MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address:	25 Oxford St., Chevy Chase	**Meeting Date:**	12/18/2019
Resource:	Non-Contributing Resource **Chevy Chase Village Historic District**	**Report Date:**	12/11/2019
Applicant:	Maryam Salass **(**Kelli Delacruz, Agent)	**Public Notice:**	12/4/2019
Review:	HAWP	**Tax Credit:**	n/a
Case Number:	35/13-19XX	**Staff:**	Dan Bruechert
PROPOSAL:	Solar Panel Installation		

STAFF RECOMMENDATION

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

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Non-Contributing Resource within the Chevy Chase Historic District
STYLE: Modern
DATE: 1941 with later modifications

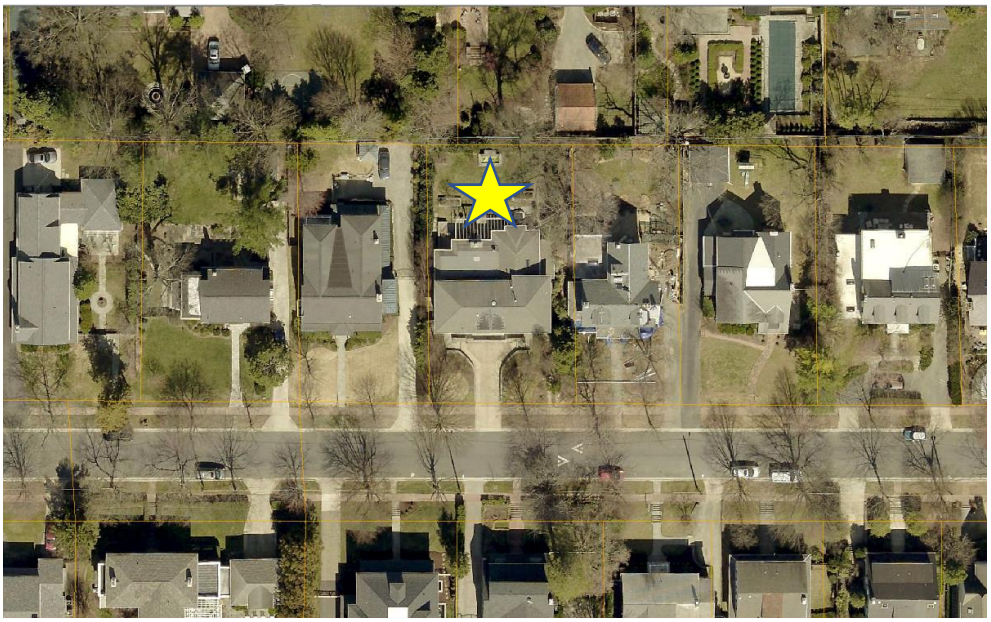


Figure 1: 25 Oxford St. is located mid-block with a southern orientation.

PROPOSAL

The applicant proposes to install forty-six solar panels on the north, south, east, and west slopes of the hipped roof.

APPLICABLE GUIDELINES

When reviewing alterations and new construction within the Chevy Chase Village Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. These documents include *Montgomery County Code Chapter 24A (Chapter 24A*), the *Chevy Chase Historic District Design Guidelines (Guidelines)*, and the *Secretary of the Interior's Standards for Rehabilitation (Standards)*. The pertinent information in these documents is outlined below.

Chevy Chase Village Historic District Guidelines
Non-Contributing/Out-of-Period Resources
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 constructed outside the district's primary period of historical importance. HAWP applications for exterior alterations, changes, and/or additions to 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 exception would be major additions and alterations to the scale and massing of the structure 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 should be reviewed under the guidance 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 insure conformity with the purposes and requirements of this chapter, if it finds that:
  (1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or
  (2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; 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.

Secretary of 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 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.

10. New additions and adjacent or related new construction shall 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.

STAFF DISCUSSION

The subject property is an eclectic house drawing from elements of the shingle and prairie style, constructed in 1941 with later modifications. The low sloped hipped roof has a central eyebrow dormer facing the street. The house is on the north side of Oxford St.

The applicant proposes to install 46 (forty-six) solar panels on all four roof slopes. The panels will be installed on a rail system that will install the panels a maximum of 6" (six inches) above the roof surface. Due to the southern orientation of the house, a solar array that does not include panels on the south face, would produce very little in the way of electricity. It is only because of the very low roof slope that panels on the north slope will be able to produce any electricity.

Staff finds that this proposal will not significantly alter the massing or scale of the structure and, per the *Design Guidelines*, Staff finds this should be approved "as a matter of course." As this building is listed as a non-contributing resource to the District, the *Standards* with their focus on maintaining the historic character of a resource, aren't as applicable as they are to designated historic resources. However, Staff finds this construction will not significantly alter the character of the building, is readily recognized as new, and will be easily reversable in the future with a change in technology (comporting with *Standards* 2, 9, and 10). Staff recommends approval of the HAWP.

STAFF RECOMMENDATION

Staff recommends that the Commission **approve** the HAWP application;
under the Criteria for Issuance in *Chapter 24A-8(b)(2)* and *(d)*, and the *Chevy Chase Village Historic District Design Guidelines;* 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*; the *Design* Guidelines; 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 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 dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.

