

VILLAGE OF IRVINGTON

BUILDING DEPARTMENT

85 MAIN STREET

IRVINGTON, NEW YORK 10533

TEL: (914) 591-8335 • FAX: (914) 591-5870



PHOTOVOLTAIC (PV SOLAR) RESIDENTIAL SYSTEMS PERMIT APPLICATION CHECK LIST

Revised June 7, 2017

It is suggested that all applicants applying for a permit read and understand the manufacture installation instructions prior to applying for a building permit and attached ARB guide lines and Village code for Solar Energy Equipment.

REQUIREMENTS TO APPLY FOR A PHOTOVOLTAIC (PV SOLAR) SYSTEM PERMIT

- ✓ 1) Apply on line at www.irvingtonny.gov for a mechanical permit, under building permits and along with your application, submit to the building department the following;
- ✓ 2) Owners phone number and email address entered in the online permit application
- ✓ 3) Evidence of Workers Compensation Insurance (on a C-105 or equivalent)
- ✓ 4) Evidence of Liability Insurance naming the Village of Irvington additional insured
- ✓ 5) A copy of the contractors Westchester County Department of Consumer Protection License
- ✓ 6) Pursuant to 9-12-A. provide evidence of notice to adjacent properties owners not less than 10 days prior to the meeting (see attached code section for more details)
- ✓ 7) Submit permit fee: (all fees must be paid at time of submission)
 - \$85 application fee
 - \$200 for systems up to 5 kilowatts
 - ✓ — \$450 for systems above 5 kilowatts and less than 10 kilowatts
 - \$700 for systems above 10 kilowatts and less than 20 kilowatts
 - \$700 plus \$250 per additional 10 kilowatts above 20 for systems above 20 kilowatts
 - \$75 Certificate of Completion inspection and fee
- ✓ 8) An affidavit from a NYS licensed professional detailing and certifying that the existing structure meets or exceeds the minimum load requirement's as per TABLE R301.2(1) for wind and load before and after installation of the proposed equipment or the proposed upgrades to the existing structure to accomplish the aforesaid.
- ✓ 9) Drawings (signed and sealed by a NYS licensed professional) of the roof plan showing the following criteria;
 - a. ✓ Showing all proposed PV panels on all proposed roof surfaces.
 - b. ✓ Showing all equipment on all elevations including
 - c. ✓ Show / list all roof connectors and flashing details
 - d. ✓ Show compliance with section R902.4 (fire classification in accordance with UL1703 and 3' from any lot line)
 - e. ✓ Show compliance with sections R324.3.1 through R324.7.2.5 and NFPA 70 (installation)
 - f. ✓ Show compliance with section R324.7 (access and pathways) (see attachment)
 - g. ✓ Show compliance with section R324.7.2.1-6. (roof access points) (see attachment)
 - h. ✓ Show compliance with section R324.7.3 (ground access areas) (see attachment)
 - i. ✓ Show compliance with section R324.7.4 (single ridge roofs *when applicable*) (see attachment)
 - j. ✓ Show compliance with section R324.7.5 (hip roofs *when applicable*) (see attachment)
 - k. ✓ Show compliance with section R324.7.6 (roof with valleys *when applicable*) (see attachment)
 - l. ✓ Show compliance with section R324.7.7 (allowance for smoke ventilation operations) (see attachment)
 - m. ✓ Show a Fire Department AC disconnect, located outside by the Utility meter on all systems.
- ✓ 10) Provide a drawing or manufactures cut sheets of array mounting hardware and interconnection diagram and specifications.
- ✓ 11) Provide a drawing or manufactures cut sheets of the unit mount and roof penetration's flashing system.
- ✓ 12) 3 wire diagram showing all proposed equipment as governed by the National Electrical Code (NEC)
- ✓ 13) Provide a diagram showing all proposed labels and labeling locations including; Solar AC Disconnect, Inverter Output, Connection Warning, Dual Power Source Warning, Solar AC Combiner Panel, Solar PV Circuits Only, Solar Production meter. (see attachment)
- ✓ 14) Provide snow guards on panels where snow has the potential of sliding of the panel into a neighbor's property
- ✓ 15) Pictures of dwelling showing photo shopped arrays on the structure.
- ✓ 16) Provide a drawing or photo shop picture of all proposed equipment on all effected elevations (including FD emergency disconnect switch)
- ✓ 17) A Fire Department AC disconnect, located outside by the Utility meter on all systems.

VILLAGE OF IRVINGTON

BUILDING DEPARTMENT

85 MAIN STREET

IRVINGTON, NEW YORK 10533

TEL: (914) 591-8335 • FAX: (914) 591-5870



- 18) Separate Electrical Permit application by a Westchester County Department of Licensing, licensed Electrician with required insurances and the appropriate fee (must be filed by the licensed contractor, see village application for further details).
- 19) Submit signed check list with submission and appropriate building permit fee.
- 20) Applicant has provided seven copies of the entire submittal for Architectural Review Board approval.

Applicant Affidavit:

Applicants Name: Jay Philipi
Applicants Address: 116 Main St 10533

Applicants Phone # 914-260-2483
Applicants Email J.philipi@eileenfisher.com

Applicant Name: Brandon Hall Signature: [Signature] Date: 8/1/22 By signing this affidavit I attest to have read the attached Solar Energy Equipment Code and the Solar Equipment Guidelines manufactures installation instructions and that all information asked for above has been submitted and that the submitted information is correct.

General Contractor Affidavit:

Contractors Name: Rivertown Solar
Contractors Address: 64 Main St

Contractors Phone # 914-591-0100
Contractors Email info@rivertown.solar.com

General Contractor Name: Brandon Hall Signature: [Signature] Date: 8/1/22 By signing this affidavit I attest to being the general contractor of record for this application and will be responsible for oversight and direct supervision of same, and will maintain a valid Westchester County Department of Consumer Protection License, a valid for Workers Compensation Policy and a General Liability Policy listing the Village of Irvington as Certificate Holder and additional insured with no conditions until such time I apply for and receive a Certificate of Completion.

Electrical Contractor Affidavit:

Electrical Contractors Name: Consolidated Hudson Elec
Electrical Contractors Address: 64 Main St

Electrical Contractors Phone # 591-0100
Electrical Contractors Email info@consolidatedelectric.com

Electrical Contractor Name: Brandon Hall Signature: [Signature] Date: 8/1/22 By signing this affidavit I attest to being the electrical contractor of record for this application and will be responsible for oversight and direct supervision of same, and will maintain a valid Westchester County Electrical License, a valid for Workers Compensation Policy and a General Liability Policy listing the Village of Irvington as Certificate Holder and additional insured with no conditions until such time I apply for and receive a Certificate of Completion.

Note: Applications for all exterior elevation changes including photovoltaic solar systems are required to apply for, make a presentation in front of, and receive approval from the Village of Irvington Architectural Review Board (ARB) prior to issuance of a building permit. The ARB meetings are the second and fourth Mondays of the month, with a deadline for submissions one week prior to the meetings (see village web site for confirmation of meetings). Seven sets of copies of the entire application are required to be submitted at the deadline with appropriate fee at the time of submission.

Note: The following list above is given to assist in the application process. It is not intended to be a replacement for the Building or Zoning Code, County or State Regulations, or Consolidate Edison Requirements. Unique and Special projects may require additional information.

***Hours of Construction: Monday-Friday 7AM-7PM; Saturday 9AM-5PM; Sunday and holiday's construction is prohibited**
***Only completed applications will be accepted with attached insurance certificates and County license**

NOTICE OF APPLICATION AND HEARING

Board of Architectural Review

Clerk's Office

Village of Irvington

Westchester County, New York

CERTIFIED MAIL

Date of Mailing 7/20/22

NOTICE:

Pursuant to 9-12 of the code of the Village of Irvington notice to adjacent neighbors (as defined below) is required 10 days prior a meeting where an application for Solar Panels to the Village of Irvington Architectural Board is asking to be heard.

Date of Meeting: 8/22/22
Time of Meeting: Meeting starts at 8pm
Location of Meeting: Trustees Meeting Room
85 Main St. Irvington, NY 10533

Applicant Name	<u>JAY PHILIPPI</u>	Owners Name	<u>EILEEN FISHER</u>
Applicant Mailing Address	<u>116 MAIN ST</u> <u>10533</u>	Owner Mailing Address	<u>SAME --</u> <u>--</u>
Applicant Phone Number	<u>914-260-2483</u>	Owners Phone Number	
Applicant Email Address	<u>J.philippi@eileenfisher.com</u>	Owners Email Address	

Address of Proposed Solar Panels:

Street Address 116 Main St
10533

To Adjacent Neighbors of: 23 S Main St LLC
S Aqueduct Ln Irvington NY

Please take notice that the applicant named above is requesting the Board of Architectural Review of the Village of Irvington to grant a permit for the installation of **Solar Energy Equipment** to the address listed above.

Plans of the proposed work are available in the office of the Irvington Building Department for public inspection during regular business hours 5 days prior to the scheduled meeting.

9-12. Solar Energy Equipment.

For any application for a building permit for solar energy equipment, written notice of the application and the date, time and place of the meeting at which it will be considered must be given to all adjacent property* owners not less than 10 days prior to the meeting date. Notice shall be by a method of mail or a delivery service company providing proof of mailing or delivery or by personal service of such notice on the property owners, evidenced by their signature as acknowledgment of receipt of such notice on a form supplied or similar to one supplied by the Village Clerk. Proof of service of the notice shall be filed prior to or at the meeting at which the application is considered.
("Adjacent property" refers to any neighbor that shares a property line with the subject property as well as neighbors across any street from the subject property.)

NOTICE OF APPLICATION AND HEARING

Board of Architectural Review

Clerk's Office

Village of Irvington

Westchester County, New York

CERTIFIED MAIL

Date of Mailing 7/20/22

NOTICE:

Pursuant to 9-12 of the code of the Village of Irvington notice to adjacent neighbors (as defined below) is required 10 days prior a meeting where an application for Solar Panels to the Village of Irvington Architectural Board is asking to be heard.

Date of Meeting: 8/22/22
Time of Meeting: Meeting starts at 8pm
Location of Meeting: Trustees Meeting Room
85 Main St. Irvington, NY 10533

Applicant Name	<u>JAY PHILIPPI</u>	Owners Name	<u>EILEEN FISHER</u>
Applicant Mailing Address	<u>116 MAIN ST</u> <u>10533</u>	Owner Mailing Address	<u>SAME --</u> <u>--</u>
Applicant Phone Number	<u>914-260-2483</u>	Owners Phone Number	
Applicant Email Address	<u>J.philippi@eileenfisher.com</u>	Owners Email Address	

Address of Proposed Solar Panels:

Street Address 116 Main St
10533

To Adjacent Neighbors of: 23 S Main St LLC
S Aqueduct Ln Irvington NY

Please take notice that the applicant named above is requesting the Board of Architectural Review of the Village of Irvington to grant a permit for the installation of **Solar Energy Equipment** to the address listed above.

Plans of the proposed work are available in the office of the Irvington Building Department for public inspection during regular business hours 5 days prior to the scheduled meeting.

9-12. Solar Energy Equipment.

For any application for a building permit for solar energy equipment, written notice of the application and the date, time and place of the meeting at which it will be considered must be given to all adjacent property* owners not less than 10 days prior to the meeting date. Notice shall be by a method of mail or a delivery service company providing proof of mailing or delivery or by personal service of such notice on the property owners, evidenced by their signature as acknowledgment of receipt of such notice on a form supplied or similar to one supplied by the Village Clerk. Proof of service of the notice shall be filed prior to or at the meeting at which the application is considered.
("Adjacent property" refers to any neighbor that shares a property line with the subject property as well as neighbors across any street from the subject property.)

NOTICE OF APPLICATION AND HEARING

Board of Architectural Review

Clerk's Office

Village of Irvington

Westchester County, New York

CERTIFIED MAIL

Date of Mailing 7/20/22

NOTICE:

Pursuant to 9-12 of the code of the Village of Irvington notice to adjacent neighbors (as defined below) is required 10 days prior a meeting where an application for Solar Panels to the Village of Irvington Architectural Board is asking to be heard.

Date of Meeting:

8/22/22

Time of Meeting:

Meeting starts at 8pm

Location of Meeting:

Trustees Meeting Room

85 Main St. Irvington, NY 10533

Applicant Name

Applicant Mailing Address

JAY PHILIPPI

116 MAIN ST

10533

Applicant Phone Number

914-260-2483

Applicant Email Address

jphilippi@eileenfisher.com

Owners Name

Owner Mailing Address

EILEEN FISHER

SAME "

"

Owners Phone Number

Owners Email Address

Address of Proposed Solar Panels:

Street Address

116 Main St

10533

To Adjacent Neighbors of: 35 Elm Park LLC

35 S Dearman St Irvington NY

Please take notice that the applicant named above is requesting the Board of Architectural Review of the Village of Irvington to grant a permit for the installation of **Solar Energy Equipment** to the address listed above.

