

Historic Preservation Commission



Members:

Mr. Larry Jackson – Chairperson
Mr. Tim Hoffman - Secretary
Dr. Lincoln Wilkins, Jr.
Dr. Brian Plitnik

Mr. Justin T. Paulman
Mr. Nathan C. Williams
Ms. Lynda Lambert
Councilwoman: Laurie Marchini

Staff Liaison: Ruth Davis - Rogers, Historic Preservation Planner

AGENDA

Historic Preservation Commission
Cumberland City Hall, Council Chambers
Jan. 14th, 2024, 4:00 P.M.

APPROVAL OF MINUTES

- Review and approval of Dec. 2023 meeting minutes

PUBLIC COMMENT

CERTIFICATE OF APPROPRIATENESS

Consent Agenda – these COA's received administrative approval

- 112 Baltimore St. COA23-000065 (*sign permit revision*)
Applicant: Allegany College of Maryland
- 138 Baltimore Street COA23-000068 (*sign permit*)
Applicant: Queen City Creamery Production – Rhiannon Brown
- 201 S. Mechanic St. COA24-000003 (*brick repointing*)
Applicant: Chamber of Commerce

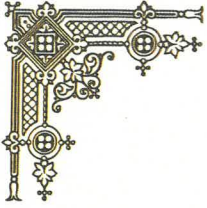
Regular Agenda – to be reviewed by HPC

- 49 Baltimore Street COA24-000004
Applicant: Cumberland Theatre (*exterior painting*)
- 308 Washington Street COA23-000063 (*solar panel revision/resubmission*)
Applicant: Energy Select

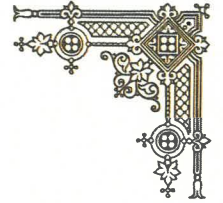
OTHER BUSINESS

ANNOUNCEMENTS

ADJOURNMENT`



City of Cumberland



MINUTES

HISTORIC PRESERVATION COMMISSION

December 13, 2023

The Cumberland Historic Preservation Commission held its regular meeting on Wednesday, December 13, 2023, within the Council Chambers of City Hall. Members present were, Mr. Larry Jackson, Mr. Tim Hoffman, Dr. Lincoln Wilkins Jr., Councilwoman Laurie Marchini, Mr. Nathan Williams, Mr. Justin Paulman, and Ms. Lynda Lambert (via phone).

Others in attendance were, Ms. Ruth Davis-Rogers, Historic Preservation Planner/Grants Management, Ms. Chelsea Rexrode, Codes Technician, and Brooke Barnett representing Energy Select.

Chairman, Mr. Larry Jackson, called the meeting to order. He read the following statement into the record: "The Cumberland Historic Preservation Commission exists pursuant to Section 11 of the City of Cumberland Municipal Zoning Ordinance. Members are appointed by the Mayor and City Council and shall possess a demonstrated special knowledge or professional or academic training in such fields as history, architecture, architectural history, planning, archeology, anthropology, curation, conservation, landscape architecture, historic preservation, urban design, or related disciplines. The Commission strives to enhance quality of life by safeguarding the historical and cultural heritage of Cumberland. Preservation is shown to strengthen the local economy, stabilize and improve property values, and foster civic beauty. The Cumberland Historic Preservation Commission operates pursuant to State of Maryland 1977 Open Meetings Act and therefore no pending applications shall be discussed between or amongst Commissioners outside the public hearing to determine the disposition of the application."

APPROVAL OF MINUTES

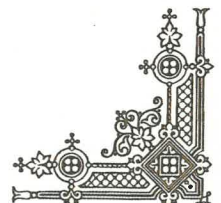
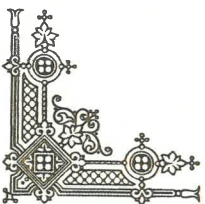
1. Minutes from November 2023 were approved as written. **Mr. Tim Hoffman made the motion for approval and Mr. Nathan Williams, seconded the motion. All members were in favor. Motion approved.**

PUBLIC COMMENTS

There were no comments made.



CUMBERLAND HISTORIC PRESERVATION COMMISSION
57 N. Liberty Street
CUMBERLAND, MARYLAND 21502



CONCENT AGENDA

1. 112 Baltimore St. - COA23-000065 (Sign Permit)
Applicant: Allegany College of Maryland
2. 201 S Mechanic St. - COA23-000067 (After-the-fact painting on side of building)
Applicant: Brian Dillon

Mr. Larry Jackson read the approval statement: We have studied the application in all other relevant documents and presentation related to the for-mention cases COA23-000065 and COA23-000067. We find the properties on the approve Certificate of Appropriateness contribute to the Historic Districts where they are located and the proposed changes are consisted with guidelines and criteria found in the Historic Preservation District designed guidelines for Cumberland Maryland.

REGULAR AGENDA

1. 308 Washington St. - COA23-000066 (Solar Panels)
Applicant: Energy Select

Brooke Barnett, representative for Energy Select, states they are proposing installing 27 Solar Panels on the 308 Washington Street roof. Energy Select is part of a solar co-op that is 80 of the top solar companies in the country that represents over 1.5 billion dollars in solar installations. They use tier 1 materials that are all American Made. Energy Select has been in business for 20 years and have been located in Cumberland for the last 2 years.

The Commission had an open discussion regarding the Solar Panels. The Commission expressed their concerns about the visibility of the Solar Panels.

- Mr. Nathan Williams asked - Is there any way to move the solar panels to not be visible from the street view?
Brooke, explained that the Panels are back as far as they can be on the roof.
- Mr. Nathan Williams asked - Is there any alternative product that can used such as solar shingles that can be more conformed to the roof line?
Brooke explains that their company does not use solar shingles. They are not financially viable for most people.
- Dr. Lincoln Wilkins expressed that the drawings weren't very clear with where the panels will be placed.
Brooke addressed his concerns. She explained the way the panels are installed.
- Dr. Lincoln Wilkins asked - What type of roof is this?
Brooke stated that the roof is an asphalt roof and explained there are different types of attachments to be able to install on difficult variety of roofing materials.

- Mr. Justin Pullman asked - Can you order the panels in a different color?

Brooke stated the tier one materials only come in Black. The solar shingles may come in a different color.

- Mr. Nathan Williams asked - Can you custom make/shape the solar panels?

Brooke expressed they can not custom shape the panels. They have worked this layout many different ways. She expressed that the homeowner may be willing to take away a few panels, but it will cause him to have less production.

The Commission discussed the location of each Solar Panel that was an issue. They viewed the photos that were provided. They suggested that the applicant discuss possibly changing a few panels in the section of I in the roof (please refer to pictures for section labels). If they remove the first two panels near the chimney (section I), it will certainly make an impact on their decision. The Commission suggests that the applicant reconfigures the solar panel layout and present at our next meeting. The Commission would like to stick to a 50% encroachment.

Mr. Tim Hoffman made the motion to table the applicant for COA23-000063 for the solar panels to be reconfigured and resubmitted at the next meeting. Councilwoman, Laurie Marchini, seconded the motion. All members were in favor. Motion approved.

TAX INCENTIVES

1. 505 Washington St. (Step 3 Approval)
Applicant: Michael & Nancy Armiento

Mr. Larry Jackson read "Maryland State law grants the City of Cumberland the authority to provide local historic preservation tax credits. Before us are tax credit application for work to be performed at 505 Washington St. We have studied the applications and find that these properties qualify based on City of Cumberland Code and section 9-204 of the Tax Property Article of the Annotated Code of Maryland."

Larry Jackson stated that the tax credit is in the amount of \$7,920.00

Mr. Nathan Williams made a motion to make a recommendation to Mayor and City Council on this matter. Dr. Lincoln Wilkins seconded the motion. All members were in favor. Motion was approved.

OTHER BUSINESS/STAFF UPDATES

1. The Lakota Group Historic Preservation Plan will be presented to Mayor and City Council on December 19, 2023 if recommended by the HPC. Each Commission member was given the draft to view.

Mr. Nathan Williams made the motion for recommendation of the Historic Preservation Plan to be proposed to the Mayor and City Council on December 19, 2023, and Ms. Lynda Lambert, seconded the motion. All members were in favor. Motion approved.

Announcements

- The City of Cumberland was awarded funding for the following projects that were submitted for in June 2023
 - 1) Choose Cumberland Relocation Package - \$100,000
 - 2) Midtown Façade Grant Program - \$50,000
 - 3) Cumberland Roof Replacement Program - \$50,000
- 1.4 million dollars was awarded by the State of Maryland to Brian Gilbride to help with the Wills Hotel project located on Baltimore St.

An audio of tonight's meeting is available upon request.

ADJOURMENT

Mr. Larry Jackson adjourned the meeting.

Respectfully,

Mr. Tim Hoffman, Secretary

City of Cumberland - Dept. of Community Development

Internal Routing Sheet

Permit or Review #: **COA23-000065**

Permit or Review Type: Certificate of Appropriateness

Project Location: 112 BALTIMORE ST CUMBERLAND, MD 21502

Applicant Contact Information: Name: Allegany College of Maryland
 Address: 12401 Willowbrook Road
 City/State/Zip: Cumberland MD 21502
 Phone: 3017845220
 Email: klayman@allegany.edu

Contractor Contact Information: Company Name: Morgantown Printing & Binding
 Contact:
 Address: 915 Green Bag Rd
 City/State/Zip: Morgantown WV 26508
 Phone: (304) 292-3368
 Email:

Date of Application: 11/13/2023

Work Description: (narrative box)

Allegany College of Maryland will be replacing decals on right-hand door of main entry doors. Decal will be installed on interior side of glass per City guidelines. Decal size is 17.3" w x 37.7" h. Total sq. ft. of signage is 4.5. Decal created by Morgantown Printing & Binding with installation being done by Allegany College of Maryland.

Ref: SP23-000065

Amount Paid: 0.00

Amount Due: 0.00



CITY OF
CUMBERLAND
MARYLAND

DEPARTMENT OF COMMUNITY DEVELOPMENT

57N. LIBERTY STREET, CUMBERLAND, MD 21502 • PHONE 301-759-6442 • FAX 301-759-6432 • TDD 800-735-2258
www.cumberlandmd.gov

Permit Number: COA23-000065
Approval Date: 12/08/2023

Certificate of Appropriateness Permit


Permit issued as per plans and subject to all applicable Preservations Guidelines, City Codes and regulations.

Project Location:	112 BALTIMORE ST	Date applied:	11/13/2023
MD Prop. #:	14004483	Work expected to begin:	12/08/2023
Owner:	ALLEGANY COLLEGE OF MARYLAND		
Applicant:	Allegany College of Maryland	Contractor:	Morgantown Printing & Binding
Address:	12401 Willowbrook Road	Address:	915 Green Bag Rd
City/State/Zip:	Cumberland MD 21502	City/State/Zip:	Morgantown WV 26508
Phone:	3017845220	Phone:	(304) 292-3368
Email:	klayman@allegany.edu	Email:	
		MD Master Plumber License #:	00000

Quantity Description Amount Total Cost

Project Description:
Allegany College of Maryland will be replacing decals on right-hand door of main entry doors. Decal will be installed on interior side of glass per City guidelines. Decal size is 17.3" w x 37.7" h. Total sq. ft. of signage is 4.5. Decal created by Morgantown Printing & Binding with installation being done by Allegany College of Maryland.
Ref: SP23-000065

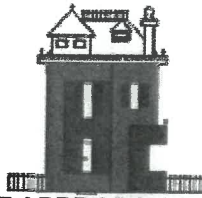
APPROVED with the following conditions:



 Signature / Date

STATEMENT: I hereby agree to comply with all regulations which are applicable hereto, and further agree that the proposed work shall be faithfully carried out as described on this request and as shown on the plans accompanying same, and not otherwise. This application hereby expires six months following the file date if no action is taken to start specified work. Also, this application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision. The application is active for two years.

Signature



CERTIFICATE OF APPROPRIATENESS DECISION

Certificate of Appropriateness #COA23-000065

Agenda Item: COA-000065

Project Address: 112 BALTIMORE ST

Meeting Date: 12/08/2023

Property Number: 14004483

Issued

Korey Layman
12401 Willowbrook Road
Cumberland, MD 21502

Dear Applicant:

The Historic Preservation Commission of the City of Cumberland on the above date, considered the application for construction at the above address as follows:

Exterior improvements are to include: Allegany College of Maryland will be replacing decals on right-hand door of main entry doors. Decal will be installed on interior side of glass per City guidelines. Decal size is 17.3" w x 37.7" h. Total sq. ft. of signage is 4.5. Decal created by Morgantown Printing & Binding with installation being done by Allegany College of Maryland.

Ref: SP23-000065

The application was:

Issued

APPROVED with the following conditions: Administrative Approval by Ruth Davis - Rogers, Historic Preservation Planner

Sincerely,

Ruth Davis-Rogers

Cc:Planning and Zoning
COA File

NOTE: Please note that the approval listed above only constitutes the approval of the Historic Preservation Commission. You must still ensure that all other permits associated with this project, if required, have been applied for and approved by the Building and Zoning Officer.
EXPIRATION OF CERTIFICATES OF APPROPRIATENESS: This application hereby expires six months following the file date if no action is taken to start specified work. Also, the application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision.



MPB Print & Sign Superstore
915 Greenbag Road
Morgantown, WV 26508
Tel: 888-292-0001
Email: sales@mpbonline.com

ESTIMATE 114933 A / BRD

Date: 11/08/2023

Shannon Redman

Allegany College Of MD

12401 Willow Brook Rd SE
Cumberland, MD 21502

We are pleased to submit this estimate based on the following specifications:

Title: Window Decal
Size: 17.3"w x 37.7"h
Graphics: Print ready files supplied - this quote only includes time for 1 initial prepress set up. ANY formatting, changes, or new file submission may incur additional charges. The graphics rate is \$75 per hour with a \$15 minimum. Last job#297941.
Proof: PDF proof to customer
Printing: 4+white/0-face adhesive
Materials: clear decal
Bindery: trim, pack for customer install
Delivery: ship ground

Notes:
Terms: All prices exclude sales tax and postage when applicable. All orders are subject to a review of artwork and our terms & conditions, available by request. All estimates are valid for thirty (30) days. If acceptance of this estimate is received after this period has lapsed, a revised estimate may be required.

Quantity	Price
1	\$75.00

I hope our estimate meets your requirements and look forward to receiving your instruction to process this order. If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

Thad Welch

Senior Account Manager



STATE
OF
MARYLAND

DEPARTMENT
OF
ASSESSMENTS

HOURS OF OPERATION

Monday - Friday
8:00 a.m. - 4:30 p.m.

ADULT
BASIC
EDUCATION

ALLEZARBY COLLEGE
of MARYLAND

HG



ALLEGANY COLLEGE
of MARYLAND

November 16th, 2023

Mayor & City Council
City of Cumberland
57 N. Liberty St.
Cumberland, MD 21502

Dear Ms. Davis-Rogers,

Allegany College of Maryland is currently in the early planning phases of replacing vinyl-lettering window signage, present on the entrance to our building at 112 Baltimore St., or better known as the “Gateway Center”.

With the assistance of the Ms. Robyn Roberts, it was determined that along with the submission of the application for a “Signage Permit” and a “Certificate of Appropriateness”, the College should also submit a written letter to the Mayor and City Council in order for a determination to be made as to whether or not the City of Cumberland would be considering the College tax-exempt.