[redacted]

DPS - #8

HISTORIC PRESERVATION COMMISSION
301/563-3400

APPLICATION FOR HISTORIC AREA WORK PERMIT

Contact Email: kelli.delacruz@vivintsolar.com Contact Person: Kelli Delacruz
Daytime Phone No.: 301 674 5219

Tax Account No.: 07004560168

Name of Property Owner: Maryam Sellass Daytime Phone No.: 480 415 0850

Address: 25 Oxford St. (Street Number) Chevy Chase (City) MD (State) 20815 (Zip Code)

Contractor: Vivint Solar Phone No.: 877 404 4129

Contractor Registration No.: 130385

Agent for Owner: _____ Daytime Phone No.: _____

LOCATION OF BUILDING/PREMISE

House Number: _____ Street: _____

Town/City: _____ Nearest Cross Street: _____

Lot: _____ Block: _____ Subdivision: _____

Liber: _____ Folio: _____ Parcel: _____

PART ONE: TYPE OF PERMIT ACTION AND USE

1A. CHECK ALL APPLICABLE:

☐ Construct ☐ Extend ☐ Alter/Renovate

☐ Move ☑ Install ☐ Wreck/Raze

☐ Revision ☐ Repair ☐ Revocable

CHECK ALL APPLICABLE:

☐ A/C ☐ Slab ☐ Room Addition ☐ Porch ☐ Deck ☐ Shed

☐ Solar ☐ Fireplace ☐ Woodburning Stove ☐ Single Family

☐ Fence/Wall (complete Section 4) ☑ Other: roof mounted solar panels

1B. Construction cost estimate: $ 31,878

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

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTEND/ADDITIONS

2A. Type of sewage disposal: 01 ☐ WSSC 02 ☐ Septic 03 ☐ Other: _____

2B. Type of water supply: 01 ☐ WSSC 02 ☐ Well 03 ☐ Other: _____

PART THREE: COMPLETE ONLY FOR FENCE/RETAINING WALL

3A. Height _____ feet _____ inches

3B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:

☐ On party line/property line ☐ Entirely on land of owner ☐ On public right of way/easement

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

K. Dela — *Signature of owner or authorized agent*

10/22/19 — *Date*

Approved: _____ *For Chairperson, Historic Preservation Commission*

Disapproved: _____ Signature: _____ Date: _____

Application/Permit No.: _____ Date Filed: _____ Date Issued: _____

Edit 6/21/99

SEE REVERSE SIDE FOR INSTRUCTIONS

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

1. **WRITTEN DESCRIPTION OF PROJECT**

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

   Installation of 46 roof mounted Solar panels.

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

2. **SITE PLAN**

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

   a. the scale, north arrow, and date;

   b. dimensions of all existing and proposed structures; and

   c. site features such as walkways, driveways, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.

3. **PLANS AND ELEVATIONS**

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

   a. ***Schematic construction plans***, with marked dimensions, indicating location, size and general type of walls, window and door openings, and other fixed features of both the existing resource(s) and the proposed work.

   b. Elevations (facades), with marked dimensions, clearly indicating proposed work in relation to existing construction and, when appropriate, context. All materials and fixtures proposed for the exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.

4. **MATERIALS SPECIFICATIONS**

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

5. **PHOTOGRAPHS**

   a. Clearly labeled photographic prints of each facade of existing resource, including details of the affected portions. All labels should be placed on the front of photographs.

   b. Clearly label photographic prints of the resource as viewed from the public right-of-way and of the adjoining properties. All labels should be placed on the front of photographs.

6. **TREE SURVEY**

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

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

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

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

JURISDICTIONAL NOTES:

GOVERNING CODES

ALL WORK SHALL CONFORM TO THE FOLLOWING CODES

a. 2014 NATIONAL ELECTRICAL CODE
b. 2015 INTERNATIONAL BUILDING CODE
c. 2015 INTERNATIONAL RESIDENTIAL CODE
d. ANY OTHER LOCAL AMENDMENTS

SHEET INDEX:

GENERAL ELECTRICAL NOTES:

1. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. FOR ROOF-MOUNTED SYSTEMS, WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF OF THE ROOF SURFACE.
2. ANY CODE VIOLATIONS EVIDENT IN THE INTERCONNECTION PANEL WILL BE CORRECTED ON INSTALLATION.
3. SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT CODE
4. RAPID SHUTDOWN INITIATION TAKES PLACE AT THE AC DISCONNECT. RAPID SHUTDOWN COMMENCES UPON LOSS OF UTILITY SOURCE VOLTAGE.
5. SEE "E 1.0 AND "E 2.0 FOR DIAGRAMS CALCULATIONS SCHEDULE AND SPECIFICATIONS.

GENERAL STRUCTURAL NOTES:

a. THE SOLAR PANELS ARE TO BE MOUNTED TO THE ROOF FRAMING USING THE ROCK-IT SYSTEM BY ECOFASTEN. THE MOUNTING FEET ARE TO BE SPACED AS SHOWN IN THE DETAILS, AND MUST BE STAGGERED TO ADJACENT FRAMING MEMBERS TO SPREAD OUT THE ADDITIONAL LOAD.
b. UNLESS NOTED OTHERWISE, MOUNTING ANCHORS SHALL BE 5/16" LAG SCREWS WITH A MINIMUM OF 2½" PENETRATION INTO ROOF FRAMING.
c. THE PROPOSED PV SYSTEM ADDS 2.6 psf TO THE ROOF FRAMING SYSTEM.
d. ROOF LIVE LOAD = 20 psf TYPICAL, 0 psf UNDER NEW PV SYSTEM.
e. GROUND SNOW LOAD = 30 psf
f. WIND SPEED = 115 mph
g. EXPOSURE CATEGORY = B