Plans of the proposed work are available in the office of the Irvington Building Department for public inspection during regular business hours 5 days prior to the scheduled meeting.

9-12. Solar Energy Equipment.

For any application for a building permit for solar energy equipment, written notice of the application and the date, time and place of the meeting at which it will be considered must be given to all adjacent property* owners not less than 10 days prior to the meeting date. Notice shall be by a method of mail or a delivery service company providing proof of mailing or delivery or by personal service of such notice on the property owners, evidenced by their signature as acknowledgment of receipt of such notice on a form supplied or similar to one supplied by the Village Clerk. Proof of service of the notice shall be filed prior to or at the meeting at which the application is considered. ("Adjacent property" refers to any neighbor that shares a property line with the subject property as well as neighbors across any street from the subject property.)

NOTICE OF APPLICATION AND HEARING

Board of Architectural Review

Clerk's Office

Village of Irvington

Westchester County, New York

CERTIFIED MAIL

Date of Mailing 7/20/22

NOTICE:

Pursuant to 9-12 of the code of the Village of Irvington notice to adjacent neighbors (as defined below) is required 10 days prior a meeting where an application for Solar Panels to the Village of Irvington Architectural Board is asking to be heard.

Date of Meeting:

8/22/22

Time of Meeting:

Meeting starts at 8pm

Location of Meeting:

Trustees Meeting Room

85 Main St. Irvington, NY 10533

Applicant Name

Applicant Mailing Address

JAY PHILIPPI
116 MAIN ST
10533

Owners Name

Owner Mailing Address

EILEEN FISHER

SAME "

Applicant Phone Number

914-260-2483

Owners Phone Number

Applicant Email Address

philippi@eileenfisher.com

Owners Email Address

Address of Proposed Solar Panels:

Street Address

116 Main St
10533

To Adjacent Neighbors of:

215 Main St LLC
S Aqueduct Ln Irvington NY

Please take notice that the applicant named above is requesting the Board of Architectural Review of the Village of Irvington to grant a permit for the installation of Solar Energy Equipment to the address listed above.

Plans of the proposed work are available in the office of the Irvington Building Department for public inspection during regular business hours 5 days prior to the scheduled meeting.

9-12. Solar Energy Equipment.

For any application for a building permit for solar energy equipment, written notice of the application and the date, time and place of the meeting at which it will be considered must be given to all adjacent property* owners not less than 10 days prior to the meeting date. Notice shall be by a method of mail or a delivery service company providing proof of mailing or delivery or by personal service of such notice on the property owners, evidenced by their signature as acknowledgment of receipt of such notice on a form supplied or similar to one supplied by the Village Clerk. Proof of service of the notice shall be filed prior to or at the meeting at which the application is considered. ("Adjacent property" refers to any neighbor that shares a property line with the subject property as well as neighbors across any street from the subject property.)

7021 2720 0001 8231 9733

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To 35 Elm Park LLC

Street and Apt. No., or PO Box No.

35 S Dearman St

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9726

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To 235 Main St

Street and Apt. No., or PO Box No.

S Aqueduct Ln

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9757

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To Bowling SCYLD

Street and Apt. No., or PO Box No.

120 Main St

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9740

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To 235 Main St LLC

Street and Apt. No., or PO Box No.

S Aqueduct Ln

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9771

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To 235 Main St LLC

Street and Apt. No., or PO Box No.

Main St

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9764

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Irvington, NY 10533

Certified Mail Fee \$4.00

Extra Services & Fees (check box, add fee as appropriate)

☐ Return Receipt (hardcopy) \$0.00

☐ Return Receipt (electronic) \$0.00

☐ Certified Mail Restricted Delivery \$0.00

☐ Adult Signature Required \$0.00

☐ Adult Signature Restricted Delivery \$0.00

Postage \$0.60

Total Postage and Fees \$4.60

Sent To Thomas Sabatino

Street and Apt. No., or PO Box No.

10 S Dearman St

City, State, ZIP+4® 10533

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 2720 0001 8231 9795

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
Irvington, NY 10533 OFFICIAL USE	
Certified Mail Fee \$4.00 \$ Extra Services & Fees (check box, add fee as appropriate) <input type="checkbox"/> Return Receipt (hardcopy) \$0.00 <input type="checkbox"/> Return Receipt (electronic) \$0.00 <input type="checkbox"/> Certified Mail Restricted Delivery \$0.00 <input type="checkbox"/> Adult Signature Required \$0.00 <input type="checkbox"/> Adult Signature Restricted Delivery \$0.00 Postage \$0.60 Total Postage and Fees \$4.60	0049 18 Postmark Here 
Sent To <u>Lauren Stone</u> Street and Apt. No., or PO Box No. <u>123 MAIN ST</u> City, State, ZIP+4® <u>10533</u>	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

7021 2720 0001 8231 9818

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
Irvington, NY 10533 OFFICIAL USE	
Certified Mail Fee \$4.00 \$ Extra Services & Fees (check box, add fee as appropriate) <input type="checkbox"/> Return Receipt (hardcopy) \$0.00 <input type="checkbox"/> Return Receipt (electronic) \$0.00 <input type="checkbox"/> Certified Mail Restricted Delivery \$0.00 <input type="checkbox"/> Adult Signature Required \$0.00 <input type="checkbox"/> Adult Signature Restricted Delivery \$0.00 Postage \$0.60 Total Postage and Fees \$4.60	0049 18 Postmark Here 
Sent To <u>Steven Nkosis</u> Street and Apt. No., or PO Box No. <u>112 MAIN ST</u> City, State, ZIP+4® <u>10533</u>	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

7021 2720 0001 8231 9788

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
Irvington, NY 10533 OFFICIAL USE	
Certified Mail Fee \$4.00 \$ Extra Services & Fees (check box, add fee as appropriate) <input type="checkbox"/> Return Receipt (hardcopy) \$0.00 <input type="checkbox"/> Return Receipt (electronic) \$0.00 <input type="checkbox"/> Certified Mail Restricted Delivery \$0.00 <input type="checkbox"/> Adult Signature Required \$0.00 <input type="checkbox"/> Adult Signature Restricted Delivery \$0.00 Postage \$0.60 Total Postage and Fees \$4.60	0049 18 Postmark Here 
Sent To <u>113-115 MAIN LEE</u> Street and Apt. No., or PO Box No. <u>115 MAIN ST</u> City, State, ZIP+4® <u>10533</u>	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

7021 2720 0001 8231 9801

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
Irvington, NY 10533 OFFICIAL USE	
Certified Mail Fee \$4.00 \$ Extra Services & Fees (check box, add fee as appropriate) <input type="checkbox"/> Return Receipt (hardcopy) \$0.00 <input type="checkbox"/> Return Receipt (electronic) \$0.00 <input type="checkbox"/> Certified Mail Restricted Delivery \$0.00 <input type="checkbox"/> Adult Signature Required \$0.00 <input type="checkbox"/> Adult Signature Restricted Delivery \$0.00 Postage \$0.60 Total Postage and Fees \$4.60	0049 18 Postmark Here 
Sent To <u>Philip Striano</u> Street and Apt. No., or PO Box No. <u>119 Main St</u> City, State, ZIP+4® <u>10533</u>	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	



Technical Data and Specifications

Standard Lug Capacities

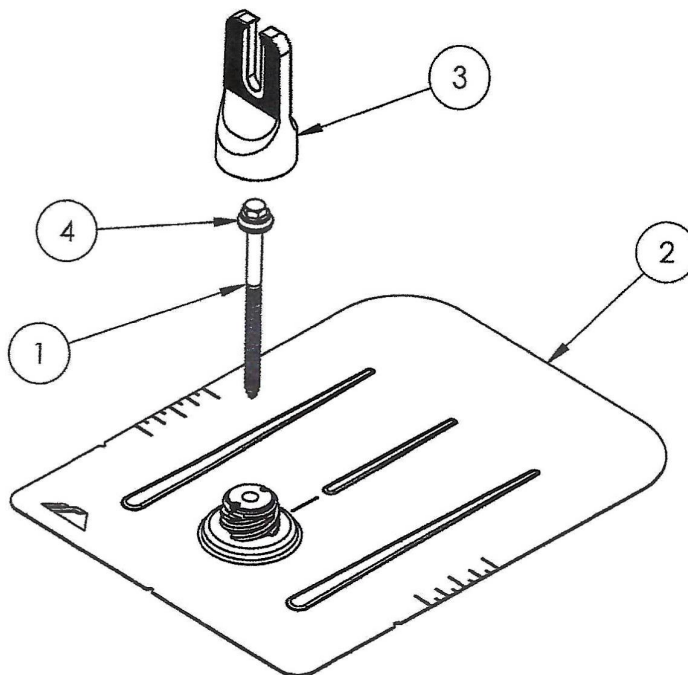
Description	Minimum Wire Size	Maximum Wire Size	Wire Type
30A DP	#14 #12	#10 #10	Cu or ^① Al
30A DG	#14	#6	Cu/Al
30A DH, DT	#14	#2	Cu/Al
60A DG	#14	#1/0	Cu/Al
60A DH, DT	#14	#2	Cu/Al
100A DG ^②	#14	#1/0	Cu/Al
100A DH, DT	#14	#1/0	Cu/Al
200A DG, DT	#6	250 kcmil	Cu/Al
200A DH Type 1 and 3R	#6	250 kcmil	Cu/Al
200A DH Type 4 and 12	#6	300 kcmil	Cu/Al
400A DG, DH, DT	(2) #1/0 (1) #1/0	(2) 300 kcmil (1) 750 kcmil	Cu/Al or ^① Cu/Al
600A DG, DH	(1) #2 (1) #1/0	(1) 600 kcmil (1) 750 kcmil	Cu/Al and ^③ Cu/Al
600A non-fusible DT	(2) #250	(2) 500 kcmil	Cu/Al
800A DH	(4) #1/0	(4) 750 kcmil	Cu/Al
800A DT, 600A fusible DT	(3) #250	(3) 500 kcmil	Cu/Al
1200A DH, DT	(4) #1/0	(4) 750 kcmil	Cu/Al
Copper-Bodied Lugs			
30A Cu	#14	#6	Cu
60A Cu	#14	#4	Cu
100A Cu	#6	#1/0	Cu
200A Cu	#6	250 kcmil	Cu
400A Cu	#1/0	500 kcmil	Cu
600–800A Cu	(2) #1/0	(2) 500 kcmil	Cu

Notes

- ① Single barrel lug that accepts one or two cables per phase as detailed above.
 ② The maximum size aluminum or copper-clad aluminum wire allowable for applications where the conductor enters or leaves the enclosure through the wall opposite its terminal is #1 gauge.
 ③ Double barrel lug that accepts two cables per phase as detailed above.

Although certain lug capacities are larger than required, only minimum wire bending space is provided per the requirements noted in NEC® Tables 373.6 (a) and (b) for respective ampere ratings.

A factory-installed ground lug is supplied in all heavy-duty safety switches.