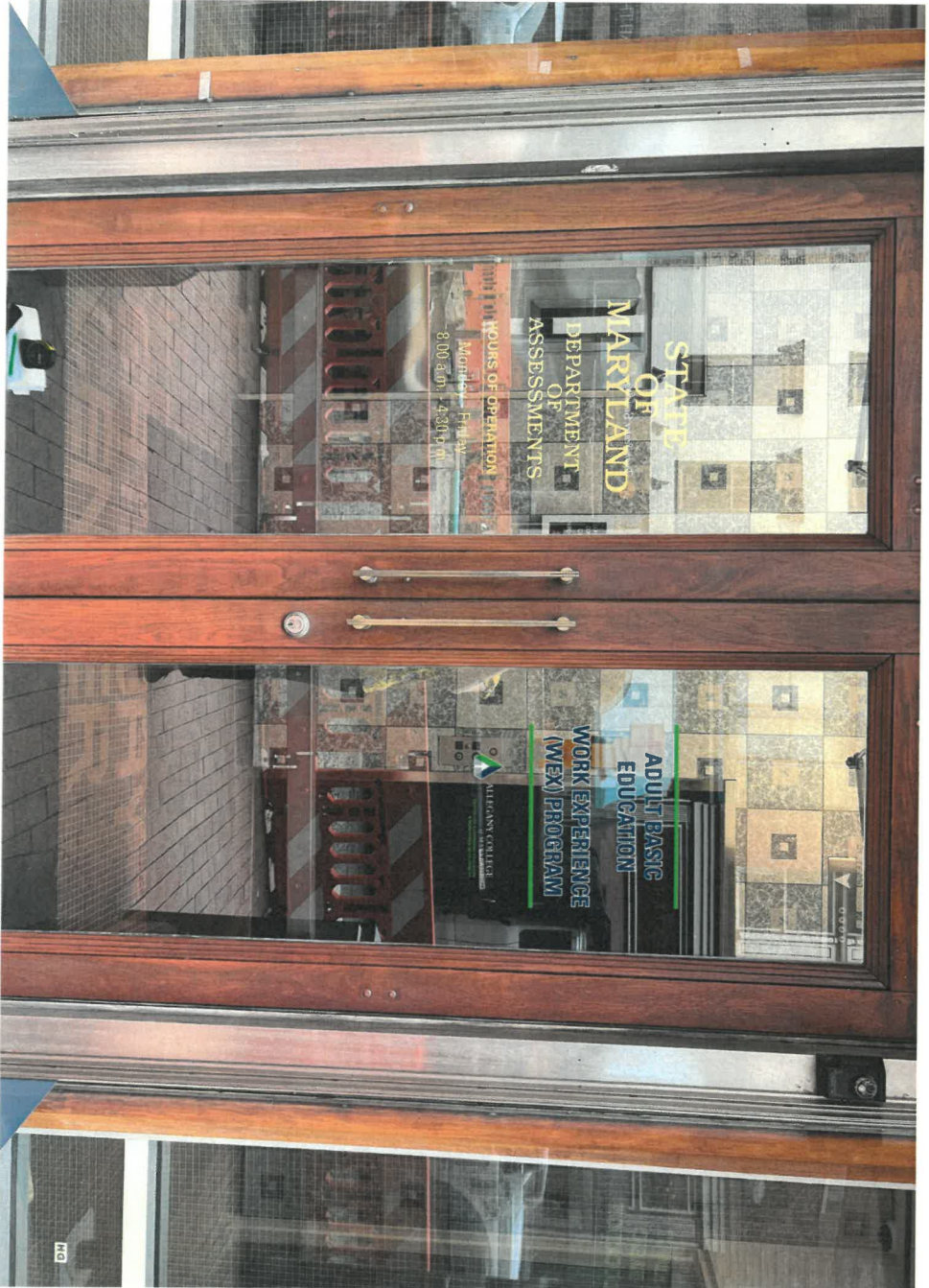
Allegany College of Maryland is among the sixteen community colleges of Maryland considered to be public institutions of higher education that were established pursuant to Title 16 of the Education Article of the Annotated Code of Maryland. They are all non-profit organizations and are State tax exempt.

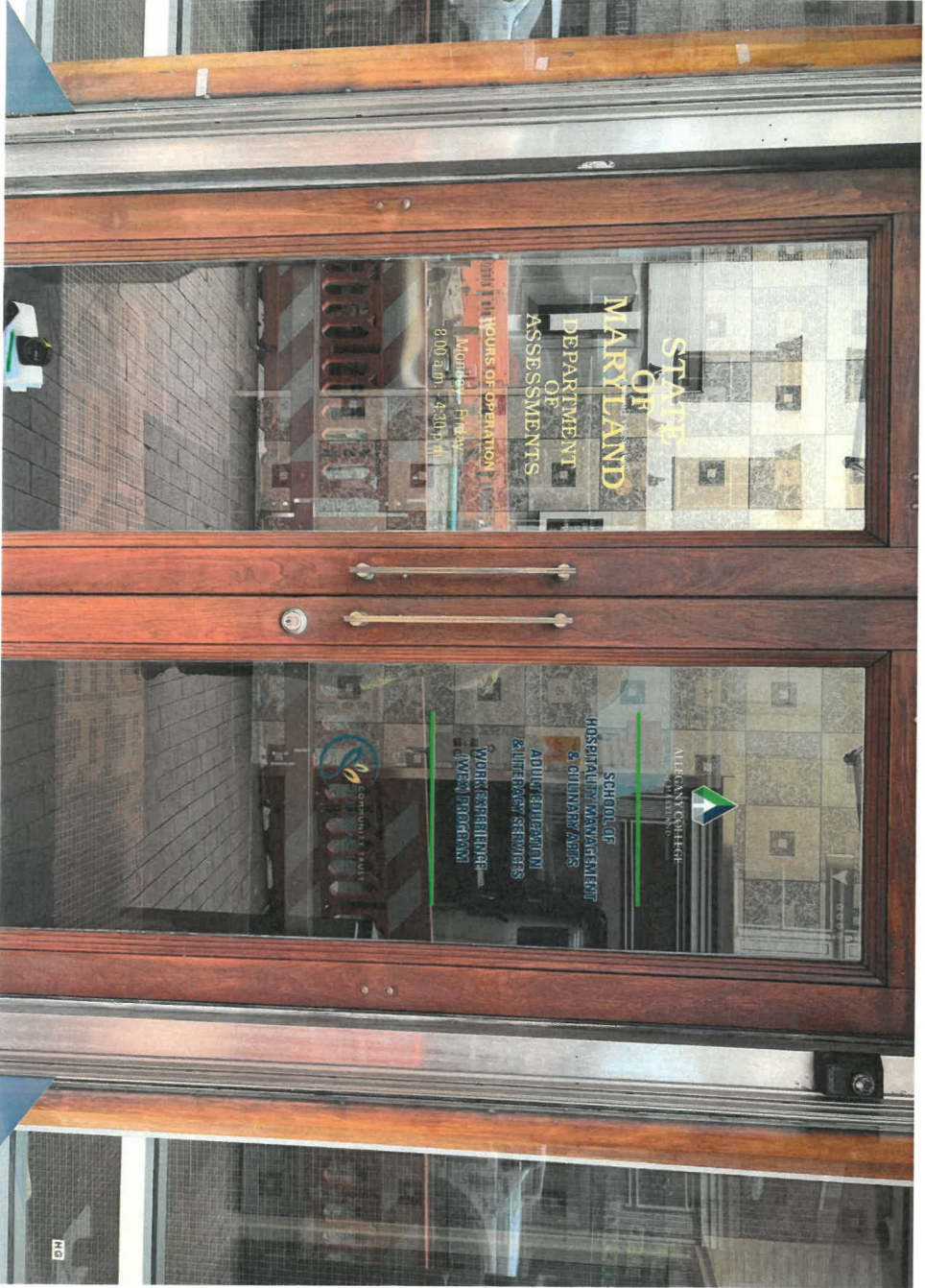
The tax exemption afforded community colleges allows us to not only fulfill our vision of “being the College of choice that transforms lives, strengthens communities, and makes learners the center of everything we do”, our mission of “delivering diverse and relevant education centered around student success in a supportive and engaging community”, but it also allows maximize the benefit that we provide to our students and community, which are then paid forward to society as a whole. Community Colleges provide communities such as Cumberland with the educated, skilled, and productive workforce needed to drive the local economy forward.

We formally ask the City of Cumberland to please consider the College’s tax exemption status, and the waive any associated fees.

Sincerely,

Christina Kilduff
VP of Finance and Administration





STATE
OF
MARYLAND
DEPARTMENT
OF
ASSESSMENTS

11 HOURS OF OPERATION
Monday - Friday
8:00 a.m. - 5:30 p.m.



ALLEGANY COLLEGE
OF MARYLAND

SCHOOL OF
HOSPITALITY MANAGEMENT
& CULINARY ARTS
ADULT EDUCATION
& LIFELONG SERVICES
WORK EXPERIENCE
(WEP) PROGRAM



COMMUNITY TRUST

DM



CITY OF
CUMBERLAND
MARYLAND

DEPARTMENT OF COMMUNITY DEVELOPMENT

57 N. LIBERTY STREET, CUMBERLAND, MD 21502 • PHONE 301-759-6442 • FAX 301-759-6432 • TDD 800-735-2258

www.cumberlandmd.gov

Permit Number: COA23-000068
Approval Date: 12/15/2023

Certificate of Appropriateness Permit


Permit issued as per plans and subject to all applicable Preservations Guidelines, City Codes and regulations.

Project Location:	138 BALTIMORE ST	Date applied:	11/28/2023
MD Prop. #:	14004343	Work expected to begin:	12/15/2023
Owner:	CG ENTERPRISES LLC		
Applicant:	Queen City Creamery & Deli, LLC	Contractor:	Queen City Creamery & Deli, LLC
Address:	108 W Harrison St.	Address:	108 W Harrison St.
City/State/Zip:	Cumberland, MD 21502	City/State/Zip:	Cumberland, MD 21502
Phone:	4433262444	Phone:	4433262444
Email:	info@queencitycreamery.com	Email:	info@queencitycreamery.com
		MD Master Plumber License #:	

Quantity	Description	Amount	Total Cost
1.0	Certificate of Appropriateness Review Fee	30.00	30.00

Project Description:
Queen City Creamery & Deli production space for frozen custard. Permit is for after the fact. Sign permit will be forthcoming and is also after-the-fact.

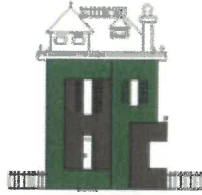
Administrative Approval by Ruth-Davis-Rogers, Historic Preservation Planner, for after-the-fact permit.



 Signature / Date

STATEMENT: I hereby agree to comply with all regulations which are applicable hereto, and further agree that the proposed work shall be faithfully carried out as described on this request and as shown on the plans accompanying same, and not otherwise. This application hereby expires six months following the file date if no action is taken to start specified work. Also, this application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision. The application is active for two years.

Signature



CERTIFICATE OF APPROPRIATENESS DECISION

Certificate of Appropriateness #COA23-000068

Agenda Item: COA23-000068

Project Address: 138 BALTIMORE ST

Meeting Date: 12/15/2023

Property Number: 14004343

Issued

Rhiannon Brown
108 W Harrison St.
Cumberland,, MD 21502

Dear Applicant:

The Historic Preservation Commission of the City of Cumberland on the above date, considered the application for construction at the above address as follows:

Exterior improvements are to include: Queen City Creamery & Deli production space for frozen custard. Permit is for after the fact. Sign permit will be forthcoming and is also after-the-fact.

The application was:

Issued

APPROVED with the following conditions: Administrative Approval by Ruth Davis-Rogers, Historic Preservation Planner, for after-the-fact sign permit.

Sincerely,

Ruth Davis-Rogers

Cc:Planning and Zoning
COA File

NOTE: Please note that the approval listed above only constitutes the approval of the Historic Preservation Commission. You must still ensure that all other permits associated with this project, if required, have been applied for and approved by the Building and Zoning Officer.
EXPIRATION OF CERTIFICATES OF APPROPRIATENESS: This application hereby expires six months following the file date if no action is taken to start specified work. Also, the application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision.





City of Cumberland

Administrative Review HP Commission Review

Department of Community Development • 57 N. Liberty Street • Cumberland, MD 21502 • www.cumberlandmd.gov
Ruth Davis Rogers, Historic Preservation Planner • 301-759-6431 • ruth.davis-rogers@cumberlandmd.gov

COA 23-000068

CERTIFICATE OF APPROPRIATENESS PERMIT APPLICATION

AND/OR REQUEST FOR CHANGE AMENDMENT RELATED TO AN EARLIER COA (WITHIN 2 YEARS)

This application is required for ALL exterior work on properties that are located within the Canal Place Preservation District (Cumberland's locally zoned historic district). The application will be reviewed by the Historic Preservation Commission. Examples include additions, alterations, awnings, roofs, doors, painting, porches, fences, siding, signage, window replacement, demolition, and new construction. Please note that you do not need to separately submit this form if you are entering your request through the City of Cumberland's Online Permit Portal - accessed at www.ci.cumberland.md.us/150/Community-Development If you do not already have a portal account, you will need to create one and then please use the same account for any future permit/review applications, rental licenses, and pavilion reservations.

Project Address: 138 Baltimore Street Tax ID # 47-5415981

The Tax ID # can be found on your tax bill or by visiting www.dat.state.md.us/RealProperty/RealPropertySearch. If you are using the permit portal, you may use the search function to select your property account number. When construction is being done and several property account numbers are involved, permit must be entered under the account of the main structure referencing other accounts (or a separate permit will be required per each property of record).

COA # 23-000068
RCA #

Application Date 11/20/23

Applicant Name Queen City Creamery + Deli Phone 301-777-0011

Applicant Address (if different than project address) 108 W Harrison Street

Fax _____ Email info@queencitycreamery.com

Contractor Name (if applicable) _____ Phone _____

Contractor Address _____ Email _____

Summarized Description of Project (please add extra pages, if needed) Production space for frozen custard (signage for Queen City Creamery + Deli production space for frozen custard)

Attach a full written scope of work BACK Use reverse side or attach additional pages, if needed →

Attach photographs of the site and structure

As it pertains to the application/project scope of work, include the following and consult with HPC staff if you require assistance (please note that all of the following might not pertain to your application):

- Façade Elevations
- Sample of Proposed Materials
- Scaled Drawings
- Digital Renderings, when available
- Color Scheme/Paint Chips
- Manufacturer's Cut-Sheets or Product Specifications

Provide one (1) complete original copy of all supplementary materials (in hardcopy if applying in person; upload digitally if using the portal).

Pay a non-refundable Certificate of Appropriateness review fee of \$30.00 - payable at time of application either in person or online.

Apply for any relevant Building, Sign, and Occupancy Permits through the City (fees apply)

The HPC meets the second Wednesday of each month and complete applications are due the first Wednesday of each month before 4:00 p.m. You (or a representative) are required to attend the meeting scheduled for your COA review. Preservation Guidelines can be found on the City of Cumberland website at www.cumberlandmd.gov. Navigate to Historic Preservation Commission and then to Revised Guidelines.

To apply online go to citizenserve.com/Cumberland

An HPC brochure is available

Do not begin work until written approval is received from HPC Staff, and; if the project requires additional building, sign, or occupancy permits, all applicable permits must also have been applied for separately and then approved by the Code Compliance Manager or designated representative.



CITY OF
CUMBERLAND
MARYLAND

DEPARTMENT OF COMMUNITY DEVELOPMENT

57 N. LIBERTY STREET, CUMBERLAND, MD 21502 • PHONE 301-759-6442 • FAX 301-759-6432 • TDD 800-735-2258

www.cumberlandmd.gov

Permit Number: COA24-000003

Approval Date: 02/07/2024

Certificate of Appropriateness Permit

Permit issued as per plans and subject to all applicable Preservations Guidelines, City Codes and regulations.

Project Location:	0 N LIBERTY-BEDFORD ST	Date applied:	02/07/2024
MD Prop. #:	14006141	Work expected to begin:	02/07/2024
Owner:	CHAMBER OF COMMERCE INC W MD		
Applicant:	Allegany County Chamber of Commerce	Contractor:	Allegany County Chamber of Commerce
Address:	24 Frederick St	Address:	24 Frederick St
City/State/Zip:	Cumberland MD 21502	City/State/Zip:	Cumberland MD 21502
Phone:	3017222820	Phone:	3017222820
Email:	juli@alleganycountychamber.com	Email:	juli@alleganycountychamber.com
		MD Master Plumber License #:	01101232

Quantity Description Amount Total Cost

Project Description:
Certificate of Appropriateness for repair/repointing on all 4 sides of Chamber of Commerce building. Use of Public Right of Way Permit will be needed.

Approved via administrative review by Ruth Davis - Rogers, historic Preservation Planner, based on approval by MHT for proposed work.

Signature / Date

STATEMENT: I hereby agree to comply with all regulations which are applicable hereto, and further agree that the proposed work shall be faithfully carried out as described on this request and as shown on the plans accompanying same, and not otherwise. This application hereby expires six months following the file date if no action is taken to start specified work. Also, this application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision. The application is active for two years.

Signature



CERTIFICATE OF APPROPRIATENESS DECISION

Certificate of Appropriateness #COA24-000003
Agenda Item: COA24-000003
Project Address: 0 N LIBERTY-BEDFORD ST
Meeting Date: 02/07/2024
Property Number: 14006141

Issued

Juli McCoy

Dear Applicant:

The Historic Preservation Commission of the City of Cumberland on the above date, considered the application for construction at the above address as follows:

Exterior improvements are to include: Certificate of Appropriateness for repair/repointing on all 4 sides of Chamber of Commerce building. Use of Public Right of Way Permit will be needed.

The application was:

Issued

APPROVED with the following conditions: Administrative Review and Approval by Ruth Davis - Rogers, Historic Preservation Planner

Sincerely,

Ruth Davis-Rogers

Cc:Planning and Zoning
COA File

NOTE: Please note that the approval listed above only constitutes the approval of the Historic Preservation Commission. You must still ensure that all other permits associated with this project, if required, have been applied for and approved by the Building and Zoning Officer.
EXPIRATION OF CERTIFICATES OF APPROPRIATENESS: This application hereby expires six months following the file date if no action is taken to start specified work. Also, the application will expire six months following the file date if the applicant fails to provide additional information as requested by the HPC or its staff in order for the Commission to render a decision.

City of Cumberland - Dept. of Community Development

Internal Routing Sheet

Permit or Review #: **COA24-000003**

Permit or Review Type: Certificate of Appropriateness

Project Location: 0 N LIBERTY-BEDFORD ST CUMBERLAND, MD 21502

Applicant Contact Information: Name: Allegany County Chamber of Commerce
 Address: 24 Frederick St
 City/State/Zip: Cumberland MD 21502
 Phone: (301) 722-2820
 Email: juli@alleganycountychamber.com

Contractor Contact Information: Company Name: Allegany County Chamber of Commerce
 Contact: Juli McCoy
 Address: 24 Frederick St
 City/State/Zip: Cumberland MD 21502
 Phone: (301) 722-2820
 Email: juli@alleganycountychamber.com

Date of Application: 02/07/2024

Work Description: (narrative box)

Certificate of Appropriateness for repair/repointing on all 4 sides of Chamber of Commerce building. Use of Public Right of Way Permit will be needed.