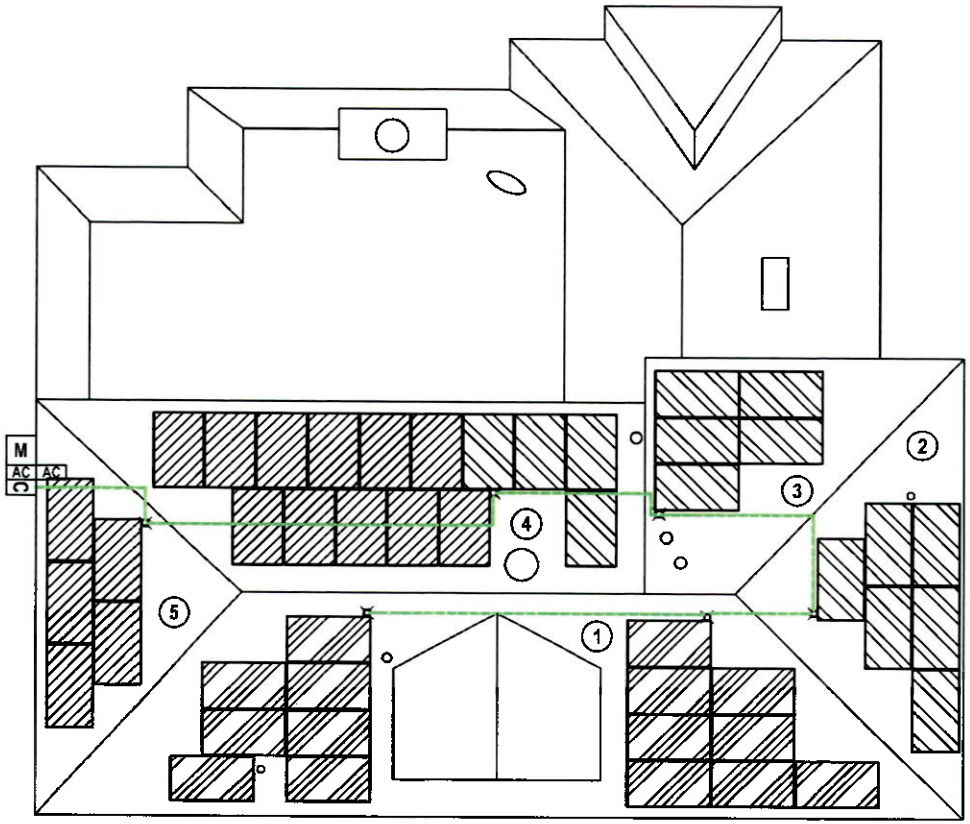
PHOTOVOLTAIC SYSTEM SPECIFICATIONS:

SYSTEM SIZE - 14.490kW DC | 10.580kW AC
MODULE TYPE & AMOUNT - (46) LG LG315N1K-V5
MODULE DIMENSIONS - (L/W/H) 66.38"/ 40.08"/ 1.57"
INVERTER - (46) Enphase Energy IQ6-60-2-US
INTERCONNECTION METHOD - SUPPLY TAP

vivint.Solar
1800 ASHTON BLVD. LEHI, UT, 84043
1.877.404.4129
MD LICENSE: HIC-130385
ME.11692

HASHIM RESIDENCE
25 OXFORD ST
CHEVY CHASE, MD, 20815-4230
UTILITY ACCOUNT #: 5502 4452 496

SERVICE #: S-0217175	COVER SHEET
REGIONAL OPERATING CENTER: MD-01	
DATE: 10/8/2019	
DRAWN BY: DIN	



PV CIRCUIT(S):

- #1, 16 MODULES
- #2, 15 MODULES
- #3, 15 MODULES

ROOF SECTION(S):

1. SLOPE - 23
   AZIMUTH - 180
   MATERIAL - COMPOSITION SHINGLE
2. SLOPE - 22
   AZIMUTH - 90
   MATERIAL - COMPOSITION SHINGLE
3. SLOPE - 18
   AZIMUTH - 0
   MATERIAL - COMPOSITION SHINGLE
4. SLOPE - 23
   AZIMUTH - 0
   MATERIAL - COMPOSITION SHINGLE
5. SLOPE - 22
   AZIMUTH - 270
   MATERIAL - COMPOSITION SHINGLE

25 OXFORD ST

FRONT OF HOUSE.

SITE PLAN

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

SYSTEM LEGEND

PV SYSTEM SIZE:

NEW 14.490kW DC | 10.580kW AC

M — EXISTING INTERIOR MAIN SERVICE PANEL & POINT OF INTERCONNECTION, TIED TO UTILITY METER #MYA108697335.

AC — NEW PV SYSTEM AC DISCONNECT(RSD). LOCATED WITHIN 10' OF MSP.

C — NEW DEDICATED PV SYSTEM COMBINER PANEL.

46 NEW LG LG315A1K-V5 MODULES
NEW ENPHASE ENERGY IQ6-60-2-US INVERTERS, MOUNTED ON THE BACK OF EACH MODULE.

NEW PV CONDUIT RUN *SEE EE1.0 CONDUIT SCHEDULE*
= EXTERIOR RUN = ATTIC RUN

NEW JUNCTION BOX, (MOUNTED WITH SOLADECK

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 52248 EXPIRATION DATE 6-30-2020

STATE OF MARYLAND · MATTHEW WA... · 52248 · PROFESSIONAL ENGINEER

ENGINEER 10/11/2019 DATE

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1.877.404.4129

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25 OXFORD ST
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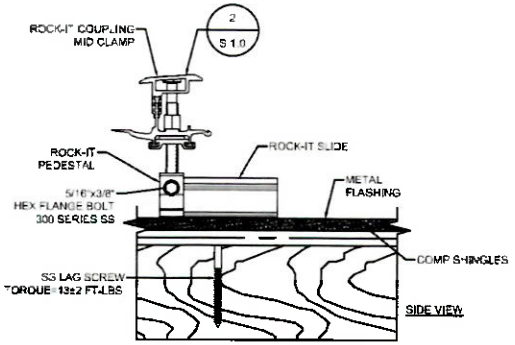
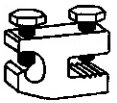
UTILITY ACCOUNT # 5502 4452 496

