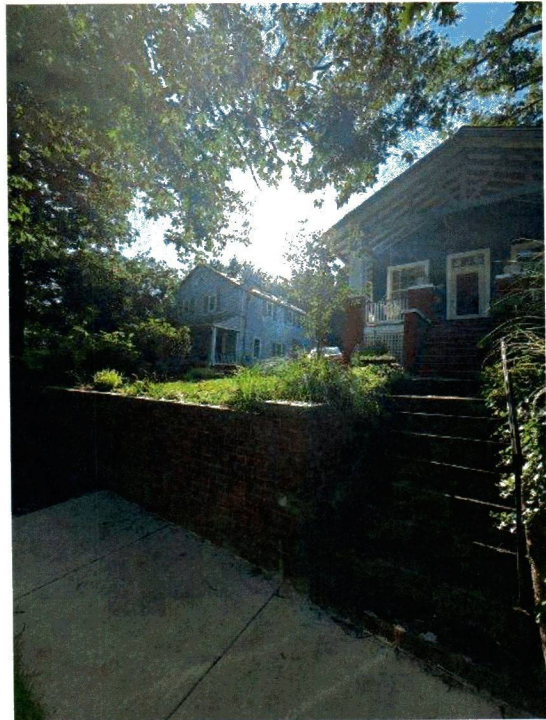
Home Photos / 360 of the house



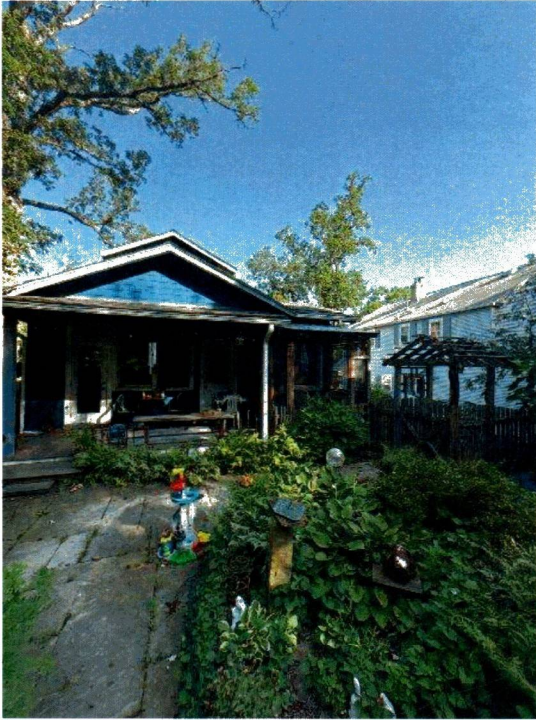
Home Photos / 360 of the house



Home Photos / 360 of the house



Home Photos / 360 of the house



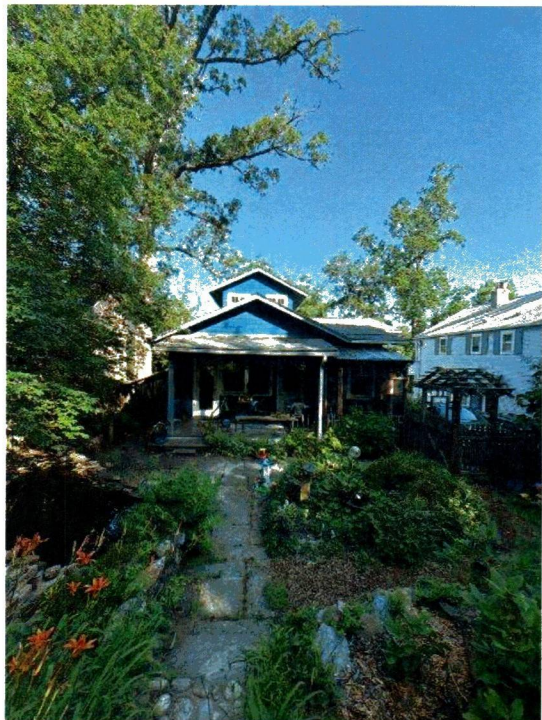
Home Photos / Photo: Right Side of Home. INCLUDE DAMAGE



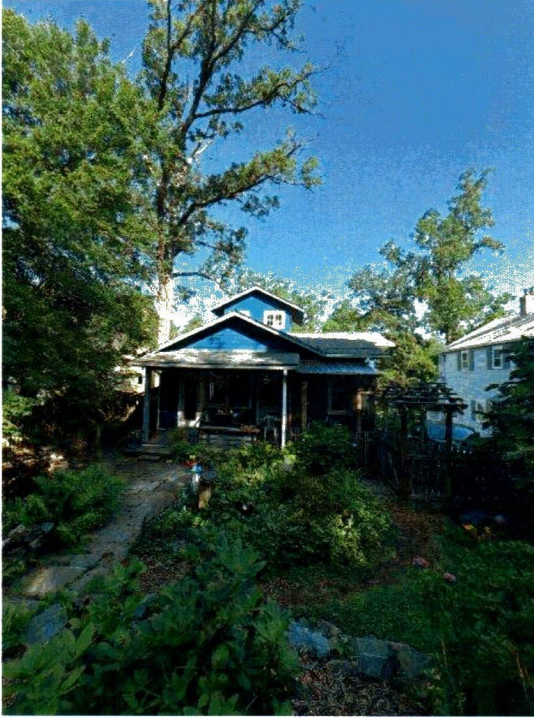
Home Photos / Photo: Left Side of Home. INCLUDE DAMAGE



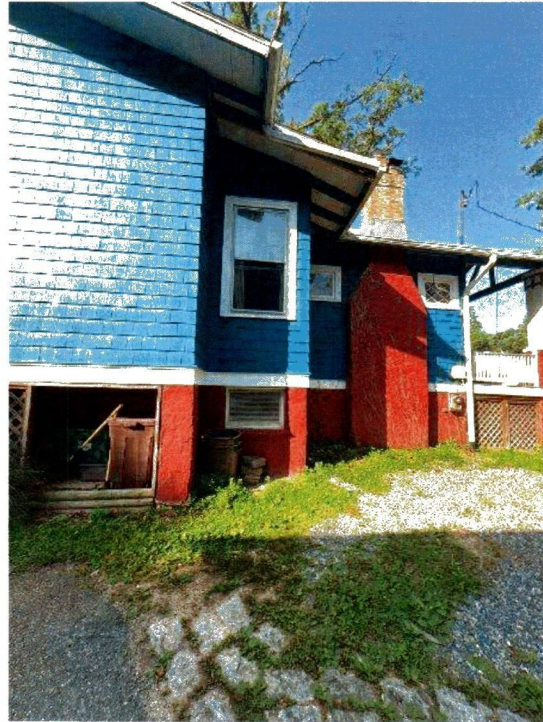
Home Photos / Photo: Back Side of Home. INCLUDE DAMAGE



Home Photos / Photo: Back Side of Home. INCLUDE DAMAGE



Home Photos / Expected Inverter Location



Home Photos / Utility Meter