Amount Paid: 0.00

Amount Due: 0.00



City of Cumberland

Administrative Review HP Commission Review

Department of Community Development • 57 N. Liberty Street • Cumberland, MD 21502 • www.cumberlandmd.gov
Ruth Davis Rogers, Historic Preservation Planner • 301-759-6431 • ruth.davis-rogers@cumberlandmd.gov

CERTIFICATE OF APPROPRIATENESS PERMIT APPLICATION

AND/OR REQUEST FOR CHANGE AMENDMENT RELATED TO AN EARLIER COA (WITHIN 2 YEARS)

This application is required for ALL exterior work on properties that are located within the Canal Place Preservation District (Cumberland's locally zoned historic district). The application will be reviewed by the Historic Preservation Commission. Examples include additions, alterations, awnings, roofs, doors, painting, porches, fences, siding, signage, window replacement, demolition, and new construction. Please note that you do not need to separately submit this form if you are entering your request through the City of Cumberland's Online Permit Portal - accessed at www.ci.cumberland.md.us/150/Community-Development If you do not already have a portal account, you will need to create one and then please use the same account for any future permit/review applications, rental licenses, and pavilion reservations.

Project Address: 24 Frederick St. N Liberty-Bedford St Tax ID # 14006141-0285790

The Tax ID # can be found on your tax bill or by visiting www.dat.state.md.us/RealProperty/RealPropertySearch. If you are using the permit portal, you may use the search function to select your property account number. When construction is being done and several property account numbers are involved, permit must be entered under the account of the main structure referencing other accounts (or a separate permit will be required per each property of record).

COA #
RCA #

Application Date 2/6/24

Applicant Name Juli McCoy Phone 301-722-2820

Applicant Address (if different than project address) _____

Fax _____ Email juli@alleghenycountychamber.com

Contractor Name (if applicable) Allegheny Restoration Phone 724-832-8209

Contractor Address 1145 Garden St. Hempfield, PA MDL-0110232 Email _____

Summarized Description of Project (please add extra pages, if needed) repainting on building - 4 sides

Est. Cost \$20,000.00

Attach a full written scope of work Use reverse side or attach additional pages, if needed →

Attach photographs of the site and structure

As it pertains to the application/project scope of work, include the following and consult with HPC staff if you require assistance (please note that all of the following might not pertain to your application):

- Façade Elevations
- Sample of Proposed Materials
- Scaled Drawings
- Digital Renderings, when available
- Color Scheme/Paint Chips
- Manufacturer's Cut-Sheets or Product Specifications

Provide one (1) complete original copy of all supplementary materials (in hardcopy if applying in person; upload digitally if using the portal).

Pay a non-refundable Certificate of Appropriateness review fee of \$30.00 - payable at time of application either in person or online.

Apply for any relevant Building, Sign, and Occupancy Permits through the City (*fees apply*)

The HPC meets the second Wednesday of each month and complete applications are due the first Wednesday of each month before 4:00 p.m. You (or a representative) are required to attend the meeting scheduled for your COA review. Preservation Guidelines can be found on the City of Cumberland website at www.cumberlandmd.gov. Navigate to Historic Preservation Commission and then to Revised Guidelines.

To apply online go to citizenserve.com/Cumberland

An HPC brochure is available

Do not begin work until written approval is received from HPC Staff, and; if the project requires additional building, sign, or occupancy permits, all applicable permits must also have been applied for separately and then approved by the Code Compliance Manager or designated representative.

Wes Moore, Governor
Aruna Miller, Lt. Governor



Rebecca L. Flora, AICP, LEED ND / BD+C, Secretary
Elizabeth Hughes, MHT Director and
State Historic Preservation Officer

Maryland
DEPARTMENT OF PLANNING
MARYLAND HISTORICAL TRUST

January 3, 2024

Juli McCoy
Executive Director, Allegany County Chamber of Commerce
24 Frederick Street
Cumberland, MD 21502

Re: Bell Tower Building, Allegany County – Change/Alteration
Maryland Historical Trust Preservation Easement

Dear Ms. McCoy:

The Maryland Historical Trust (MHT) is in receipt of your application, received on November 27, 2023, requesting approval to repoint and repaint brick façade, and conduct foundation repairs at the Bell Tower Building. MHT's Easement Committee (Committee) reviewed the information on December 5, 2023.

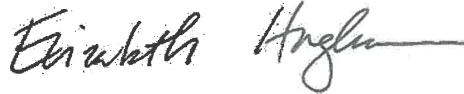
Based on the review and recommendation of the Committee, I conditionally approve the request to repoint and repaint the brick façade, and conduct foundation repairs; provided the following conditions are met:

- The cleaning of masonry must be accomplished using the gentlest means possible without damaging the surface of the masonry. This work must be accomplished in accordance with the guidance provided in Preservation Brief #1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings. If you will be using any cleaning products, product specifications for any cleaning product must be submitted for review and approval.
- Repointing mortar must match the existing historic mortar in size, design, color, texture, composition, strength, joint width, joint profile, and other visual qualities, per Standard #6.
- Any deteriorated or failing mortar must be removed by hand, without the use of power tools. Power tools can cause unnecessary damage to the masonry units by breaking the edges and overcutting the joints. If Portland cement is present, we generally recommend that holes be drilled into the center of the joints to loosen the aggregate. The mortar must then be removed from the joint using manual hammer and chisel.
- If any bricks would be needed: The existing bricks must be salvaged to the greatest extent possible. Any new replacement bricks must match the historic bricks in-kind, matching the size, texture, finish, color, and scale. Photographs of the proposed new brick against the existing masonry must be submitted for comparison for review and approval prior to any replacement.
- Typically, caulking masonry and injecting epoxy is not an approvable method of repair for historic masonry buildings. MHT recommends the use of a grout which will bond and interact cohesively with existing masonry. If an epoxy is being considered, the product specifications, location where its use is being proposed, the problem that is trying to be solved, and the level of intervention, should be submitted to MHT for review and approval prior to the work being undertaken.

This work is consistent with the Secretary of the *Interior's Standards for Rehabilitation, General Rehabilitation Standards*, in particular *Standards 5, 6, and 7*.

This approval is valid for a period of six months from the date of this letter. Should you require additional time to complete the project, make any changes to the scope of work as approved, or have any questions regarding this letter, please contact MHT Easement Staff via email at mht.easements@maryland.gov.

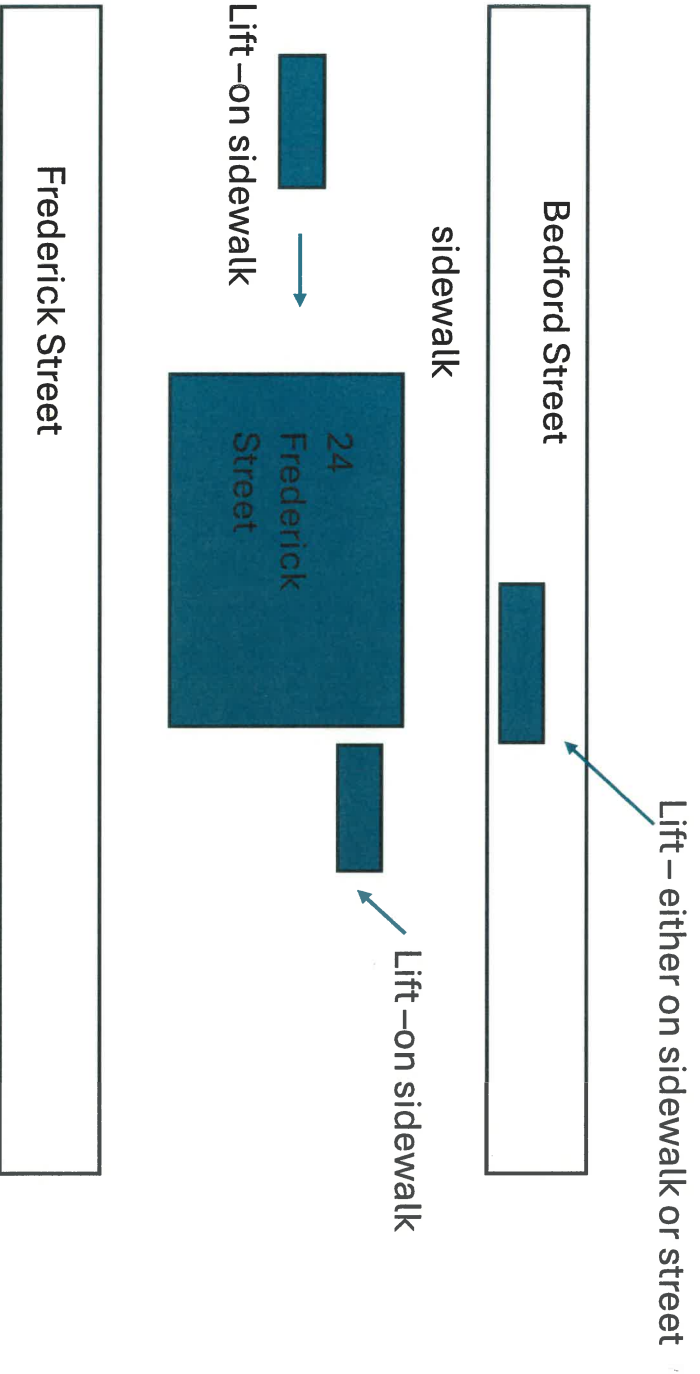
Sincerely,

A handwritten signature in black ink that reads "Elizabeth Hughes". The signature is written in a cursive style with a long horizontal flourish at the end.

Elizabeth Hughes
Director
Maryland Historical Trust

EH/CN

cc: Martha Waldron, MHT





Allegany County Chamber of Commerce (Bell Tower) Building - Cumberland, Maryland - August 22, 2023 - Photograph by Albert L. Feldstein



Allegany County Chamber of Commerce (Bell Tower) Building - Cumberland, Maryland - August 22, 2023 - Photograph by Albert L. Feldstein

City of Cumberland - Dept. of Community Development

Internal Routing Sheet

Permit or Review #: **COA24-000004**

Permit or Review Type: Certificate of Appropriateness

Project Location: 49 BALTIMORE ST CUMBERLAND, MD 21502

Applicant Contact Information: Name: Embassy Theatre
Address: 49 Baltimore St
City/State/Zip: Cumberland MD 21502
Phone: (240) 362-7183
Email: embassytheatre@atlanticbbn.net

Contractor Contact Information: Company Name: Embassy Theatre
Contact: Gerard Puckett
Address: 49 Baltimore St
City/State/Zip: Cumberland MD 21502
Phone: (240) 362-7183
Email: embassytheatre@atlanticbbn.net

Date of Application: 02/08/2024

Work Description: (narrative box)

Strip, sand, prime, and paint front entrance doors of Embassy Theatre. Also will clean, polish, & seal brass plates and hardware.

Amount Paid: 30.00

Amount Due: 0.00



**Certificate of Appropriateness Application
Presentation of Information/Staff Report
By Ruth Davis - Rogers**

COA24-000004

Address: 49 Baltimore Street – Embassy Theatre

Project Contact: Gerard Puckett

Project Summary:

This proposed project involves painting the stained exterior doors of the Embassy Theatre

Property Description:

This building is located in the Downtown Cumberland Historic District, on Baltimore Street. The Cumberland Historic District gains its significance from both its architecture and the history of its commercial development. These late 19th to early 20th century buildings consist of a broad array of significant architectural styles.

The Embassy was opened on November 18, 1931. Of all the classic theaters mentioned above in Cumberland, only the Embassy remains. The original capacity of the Embassy Theater was about 500, seated in both orchestra and balcony areas. A full stage was in front of the screen. The Embassy Theater was converted into a dress shop in the 1960's; however, the owner simply built the shop in the former lobby and orchestra areas, preserving much of the theater. His son, Broadway actor Mark Baker, restored the theater back to its 1931 appearance, taking several years. The entrance, lobby, ceiling and walls of the orchestra, the screen (original-was barely saved from becoming a painter's drop-cloth), and mezzanine lobby/restrooms have been restored to original appearance. A facsimile marquee has been installed.

Staff Summary:

The doors on the Embassy Theatre appear to be original to the building. Any original door that exists on your historic house or commercial building is an important character-defining feature. These original doors have designs and materials that help to define the age and style of a building. If you want to maintain the architectural integrity of a historic structure, the original doors should be saved. Any significant alteration made to an entrance door, or replacement with an inappropriate door style, can severely affect the character of a historic building.

The exterior surfaces of historic buildings are painted and/or stained for two reasons: to protect and preserve the exterior materials and to create color schemes appropriate for the buildings architectural style. An appropriate paint scheme on a historic building will accentuate its architectural details and add to the character of the historic district.

Choosing the right combination of colors for a historic rehabilitation can unify building elements with the façade and highlight important architectural detailing. Paint color selection should be appropriate to the architectural style and complement the building and its surroundings. Do not use accent colors that contrast so strongly that they do not read as part of the composition and detract from the façade. The marquee of the Embassy has brown lettering. The wood tone doors blend with this color scheme.

It is recommended not to paint a door that was originally stained on a historic building. Conversely, originally painted doors should not be stripped of paint and left natural or stained.

If these doors were painted at one time, someone (perhaps Mr. Baker) painstakingly stripped them and did an exceptional job doing so. To repaint them would be a shame and, over time, paint will chip and peel whereas stain will not. Wood mellows with age and when old growth doors are refinished and stained properly, will emit a warm hue and glow.

A 2015 COA was issued for exterior work and maintenance of the exterior of the building. This permit requested that the doors be refinished and sealed. I do not believe the work was completed.

Applicable Guidelines:

Identifying, retaining, and preserving storefronts, and their functional and decorative features, is important in defining the overall historic character of a building and the district where it is located. Storefront materials, and retaining the configuration of the storefront, is significant (such as display windows, doors, transoms, etc.).

The sections of the Preservation Guidelines that pertain to this application can be found under Specific Design Guidelines for Commercial Buildings (the entire chapter).

Below are the best practices for the maintenance and repair of original doors on a historic house or commercial building:

- Preserve and maintain your original doors and entrances. If you have original doors, do not remove or alter the original door, surrounds, transoms or sidelights unless they are deteriorated beyond repair. Keep and maintain the original door framing, including jambs, sills and headers. It is especially important to preserve your primary and storefront doors, because these doors significantly contribute to a building's historic appearance. Do not infill or partially block historic door openings.
- Repair deteriorated or damaged historic doors in keeping with historic materials. If your historic doors need to be repaired, use methods that will preserve their historic materials and appearance as much as possible. Use epoxy to strengthen and replace deteriorated wood in your doors.
- Wood doors are terrifically challenging, whether they are new or historic: Rotting wood, cracked panels, fading paint, and loose joints are all plagues on their integrity. Wood quality today is not what it was 100 years ago. Since we no longer have virgin timbers and old growth lumber readily available, we must use woods that can withstand the elements.
- You can safeguard wood in one of two ways: either with paint, which seals it under an opaque film, or, perhaps better, with exterior stain. The beauty of stain is that it's easy to apply, resistant to peeling, and brings out wood's texture or grain.

A good source of information on how to take care of and repair exterior wood doors can be found at:
https://preservationutah.org/images/Historic_Windows_and_Doors_-_Property_Owners_Guide.pdf



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Project Address: 49 Baltimore St, Cumberland MD Tax ID # 04 - 023803

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COA # COA24-000004

RCA #

Application Date Feb 7 2023

Applicant Name Embassy Theatre Phone 240-362-7183

Applicant Address (if different than project address) _____

Fax _____ Email embassytheatre@atlanticbbn.net

Contractor Name (if applicable) Petersen Handyman Serv. Phone 240-451-1009

Contractor Address 416 High Bedford St, Cumberland MD Email _____

Summarized Description of Project (please add extra pages, if needed) Strip, sand, prime & paint front entrance doors; clean, polish & seal brass plates & hardware

Attach a full written scope of work

Use reverse side or attach additional pages, if needed →

Attach photographs of the site and structure

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Scope of Work Painting of Front Entrance Doors Embassy Theatre

- Strip, sand, prim and paint eight (8) front doors
- Clean, polish and seal brass plates and hardware.

We are requesting an addition to our current Certificate of Appropriateness to include the painting of our front doors. Our hope is that with the proper paint job, the doors will weather much better than the current natural stain and varnish, which was done around the year 2000. Allegany County has given us a grant to accomplish this work.

As shown by the accompanying pictures, these doors were originally painted rather than naturally finished. We would like to use the colors that are currently on the back side of these doors, as they match well with other colors along Baltimore St. Sherwin Williams will mix the custom colors to match the Pantone shades we submit with this request.

ADDENDUMS:

Front elevation of the Embassy Theatre building showing areas to be painted and refurbished.