SERVICE #: S-5217175
REGIONAL OPERATING CENTER: MD-01
DATE: 10/7/2019
DRAWN BY: DN

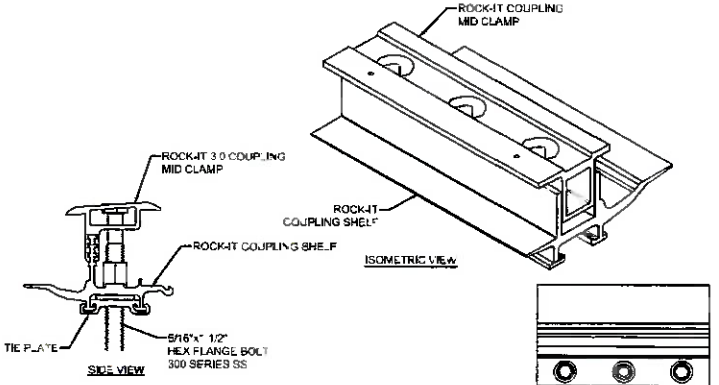
PV 1.0



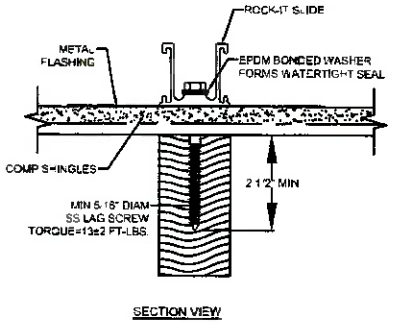
1 S 1.0 ROCK-IT MOUNT DETAIL
NOT TO SCALE



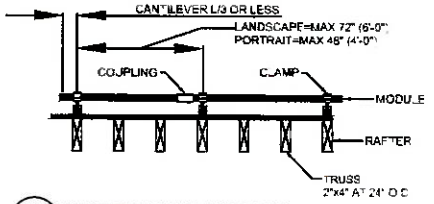
8 S 1.0 ILSCO SGB-4 GROUNDING LUGS
NOT TO SCALE
LISTING FOR ECOFASTEN ZEP
WEIGHT: 2.3lb



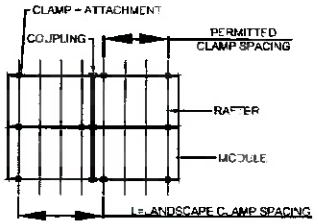
2 S 1.0 ROCK-IT COUPLING ASSEMBLY
NOT TO SCALE



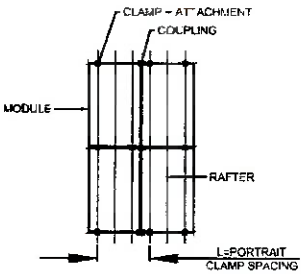
3 S 1.0 SECTION VIEW
NOT TO SCALE



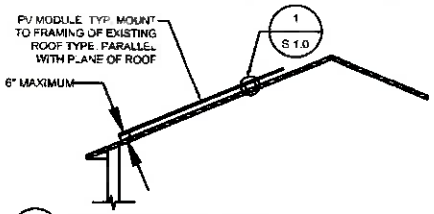
4 S 1.0 PV SYSTEM MOUNTING DETAIL
NOT TO SCALE



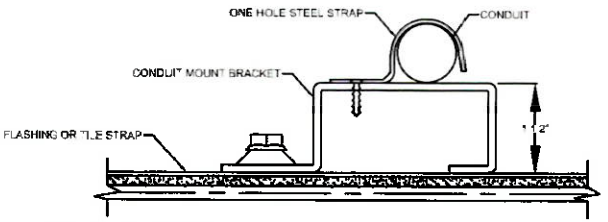
5 S 1.0 MODULES IN PORTRAIT/LANDSCAPE
NOT TO SCALE



3" MIN AND 6" MAX BETWEEN TOP OF ROOF AND BOTTOM OF MODULE



6 S 1.0 PV ARRAY TYP. ELEVATION
NOT TO SCALE



7 S 1.0 CONDUIT MOUNTING DETAIL
NOT TO SCALE

MOUNT DETAILS

SCALE: NOT TO SCALE

MOUNTING LEGEND

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STATE OF MARYLAND · MATTHEW W. [illegible] · 52248 · PROFESSIONAL ENGINEER

ENGINEER 10/11/2019 DATE

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HASHIM RESIDENCE
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CHEVY CHASE, MD 20815-4230
UTILITY ACCOUNT #: 5502 4452 496

SERVICE # S-6217175
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DATE: 10/8/2019
DRAWN BY: DIN

S 1.0

ROOF SECTION(S):