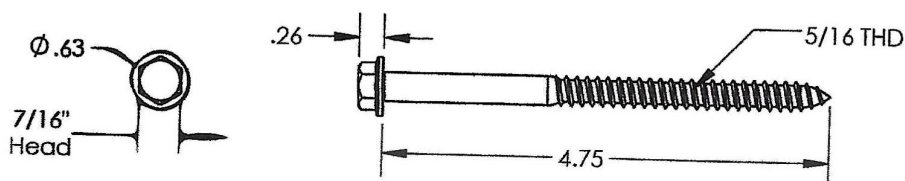


ITEM NO.	DESCRIPTION
1	BOLT LAG 5/16 X 4.75"
2	ASSY, FLASHING
3	ASSY, CAP
4	WASHER, EPDM BACKED

FLASHFOOT 2

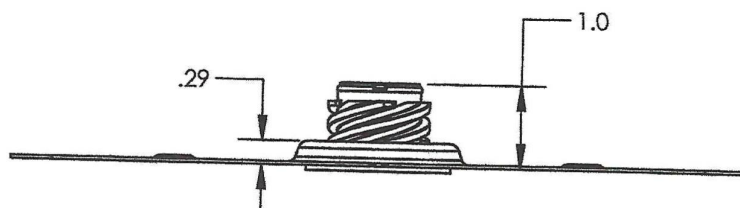
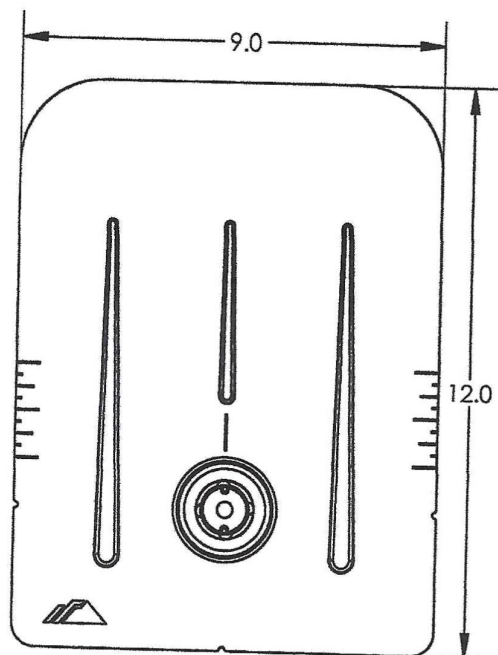
Part Number	Description
FF2-01-M2	FLASHFOOT2, MILL
FF2-01-B2	FLASHFOOT2, BLACK

1) Bolt, Lag 5/16 x 4.75



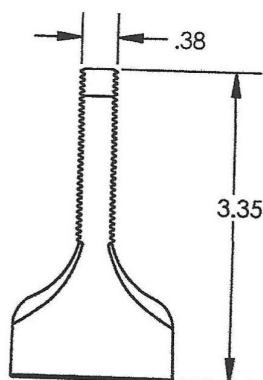
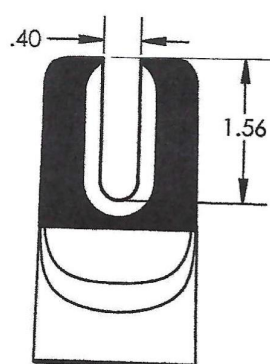
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

2) Assy, Flashing



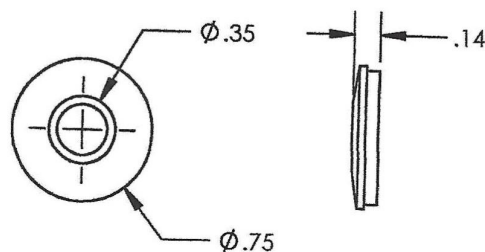
Property	Value
Material	Aluminum
Finish	Mill/Black

3) Assy, Cap



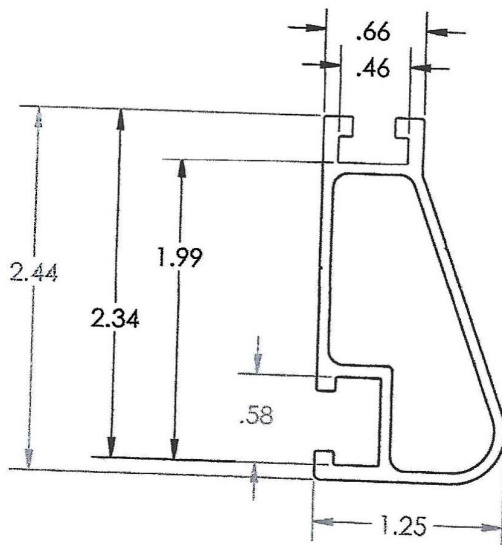
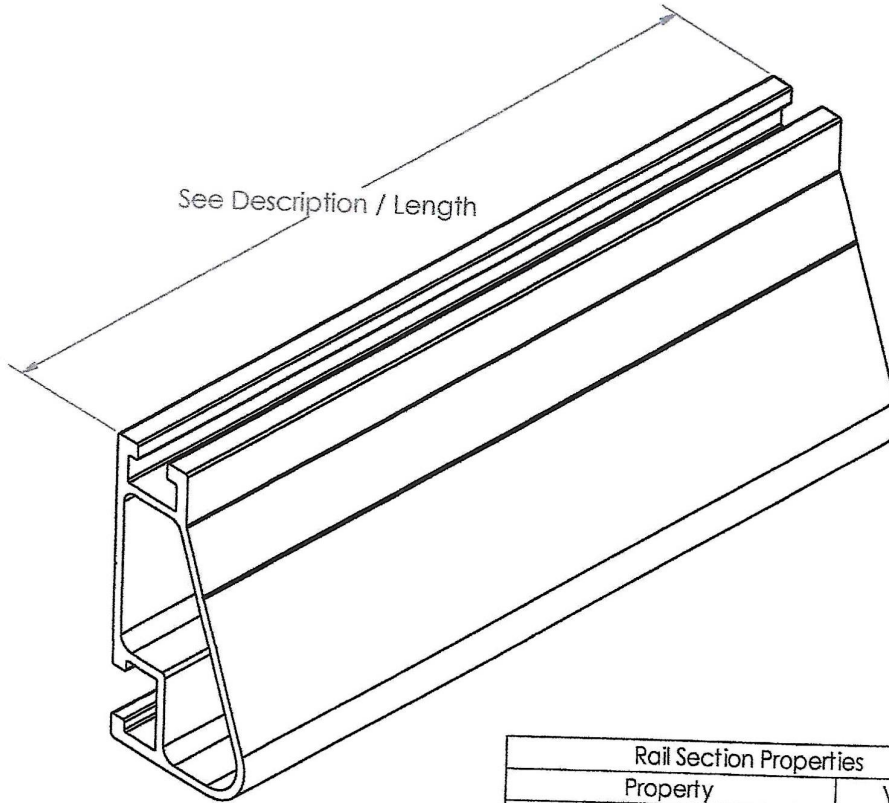
Property	Value
Material	Aluminum
Finish	Mill/Black

4) Washer, EPDM Backed



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

XR100 Rail



Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.582 in ²
Section Modulus (X-axis)	0.297 in ³
Moment of Inertia (X-axis)	0.390 in ⁴
Moment of Inertia (Y-axis)	0.085 in ⁴
Torsional Constant	0.214 in ³
Polar Moment of Inertia	0.126 in ⁴

APPROVED MATERIALS:
6005-T6, 6005A-T61, 6105-T5, 6N01-T6
(34,000 PSI YIELD STRENGTH MINIMUM)

Clear Part Number	Black Part Number	Description / Length	Material	Weight
XR-100-132A	XR-100-132B	XR100, Rail 132" (11 Feet)	6000-Series Aluminum	7.50 lbs.
XR-100-168A	XR-100-168B	XR100, Rail 168" (14 Feet)		9.55 lbs.
XR-100-204A	XR-100-204B	XR100, Rail 204" (17 Feet)		11.60 lbs.

George Latimer
Westchester County Executive



James Maisano
Director, Consumer Protection

Department of Consumer Protection Home Improvement License

RIVERTOWN SOLAR LLC
64 MAIN STREET
IRVINGTON, NY-10533

This license is issued in accordance with Article XVI of the Westchester County Consumer Protection Code and is valid only upon presence of the official department seal. Proof of citizenship or immigration status is not required for issuance of this license.
NOT FOR FEDERAL PURPOSES

License Number
WC-34809-H22



Date of Expiration
01/10/2024

GENERAL NOTES

1.1.1 PROJECT NOTES:

- 1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
- 1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
- 1.1.4 GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE MICROINVERTER IN ACCORDANCE WITH NEC 690.41(B)
- 1.1.5 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4:
PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE
INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519
COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY
- 1.1.6 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
- 1.1.7 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D), SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].
- 1.1.8 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1.2.1 SCOPE OF WORK:

- 1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

1.3.1 WORK INCLUDES:

- 1.3.2 PV ROOF ATTACHMENTS - IRONRIDGE FLASHFOOT2
- 1.3.3 PV RACKING SYSTEM INSTALLATION - IRONRIDGE XR-100
- 1.3.4 PV MODULE AND INVERTER INSTALLATION - LG ELECTRONICS LG380Q1K-A6 / ENPHASE IQ7PLUS-72-2-US
- 1.3.5 PV EQUIPMENT GROUNDING
- 1.3.6 PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
- 1.3.7 PV LOAD CENTERS (IF INCLUDED)
- 1.3.8 PV METERING/MONITORING (IF INCLUDED)
- 1.3.9 PV DISCONNECTS
- 1.3.10 PV GROUNDING ELECTRODE & BONDING TO (E) GEC
- 1.3.11 PV FINAL COMMISSIONING

NEW PV SYSTEM: 11.020 kWp

FISHER RESIDENCE

116 MAIN ST

IRVINGTON, NY 10533

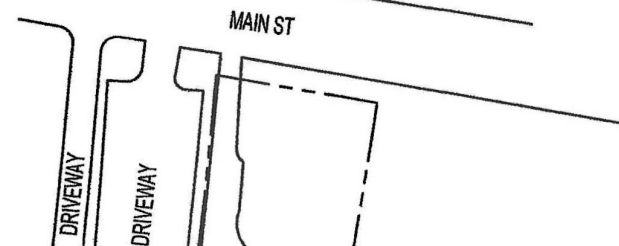
ASSESSOR'S #: 55260098890



01

AERIAL PHOTO

SCALE: NOT TO SCALE



2.1.1 **SITE NOTES:**

2.1.2 A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.

2.1.3 THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH STORAGE BATTERIES.

2.1.4 THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.

2.1.5 PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.

2.1.6 ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.

2.2.1 **EQUIPMENT LOCATIONS:**

2.2.2 ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.

2.2.3 WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C).

2.2.4 JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.

2.2.5 ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.

2.2.6 ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.

2.2.7 ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

2.3.1 **STRUCTURAL NOTES:**

2.3.2 RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAI MANUFACTURER'S INSTRUCTIONS.

2.3.3 JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.

2.3.4 ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.

2.3.5 ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.

2.3.6 WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

2.4.1 **WIRING & CONDUIT NOTES:**

2.4.2 ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING

4.5.1

2.5.2

2.5.3

2.5.4

2.5.5

2.5.6

2.5.7

2.5.8

2.5.9

2.5.10

2.6.1

2.6.2

2.6.3

2.6.4

2.6.5

2.6.6

2.6.7

2.7.1

2.7.2

2.7.3

2.7.4

GROUNDING NOTES:

GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.

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

METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).

EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND MICROINVERTER MANUFACTURERS' INSTRUCTIONS.

EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.

THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.

GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]

THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.

GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.41(B)(1) AND (2) TO REDUCE FIRE HAZARDS

DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:

DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).

DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH

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

ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.

MICROINVERTER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B).

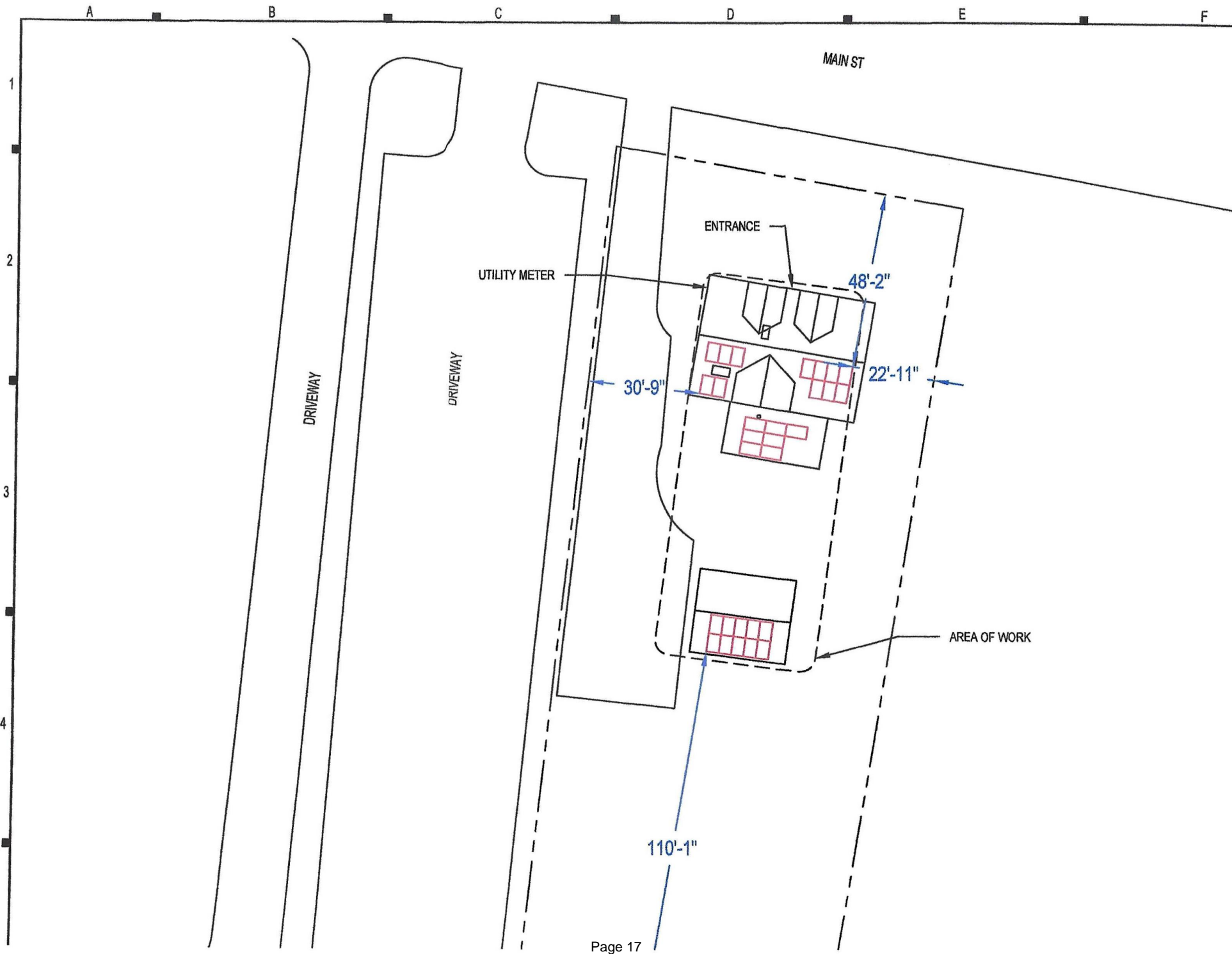
IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