Historical pictures of the doors, along with proposed colors.

Contractor's bid for the work.

Sherwin Williams quote.

9'-8"
FIRST FLOOR

9'-0"
LOUNGE LEVEL

32'-3"





Picture from 1952.



Doors in 1999, shown with original colors before they were stripped, stained and varnished.

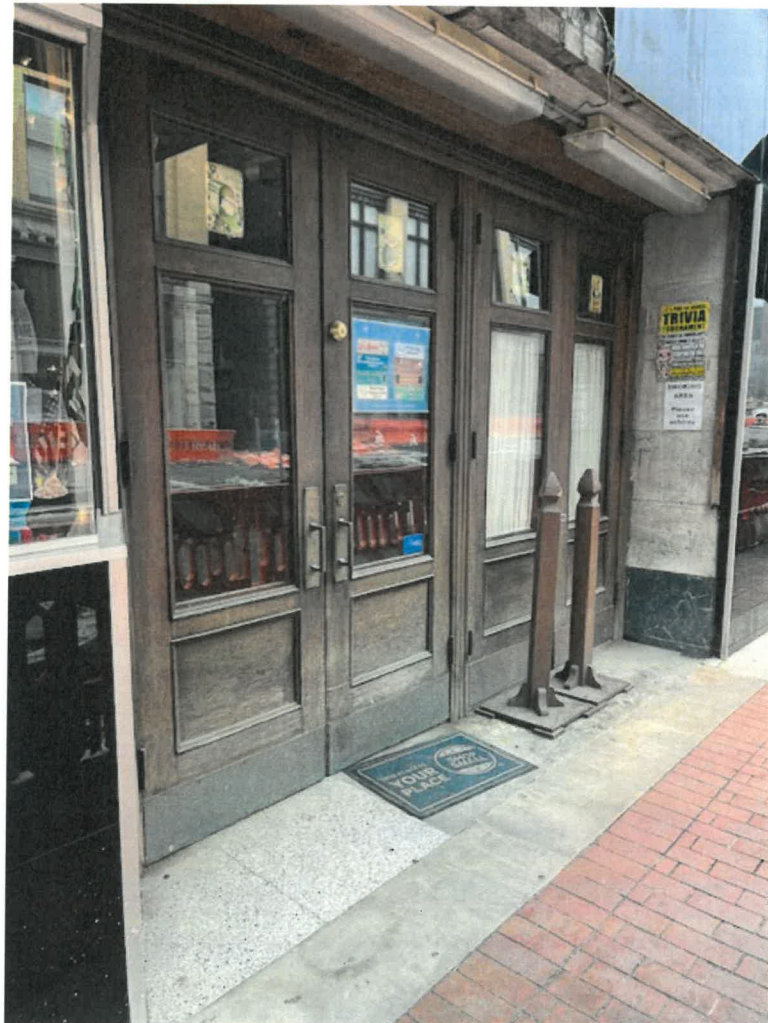
Main color
Pantone 491



Trim color
Pantone 494



Exterior Doors of Embassy Theatre 2/12/24



Scope of Work EMBASSY THEATRE Façade & Marquee 2015

MARQUEE:

- **Restoration of printed photo on canvas of faux marquee**
- **Fabrication of top medallion & corner pieces to replicate original**
- **Cleaning & painting of the chain supporting marquee**
- **Patch & seal cap to render waterproof**
- **Flash, gutter & spout back top edge of marquee & side boxes**
- **Repair marquee side box fronts**
- **Restore and/or upgrade back lighting**
- **Replacement of standard bulbs with LEDs**

FAÇADE:

- **Gloss black enameled metal to blend with black glass in place:**
 - **beneath façade & side boxes**
 - **marquee underside, above doors**
 - **top and partial frame of box office**
- **Replacement of fluorescents with LED fixtures above doors (8)**
- **Plate glass mirror on facade sides (framed top & bottom in black metal)**
- **Refinish & seal eight front doors**
- **Polish & seal original brass plates**

ADDENDUMS:

Front elevation of Embassy Theatre Building

pg. 2.

Photos of current condition of marquee & façade

pg. 3.

Inez Foose proposal: marquee graphic restoration/ medallion & corners

pp. 4-6.

Scaled drawings for metal fabrication, mirrors, LEDs

pp. 7-10.

Assorted fabrication material samples

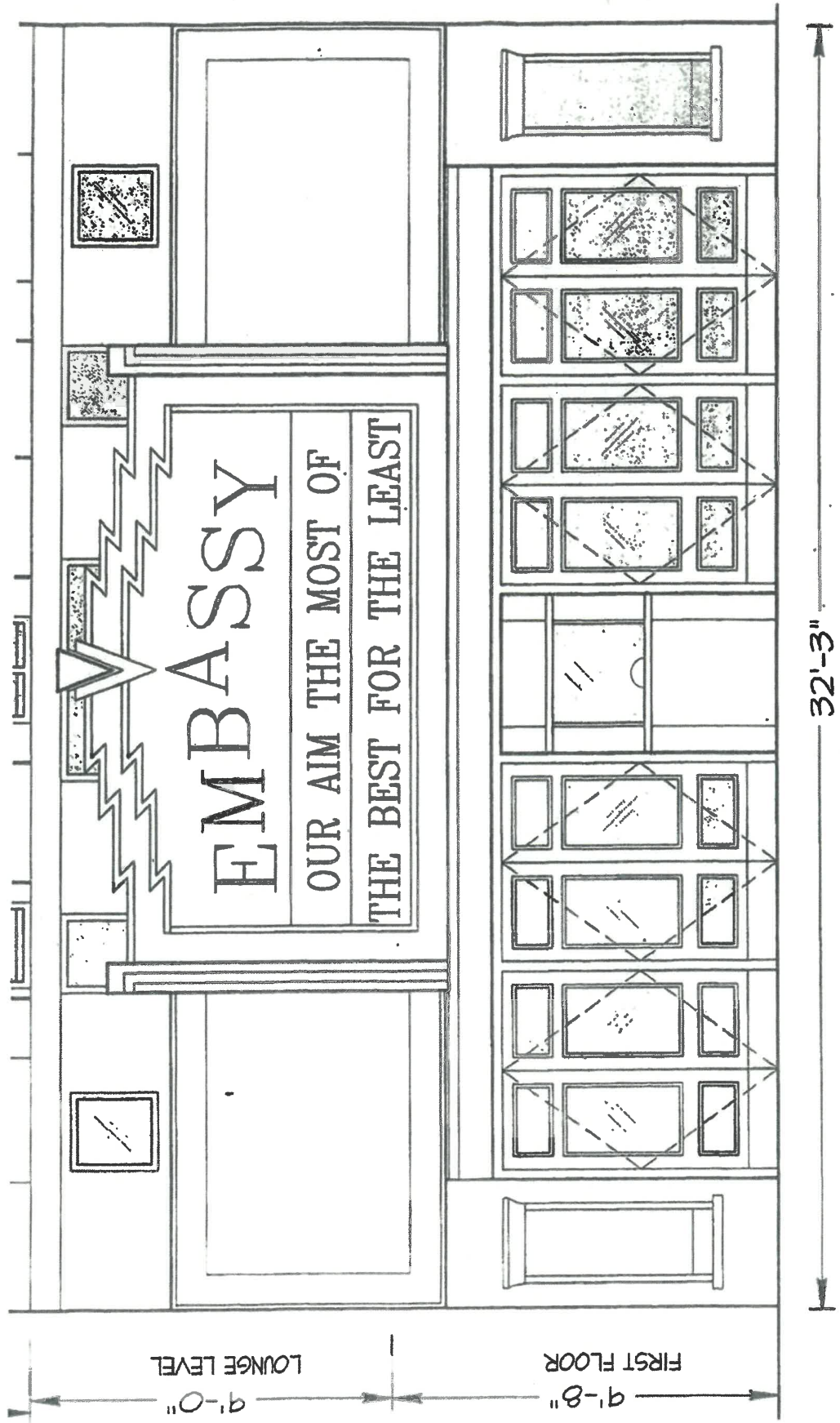




Figure 1 – Front of Embassy Theatre building, February 2015



Figure 2 - Side

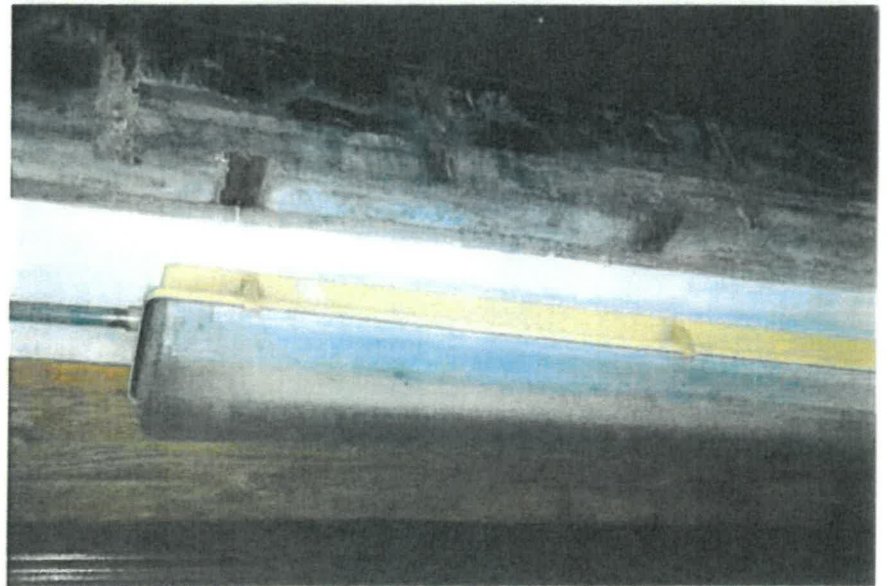


Figure 3 - Above doors, fluorescents to be replaced

EMBASSY AWNING RESTORATION Jan. 2015
Proposed Medallion and Corner Cap addition
Material: Black, Seple tortoise, and White Lucite

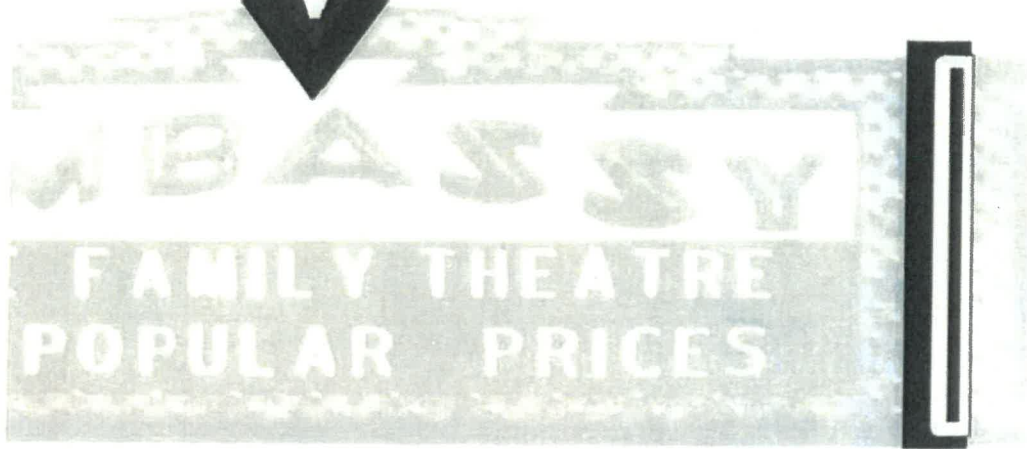


Figure 4 – Design showing Lucite additions.

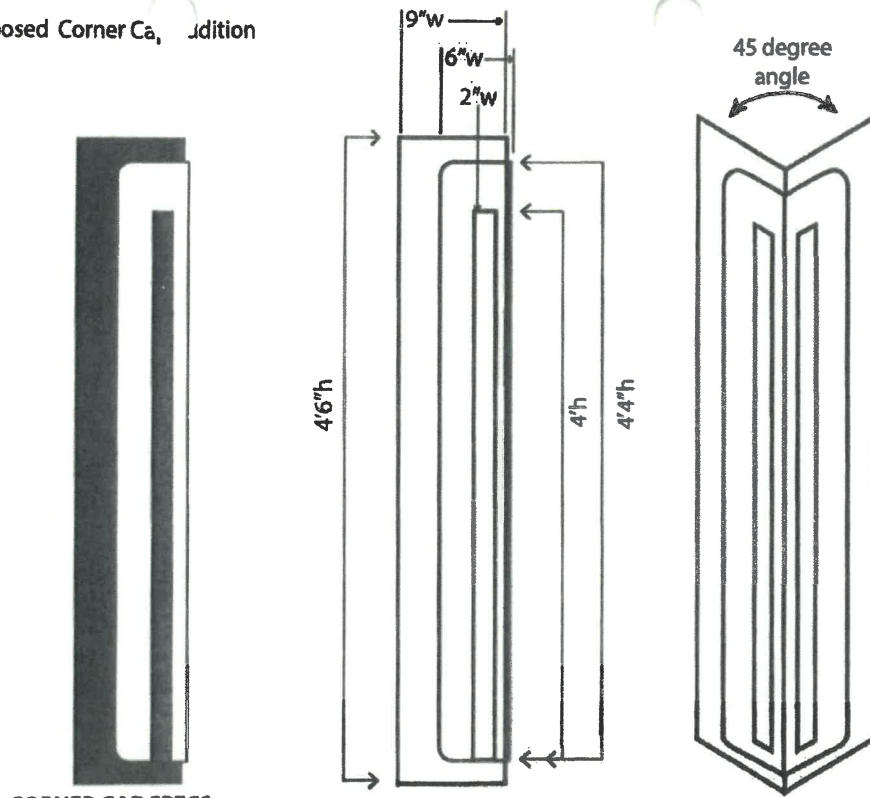


Figure 5 – Maquette of original sign.



Figure 6 – Photo from original installation in 2001.

Proposed Corner Cap Addition



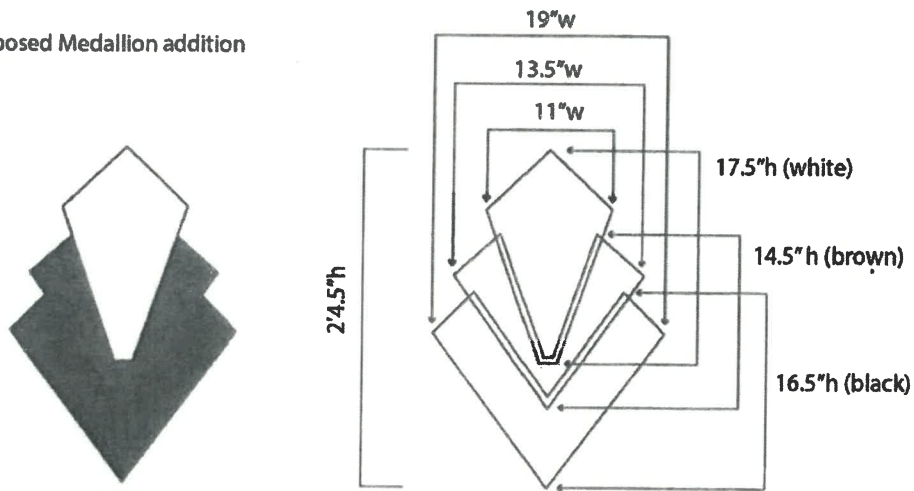
CORNER CAP SPECS

- 2 corners
- 3 colors plexi glued together as one

Material:
 Black 2025 - 1/4"
 Brown tortoise 1/8"
 White translucent 2447 - 1/8"

Figure 7 – Corner pieces (2) for marquee.

Proposed Medallion addition



MEDALLION SPECS

- 3 colors plexi attached (glued) as one
- back overlap of black and brown tortoise pieces cut out for back lite glow
- finished medallion = one piece

Material:
 Black 2025 - 1/4"
 Brown tortoise 1/4"
 White translucent 2447 - 1/4"

Figure 8 – Medallion for top center of marquee.

PHOTOVOLTAIC ROOF MOUNT SYSTEM

25 MODULES-ROOF MOUNTED - 10.000 kW DC, 7.250 kW AC
 308 WASHINGTON STREET, CUMBERLAND, MD 21502

ENERGY SELECT
 WE KNOW ENERGY

ENERGY SELECT LLC
 22815 WASHINGTON ST.
 LEONARDTOWN, MD 20650
 UNITED STATES

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/22/2023	
INVESTMENT COST ESTIMATE	12/19/2023	A
LAYOUT CHANGE	12/19/2023	B



STRUCTURAL ONLY
 12/19/2023

PROJECT NAME & ADDRESS
 DEREK CALL RESIDENCE
 308 WASHINGTON STREET,
 CUMBERLAND, MD 21502

DRAWN BY
ESR

SHEET NAME
COVER SHEET

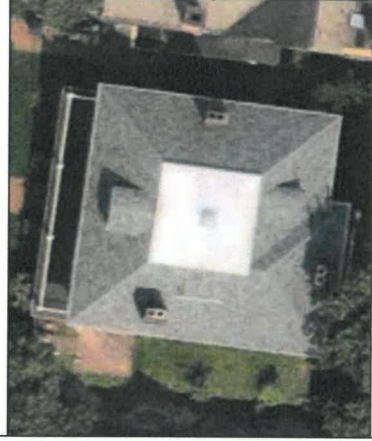
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-1

VICINITY MAP



HOUSE PHOTO



CODE REFERENCES

- 2018 INTERNATIONAL FIRE CODE
- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2017 NATIONAL ELECTRICAL CODE

GENERAL NOTES

- ALL COMPONENTS ARE UL LISTED AND CEC CERTIFIED, WHERE WARRANTED.
- THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2017.
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
- ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
- HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH CEC 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED, PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE, A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #6 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
- PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE.
- ALL SINAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SINAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHI.
- INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
- THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)].
- ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES.
- ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
- SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
- PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12.
- DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)].
- ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
- WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
- ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703
- ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.