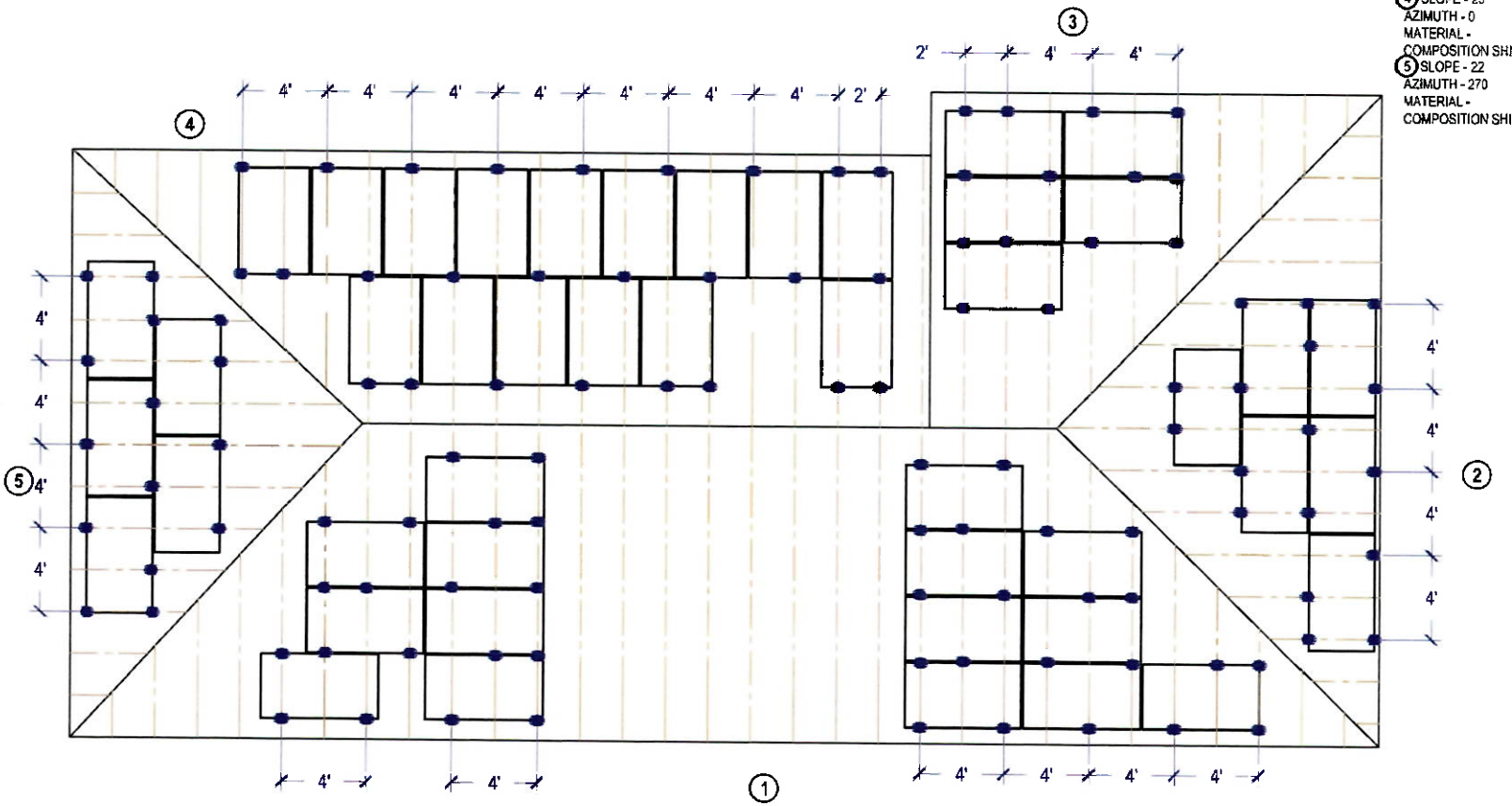
1 SLOPE - 23
AZIMUTH - 180
MATERIAL - COMPOSITION SHINGLE

2 SLOPE - 22
AZIMUTH - 90
MATERIAL - COMPOSITION SHINGLE

3 SLOPE - 18
AZIMUTH - 0
MATERIAL - COMPOSITION SHINGLE

4 SLOPE - 23
AZIMUTH - 0
MATERIAL - COMPOSITION SHINGLE

5 SLOPE - 22
AZIMUTH - 270
MATERIAL - COMPOSITION SHINGLE



MOUNT DIAGRAM

SCALE: 3/16" = 1'-0"

MOUNTING LEGEND

RAFTER =

MOUNTING FEET =

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STATE OF MARYLAND · MATTHEW WALKER · 52248 · PROFESSIONAL ENGINEER

ENGINEER 10/11/2019 DATE

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UTILITY ACCOUNT # 5502 4452 496

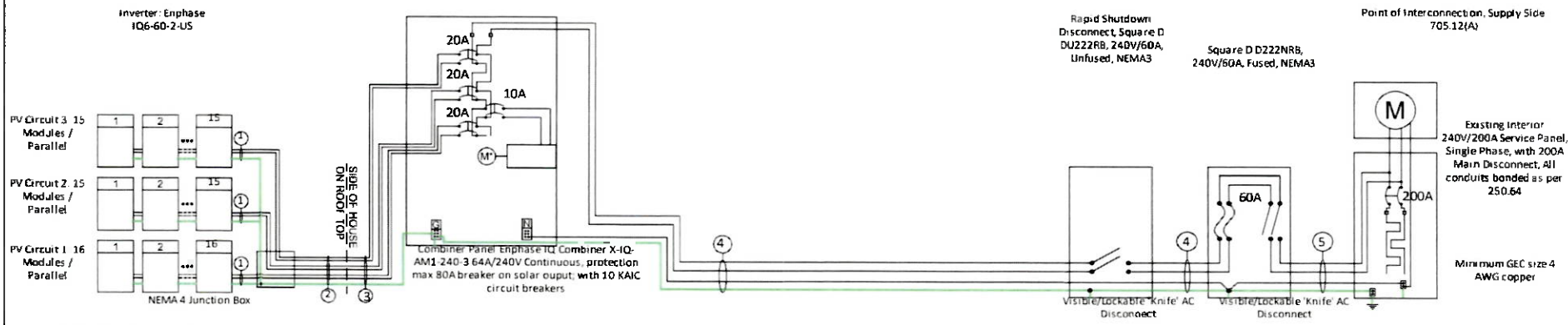
SERVICE # S-6217175
REGIONAL OPERATING CENTER MD-01
DATE 10/8/2019
DRAWN BY DIN

S 1.1

Photovoltaic System	
DC System Size (Watts)	14490
AC System Size (Watts)	10580
Total Module Count	46

Conduit Conductor Schedule (Unless Otherwise Specified Conductors Shall be Copper)