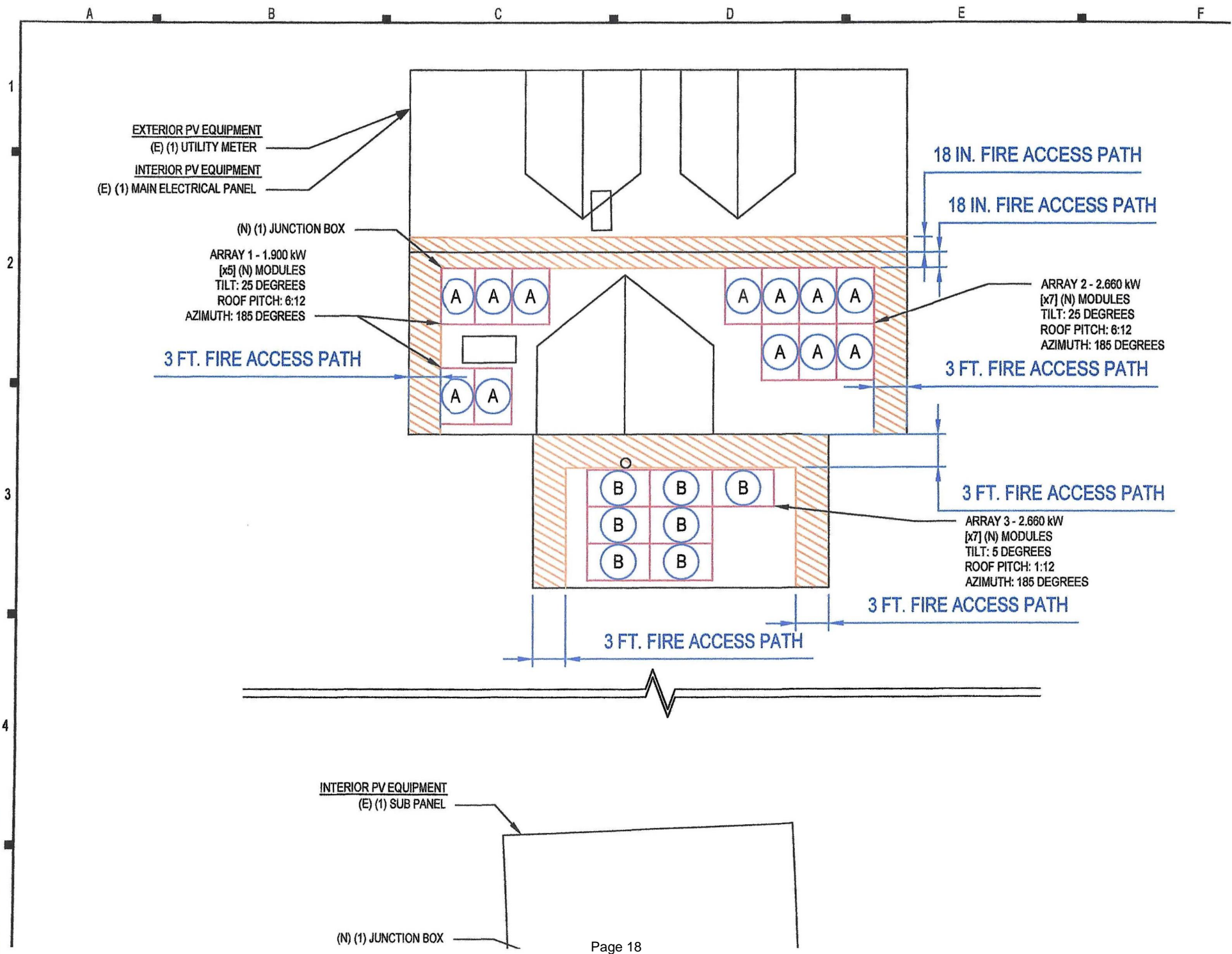
INTERCONNECTION NOTES:

LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 705.12 (B)]

THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(D)(2)(3)].

THE SUM OF 125 PERCENT OF THE POWER SOURCE(S) OUTPUT CIRCUIT CURRENT AND THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE





A

B

C

D

E

F

ROOF MATERIAL IS ASPHALT SHINGLE

FLUSH MOUNT SOLAR MODULES
ATTACHED TO ROOF SURFACE (SEE
SHEET S-501 FOR MOUNTING DETAILS)

10'-3"

13'-8"

6'-10"

ROOF MATERIAL IS ASPHALT

FLUSH MOUNT SOLAR MODUL
ATTACHED TO ROOF SURFACE
SHEET S-501 FOR MOUNTING I

ROOF MATERIAL IS ASPHALT SHINGLE

FLUSH MOUNT SOLAR MODULES
ATTACHED TO ROOF SURFACE (SEE
SHEET S-501 FOR MOUNTING DETAILS)

17'-2"

ROOF MATERIAL IS ASPHALT SHINGLE

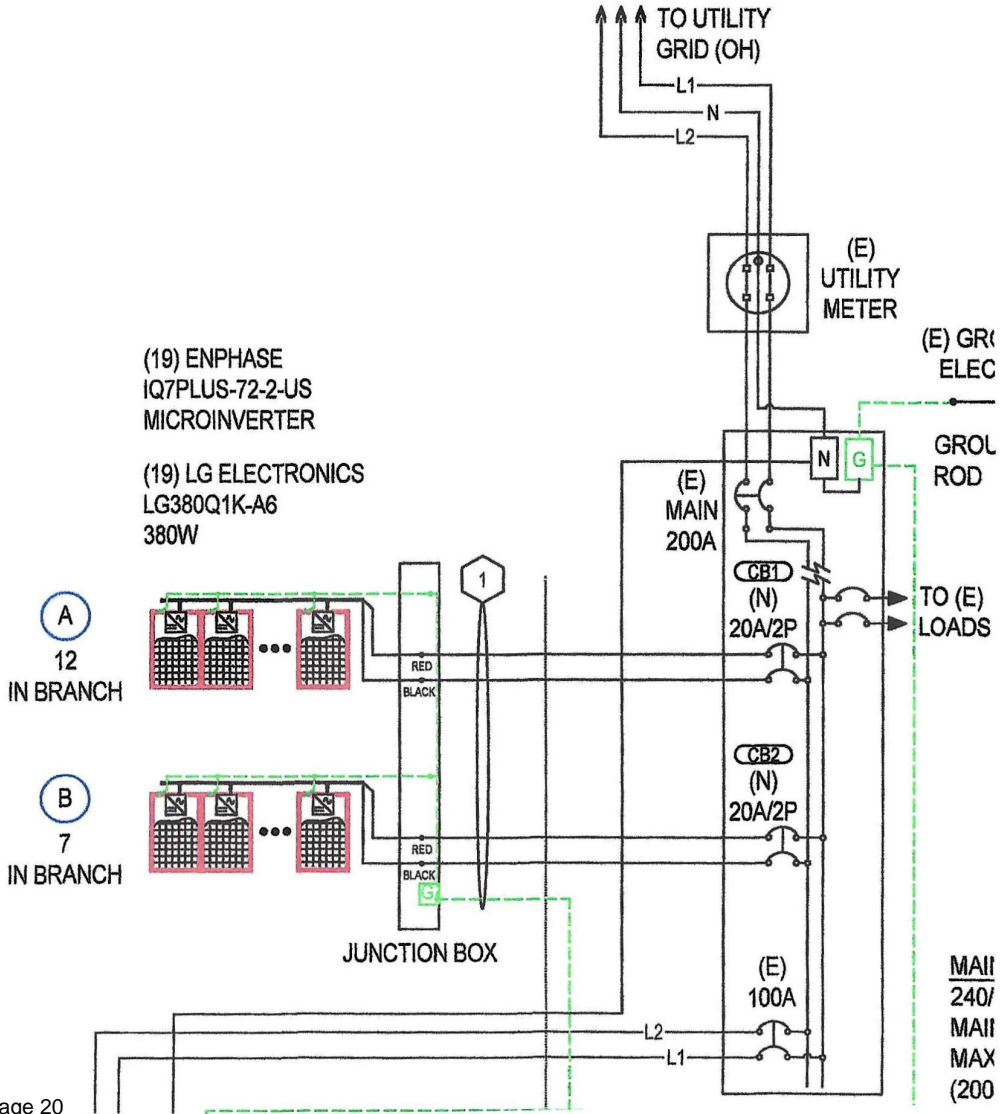
FLUSH MOUNT SOLAR MODULES
ATTACHED TO ROOF SURFACE /SFF

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURI (125%)
1	3	10 AWG THWN-2, COPPER	0.75" DIA EMT	6	20A	10 AWG THWN-2, COPPER	0.96 (32.4 °C)	0.8	12.1A	15.13A

PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN DISCONNECT PER NEC 690.12
SYSTEM COMPLIANT WITH NEC 690.13

- (A) MODULE STRINGING
- (B) MODULE STRINGING
- (C) MODULE STRINGING



SYSTEM SUMMARY

	BRANCH #1	BRANCH #2	BRANCH #3
INVERTERS PER BRANCH	12	7	10
MAX AC CURRENT	14.52A	8.47A	12.1A
MAX AC OUTPUT POWER	3,540W	2,065W	2,950W
ARRAY STC POWER	11,020W		
ARRAY PTC POWER	10,444W		
MAX AC CURRENT	35.09A		
MAX AC POWER	8,555W		
DERATED (CEC) AC POWER	8,555W		

MODULES

REF.	QTY.	MAKE AND MODEL	PMAX	PTC	
PM1-29	29	LG ELECTRONICS LG380Q1K-A6	380W	360.15W	1

INVERTERS

REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OCF RATIO
I1-29	29	ENPHASE IQ7PLUS-72-2-US	240V	FLOATING	20A

ASHRAE EXTREME LOW -19.7°C (-3.5°F), SOURCE: WESTCHESTER CO (41.07°; -73.71°)

ASHRAE 2% HIGH 32.4°C (90.3°F), SOURCE: WESTCHESTER CO (41.07°; -73.71°)

BILL OF MATERIALS

CATEGORY	MAKE	MODEL NUMBER	REF	QTY	UNIT	QTY/UNIT	
MODULE	LG ELECTRONICS	LG380Q1K-A6	PM1-29	29	PIECES	1	LG ELECTRONICS LG380Q1K-A6 380W 120V
INVERTER	ENPHASE	IQ7PLUS-72-2-US	I1-29	29	PIECES	1	ENPHASE IQ7PLUS-72-2-US 290W INVERTER
WIRING		GEN-10-AWG-THWN-2-CU-RD	WR1	10	FEET	1	10 AWG THWN-2, COPPER, RED (LINE 1)
WIRING		GEN-10-AWG-THWN-2-CU-BLK	WR1	10	FEET	1	10 AWG THWN-2, COPPER, BLACK (LINE 2)
WIRING		GEN-10-AWG-THWN-2-CU-WH	WR1	10	FEET	1	10 AWG THWN-2, COPPER, WHITE (NEUTRAL)
WIREWAY	ENPHASE	ET-SPLK-05	EN3	1	BUNDLE	5	ENPHASE ENGAGE (TM) ENGAGE COUPLER
WIREWAY		GEN-EMT-0.5" DIA	WW1	10	FEET	1	EMT CONDUIT, 0.5" DIA
OCPD	GENERIC MANUFACTURER	GEN-CB-20A-240VAC	CB1-3	3	PIECE	1	CIRCUIT BREAKER, 20A, 240VAC
TRANSITION BOX	GENERIC MANUFACTURER	GEN-AWB-TB-4-4X	JB1-2	2	PIECES	1	TRANSITION/PASS-THROUGH BOX, WITH