PROJECT DATA

PROJECT ADDRESS
 308 WASHINGTON STREET,
 CUMBERLAND, MD 21502

OWNER:
 DEREK CALL

DESIGNER:
 ESR

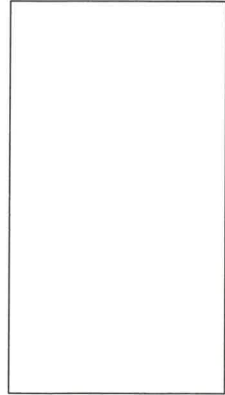
SCOPE: 10.000 kW DC ROOF MOUNT
 SOLAR PV SYSTEM WITH
 25 SILFAB SOLAR: SIL-400 HC+ 400W
 PV MODULES WITH
 25 ENPHASE IQ8PLUS-72-2-US 290W
 MICRO INVERTERS EQUIPPED WITH
 RAPID SHUTDOWN

AUTHORITIES HAVING JURISDICTION:
 BUILDING: ALLEGANY COUNTY
 ZONING: ALLEGANY COUNTY
 UTILITY: POTOMAC EDISON

SHEET INDEX

- PV-1 COVER SHEET
- PV-2 SITE PLAN
- PV-3 ROOF PLAN & MODULES
- PV-4 ELECTRICAL PLAN
- PV-5 STRUCTURAL DETAIL
- PV-5A STRUCTURAL DETAIL
- PV-6 ELECTRICAL LINE DIAGRAM
- PV-7 WIRING CALCULATIONS
- PV-8 LABELS
- PV-9 PLACARD
- PV-10 MICRO INVERTER CHART
- PV-11+ EQUIPMENT SPECIFICATIONS

SIGNATURE



ENERGY SELECT LLC
22815 WASHINGTON ST.
LEONARDTOWN, MD 20650
UNITED STATES

REVISIONS	DESCRIPTION	DATE	REV
	INITIAL DESIGN	11/22/2023	
	MODULE CAPACITY DECREASE	12/18/2023	A



STRUCTURAL ONLY
12/18/2023

PROJECT NAME & ADDRESS
DEREK CALL RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY
ESR

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI/B
11" X 17"

SHEET NUMBER
PV-2

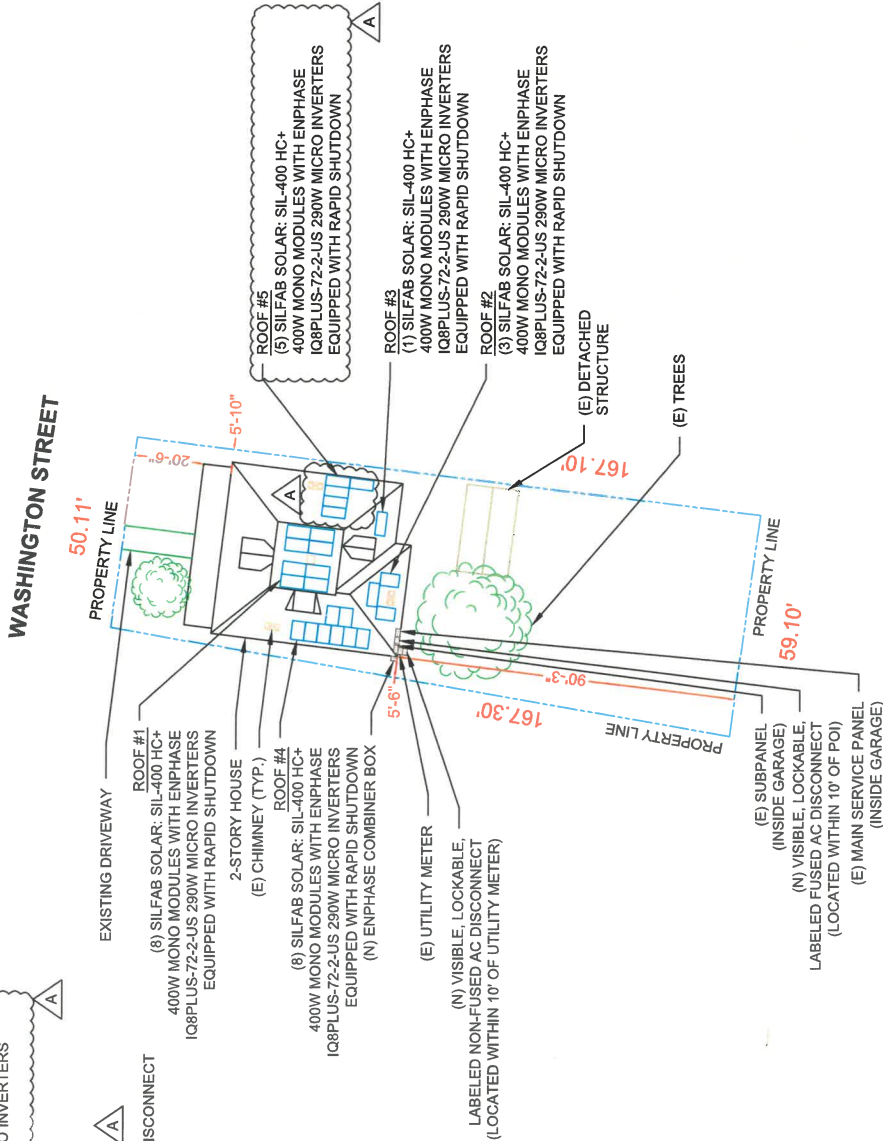
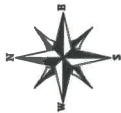
NOTE: AC DISCONNECT IS 24/7 ACCESSIBLE, TAGGABLE, AND UTILITY ACCESSIBLE.

PROJECT DESCRIPTION:

- 25 X SILFAB SOLAR: SIL-400 HC+ 400W MONO MODULES
- ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
- DC SYSTEM SIZE: 25 x 400 = 10,000 KW/DC
- AC SYSTEM SIZE: 25 x 290 = 7,250 KW/AC
- EQUIPMENT SUMMARY
- 25 SILFAB SOLAR: SIL-400 HC+ 400W MONO MODULES
- 25 ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS
- EQUIPPED WITH RAPID SHUTDOWN

- ROOF ARRAY AREA #1: 170.64 SQ. FT.
- ROOF ARRAY AREA #2: 63.99 SQ. FT.
- ROOF ARRAY AREA #3: 21.33 SQ. FT.
- ROOF ARRAY AREA #4: 170.64 SQ. FT.
- ROOF ARRAY AREA #5: 106.65 SQ. FT.

NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT LOCATED WITHIN 10' OF UTILITY METER



DESIGN SPECIFICATION
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: REFER STRUCTURAL LETTER
WIND EXPOSURE: REFER STRUCTURAL LETTER
WIND SPEED: REFER STRUCTURAL LETTER

ENERGY SELECT LLC
28815 WASHINGTON ST.
LEONARDTOWN, MD 21060
UNITED STATES

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/22/2023	
MODULE CAPACITY DECREASE	12/16/2023	A

DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY
ESR

SHEET NAME
ELECTRICAL PLAN

SHEET SIZE
**ANSI B
11" X 17"**

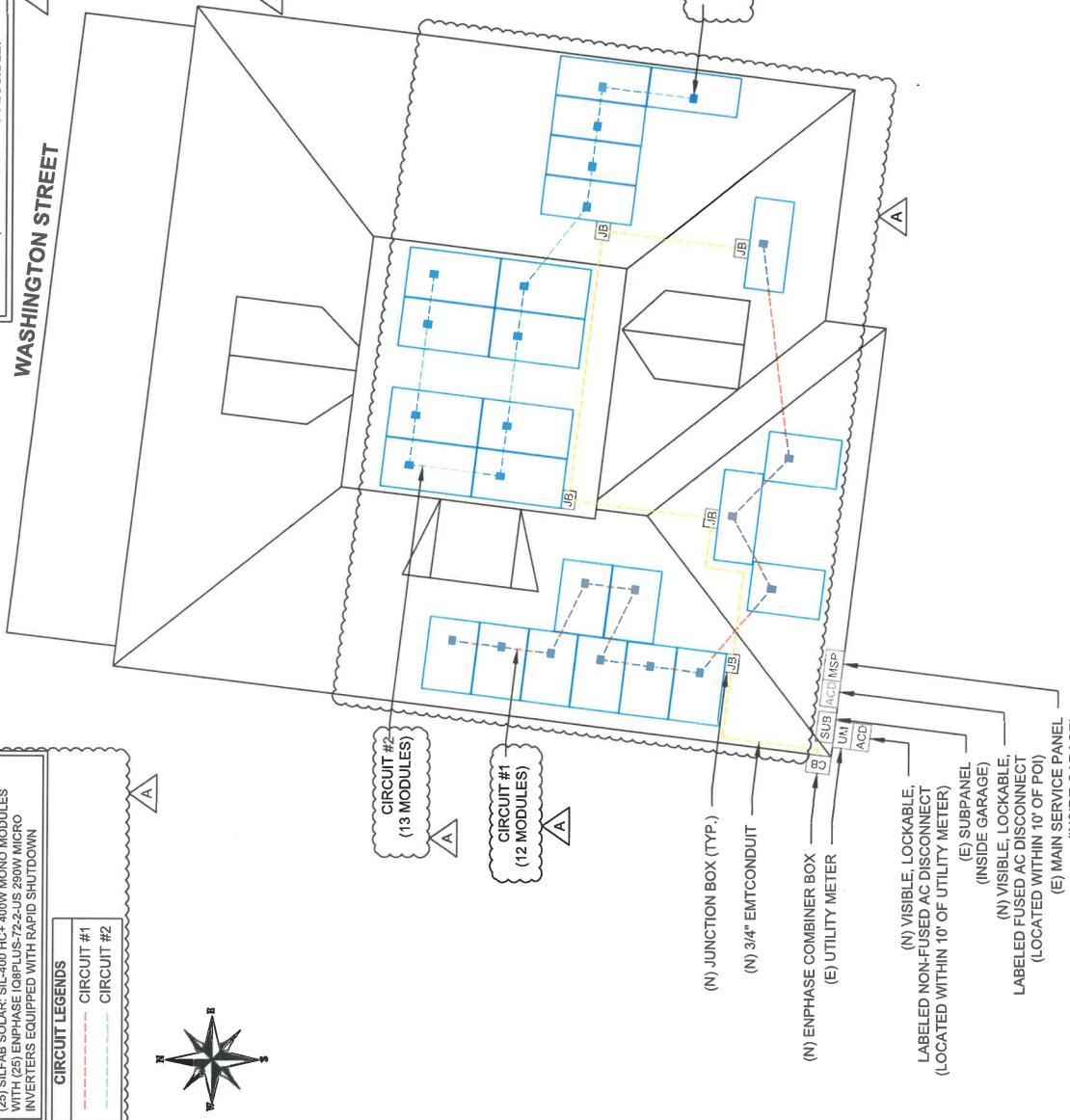
SHEET NUMBER
PV-4

EQUIPMENT DESCRIPTION	QTY
SOLAR PV MODULES: SILFAB SOLAR: SIL-400 HC+ 400W MODULE	25
MICRO INVERTERS: ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN	25
JUNCTION BOXES: JUNCTION BOX UL-1741, NEMA 3R CSA C22.2 NO.290	4
JUNCTION BOX: 6"X6"X2" UL LISTED, STEEL WATER TIGHT NEMA TYPE 3R, UL LISTED	1
COMBINER BOX: ENPHASE IQ COMBINER X-IQ-AM1-240-4/AC 120/240VAC, 1 $\frac{1}{2}$ 3W 125A RATED BUS BAR, NEMA 3R SOLAR LOADS ONLY, UL-1741 COMPLIANT	1
20A BREAKERS	2
AC DISCONNECT: NON-FUSED AC DISCONNECT 60A, 240V, NEMA 3R, UL LISTED	1
AC DISCONNECT: FUSED AC DISCONNECT, 60A FUSED, (2) 40A FUSES 240V, NEMA 3R, UL LISTED	1
IRONRIDGE XR100 RAIL (RAIL 168" (14 FEET) CLEAR) (XR-100-168A)	16
BONDED SPLICE, XR100 (XR100-BOSS-01-M1)	2
UNIVERSAL MODULE CLAMP, CLEAR (UFO-CL-01-A1)	22
STOPPER SLEEVE, 40MM, MILL (UFO-STP-40MM-M1)	56
GROUNDING LUG (XR-LUG-03-A1)	14
IRONRIDGE HALO ULTRAGRIP ATTACHMENTS (QM-HUG-01-M1)	64
RT MINI II ATTACHMENTS	24
RD STRUCTURAL SCREW, 3.0L (HW-RD1430-01-M1)	176
SQUARE-BOLT BONDING HARDWARE (BHW-SQ-02-A1)	88

NOTE: AC DISCONNECT IS 24/7 ACCESSIBLE, TAGGABLE, AND UTILITY ACCESSIBLE.

DC SYSTEM SIZE: 25 x 400 = 10,000 kW DC
AC SYSTEM SIZE: 25 x 290 = 7,250 kW AC
(25) SILFAB SOLAR: SIL-400 HC+ 400W MONO MODULES WITH (25) ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

CIRCUIT LEGENDS
--- CIRCUIT #1
--- CIRCUIT #2



LEGEND

[JB]	- JUNCTION BOX
[CB]	- COMBINER BOX
[ACD]	- AC DISCONNECT
[UM]	- UTILITY METER
[MSP]	- MAIN SERVICE PANEL
[SUB]	- SUBPANEL
[V]	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
[R]	- ROOF ATTACHMENT
[RA]	- RAFTER
[C]	- CONDUIT

REVISIONS		DATE	REV
DESCRIPTION	INITIAL DESIGN	11/22/2023	
	MODULE CAPACITY DECREASE	12/18/2023	A



STRUCTURAL ONLY
12/18/2023

PROJECT NAME & ADDRESS

DEREK CALL
RESIDENCE

308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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SHEET NAME

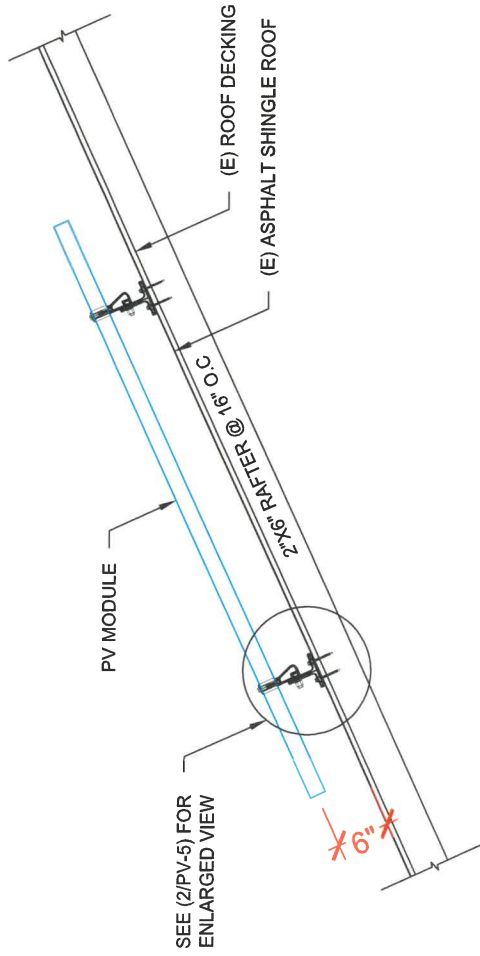
STRUCTURAL DETAIL

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

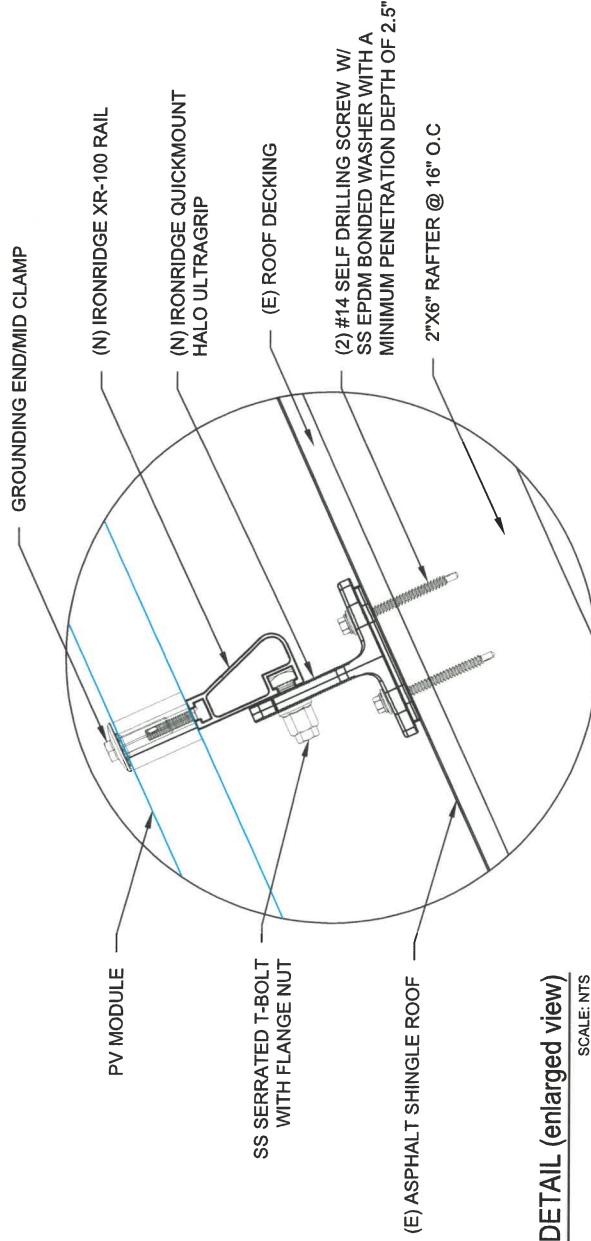
PV-5



1 | STRUCTURAL ATTACHMENT (Side view)