Tag	Description	Wire Gauge	# of Conductors/Color	Conduit Type	Conduit Size
1	Inverter Output(Enphase Q Cable)	12 AWG	3(L1, L2, G)	Free Air	N/A
1	EGC (Bare Copper Ground)	6 AWG	1 BARE	Free Air	N/A
2	Inverter Output (THWN-2)	10 AWG	6(3L1, 3L2)	FMC	3/4"
2	EGC (THWN-2)	12 AWG	1(GRN)	FMC	3/4"
3	Inverter Output (THWN-2)	10 AWG	6(3L1, 3L2)	EMT	3/4"
3	EGC (THWN-2)	12 AWG	1(GRN)	EMT	3/4"
4	Inverter Output (THWN-2)	6 AWG	3(L1, L2, N) B/R/W	EMT	3/4"
4	EGC (THWN-2)	10 AWG	1(GRN)	EMT	3/4"
5	Service Feeder (THWN-2)	6 AWG	3(L1, L2, N) B/R/W	EMT	3/4"
5	GEC (THWN-2)	8 AWG	1(GRN)	EMT	3/4"



Jafar Hashim Residence
25 OXFORD ST
Chevy Chase, MD 20815
Utility Account:5502 4452 496

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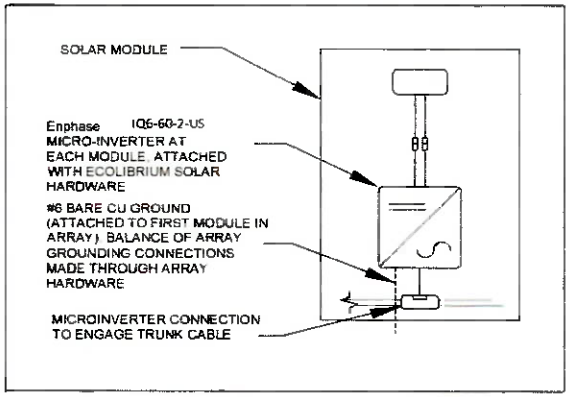
Created: 10/11/19

INSTALLER: VIVINT SOLAR
INSTALLER NUMBER: 1.877.404.4129
MD LICENSE: 11692
621175

SHEET NAME: 3-Line Drawing

SHEET NUMBER E. 1



PV Module Rating @ STC		
Module Make/Model	LG LG315N1K-V5	
Max. Power-Point Current (Imp)	9.58	Amps
Max. Power-Point Voltage (Vmp)	32.9	Volts
Open-Circuit Voltage (Voc)	40.7	Volts
Short-Circuit Current (Isc)	10.15	Amps
Max. Series Fuse (OCPD)	20	Amps
Nom. Max. Power at STC (Pmax)	315	Watts
Max. System Voltage	1000(UL/IEC)	
Voc Temperature Coefficient	-0.27	%/C

AC Output Current According to art. 690.8(B)(1)	44.16	Amps
Nominal AC Voltage	240	Volts
THIS PANEL IS FED BY MULTIPLE SOURCES (UTILITY AND SOLAR)		

Rooftop conductor ampacities designed in compliance with art. 690 8, Tables 310.15(B)(2)(a), 310 15(B)(3)(a), 310.15(B)(3)(c), 310.15(B)(16), Chapter 9 Table 4, 5, & 9. Location specific temperature obtained from ASHRAE 2017 data tables.

ASHRAE 2017 - RONALD REAGAN WASHINGTON NATL
Highest Monthly 2% D.B. Design Temp.: 35.3 °C
Lowest Min. Mean Extreme D.B.: -14.5 °C

Inverter Make/Model	Enphase IQ6-60-2-US	
Max. Dc Volt Rating	48	Volts
Max. Power at 40 C	230	Watts
Nominal AC Voltage	240	Volts
Max. AC Current	0.96	Amps
Max. OCPD Rating	20	Amps
Max. Panels/Circuit	16	
Short Circuit Current	15	Amps

Conductor Calculations

Wire gauge calculated from code art. 310.15(B)(16) with ambient temperature calculations from art. 310.15(B)(2)(a).
For "On Roof" conductors we use the 90°C column ampacity, 0.5"-3.5" off-the-roof temperature adjustment from 310 15(B)(3)(c), and raceway fill adjustments from 310.15(B)(16). Conduit shall be installed at least 1" above the roof deck
For "Off Roof" conductors we use the 75°C column ampacity, or the 90°C column ampacity with the relevant ambient temperature and raceway fill adjustments, whichever is less.
The rating of the conductor after adjustments MUST be greater than, or equal to, the continuous duty uprated output current.
Calculation Example - Wire Rating (90°C) x Ambient Temperature Adjustment x Conduit Fill Adjustment >= Continuous Duty Output Current
(Tag 2 Attic):
Inverter Output: 10 AWG rated 40 A, 40 A x 0.71 x 0.8 = 22.72 A >= 19.2 A
(Tag 3 On Roof):
Inverter Output: 10 AWG rated 40 A, 40 A x 0.71 x 0.8 = 22.72 A >= 19.2 A
(Tag 4 Off Roof):
Inverter Output: 6 AWG rated 65 A, 65 A >= 55.2 A
(Tag 5 Off Roof):
Service Feeder: 6 AWG rated 65 A, 65 A >= 60 A

OCPD Calculations

Breakers sized according to continuous duty output current. Pv circuit nominal current based off # of modules per Circuit X (1.25[art. 690.8(A)]) X (0.96 Max AC current per micro-inverter)
Circuit #1 = 16 modules, Output Current w/ continuous duty = 19.2 <= 20A Breaker
Circuit #2 = 15 modules, Output Current w/ continuous duty = 18 <= 20A Breaker
Circuit #3 = 15 modules, Output Current w/ continuous duty = 18 <= 20A Breaker
system output current w/ continuous duty = 55.2 <= 60A (System OCPD)

Other Notes

- Designed according to and all code citations are relevant to the 2014 National Electrical Code.
- All interior raceways carrying DC current shall be metallic

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25 OXFORD ST
Chevy Chase, MD 20815
Utility Account: 5502 4452 496