LABELING NOTES

1.1 LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRICAL CODE,

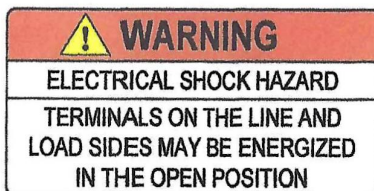
INTERNATIONAL FIRE CODE 605.11, OSHA STANDARD 1910.145, ANSI Z535

1.2 MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

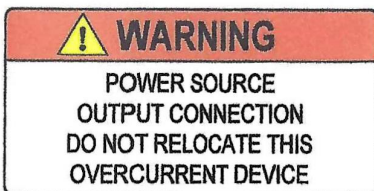
1.3 LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

1.4 LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.

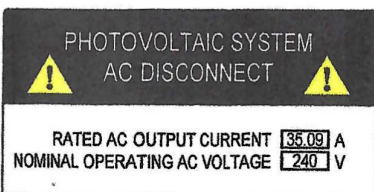
1.5 ALERTING WORDS TO BE COLOR CODED. "DANGER" WILL HAVE RED BACKGROUND; "WARNING" WILL HAVE ORANGE BACKGROUND; "CAUTION" WILL HAVE YELLOW BACKGROUND. [ANSI Z535]



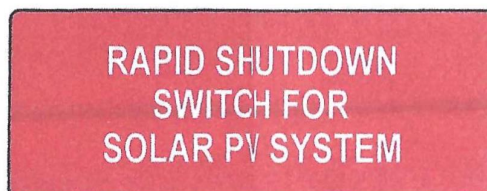
LABEL 1
AT EACH DISCONNECTING MEANS FOR
PHOTOVOLTAIC EQUIPMENT (2" X 4").
[NEC 690.13].



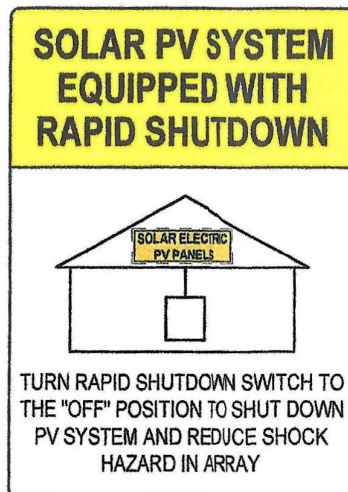
LABEL 2
AT POINT OF INTERCONNECTION
OVERCURRENT DEVICE (2" X 4").
[NEC 705.12(B)(2)(3)(B)].



LABEL 3
AT POINT OF INTERCONNECTION, MARKED
AT DISCONNECTING MEANS (4" X 2").
[NEC 690.54]



LABEL 5
AT RAPID SHUTDOWN DISCONNECT SWITCH (5 1/4" X 2").
[NEC 690.56(C)(3)].



LABEL 6
AT RAPID SHUTDOWN SYSTEM
(3 3/4" X 5 1/4"). [NEC 690.56(C)(1)(A)].

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED
PHOTOVOLTAIC SYSTEM DISCONNECT LOCATED
NORTH SIDE OF THE HOUSE

DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE
DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING
MEANS IF NOT IN THE SAME LOCATION (5 3/4" X 1 1/8").

[NEC 690.56(B)]

WHERE THE PV SYSTEMS ARE REMOTELY LOCATED FROM EACH OTHER, A
DIRECTORY IN ACCORDANCE WITH 705.10 SHALL BE PROVIDED AT EACH PV
SYSTEM DISCONNECTING MEANS.

PV SYSTEM EQUIPMENT AND DISCONNECTING MEANS SHALL NOT BE INSTALLED IN
BATHROOMS

[NEC 690.4(D),(E)]

**WARNING: PHOTOVOLTAIC
POWER SOURCE**

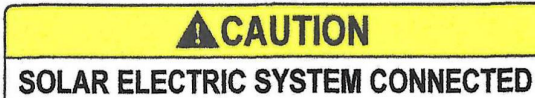
LABEL 9

AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING
METHODS; SPACED AT MAXIMUM 10 FT SECTION OR WHERE
SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS,
OR FLOORS (5 3/4" X 1 1/8").

[NEC 690.31(G)]

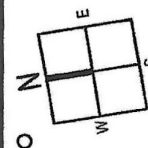
LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND;
REFLECTIVE

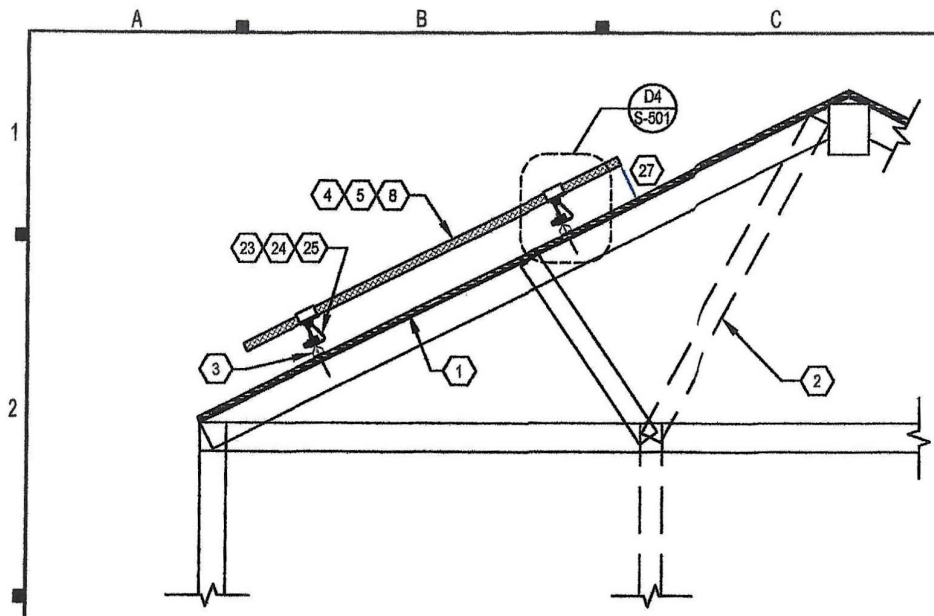
[IFC 605.11.1.1]



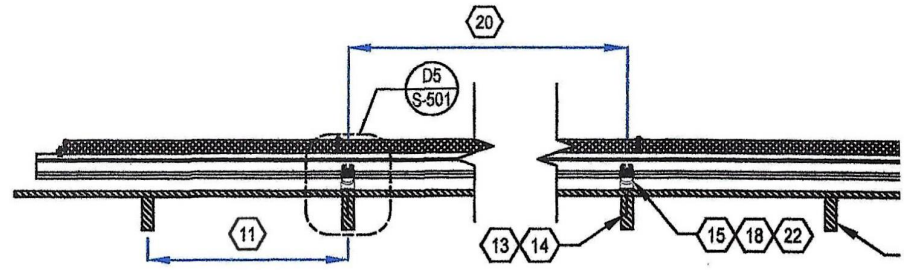
POWER
ROOM

FRONT

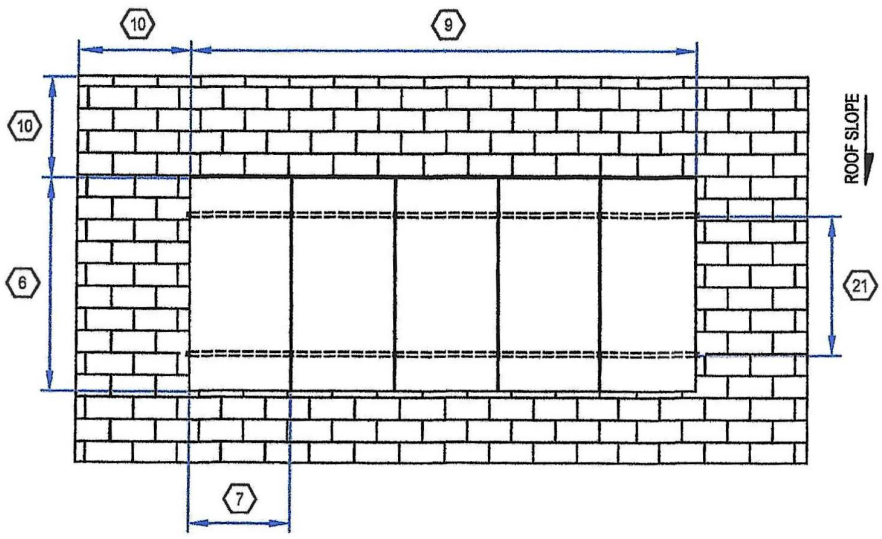




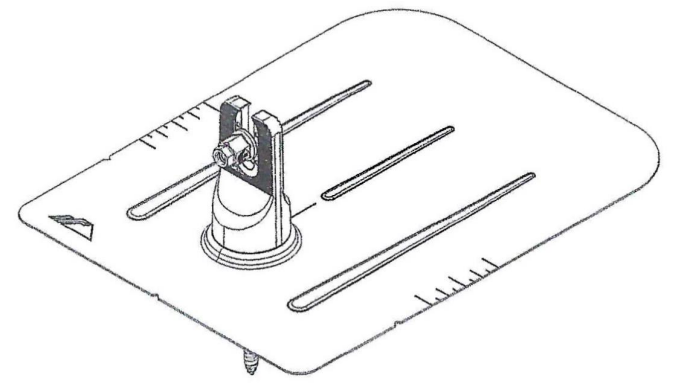
D1 RACKING DETAIL (TRANSVERSE)
SCALE: NOT TO SCALE



D2 RACKING DETAIL (LONGITUDINAL)
SCALE: NOT TO SCALE



D3 RACKING DETAIL (TOP)
SCALE: NOT TO SCALE



D7 FLASHING DETAIL (ISOMETRIC)
SCALE: NOT TO SCALE

NOTE:
1) ARRAY 2: 2 x 4 R/
HORIZONTAL CR

LG NeON[®]R Prime

LG380Q1K-A6 Preliminary

380W

LG Solar's NeON[®]R Prime is a powerful solar module that provides premium performance. The NeON[®]R incorporates a cell structure without electrodes on the front to maximize light utilization and enhance reliability. Providing added value for the customer beyond efficiency, this module features an enhanced warranty, outstanding durability, solid performance in real-world conditions and aesthetic design suitable for roofs.



Features



Roof Aesthetics

LG NeON[®]R has been designed with aesthetics in mind: the lack of any electrodes on the front creates an improved, modern aesthetic.



Enhanced Performance Warranty

LG NeON[®]R has an enhanced performance warranty. After 25 years, LG NeON[®]R is guaranteed at least 92.5% of initial performance.



25-Year Limited Product Warranty

The NeON[®]R covered by a 25-year limited product warranty. In addition, up to \$450 of labor costs will be covered in the rare case that a module needs to be repaired or replaced.



More Generation Per Square Meter

The LG NeON[®]R has been designed to significantly enhance its output, making it efficient even in limited space.