PV-5

SCALE: N.T.S



2 | ATTACHMENT DETAIL (enlarged view)

PV-5

SCALE: N.T.S

REVISIONS	DESCRIPTION	DATE	REV
	INITIAL DESIGN	11/22/2023	
	MODULE CAPACITY DECREASE	12/18/2023	A



STRUCTURAL ONLY
12/18/2023

PROJECT NAME & ADDRESS

DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

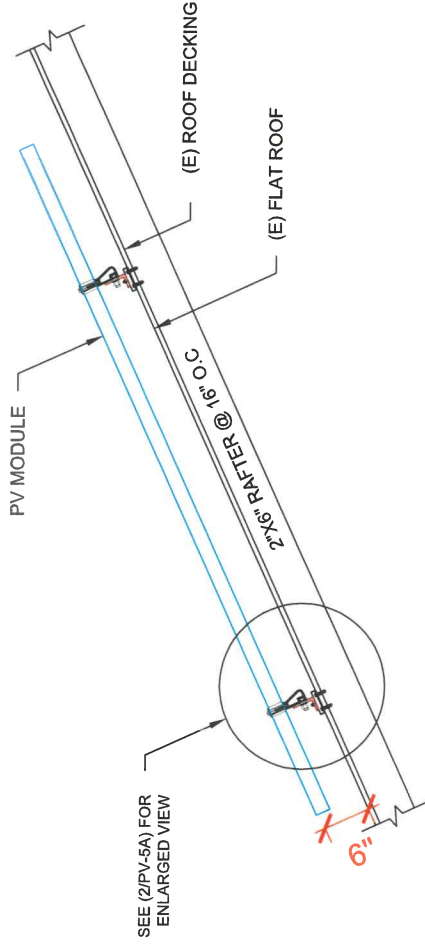
DRAWN BY
ESR

SHEET NAME

STRUCTURAL DETAIL

SHEET SIZE
ANSI B
11" X 17"

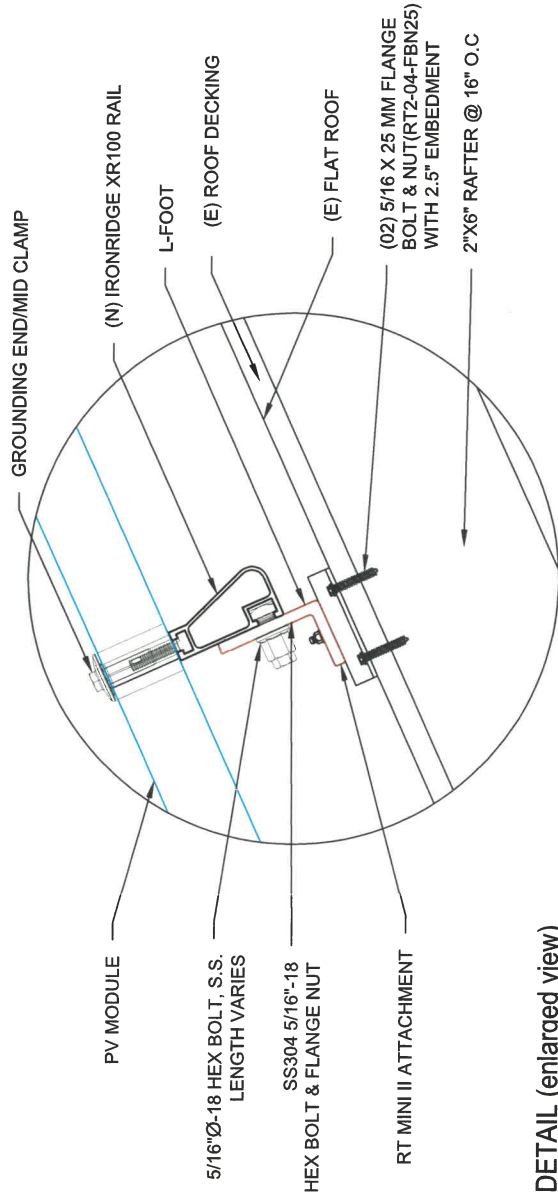
SHEET NUMBER
PV-5A



1 | **STRUCTURAL ATTACHMENT (Side view)**

PV-5A

SCALE: N.T.S



2 | **ATTACHMENT DETAIL (enlarged view)**

PV-5A

SCALE: NTS

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22815 WASHINGTON ST,
LEONARDTOWN, MD 20650
UNITED STATES

REVISIONS	DESCRIPTION	DATE	REV
	INITIAL DESIGN	11/22/2023	
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PROJECT NAME & ADDRESS
DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY
ESR

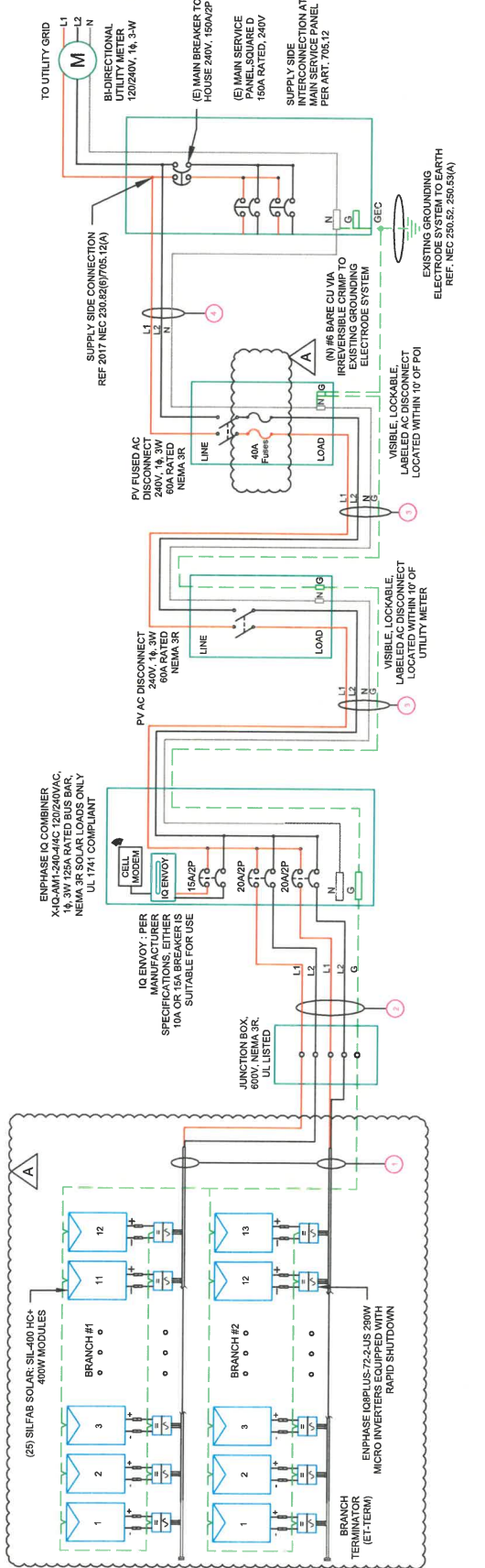
SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

- GROUNDING & GENERAL NOTES:**
- PV GROUNDING ELECTRODE SYSTEM NEEDS TO BE INSTALLED IN ACCORDANCE WITH (NEC 690.43)
 - PV INVERTER IS UNGROUNDED, TRANSFORMERLESS TYPE
 - DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
 - ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
 - JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOX DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
 - AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.
 - RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 18" ABOVE THE ROOF, USING CONDUIT SUPPORTS.
- RACKING NOTE:**
- BOND EVERY OTHER RAIL WITH #6 BARE COPPER

- INTERCONNECTION NOTES:**
- INTERCONNECTION SIZES, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH (NEC 705.12) AND (NEC 690.59).
 - GROUND FAULT PROTECTION IN ACCORDANCE WITH (NEC 715.3).
 - ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
 - PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.
- DISCONNECT NOTES:**
- DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
 - AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
 - DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH (NEC 225.31) AND (NEC 225.32).



NOTE: AC DISCONNECT IS 2477 ACCESSIBLE, TAGGABLE, AND UTILITY ACCESSIBLE.

QTY	CONDUCTOR INFORMATION	CONDUIT TYPE	CONDUIT SIZE
(4)	#12AWG - (L1 & L2 NO NEUTRAL)	N/A	N/A
(1)	#6AWG - BARE COPPER IN FREE AIR		
(4)	#10AWG - CU, THWN-2	EMT OR LFMC IN ATTIC	3/4"
(2)	#6AWG - CU, THWN-2		
(1)	#6AWG - CU, THWN-2 N	EMT, LFMC OR PVC	3/4"
(1)	#6AWG - CU, THWN-2 GND		
(2)	#6AWG - CU, THWN-2 N	EMT, LFMC OR PVC	3/4"
(1)	#6AWG - CU, THWN-2 N		

DC SYSTEM SIZE: 25 x 400 = 10,000 kW DC
AC SYSTEM SIZE: 25 x 280 = 7,250 kW AC
(25) SILFAB SOLAR: SIL-400 HC+ 400W MONO MODULES WITH (25) ENPHASE (OR PLUS: 72-2-US 280W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN)
(1) BRANCH CIRCUIT OF 13 MODULES ARE CONNECTED IN PARALLEL

ENERGY SELECT LLC
22815 WASHINGTON ST,
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UNITED STATES

REVISIONS	DESCRIPTION	DATE	REV
	INITIAL DESIGN	11/22/2023	
	MODULE CAPACITY DECREASE	12/18/2023	A

PROJECT NAME & ADDRESS
DEREK CALL RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-7

AMBIENT TEMPERATURE SPECS

AMBIENT TEMP (HIGH TEMP 2%)	36°
RECORD LOW TEMP	-11°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.28%/°C

PERCENT OF VALUES

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20

SOLAR MODULE SPECIFICATIONS

MANUFACTURER / MODEL #	SILFAB SOLAR: SIL-400 HC+ 400 W MODULE
VMP	36.05V
IMP	11.10A
VOC	43.02V
ISC	11.58A
TEMP. COEFF. VOC	-0.28%/°C
MODULE DIMENSION	75.30" L x 40.80" W x 1.37" D (in Inch)

INVERTER SPECIFICATIONS

MANUFACTURER / MODEL #	ENPHASE IQ8PLUS-72-2-US 2900W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN
MIN/MAX DC VOLT RATING	30V MIN/ 58V MAX
MAX INPUT POWER	235W/4400W
NOMINAL AC VOLTAGE RATING	240V/ 211-284V
MAX AC CURRENT	1.21A
MAX MODULES PER CIRCUIT	13 (SINGLE PHASE)
MAX OUTPUT POWER	290 VA

AC CALCULATIONS

CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	NEUTRAL SIZE	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	90°C AMPACITY (A)	90°C CONDUCTORS IN RACEWAY	TOTAL CC	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC PER RACEWAY NEC	310.15(8)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC	310.15(8)(3)(a)	90°C AMPACITY DERATED (A)	AMPACTY CHECK #2	FEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/FT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
CIRCUIT 1	JUNCTION BOX	240	14.52	18.15	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	30	2	30	0.91	310.15(8)(2)(a)	1	27.3	PASS	N/A	0.45	N/A	N/A	N/A	
CIRCUIT 2	JUNCTION BOX	240	15.73	19.6625	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	30	2	30	0.91	310.15(8)(2)(a)	1	27.3	PASS	N/A	0.54	N/A	N/A	N/A	
JUNCTION BOX	COMBINER BOX	240	15.73	19.6625	20	N/A	CU #10 AWG	CU #12 AWG	35	40	4	40	0.91	310.15(8)(2)(a)	0.8	29.12	PASS	25	1.24	0.606	3/4" EMT	19.79362	
COMBINER BOX	AC DISCONNECT	240	30.25	37.8125	40	CU #6 AWG	CU #6 AWG	CU #6 AWG	65	75	2	75	0.91	310.15(8)(2)(a)	1	68.25	PASS	5	0.491	0.062	3/4" EMT	310.048728	
AC DISCONNECT	AC DISCONNECT	240	30.25	37.8125	40	CU #6 AWG	CU #6 AWG	CU #6 AWG	65	75	2	75	0.91	310.15(8)(2)(a)	1	68.25	PASS	5	0.491	0.062	3/4" EMT	310.048728	
AC DISCONNECT	POI	240	30.25	37.8125	40	CU #6 AWG	N/A	CU #6 AWG	65	75	2	75	0.91	310.15(8)(2)(a)	1	68.25	PASS	5	0.491	0.062	3/4" EMT	218.536554	

Circuit 1 Voltage Drop 1.042
Circuit 2 Voltage Drop 1.132

A

ELECTRICAL NOTES

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS, AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF JUNCTION BOX, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCC GBL-4DBT LAY-IN LUG.
- TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.

ENERGY SELECT LLC
22815 WASHINGTON ST.
LEONARDTOWN, MD 20650
UNITED STATES

REVISIONS	
DESCRIPTION	DATE
INITIAL DESIGN	11/22/2023
MODULE CAPACITY DECREASE	12/18/2023
	A

--

DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY
ESR

SHEET NAME
LABELS

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-8

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

LABEL-1:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13(B)

⚠ WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

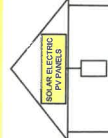
LABEL-2:
LABEL LOCATION:
UTILITY METER
MAIN SERVICE PANEL
SUBPANEL
CODE REF: NEC 705.12(C) & NEC 690.59

⚠ WARNING
TURN OFF PHOTOVOLTAIC AC
DISCONNECT PRIOR TO
WORKING INSIDE PANEL

LABEL-3:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
UTILITY METER
CUMBERLAND
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

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



LABEL-4:
LABEL LOCATION:
AC DISCONNECT
CODE REF: [NEC 690.56(C)(1)(A)]

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

LABEL-5:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC
AC DISCONNECT

LABEL-6:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC
AC DISCONNECT
NOMINAL OPERATING AC VOLTAGE **240 V**
RATED AC OUTPUT CURRENT **30.25 A**

LABEL-7:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT

LABEL-8:
LABEL LOCATION:
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)
CODE REF: NEC 690.13(B)

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UNITED STATES

REVISIONS		
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PROJECT NAME & ADDRESS
**DEREK CALL
RESIDENCE**
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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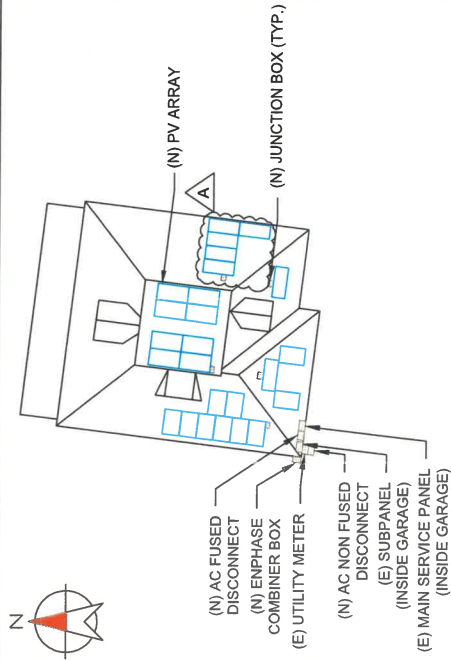
SHEET NAME
PLACARD

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-9

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM MULTIPLE SOURCES OF POWER WITH SAFETY DISCONNECTS AS SHOWN:



308 WASHINGTON STREET, CUMBERLAND, MD 21502

DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN:
NEC 690.56(B)&(C), [NEC 705.10])
[NEC 690.56(C)(1)(A)]

LABELING NOTES:

1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19070.145, ANSI Z535.
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND, REFLECTIVE, AND PERMANENTLY AFFIXED [NEC 690.56(C)(1)(A)].