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SHEET NAME: Notes Page

SHEET NUMBER: E. 2

Conduit, Raceways, and J Boxes (Labeled Every 10') Per 690.31(G)(3) & (4)

WARNING: PHOTOVOLTAIC POWER SOURCE

Interactive System Point of Interconnection Per 690.54

PHOTOVOLTAIC AC POWER SOURCE
RATED AC OUTPUT CURRENT: 44.16 A
NOM. OPERATING AC VOLTAGE: 240 V

PV System Disconnects Per 690.13(B)

PV SYSTEM DISCONNECT

All Disconnecting Means Per 690.13(B) & 690.15(D)

WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION

Power Source Output Connection, Adjacent to Back-fed Breaker Per 705.12

WARNING
POWER SOURCE OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

Rapid Shutdown Switch Per 690.56(C)(3)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

Plaques and Directories at the Service Equipment (MSP) and the Location of All System Disconnects Per 690.56(B) & 705.10

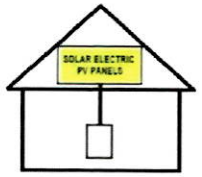
CAUTION:
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNETS LOCATED AS SHOWN

AT:
METER AND MAIN SERVICE
AC DISCONNECT
DC DISCONNECT
INVERTER

PV With Rapid Shutdown, Installed Within 3 ft of the Service Disconnecting Means Per 690.56(C)(1)(a)

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY



ALL STICKERS DESCRIBED HEREIN SHALL BE MADE OF WEATHERPROOF ADHESIVE. THEY SHALL BE REFLECTIVE, THEY SHALL CONTAIN NO SMALLER THAN 3/8" WHITE ARIAL FONT TEXT, AND HAVE A RED BACKGROUND, UNLESS OTHERWISE DEPICTED OR DESCRIBED.
ALL PLACARDS SHALL BE WEATHER-RESISTANT, PERMANENTLY ETCHED PLACARDS. HANDWRITTEN SIGNS WILL NOT BE ACCEPTABLE.

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SHEET NAME: Warning Labels Page

SHEET NUMBER: E. 3

1. MAIN BREAKER DE-RATED TO *** DUE TO SOLAR CIRCUITS
MAX OF ***AMPS PV SOURCE ALLOWED
DO NOT INCREASE MAIN BREAKER RATING
Property of Vivint Solar

2. WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
Property of Vivint Solar

3. PV SYSTEM DISCONNECT
Property of Vivint Solar

4. PHOTOVOLTAIC AC POWER SOURCE
RATED AC OUTPUT CURRENT: *** A
NOM. OPERATING AC VOLTAGE: *** V
Property of Vivint Solar

5. WARNING: PHOTOVOLTAIC POWER SOURCE
Property of Vivint Solar

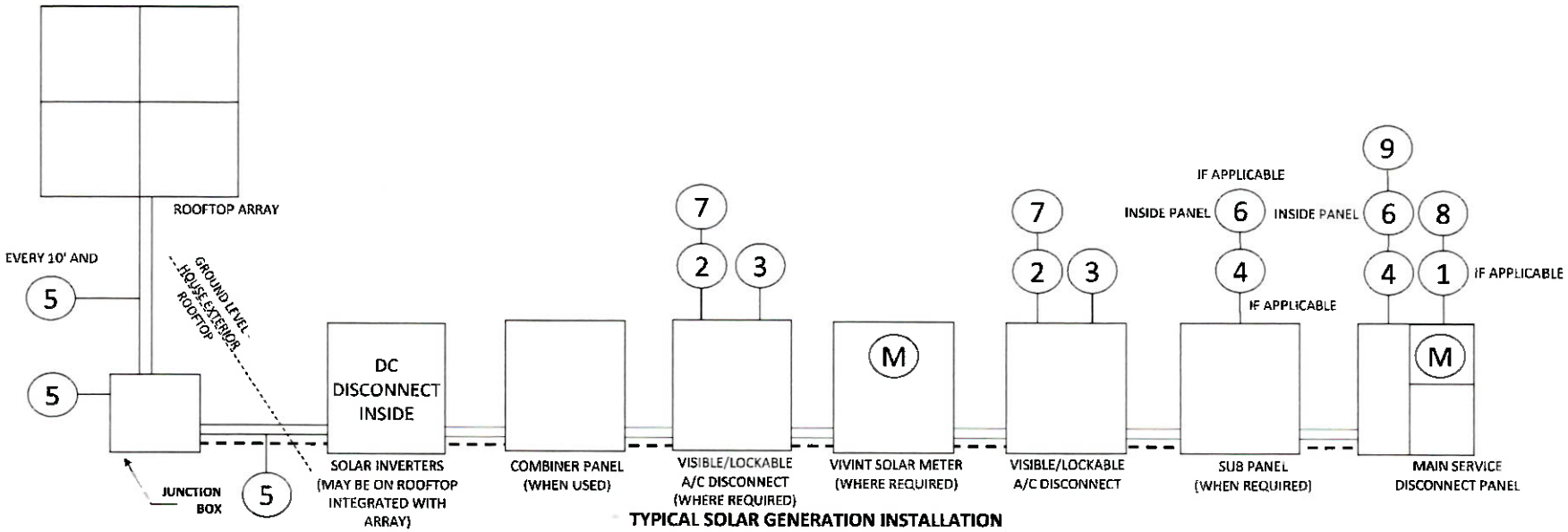
6. WARNING
POWER SOURCE OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE
Property of Vivint Solar

7. RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM
Property of Vivint Solar

8. SITE PLAN PLACARD SHOWING ADDITIONAL POWER SOURCE AND DISCONNECT LOCATIONS. PLACARD SHALL BE MOUNTED ON EXTERIOR OF ELECTRICAL PANEL
Property of Vivint Solar

9. PV rapid shutdown label required by 690.56(C)(1) indicated on E.3

*** - value calculated for each account. for specific value see the previous warning label page



TYPICAL SOLAR GENERATION INSTALLATION
(NOT ALL DEVICES ARE REQUIRED IN EVERY JURISDICTION)

ALL STICKERS DESCRIBED HEREIN SHALL BE MADE OF WEATHERPROOF ADHESIVE, THEY SHALL BE REFLECTIVE, THEY SHALL CONTAIN NO SMALLER THAN 3/8" WHITE ARIAL FONT TEXT, AND HAVE A RED BACKGROUND, UNLESS OTHERWISE DEPICTED OR DESCRIBED. ALL PLACARDS SHALL BE WEATHER-RESISTANT. PERMANENTLY ETCHED PLACARDS. HANDWRITTEN SIGNS WILL NOT BE ACCEPTABLE.