LG NeON[®]R Prime

LG380Q1K-A6

General Data

Cell Properties (Material/Type)	Monocrystalline/N-type
Cell Maker	LG
Cell Configuration	60 Cells (6 x 10)
Module Dimensions (L x W x H)	1,740mm x 1,042mm x 40mm
Weight	18.5 kg
Glass (Material)	Tempered Glass with AR Coating
Backsheet (Color)	Black
Frame (Material)	Anodized Aluminium
Junction Box (Protection Degree)	IP 68 with 3 Bypass Diodes
Cables (Length)	1,250mm x 2EA
Connector (Type/Maker)	MC 4/MC

Certifications and Warranty

Certifications**	IEC 61215-1/-1-1/2:2016, IEC 61730-1/2:2016, UL 61730-1, 2017, UL 61730-2 2017, ISO 9001, ISO 14001, ISO 50001, OHSAS 18001
Salt Mist Corrosion Test	IEC 61701:2012 Seventy 6
Ammonia Corrosion Test	IEC 62716:2013
Module Fire Performance	Type 2 (UL 61730)
Fire Rating	Class C (UL 790, ULC/ORD C 1703)
Product Warranty	25 Years
Output Warranty of Pmax	Linear Warranty*

*Improved: 1st year 98.5%, from 2-24th year: 0.25%/year down, 92.5% at year 25
**In Progress

Temperature Characteristics

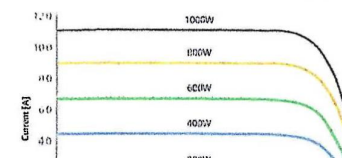
NMOT*	[°C]	44 ± 3
Pmax	[%/°C]	-0.29
Voc	[%/°C]	-0.24
Isc	[%/°C]	0.04

*NMOT (Nominal Module Operating Temperature) Irradiance 800 W/m², Ambient temperature 70°C, Wind speed 1 m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model	LG380Q1K-A6	
Maximum Power (Pmax)	[W]	288
MPP Voltage (Vmpp)	[V]	35.1
MPP Current (Impp)	[A]	8.19
Open Circuit Voltage (Voc)	[V]	41.6
Short Circuit Current (Isc)	[A]	8.75

I-V Curves

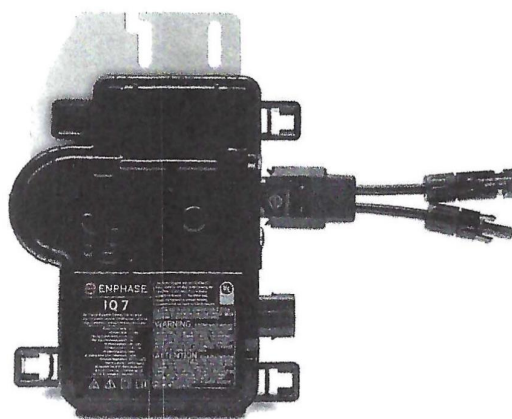


Enphase IQ 7 and IQ 7+ Microinverters

The high-powered smart grid-ready **Enphase IQ 7 Micro™** and **Enphase IQ 7+ Micro™** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters 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, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell/120 half-cell and 72-cell/144 half-cell* modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing

Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US
Commonly used module pairings¹	235 W - 350 W +
Module compatibility	60-cell/120 half-cell only
Maximum input DC voltage	48 V
Peak power tracking voltage	27 V - 37 V
Operating range	16 V - 48 V
Min/Max start voltage	22 V / 48 V
Max DC short circuit current (module Isc)	15 A
Overvoltage class DC port	II
DC port backfeed current	0 A
PV array configuration	1 x 1 ungrounded or AC side protection r

OUTPUT DATA (AC)	IQ 7 Microinverter
Peak output power	250 VA
Maximum continuous output power	240 VA
Nominal (L-L) voltage/range²	240 V / 211-264 V
Maximum continuous output current	1.0 A (240 V)
Nominal frequency	60 Hz
Extended frequency range	47 - 68 Hz
AC short circuit fault current over 3 cycles	5.8 Arms
Maximum units per 20 A (L-L) branch circuit³	16 (240 VAC)
Overvoltage class AC port	III
AC port backfeed current	18 mA
Power factor setting	1.0
Power factor (adjustable)	0.85 leading ... 0.85
EFFICIENCY	@240 V
Peak efficiency	97.6 %
CEC weighted efficiency	97.0 %

MECHANICAL DATA	
Ambient temperature range	-40°C to +65°C
Relative humidity range	4% to 100% (conden
Connector type	MC4 (or Amphenol t
Dimensions (HxWxD)	212 mm x 175 mm x
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection -
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insul
Environmental category / UV exposure rating	NEMA Type 6 / outd

FEATURES	
Communication	Power Line Commur
Monitoring	Enlighten Manager & Both options require
Disconnecting means	The AC and DC conn disconnect required
Compliance	CA Rule 21 (UL 1741 UL 62109-1, UL1741/CAN/CSA-C22.2 NO This product is UL L 2017, and NEC 2020 for AC and DC cond

Enphase IQ Combiner 3 (X-IQ-AM1-240-3)

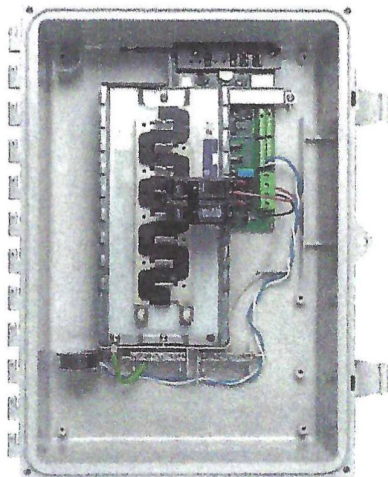
The **Enphase IQ Combiner 3™** with Enphase IQ Envoy™ consolidates interconnection equipment into a single enclosure and streamlines PV and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series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



Enphase IQ Combiner 3

MODEL NUMBER

IQ Combiner 3 X-IQ-AM1-240-3

IQ Combiner 3 with production meter

ACCESSORIES and REPLACEMENT PARTS (not included, order separately)

Enphase Mobile Connect™
CELLMODEM-03 (4G / 12-year data plan)
CELLMODEM-01 (3G / 5-year data plan)
CELLMODEM-M1 (4G based LTE-M / 5-year data plan)

Plug and play in microinverters. (where there is a data plan)

Consumption Monitoring* CT

CT-200-SPLIT

Split core current

Circuit Breakers

BRK-10A-2-240

BRK-15A-2-240

BRK-20A-2P-240

Supports Eaton B
Circuit breaker, 2
Circuit breaker, 2
Circuit breaker, 2

EPLC-01

Power line carrier

XA-PLUG-120-3

Accessory recept

XA-ENV-PCBA-3

Replacement IQ E

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240 VAC, 60
Eaton BR series busbar rating	125 A
Max. continuous current rating (output to grid)	65 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole
Max. continuous current rating (input from PV)	64 A
Max. total branch circuit breaker rating (input)	80A of distributed
Production Metering CT	200 A solid core

MECHANICAL DATA

Dimensions (WxHxD)	49.5 x 37.5 x 16.8
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C
Cooling	Natural convection
Enclosure environmental rating	Outdoor, NRTL-certified
Wire sizes	<ul style="list-style-type: none"> • 20 A to 50 A breaker • 60 A breaker breaker • Main lug combination • Neutral and ground Always follow local code
Altitude	To 2000 meters (6561 ft)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Ethernet	Optional, 802.3, Cat 5e
Cellular	Optional, CELLM1 (not included)

COMPLIANCE

Compliance, Combiner

UL 1741
CAN/CSA C22.2

27.01.2021

QIJW.E341165 - Photovoltaic Rapid Shutdown System Equipment | UL Product iQ

27.01.2021

QIJW.E341165 - Photovoltaic

UL Product iQ™


QIJW.E341165 - Photovoltaic Rapid Shutdown System Equipment

Photovoltaic Rapid Shutdown System Equipment

See General Information for Photovoltaic Rapid Shutdown System Equipment

ENPHASE ENERGY INC

1420 N McDowell Blvd

Petaluma, CA 94954-6515 USA

E341165

Cat. No.
Function
Ratings

Photovoltaic rapid shutdown system equipment		
M190-60, -72	Inverter/AC Attenuator	Input: 16-48VDC Output: 120/208 or 120/240, 190W
M210-84	Inverter/AC Attenuator	Input: 16-48VDC Output: 120/208 or 120/240, 210 W
M215-60	Inverter/AC Attenuator	Input: 16-48VDC Output: 120/208 or 120/240, 215W
M250-60, -72	Inverter/AC Attenuator	Input: 16-48VDC Output: 120/208 or 120/240, 250W
IQ6PLUS-72-X-US*(a)(b) IQ6PLUS-72-ACM*(b)	Inverter/AC Attenuator	Input: 16-62VDC Output: 208 or 240, 280W
IQ6-60-X-US*(a)(b) IQ6-60-ACM-US*(b)	Inverter/AC Attenuator	Input: 16-62VDC Output: 208 or 240, 230W
IQ7-60 (c)	Inverter/AC Attenuator	Input: 27-37VDC Output: 208 or 240, 240W
IQ7PLUS-72 (c)	Inverter/AC Attenuator	Input: 27-45VDC Output: 208 or 240, 290W
IQ7X-96 (c)	Inverter/AC Attenuator	Input: 53-64 VDC Output: 208 or 240, 315W
IQ7XS-96 (c)	Inverter/AC Attenuator	Input: 53-64VDC Output: 208 or 240, 315W
IQ7A, may be f/b S, may be f/b 66 or -72 (c)	Inverter/AC Attenuator	Input: 25-79.5VDC Output: 349W (240V) / 290W (208V)

M175IQ7-208	Inverter/AC Attenuator
M175IQ7-240	Inverter/AC Attenuator
M190IQ7-208	Inverter/AC Attenuator
M190IQ7-240	Inverter/AC Attenuator
M200IQ7-208	Inverter/AC Attenuator
M200IQ7-240	Inverter/AC Attenuator
M210IQ7-208	Inverter/AC Attenuator
M210IQ7-240	Inverter/AC Attenuator
M215IQ7-208	Inverter/AC Attenuator
M215IQ7-240	Inverter/AC Attenuator
M250IQ7-208	Inverter/AC Attenuator
M250IQ7-240	Inverter/AC Attenuator
S230IQ7-208	Inverter/AC Attenuator
S230IQ7-240	Inverter/AC Attenuator
S280IQ7-208	Inverter/AC Attenuator
S280IQ7-240	Inverter/AC Attenuator
IQ6IQ7-US	Inverter/AC Attenuator
IQ6PLUSIQ7-US	Inverter/AC Attenuator



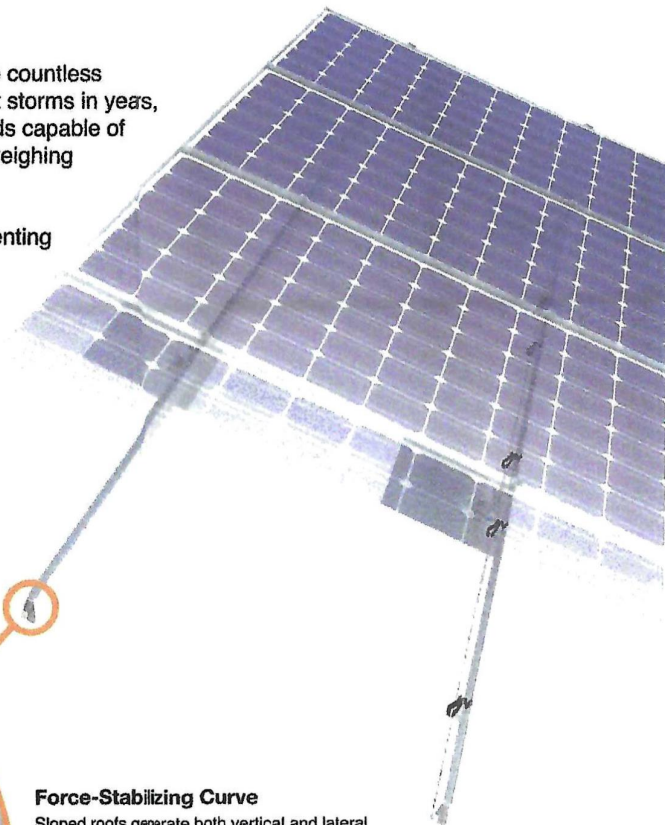
Tech Brief

XR Rail Family

Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

XR Rail Family

The XR Rail Family offers the strength of a curved rail design loads, while minimizing material costs. Depend



XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves 6 foot spans, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear anodized finish
- Internal splices available



XR100

XR100 is the ultimate mounting rail. It resists wind and snow loads while maximizing span

- 8' spanning capability
- Heavy load capability
- Clear & black finish
- Internal splices available

Rail Selection

The following table was prepared in compliance with ASCE 7-10, Roof Zone 3, based on the following criteria: ASCE 7-10, Roof Zone 3, Building Height of 30 ft. Visit IronRidge.com for details.

Load			
Snow (PSF)	Wind (MPH)	4'	5' 4"
None	100	XR10	
	120		
	140		
	160		
10-20	100		
	120		
	140		
	160		
30	100		
	120		



Tech Brief

FlashFoot2

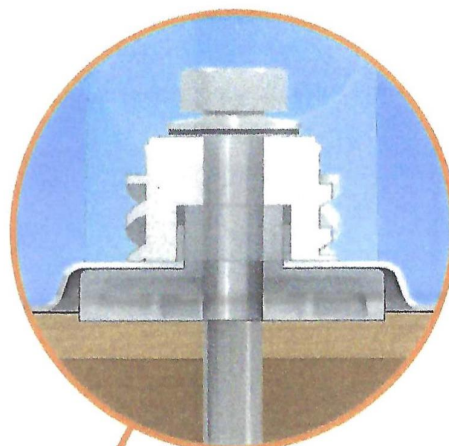
Installation Features

The Strongest Attachment in Solar

IronRidge FlashFoot2 raises the bar in solar roof protection. The unique water seal design is both elevated and encapsulated, delivering redundant layers of protection against water intrusion. In addition, the twist-on Cap perfectly aligns the rail attachment with the lag bolt to maximize mechanical strength.