DATA SHEET

IQ8 and IQ8+ Microinverters

USPT (SAFETY)		IP65 (UL 508)	
Commonly used module ratings ¹	W	235 - 330	1910US 72-2-45
Module compatibility		235 - 440	235 - 440
MPPPT voltage range	V	60-cel/120 half-cell	60-cel/120 half-cell, 86-cel/172 half-cell and 72-cel/144 half-cell
Operating range	V	27 - 37	29 - 45
Min/max start voltage	V	28 - 48	25 - 58
Max input DC voltage	V	30 / 48	30 / 58
Max DC current ² (module in)	A	50	60
Over-voltage class DC port		II	II
DC port backfeed current	mA	0	0
PV array configuration			
CEC (SAFETY)		IP65 (UL 508)	IP65 (UL 508)
Peak output power	VA	245	300
Max continuous output power	VA	240	290
Nominal (L-L) voltage/range ³	V	240 / 211-284	240 / 211-284
Max continuous output current	A	1.0	1.21
Nominal frequency	Hz	60	60
Extended frequency range	Hz	50 - 88	50 - 88
AC short circuit fault current over 3 cycles	A rms	2	2
Max units per 20-A (L-L) branch circuit ⁴		15	15
Total harmonic distortion	%	<3%	<3%
Over-voltage class AC port		III	III
AC port backfeed current	mA	30	30
Power factor setting		1.0	1.0
Grid-led power factor (adjustable)		0.95 leading - 0.95 lagging	0.95 leading - 0.95 lagging
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night-time power consumption	W	0	0
UL (SAFETY)			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	-40°C to +60°C (-40°F to +140°F)
Relative humidity range		4% to 100% (condensing)	4% to 100% (condensing)
DC Connector type		MC4	MC4
Dimensions (HxWxD)		22 mm (0.87") x 175 mm (6.89") x 302 mm (12.7")	22 mm (0.87") x 175 mm (6.89") x 302 mm (12.7")
Weight		108 kg (239 lbs)	108 kg (239 lbs)
Cooling		Natural convection - no fans	Natural convection - no fans
Approved for wet locations		Yes	Yes
Pollution degree		PD3	PD3
Enclosure		Class I double-insulated, corrosion resistant polymer enclosure	Class I double-insulated, corrosion resistant polymer enclosure
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	NEMA Type 6 / outdoor
CEC (SAFETY)			
Certifications		CA Rule 21 (UL 1741-SALU, E209-ULTRV/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 No. 1071-01)	CA Rule 21 (UL 1741-SALU, E209-ULTRV/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 No. 1071-01)

¹ Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit

² Max DC current per module

³ Nominal voltage range can be extended beyond nominal if required by the utility; (4) Limit only per local requirements to define the number of microinverters per branch in your area.

IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first micro-grid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters are UL Listed as PV Rapid Shutdown Equipment and conform with all applicable safety standards. They are installed according to manufacturer's instructions.



- Easy to install**
 - Lightweight and compact with plug-n-play connectors
 - Power Line Communication (PLC) between components
 - Faster installation with simple two-wire cabling

- High productivity and reliability**
 - Produce power even when the grid is down**
 - More than one million cumulative hours of testing
 - Class II double-insulated enclosure
 - Optimized for the latest high-powered PV modules

- Microgrid-forming**
 - Complies with the latest advanced grid support**
 - Remote automatic updates for the latest grid requirements
 - Configurable to support a wide range of grid profiles
 - Meets CA Rule 21 (UL 1741-SA) requirements

* Only when installed with IQ System Controller 2.
 ** IQ8 and IQ8Plus supports split phase, 240V installations only.

PROJECT NAME & ADDRESS
 DEREK CALL
 RESIDENCE
 308 WASHINGTON STREET,
 CUMBERLAND, MD 21502

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 ESR

SHEET NAME
 EQUIPMENT
 SPECIFICATION

SHEET SIZE
 11" X 17"

SHEET NUMBER
 PV-12

1085P-05-0002-01-EH-US-2022-03-17

Enphase IQ Combiner 4/4C

IQ Combiner 4/4C

X-IQ-AM1-240-4
X-IQ-AM1-240-4C

The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters 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 Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-d6-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

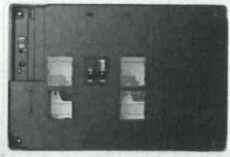
- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 10A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two-year labor reimbursement program coverage included for both the IQ Combiner-SKU's
- UL listed



X-IQ-AM1-240-4C



X-IQ-AM1-240-4



To learn more about Enphase offerings, visit enphase.com



Enphase IQ Combiner 4/4C

MODEL NUMBER
IQ Combiner 4 (X-IQ-AM1-240-4)
IQ Combiner 4C (X-IQ-AM1-240-4C)

IQ Combiner 4 with Enphase IQ Gateway (includes circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/-0.5% and consumption monitoring +/-2.5%), includes a solar shield to match the IQ Battery system and IQ System Controller, 2 and to deflect heat.

IQ Combiner 4C with Enphase IQ Gateway (includes circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/-0.5% and consumption monitoring +/-2.5%), includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-d6-SP-05), includes a solar shield to match the IQ Battery system and IQ System Controller, 2 and to deflect heat. Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area (includes a solar shield to match the IQ Battery and IQ System Controller, and to deflect heat, not included, order separately)

ACCESSORIES AND REPLACEMENT PARTS
Includes COMMS-KIT-01 and CELLMODEM-M1-d6-SP-05 with 5-year Sprint data plan for
Ensemble sites
-IG-based LTE-M1 cellular modem with 5-year AT&T data plan
-IG-based LTE-M1 cellular modem with 5-year AT&T data plan
Solar Shield (97x10, 10A, 6 BR220, BR220, BR240, BR250, and BR260 circuit breakers)
Circuit Breaker, 2 pole, 15A, Eaton BR125
Circuit Breaker, 2 pole, 15A, Eaton BR125
Circuit Breaker, 2 pole, 20A, Eaton BR120
Circuit Breaker, 2 pole, 15A, Eaton BR220
Circuit Breaker, 2 pole, 15A, Eaton BR220
Circuit Breaker, 2 pole, 20A, Eaton BR220 with head down kit support
Circuit Breaker, 2 pole, 20A, Eaton BR220 with head down kit support
Power Line Carrier (communication bridge pair), quantity - one pair
Replacement solar shield for IQ Combiner 4/4C
Accessories receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPL-C-01)
Replacement IQ Gateway primed circuit board (PCB) for Combiner 4/4C
Hold down kit for Eaton circuit breaker with increase

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	75 A
Max. continuous current rating	65 A
Max. continuous current rating (from PV/battery)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (pole and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway for either included
Energy breaker	10A per 15A fitting (SE/General) (Eaton included)
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (C17-200-3PLUT)	A pair of 200 A split core current transformers

MECHANICAL DATA

Dimensions (Width)	37.5 x 46.5 x 11.8 cm (14.75" x 18.5" x 4.65") Height is 21.08" (53.5 cm) with mounting brackets
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +40° C (-40° F to 115° F)
Cooling	Neutral convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"> 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors Main bus conductor output: 10 to 2/0 AWG copper conductors Main bus conductor output: 10 to 2/0 AWG copper conductors Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing
Altitude	Up to 2000 meters (6,500 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-d6-SP-05, CS, LAC, MDE, M, Q, A, C, S, 4G LTE based, LTE-M1 cellular modem. Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat 5E (or Cat 6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ Combiner	UL 1741, CAN/CSA C22.5 No. 107.1, IEC/EN Part 15, Class B, IEC/EN 61003 Production compliance ANSI C12.20 accuracy class 2.5 (IEC/EN Class 1.5 (IEC/EN production)) Consumption metering accuracy class 2.5
Compliance, IQ Gateway	UL 6960-1, IECANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit enphase.com

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ENERGY SELECT LLC
22815 WASHINGTON ST.
LEONARDTOWN, MD 20650
UNITED STATES

REVISIONS	DATE	REV
DESCRIPTION	1/12/2023	
INITIAL DESIGN		
MODULE CAPACITY DECREASE	12/18/2023	A

PROJECT NAME & ADDRESS

DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY

ESR

SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE

ANSI B
14" X 17"

SHEET NUMBER

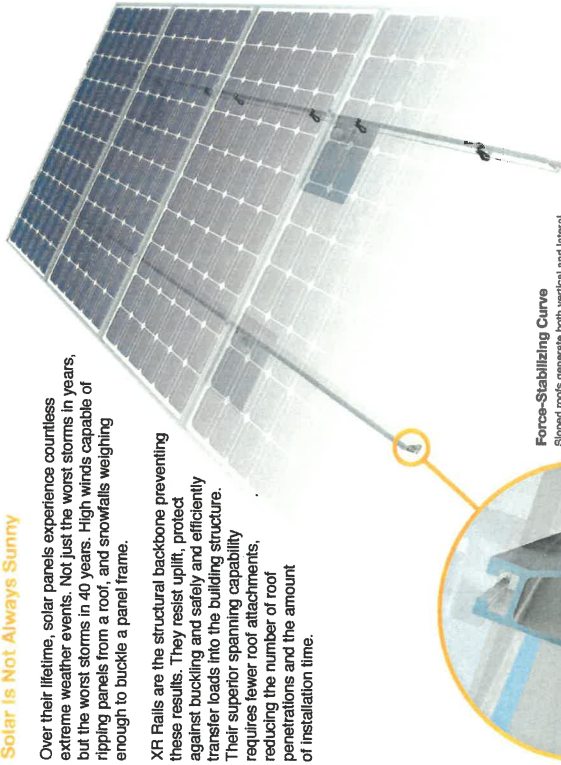
PV-13



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, increasing the ability to withstand weather and a longer system lifetime.

Compatible with Flat & Pitched Roofs

XR Rails are compatible with FlashFoot and other pitched roof attachments.



Corrosion-Resistant Materials

All XR Rails are made of marine-grade aluminum alloy, then prepared with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



Tech Brief

XR Rail Family

XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



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 residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 8 feet.

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



XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications.

- 12' spanning capability
- Heavy load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

Load	Rail Span				
	4'	5' 4"	6'	8'	12'
Snow (PSF) Wind (MPH)					
None	XR10	XR100	XR1000		
10-20					
30					
40					
50-70					
80-90					

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UNITED STATES

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/02/2023	
MODULE CAPACITY DECREASE	12/16/2023	A

DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

DRAWN BY
ESR

SHEET NAME
**EQUIPMENT
SPECIFICATION**

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-14



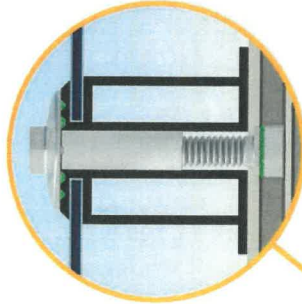
UFO Family of Components

Tech Brief

Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL-2703 standard.

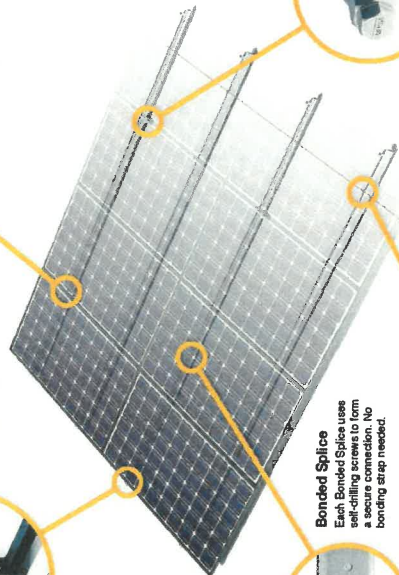
UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



Universal Fastening Object (UFO)
The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.



Stopper Sleeve
The Stopper Sleeve snaps into the rail, preventing it from sliding into a bonded end clamp.



Bonded Splice
Each Bonded Splice uses self-drilling screws to form a secure connection. No bonding strap needed.



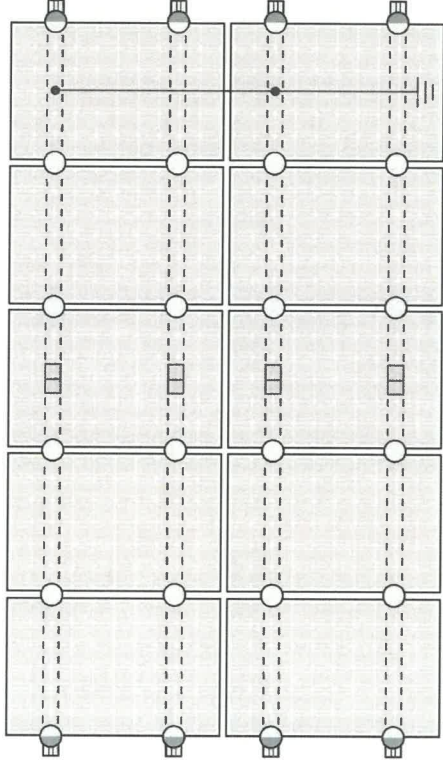
Grounding Lug
A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



Bonded Attachments
The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the rail, and secures the rest of the system.

System Diagram

Tech Brief



○ UFO ● Stopper Sleeve ● Grounding Lug □ Bonded Splice — Ground Wire

Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to IronRidge.com/UFO

Feature	Cross-System Compatibility		
	Flush Mount	Tilt Mount	Ground Mount
XR Rails	✓	✓	XR1000 Only
UFO/Stopper	✓	✓	✓
Bonded Splice	✓	✓	N/A
Grounding Lugs	1 per Row	1 per Row	1 per Array
Microinverters & Power Optimizers	Enphase - M250-72, M250-60, M215-60, C250-72 Darfon - MIG240, MIG300, G320, G640 SolarEdge - P300, P320, P400, P405, P600, P700, P730	Class A	Class A
Fire Rating	Class A	Class A	N/A
Modules	Tested or Evaluated with over 400 Framed Modules Refer to installation manuals for a detailed list.		

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ENERGY SELECT LLC
22815 WASHINGTON ST.
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UNITED STATES

REVISIONS	DATE	REV
INITIAL DESIGN	11/22/2023	
MODULE CAPACITY DECREASE	12/18/2023	A

PROJECT NAME & ADDRESS
DEREK CALL
RESIDENCE
308 WASHINGTON STREET
CUMBERLAND, MD 21502

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ESR

SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE
ANSI/B
11" X 17"

SHEET NUMBER
PV-15



QuickMount® Halo UltraGrip

Cut Sheet

Release Liner shown for reference

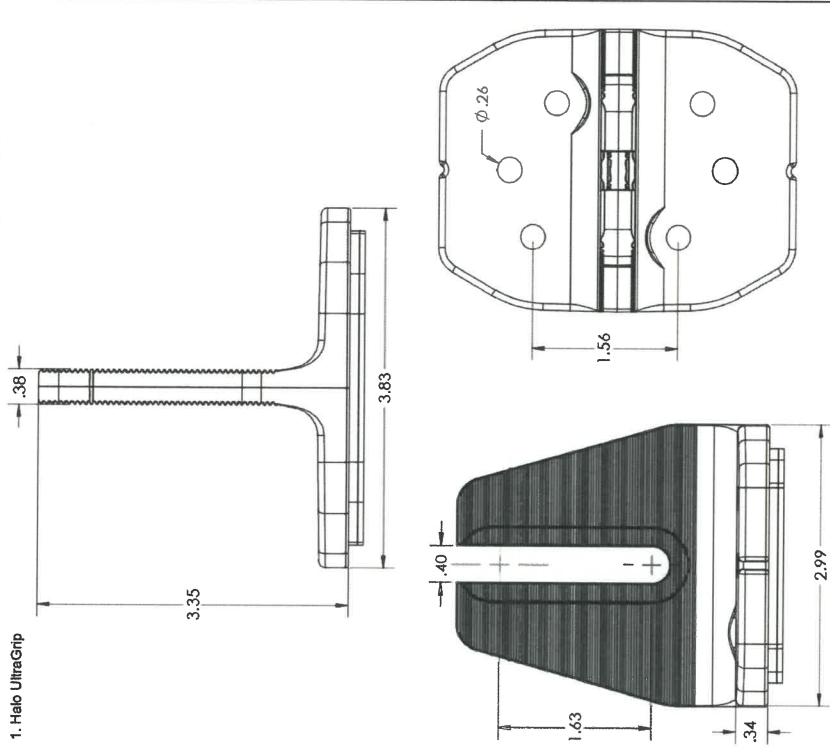
RD STRUCTURAL SCREW PN RD-1430-01-M1 SOLD SEPARATELY SHOWN FOR REFERENCE

ITEM NO	DESCRIPTION	QTY IN KIT
1	QM Halo UltraGrip (Mill or Black)	1

PART NUMBER	DESCRIPTION
QM-HUG-01-M1	Halo UltraGrip - Mill
QM-HUG-01-B1	Halo UltraGrip - Black

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1. Halo UltraGrip



Property	Value
Material	3000 Series Aluminium
Finish	Mill or Black

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DESCRIPTION	DATE	REV
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MODULE CAPACITY DECREASE	12/18/2023	A

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RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-16



QuickMount® RD Structural Screw

Call Sheet



ENERGY SELECT LLC
22815 WASHINGTON ST,
LEONARDTOWN, MD 20650
UNITED STATES

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/02/2023	
MODULE CAPACITY DECREASE	12/18/2023	A

REVISIONS

PROJECT NAME & ADDRESS
DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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ESR

SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-17

ITEM NO	DESCRIPTION	QTY IN KIT
1	Self Drilling Screw, #14, Wood Tip	1
2	Washer, EPDM Backed	1

PART NUMBER	DESCRIPTION
RD-1430-01-M1	RD Structural Screw

1. Self Drilling Screw, #14, Wood Tip

Property	Value
Material	300 Series Stainless Steel
Finish	Clear

2. Washer, EPDM Backed

Property	Value
Material	300 Series Stainless Steel
Finish	Clear

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RT-MINI II

A Self-flashing PV Mount Featuring Roof Tech's AlphaSeal™ Technology



RT-MINI II is suitable for all systems with any L-Foot

- ✓ No Caulking or Pre-Drilling Required
- ✓ Universal Attachment to Any Slope
- ✓ Metal, EPDM, TPO, SBS, & Asphalt Roofs
- ✓ Wide Range of Applications & Ultimate Flexibility on the Roof
- ✓ No Need to Bend Rails
1 5/8 North & South Adjustment



Installation Manual ICC ESR 3575



Roof Tech
The Standard for Waterproof Flexible Flashing Since 1994

www.roof-tech.us info@roof-tech.us



RT-MINI II

Flexible Flashing Certified by the International Code Council (ICC)

Components

RT2-00-MINIBK2



MINI II base : 20 ea.
Screw : 40 ea.
Extra RT-Buyl : 4 ea.