THESE PLACARDS SHALL BE PLACED ON ALL INTERIOR AND EXTERIOR DIRECT-CURRENT (DC) CONDUIT, ENCLOSURES, RACE-WAYS, CABLE ASSEMBLIES, JUNCTION BOXES COMBINER BOXES, AND DISCONNECTS TO ALERT THE FIRE SERVICE TO AVOID CUTTING THEM. MARKINGS SHALL BE PLACED ON ALL DC CONDUIT EVERY 10 FT (3048 MM), ABOVE AND BELOW PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS OR BARRIERS.

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SHEET NAME: Warning Labels Page

SHEET NUMBER: E. 4

LG NeON®2 Black

60

LG315N1K-V5

315W

The LG NeON® 2 is LG's best selling solar module, and is one of the most powerful and versatile modules on the market today. Featuring LG's Cello Technology, the LG NeON® 2 increases power output. New updates include an extended performance warranty from 86% to 90.08% to give customers higher performance and reliability.

Intertek

APPROVED PRODUCT

25 YEAR
PARTS • PERFORMANCE • LABOR
WARRANTY

Made in USA
From Imported Parts

Features

Enhanced Performance Warranty

LG NeON® 2 Black has an enhanced performance warranty. After 25 years, LG NeON® 2 Black is guaranteed at least 90.08% of initial performance.

Enhanced Product Warranty

LG has extended the warranty of the NeON® 2 Black to 25 years including labor, which is top level in the industry.

Better Performance on a Sunny Day

LG NeON® 2 Black now performs better on sunny days, thanks to its improved temperature coefficient.

Roof Aesthetics

LG NeON® 2 Black has been designed with aesthetics in mind using thinner wires that appear all black at a distance. LG NeON® 2 Black can increase the value of a property with its modern design.

When you go solar, ask for the brand you can trust: LG Solar

About LG Electronics

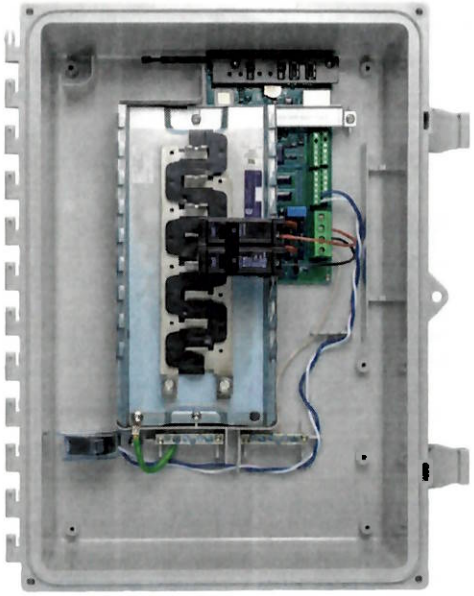
LG Electronics is a global leader in electronic products in the clean energy markets by offering solar PV panels and energy storage systems. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first MonoX® series to the market, which is now available in 32 countries. The NeON® (previous MonoX® NeON), NeON®2, NeON®2 BiFacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG's leadership and innovation in the solar industry.

LG Solar

Enphase IQ Combiner 3

(X-IQ-AM1-240-3)

The **Enphase IQ Combiner 3™** with Enphase IQ Envoy™ consolidates interconnection equipment into a single enclosure and streamlines PV and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.



Smart

- Includes IQ Envoy for communication and control
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and optional consumption monitoring

Simple

- Reduced size from previous combiner
- Centered mounting brackets support single stud mounting
- Supports back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year warranty
- UL listed

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

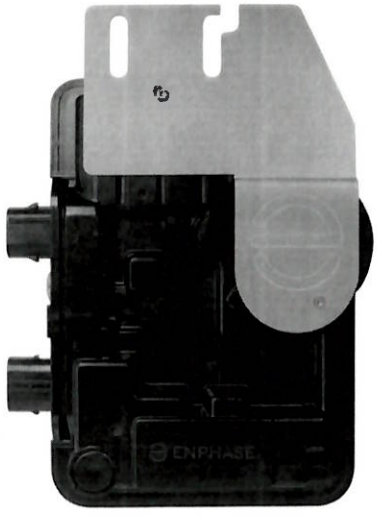
ENPHASE

Enphase IQ 6 and IQ 6+ Microinverters

The high-powered smart grid-ready **Enphase IQ 6 Micro™** and **Enphase IQ 6+ Micro™** dramatically simplify the installation process while achieving the highest efficiency for module-level power electronics.

Part of the Enphase IQ System, the IQ 6 and IQ 6+ Micro integrate seamlessly with the Enphase IQ Envoy™, Enphase Q Aggregator™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

The IQ 6 and IQ 6+ Micro extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.



Easy to Install

- Lightweight and simple
- Faster installation with improved two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell and 72-cell* modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with fixed power factor, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)

* The IQ 6+ Micro is required to support 72-cell modules

UL CERTIFIED SAFETY US CA E341165

To learn more about Enphase offerings, visit **enphase.com**

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