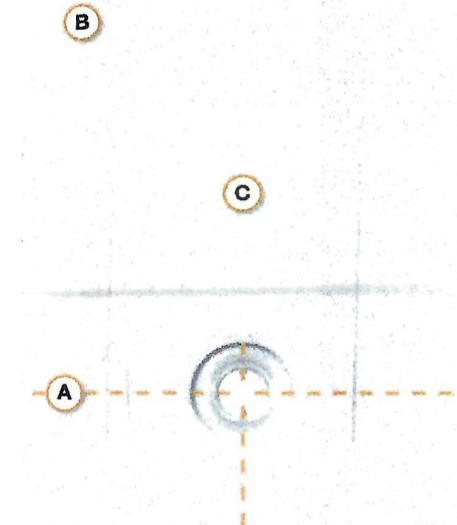
Twist-On Cap

FlashFoot2's unique Cap design encapsulates the lag bolt and locks into place with a simple twist. The Cap helps FlashFoot2 deliver superior structural strength, by aligning the rail and lag bolt in a concentric load path.



Three-Tier Water Seal

FlashFoot2's seal architecture utilizes three layers of protection. An elevated platform diverts water away, while a stack of rugged components raises the seal an entire inch. The seal is then fully-encapsulated by the Cap. FlashFoot2 is the first solar attachment to pass the TAS-100 Wind-Driven Rain Test.



Benefits of Concentric Loading

Traditional solar attachments have a horizontal offset between the rail and lag bolt, which introduces leverage on the lag bolt and decreases uplift capacity.

FlashFoot2 is the only product to align the rail and lag bolt. This concentric loading design results in a stronger attachment for the system.

Testing & Certification

Structural Certification

Designed and Certified for Compliance with the Inter

Uplift Capacity (lbs)

BARUN CORP

June 28, 2022

RE:

CERTIFICATION LETTER

Project Address:

FISHER RESIDENCE
116 MAIN STREET
IRVINGTON, NY 10533

Design Criteria:

- Applicable Codes = 2020 NYSBC, 2020 NYSEBC, 2020 NYSRC, ASCE 7-16 and 2018 NDS
- Risk Category = II
- Wind Speed = 115 mph, Exposure Category C, Partially/Fully Enclosed Method
- Ground Snow Load = 30 psf
- ARRAY 1 & 2: Roof DL = 7 psf, Roof LL/SL = 23 psf (Non-PV), Roof LL/SL = 17.3 psf (PV)
- ARRAY 3: Roof DL = 7 psf, Roof LL/SL = 23 psf (Non-PV), Roof LL/SL = 23.1 psf (PV)
- ARRAY 4: Roof DL = 7 psf, Roof LL/SL = 23 psf (Non-PV), Roof LL/SL = 17.3 psf (PV)

To Whom It May Concern,

A structural evaluation of loading was conducted for the above address based on the design criteria listed above.

Existing roof structural framing has been reviewed for additional loading due to installation of PV Solar System on the roof. The structural review applies to the sections of roof that is directly supporting the solar PV system.

Based on this evaluation, I certify that the alteration to the existing structure by installation of the PV system meets the prescriptive compliance requirements of the applicable existing building and/or new building provisions adopted/referenced above.

Additionally, the PV module assembly including attachment hardware has been reviewed to be in accordance with the manufacturer's specifications and to meet and/or exceed the requirements set forth by the referenced codes.

Installer shall verify existing roof framing (including connection) is in suitable condition and does not exhibit any signs of structural damage or deficiency. For ARRAY 2, the assumed rafter size and spacing of 2 x 4 @ 24" O.C. can span horizontally up to 7.2 ft between bearing supports. Installer verification of the mounting planes noted above is required because some or all of the framing was not observed prior to the structural evaluation performed for this report.

Sincerely,



By Yuri at 11:10:05 AM, 6/28/2022

BARUN CORP

RESULTS SUMMARY

FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533

MOUNTING PLANE STRUCTURAL EVALUATION

MOUNTING PLANE	ROOF PITCH (deg.)	RESULT	GOVERNING ANALYSIS
ARRAY 1 & 2	25°	OK	IEBC IMPACT CHECK
ARRAY 3	5°	OK	MEMBER ANALYSIS
ARRAY 4	25°	OK	IEBC IMPACT CHECK

BARUN CORP	LOAD CALCULATION	
	ARRAY 1 & 2	
	FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533	

PV SYSTEM DEAD LOAD (PV-DL)	
PV Module Weight	= 2.50 psf
Hardware Assembly Weight	= 0.50 psf
Total PV System Dead Load	PV-DL = 3.00 psf

ROOF DEAD LOAD (R-DL)		
Existing Roofing Material Weight	Composite Shingle Roof 1 Layer(s)	= 2.50 psf
Underlayment Weight		= 0.50 psf
Plywood/OSB Sheathing Weight		= 1.50 psf
Framing Weight		= 0.73 psf
No Vaulted Ceiling		= 0.00 psf
Miscellaneous		= 1.50 psf
Total Roof Dead Load		R-DL = 6.70 psf

REDUCED ROOF LIVE LOAD (L _r)	
Roof Live Load	L _o = 20.00 psf
Member Tributary Area	A _t < 200 ft ²
ARRAY 1 & 2 Pitch	25° or 6/12
Tributary Area Reduction Factor	R ₁ = 1.00
Roof Slope Reduction Factor	R ₂ = 0.93
Reduced Roof Live Load, L_r = L_o (R₁) (R₂)	L_r = 18.50 psf

SNOW LOAD	
Ground Snow Load	p _g = 30.00 psf
Effective Roof Slope	25°
Snow Importance Factor	I _s = 1.00
Snow Exposure Factor	C _e = 1.00
Snow Thermal Factor	C _t = 1.10
Minimum Flat Roof Snow Load	p _{f-min} = 20.00 psf
Flat Roof Snow Load	p_f = 23.10 psf

SLOPED ROOF SNOW LOAD ON ROOF (Non-Slippery Surfaces)	
Roof Slope Factor	C _{s-roof} = 1.00
Sloped Roof Snow Load on Roof	p_{s-roof} = 23.10 psf

SLOPED ROOF SNOW LOAD ON PV PANEL (Unobstructed Slippery Surfaces)	
Roof Slope Factor	C _{s-pv} = 0.75
Sloped Roof Snow Load on PV Panel	p_{s-pv} = 17.30 psf

BARUN CORP	IEBC IMPACT CHECK	
	ARRAY 1 & 2	
FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533		

	EXISTING	WITH PV PANEL	
Roof Dead Load (DL) =	6.70	9.70	psf
Roof Live Load (Lr) =	18.50	0.00	psf
Roof Snow Load (SL) =	23.10	17.30	psf

	EXISTING	WITH PV PANEL	
(DL + Lr)/Cd =	20.16	10.78	psf
(DL + SL)/Cd =	25.91	23.48	psf
Maximum Gravity Load =	25.91	23.48	psf

Load Increase (%) =	-9.40%	OK
IEBC Provision :	2020	

The requirements of section 806.2 of the 2020 Existing Building Code of NYS are met and the structure is permitted to remain unaltered.

BARUN CORP**LOAD CALCULATION****ARRAY 3**

FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533

PV SYSTEM DEAD LOAD (PV-DL)

PV Module Weight	= 2.50 psf
Hardware Assembly Weight	= 0.50 psf
Total PV System Dead Load	PV-DL = 3.00 psf

ROOF DEAD LOAD (R-DL)

Existing Roofing Material Weight	Composite Shingle Roof	1 Layer(s)	= 2.50 psf
Underlayment Weight			= 0.50 psf
Plywood/OSB Sheathing Weight			= 1.50 psf
Framing Weight			= 0.73 psf
No Vaulted Ceiling			= 0.00 psf
Miscellaneous			= 1.50 psf
Total Roof Dead Load			R-DL = 6.70 psf

REDUCED ROOF LIVE LOAD (L_r)

Roof Live Load	$L_o = 20.00$ psf
Member Tributary Area	$A_t < 200$ ft ²
ARRAY 3 Pitch	5° or 1/12
Tributary Area Reduction Factor	$R_1 = 1.00$
Roof Slope Reduction Factor	$R_2 = 1.00$
Reduced Roof Live Load, $L_r = L_o (R_1) (R_2)$	$L_r = 20.00$ psf

SNOW LOAD

Ground Snow Load	$p_g = 30.00$ psf
Effective Roof Slope	5°
Snow Importance Factor	$I_s = 1.00$
Snow Exposure Factor	$C_e = 1.00$
Snow Thermal Factor	$C_t = 1.10$
Minimum Flat Roof Snow Load	$p_{f-min} = 20.00$ psf
Flat Roof Snow Load	$p_f = 23.10$ psf

SLOPED ROOF SNOW LOAD ON ROOF (Non-Slippery Surfaces)

Roof Slope Factor	$C_{s-roof} = 1.00$
Sloped Roof Snow Load on Roof	$p_{s-roof} = 23.10$ psf

SLOPED ROOF SNOW LOAD ON PV PANEL (Unobstructed Slippery Surfaces)

Roof Slope Factor	$C_{s-pv} = 1.00$
Sloped Roof Snow Load on PV Panel	$p_{s-pv} = 23.10$ psf

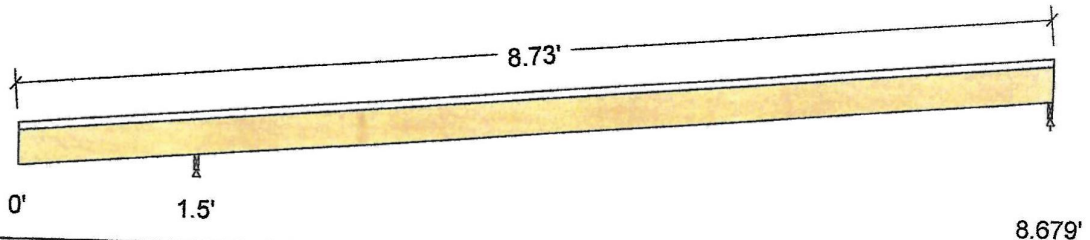


Design Check Calculation Sheet
WoodWorks Sizer 2019 (Update 4)

Loads:

Load	Type	Distribution	Pat- tern	Location [ft]		Magnitude		Unit
				Start	End	Start	End	
ROOF DL1	Dead	Full Area	No			6.70 (24.0")		psf
PV DL1	Dead	Partial Area	No	1.00	8.70	3.00 (24.0")		psf
ROOF & PV SL1	Snow	Full Area	No			23.10 (24.0")		psf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:					
Dead			95		
Snow			242		68
Factored:					160
Total			338		
Bearing:					228
F'theta			427		
Capacity					427
Joist			561		
Support			586		320
Des ratio					586
Joist			0.60		
Support			0.58		0.71
Load comb			#2		0.39
Length			0.50*		#2
Min req'd			0.30		0.50*
Cb			1.75		0.50*
Cb min			1.75		1.00
Cb support			1.25		1.00
Fcp sup			625		1.25
					625

*Minimum bearing length setting used: 1/2" for end supports and 1/2" for interior supports

Lumber n-ply, S-P-F, No.1/No.2, 2x4, 1-ply (1-1/2"x3-1/2")

Supports: 1 - Timber-soft Beam, D.Fir-L No.2; 2 - Lumber n-ply Beam, D.Fir-L No.2;

Roof joist spaced at 24.0" c/c; Total length: 8.75'; Clear span(horz): 1.5', 7.125'; Volume = 0.3 cu.ft.; Pitch: 1/12
Lateral support: top = continuous, bottom = at supports; Repetitive factor: applied where permitted (refer to online help);
This section PASSES the design code check.

Analysis vs. Allowable Stress and Deflection using NDS 2018 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$f_v = 64$	$F_v' = 155$	psi	$f_v/F_v' = 0.41$
Bending(+)	$f_b = 1527$	$F_b' = 1736$	psi	$f_b/F_b' = 0.88$
Bending(-)	$f_b = 266$	$F_b' = 1632$	psi	$f_b/F_b' = 0.16$
Live Defl'n	$0.33 = L/260$	$0.36 = L/240$	in	0.92
Total Defl'n	$0.48 = L/181$	$0.48 = L/180$	in	0.99

ARRAY 2

WoodWorks® Sizer 2019 (Update 4)

Page 2

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	135	1.15	1.00	1.00	-	-	-	-	1.00	1.00	2
Fb'+	875	1.15	1.00	1.00	1.000	1.500	-	1.15	1.00	1.00	2
Fb'-	875	1.15	1.00	1.00	0.940	1.500	-	1.15	1.00	1.00	2
Fcp'	425	-	1.00	1.00	-	-	-	-	1.00	1.00	-
E'	1.4 million	1.00	1.00	1.00	-	-	-	-	1.00	1.00	2
Emin'	0.51 million	1.00	1.00	1.00	-	-	-	-	1.00	1.00	2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = D + S
 Bending(+): LC #2 = D + S
 Bending(-): LC #2 = D + S
 Deflection: LC #2 = D + S (live)
 LC #2 = D + S (total)
 Bearing : Support 1 - LC #2 = D + S
 Support 2 - LC #2 = D + S

D=dead S=snow

All LC's are listed in the Analysis output

Load combinations: ASD Basic from ASCE 7-16 2.4 / IBC 2018 1605.3.1

CALCULATIONS:

V max = 244, V design = 224 lbs; M(+) = 390 lbs-ft; M(-) = 68 lbs-ft

EIy = 7.50 lb-in²

"Live" deflection is due to all non-dead loads (live, wind, snow...)

Total deflection = 1.0 dead + "live"

Bearing: Allowable bearing at an angle F'theta calculated for each support as per NDS 3.10.3

Lateral stability(-): Lu = 7.19' Le = 11.25' RB = 14.5; Lu based on full span

Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2018) and the National Design Specification (NDS 2018), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Continuous or Cantilevered Beams: NDS Clause 4.2.5.5 requires that normal grading provisions be extended to the middle 2/3 of 2 span beams and to the full length of cantilevers and other spans.
4. Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.
5. SLOPED BEAMS: level bearing is required for all sloped beams.
6. FIRE RATING: Joists, wall studs, and multi-ply members are not rated for fire endurance.
7. The critical deflection value has been determined using maximum back-span deflection. Cantilever deflections do not govern design.

BARUN CORP	LOAD CALCULATION	
	ARRAY 4	
FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533		

PV SYSTEM DEAD LOAD (PV-DL)	
PV Module Weight	= 2.50 psf
Hardware Assembly Weight	= 0.50 psf
Total PV System Dead Load	PV-DL = 3.00 psf

ROOF DEAD LOAD (R-DL)		
Existing Roofing Material Weight	Composite Shingle Roof 1 Layer(s)	= 2.50 psf
Underlayment Weight		= 0.50 psf
Plywood/OSB Sheathing Weight		= 1.50 psf
Framing Weight		= 0.73 psf
No Vaulted Ceiling		= 0.00 psf
Miscellaneous		= 1.50 psf
Total Roof Dead Load		R-DL = 6.70 psf

REDUCED ROOF LIVE LOAD (L_r)	
Roof Live Load	$L_o = 20.00 \text{ psf}$
Member Tributary Area	$A_t < 200 \text{ ft}^2$
ARRAY 4 Pitch	25° or 6/12
Tributary Area Reduction Factor	$R_1 = 1.00$
Roof Slope Reduction Factor	$R_2 = 0.93$
Reduced Roof Live Load, $L_r = L_o (R_1) (R_2)$	$L_r = 18.50 \text{ psf}$

SNOW LOAD	
Ground Snow Load	$p_g = 30.00 \text{ psf}$
Effective Roof Slope	25°
Snow Importance Factor	$I_s = 1.00$
Snow Exposure Factor	$C_e = 1.00$
Snow Thermal Factor	$C_t = 1.10$
Minimum Flat Roof Snow Load	$p_{f-min} = 20.00 \text{ psf}$
Flat Roof Snow Load	$p_f = 23.10 \text{ psf}$

SLOPED ROOF SNOW LOAD ON ROOF (Non-Slippery Surfaces)	
Roof Slope Factor	$C_{s-roof} = 1.00$
Sloped Roof Snow Load on Roof	$p_{s-roof} = 23.10 \text{ psf}$

SLOPED ROOF SNOW LOAD ON PV PANEL (Unobstructed Slippery Surfaces)	
Roof Slope Factor	$C_{s-pv} = 0.75$
Sloped Roof Snow Load on PV Panel	$p_{s-pv} = 17.30 \text{ psf}$

BARUN CORP	IEBC IMPACT CHECK	
	ARRAY 4	
FISHER RESIDENCE, 116 MAIN STREET, IRVINGTON, NY 10533		

	EXISTING	WITH PV PANEL	
Roof Dead Load (DL) =	6.70	9.70	psf
Roof Live Load (Lr) =	18.50	0.00	psf
Roof Snow Load (SL) =	23.10	17.30	psf

	EXISTING	WITH PV PANEL	
(DL + Lr)/Cd =	20.16	10.78	psf
(DL + SL)/Cd =	25.91	23.48	psf
Maximum Gravity Load =	25.91	23.48	psf

Load Increase (%) =	-9.40%	OK
IEBC Provision :	2020	

FALSE

VILLAGE OF IRVINGTON
BUILDING DEPARTMENT
85 MAIN STREET
IRVINGTON, NEW YORK 10533
TEL: (914) 591-8335 • FAX: (914) 591-5870
Web Site: www.Irvingtonny.gov



LICENSED PROFESSIONAL AFFIDAVIT for RESIDENTIAL SOLAR SYSTEMS

TO BE SUBMITTED AS PART OF THE PERMIT APPLICATION

AFFIDAVIT OF ARCHITECT OR ENGINEER

State of New York)
County of Westchester) ss.:

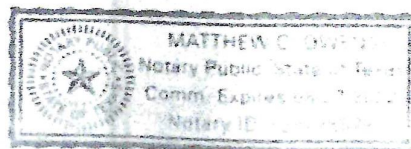
I the undersigned, under penalty of perjury, do hereby affirm:

1. I am an the ~~(architect)~~(engineer) duly licensed in the State of New York
2. I am the NYS licensed design professional named in the Application for which a Building Permit for a residential solar system located at 116 Main Street, ~~Dobbs Ferry~~, Irvington, New York 10522 33
3. I have inspected the existing building and structure and find that the existing structure with the proposed solar panel installation and connections to the existing roof meet the minimum criteria set forth in:
Applicable Codes: 2015 Residential Code of New York State
Design Roof Load: 30 psf live load, 115 psf dead load, 45 psf total load
Design Wind Load: 120 mph, 35psf
OR have proposed additional measures to insure compliance with above.
4. I have reviewed the following submitted drawings and/or manufacture specifications as part of the submission
List applicable plans with revision dates: _____ (rev date)
_____ (rev date)
_____ (rev date)
_____ (rev date)
_____ (rev date)
_____ (rev date)
5. The plans, drawings and specifications which the Building Permit is requested and listed above, as submitted (a)-were prepared by me or under my supervision, and (b)-to the best of my knowledge comply with the requirements of the Residential Building Code of New York State as adopted by the Village of Irvington, applicable design loads and all other applicable laws, rules and regulations governing building construction.

Signature _____
Yurianto Yurianto, P.E.
~~(Architect)~~ (Engineer)

7/11/22

Sworn to before me this
11 day of July, 20 22
[Signature]
Notary Public



PHOTOVOLTAIC DC DISCONNECT

WARNING! ELECTRIC SHOCK HAZARD!

Voc	V
Vmp	V
Isc	A
Imp	A

Label Location:
(DC), (INV)
Per Code:
CEC 690.53, NE

WARNING - Dual Power Sources
Second source is photovoltaic system

Label Location:
(INV), (AC), (LC)

WARNING - Electric Shock Hazard
No user serviceable parts inside
Contact authorized servicer for assistance

Label Location:
(CB)

PHOTOVOLTAIC POINT OF INTERCONNECTION

WARNING! ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE
LINE AND LOAD SIDE MAY BE ENERGIZED

PV POWER SOURCE	
MAXIMUM AC CIRCUIT OUTPUT OPERATING CURRENT	A
OPERATING AC VOLTAGE	V

Label Location:
(POI)

PV COMBINER BOX

WARNING:
ELECTRIC SHOCK HAZARD

Label Location:
(CB)

CAUTION: SOLAR CIRCUIT

Label Location:
(C)

Solar Disconnect

WARNING - Electric Shock Hazard
DO NOT TOUCH TERMINALS
Terminals on both line and Load sides
may be energized in the Open Position

Label Location:
(AC), (LC)
Per Code:
CEC 690.17, NEC 690.14 (4)

DC DISCONNECT

WARNING - Electric Shock Hazard
DO NOT TOUCH TERMINALS
Terminals on both line and Load sides
may be energized in the Open Position
DC VOLTAGE IS ALWAYS PRESENT WHEN
SOLAR MODULES ARE EXPOSED TO SUNLIGHT

Label Location:
(DC), (INV)

WARNING!
INVERTER OUTPUT CONNECTION. DO NOT
RELOCATE THIS OVERCURRENT DEVICE

Label Location:
(POI)

PHOTOVOLTAIC AC DISCONNECT

WARNING! ELECTRIC SHOCK HAZARD!

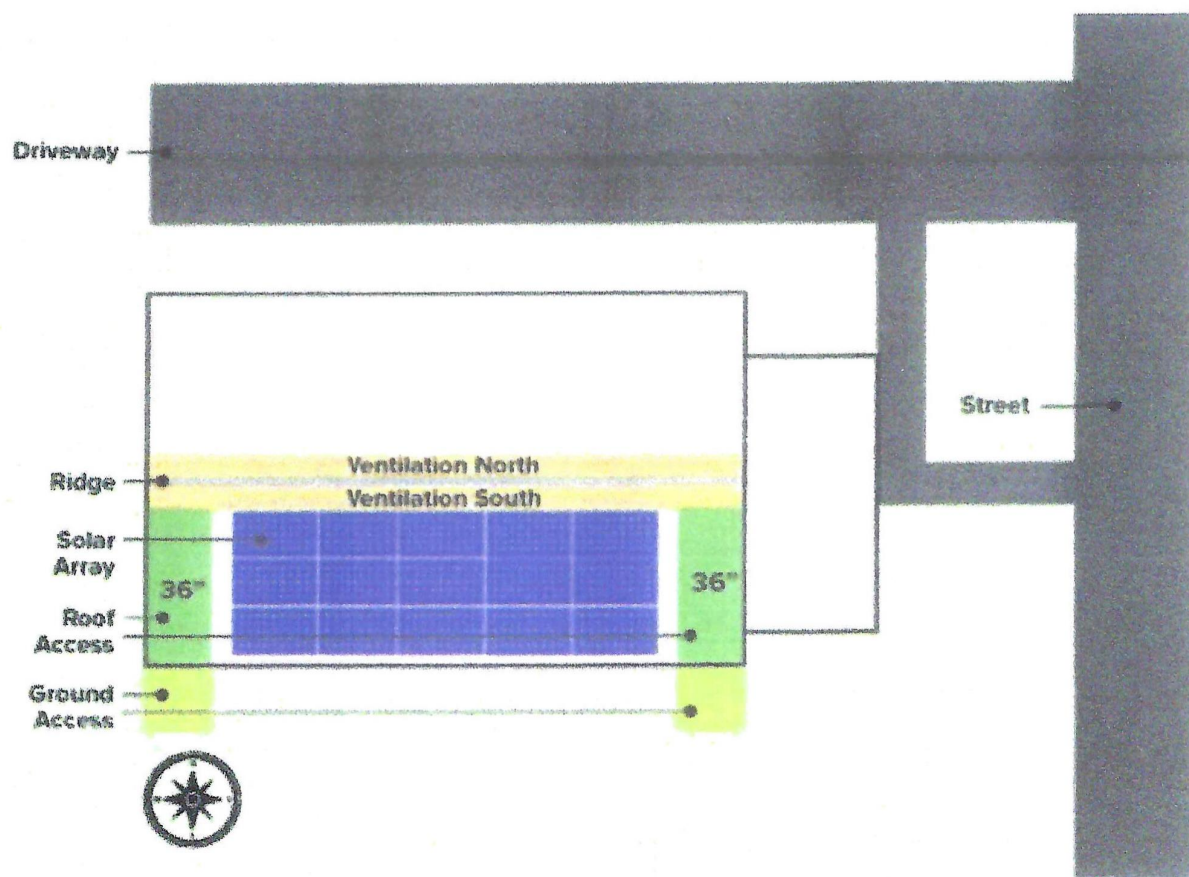
OPERATING AC VOLTAGE	V
MAXIMUM OPERATING CURRENT	A

Label Location:
(AC), (D), (LC)
Per Code:
CEC 690.8.A.3 & CEC 690.54, NEC 690.14 (c)(2)

(AC): AC Disconnect
(C): Conduit
(CB): Combiner Box
(D): Distribution Panel
(DC): DC Disconnect
(IC): Interior Run Conduit
(INV): Inverter With Integrated DC Disconnect

Single Ridge Roof with Two Pathways on Same Slope as Array

Two pathways are required for single ridge roofs. If both pathways are located on the same slope as the PV array, array space is limited. Exceptions to Section R324.7.4 may permit alternate access, pathways and venting locations.



Source: NYSERDA