Optional Items:

5 x 60mm Mounting Screw (RT2-04-SD5-60) : 100 ea./Bag
5/16 X 25MM Flange Bolt & Nut (RT2-04-FBNZ5) : 100 ea./Bag
RT-Buyl (RT2-04-MINBUTYL) : 10 ea./Box

Deck Installation

OSB & PLY

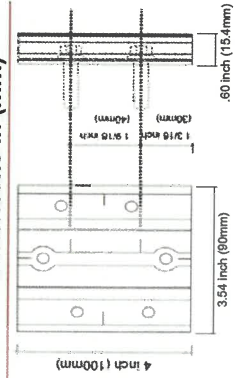


Rafter Installation

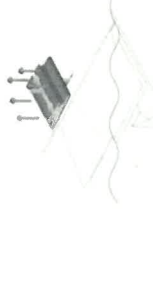
Hybrid Mounting



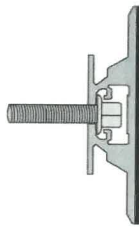
Dimensions in (mm)



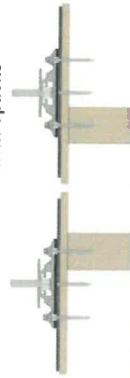
Offset Rafter Installation



RT Serrated Hex Flange Bolt/Nut:
5/16-18 X 1"



Offset Rafter Attachment Options



Metal Flashing Retrofit

Flexible Flashing



Shedding Water?

100% Waterproof

PROJECT NAME & ADDRESS

DEREK CALL
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308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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SHEET NAME

EQUIPMENT
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-18

ENERGY SELECT
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ENERGY SELECT LLC
22815 WASHINGTON ST.
LEONARDTOWN, MD 20650
UNITED STATES

REVISIONS	DATE	REV
DESCRIPTION	11/22/2023	
INITIAL DESIGN		
MODULE CAPACITY DECREASE	12/18/2023	A

August 2022

Roof Tech Inc.
www.roof-tech.us info@roof-tech.us
10620 Treena Street, Suite 230, San Diego, CA 92131
858.935.6064



Support & Downloads

P.E. Letters

ASTM2140 Testing

ICC ESR-3575

ASTM D 1761
(Standard Test Methods for Mechanical Fasteners in Wood)





PHONE: 385-202-4150
WWW.EZSOLARPRODUCTS.COM

PHONE: 385-202-4150
WWW.EZSOLARPRODUCTS.COM

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	JB-12 BODY	POLYCARBONATE WITH UV INHIBITORS	1
2	JB-12 LID	POLYCARBONATE WITH UV INHIBITORS	1
3	#10 X 1-1/4" PHILLIPS PAN HEAD SCREW		6
4	#8 X 3/4" PHILLIPS PAN HEAD SCREW		6

SIZE	DWG. NO.	REV
B	JB-12	
SCALE: 1:2	WEIGHT: 1.45 LBS	SHEET 1 OF 3
TORQUE SPECIFICATION:	15-20 LBS	
CERTIFICATION:	UL 1741, NEMA 3R CSA C22.2 NO. 290	
WEIGHT:	1.45 LBS	

SIZE	DWG. NO.	REV
B	JB-12	
SCALE: 1:2	WEIGHT: 1.45 LBS	SHEET 2 OF 3



ENERGY SELECT LLC
22815 WASHINGTON ST.
LEONARDTOWN, MD 20650
UNITED STATES

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/22/2023	
MODULE CAPACITY DECREASE	12/16/2023	A

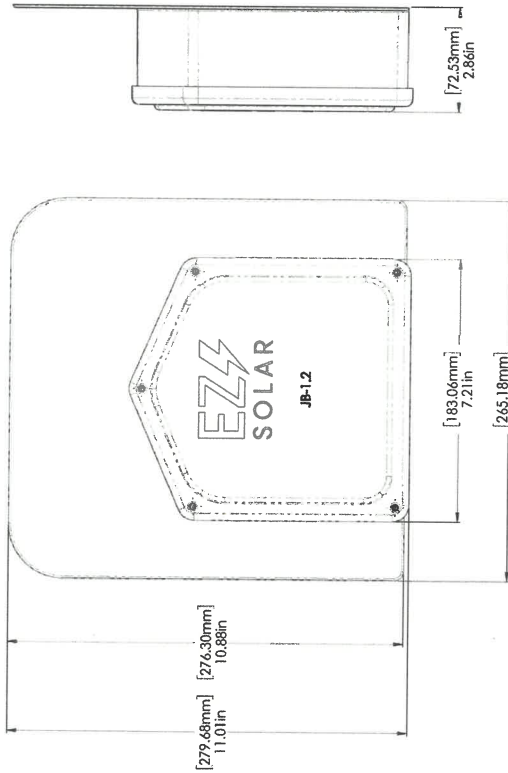
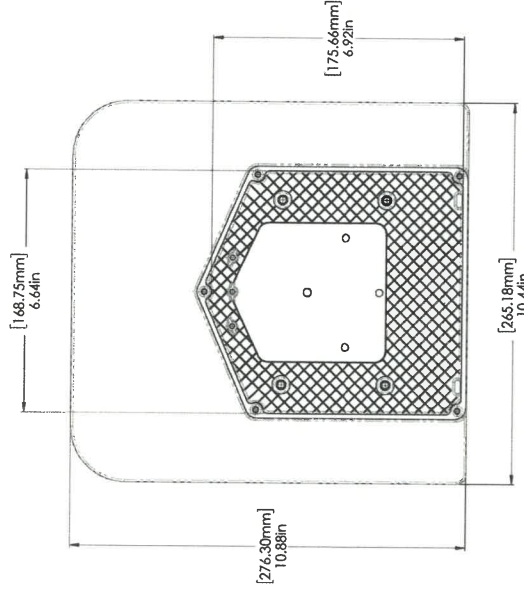
PROJECT NAME & ADDRESS
DEREK CALL
RESIDENCE
308 WASHINGTON STREET,
CUMBERLAND, MD 21502

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SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-19



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PERMIT PROJECT

FILE #: 23-001704

308 WASHINGTON ST CUMBERLAND MD 21502

INSTALLATION OF (20) ROOF MOUNTED SOLAR PANELS AND (20) MICROINVERTERS



PERMIT #: COA23-000066

Permit Type

Certificate of Appropriateness

Subtype

Certificate of Appropriateness

Work Description:

Installation of (20) roof mounted solar panels and (20) microinverters

Applicant

Energy Select LLC - Kristi Felton

Status

Online Application Received

Valuation

0.00



FEES & PAYMENTS

Plan Check Fees

30.00

Permit Fees

0.00

Total Amount

30.00

Amount Paid

0.00

Balance Due

30.00

Non-Billable



PERMIT DATES

Application Date

11/13/2023

Approval Date

Issue Date:

Expiration Date:

Close Date

Last Inspection

Non-Billable Comments

Contractor

Energy Select LLC - Kristi Felton



Contact

Energy Select LLC - Kristi Felton



Estimated Cost of the project

\$24,400.00

Attach a full written scope of work

[Signed - Call - Contract.pdf](#)



Attach photographs of the site and structure

[jpg2pdf \(4\)-min.pdf](#)



Facade Elevations

[screenshot-1697136067006.pdf](#)



Sample of Proposed Materials

[Call Material.pdf](#)



Scaled Drawings

[screenshot-1697136083233.pdf](#)



Digital Renderings, when available

[screenshot-1697136067006.pdf](#)



Color Scheme/Paint Chips

[v2 Call.pdf](#)



Manufacturer Cut-Sheets or Product Specifications

Call Material.pdf



Provide one (1) complete original copy of all supplementary materials

v2 Call.pdf



The HPC meets the second Wednesday of each month and complete applications are due the first Wednesday of each month before 4:00 p.m. You (or a representative) are required to attend the meeting scheduled for your COA review.

Preservation Guidelines (Updated 1/1/16) can be found on the City of Cumberland website at www.cumberlandmd.gov.

Do not begin work until an approval is received on Permits from both The Historic Preservation Commission and the City of Cumberland.

A signed, approved, and stamped COA and MB or RB permit form is required for application to be considered complete. These will be sent to you upon approval of the department manager or designated representative.

Signing Method

Acknowledgement



By checking this box I acknowledge that I am electronically signing this document

Type your name

Kristi Felton

Today's Date

10/25/2023

FEES



FEE	DI	QUANTITY	AMOUNT	TOTAL
Certificate of Appropriateness Review Fee				30.00
Plan Check Fees				30.00
Permit Fees				0.00
Total Fees				30.00

PAYMENTS



DATE	TYPE	REFERENCE	NOTE	RECEIPT #	RECEIVED FROM	AMOUNT
					Amount Paid	0.00
					Balance Due	30.00

ACCOUNT INFORMATION

Contact Type
Contractor

Association

Portal Access

PERSONAL INFORMATION

Contact Name

▼ Kristi

Felton

Personal Mailing Address

COMPANY INFORMATION

Company Name

Energy Select LLC

Company Mailing Address

22815 Washington St

Leondartown

MD

20650

CONTACT INFORMATION

Primary Number

3014756727

Work Number

Mobile Number

Home Number

Email

operations@energyselctllc.com

Fax

OTHER INFORMATION

User Name

operations@energyselctllc.com

District

Title

Notes

Created On

08/07/2023 - 08:00 AM

Created By

Kristi Felton

MD License: 447

ENERGY SELECT

WE KNOW ENERGY

YOUR ENERGY SELECT SOLAR CONTRACT

Customer Name:	Derek Call	Date:	10/3/2023
Job Address:	308 Washington Street, Cumberland, MD	Phone:	(435) 713-5395
		E-mail	derek.rulon.call@gmail.com
Consultant:	Rodney Oates		
Email:	rodney@energysselectllc.com	Phone #	301-453-7447

Maryland Home Improvement License # 133726

Maryland Master Electrician #447

Maryland Contractor's License #18168299

This Agreement is made 10/03/2023, between Derek Call (Owner) and Energy Select LLC (Contractor).

The Owner owns the real property located at 308 Washington Street, Cumberland, MD (Property) and desires Contractor to install a Solar Photovoltaic Electric System (System) on the Property, and Contractor has the expertise and ability to install the System.

Now, therefore, for good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. **CONTRACT WORK.** Contractor agrees to furnish all labor and materials and to perform the work necessary for the installation of the System at the Property ("Contract Work"). The Contract Work does not include roof repair or reinforcement, engineering, painting, electrical system upgrades, or transformer upgrades (Notably, the Main or Sub Panels and the Utility Equipment such as the Transformer), drywall repair, or repair service or work other than that set forth in the Scope of Work for Solar Electric Photovoltaic System.
 - A. Transformer upgrades: depending on the size of the current electrical transformer, the utility company might demand an upgrade. The appropriate size of transformer is critical to the powering of your solar system. It is the responsibility of the Owner to make this upgrade.
 - B. For Recessed Main Service Panels, an access panel will be installed. If drywall repair is required, Contractor is responsible for tape coat only, not final finishing or can recommend a drywall company.
2. **PRICE.** Owner agrees to pay Contractor the Contract Price for the performance of the Contract Work. If not Financed through our lenders who have a previously arranged payment schedule, the remainder of the Contract Price shall be paid as follows:
 - A. Ten percent (10%) is due upon signature of this Agreement.
 - B. Forty percent (40%) of the Contract Price shall be paid after the planning site visit, Solar Engineer final system design, Customer approval on equipment and solar placement, and material sourcing.
 - C. The following forty percent (40%) of the Contract Price shall be paid after all relevant permits are obtained, permission granted for Utility Interconnection, and the material is delivery to site.
 - D. The final ten percent (10%) of the Contract Price shall be paid upon a passed Electrical Inspection, Notification to Utility, and System being 100% operational.
3. **ACCESS.** Owner agrees to cooperate fully in the performance of the Contract Work and to provide unobstructed, safe and convenient access to the roof or other areas upon which the System is to be installed. Owner will be responsible for removing or covering any items inside or outside the structure that might be soiled or damaged by the performance of the Contract Work. Owner represents and warrants that there are no restrictions or covenants of which it should reasonably be aware that would prevent the installation of the System.
4. **WARRANTY.** Contractor warrants the installation of the System against defects in workmanship for a period of 10 (ten) years following the conclusion of the Onsite Installation. The warranty does not cover power outages, force majeure, damage normally covered by homeowners insurance such as damage caused by falling trees or limbs, or normal wear and tear of the roof, sub-structure, siding or electrical system. The warranty also does not cover problems caused by animals, by improper maintenance of the structure or the System or by any action of a party other than the Contractor. In the event that Owner discovers a defect in the System within the warranty period, Owner shall notify Contractor in writing providing a complete description of the nature of the defect. Contractor will correct any defect covered by the warranty and repair the System at no additional cost to Owner. If it is necessary to repair or replace any part of the System, Owner shall cooperate fully with Contractor to provide for a safe and efficient repair process. Contractor makes no warranty, express or implied, except as expressly set forth herein. Without limiting the generality of the foregoing, Contractor hereby disclaims any implied warranty of merchantability or fitness for a particular purpose.

5. **SITE CONDITIONS.** If there are latent or unanticipated conditions of the site that would affect the safety of the Contract Work, require reinforcement or repair of the roof or structure or materially increase the cost to Contractor of the Contract Work, the parties may agree upon an additional price for the Contract Work or Contractor may terminate this Agreement. Any needed drywall patching will include drywall, taping, and one coat of joint compound.

6. **LIABILITY.** Contractor shall be liable only for damage to the installation area of the System and shall not be liable for damage to old, deteriorated or improperly installed roofing, sub-roofing, roof coverings or supports, siding, exterior covering or paint, or any other non-visible installations. Contractor's aggregate liability shall be limited to amounts paid by Owner to Contractor under this Agreement. Owner shall bear the roof, walls and floors and otherwise make areas necessary for performance of the Contract Work accessible to Contractor. Contractor specifically disclaims and disavows any guaranteed output of the installed system, including any claims made orally or in writing by Contractor or its employees or agents. The parties waive all claims against each other for incidental and/or consequential damages arising out of or in any way relating to the Agreement. There are no third party beneficiaries to this Agreement.

7. **PAST DUE PAYMENT POLICY.** In the event that any payment due pursuant to Paragraph 2 of this Agreement is late, interest shall accrue at the rate of two percent (2%) per month or the maximum amount permitted by law, whichever is less, on any outstanding balance. In the event that Contractor engages an attorney for collection of a past due amount, Owner shall be responsible for all of Contractor's costs and reasonable attorneys fees. If any payment due pursuant to this Agreement remains unpaid more than one hundred and twenty (120) days after such payment was due, Owner grants to Contractor the right to enter the Property and remove the System or any part thereof; provided, that Contractor shall notify Owner in writing of its intent to remove the System and allow Owner thirty (30) days from the date of such notice to cure its default and pay the past due amount. There shall be a fifty dollar (\$50.00) charge for all returned checks.

8. **ARBITRATION.** Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by arbitration administered by the American Arbitration Association under its Construction Industry Arbitration Rules. The parties recognize and agree that by agreeing to this provision, they are waiving any right they may have to a jury trial. Judgment on the arbitration award may be entered in any court having jurisdiction thereof.

9. **BUYERS RIGHT TO CANCEL.** If this agreement was solicited at or near your residence and you do not want the goods or services, you may cancel this agreement by mailing a notice to the seller. The notice must say that you do not want the goods or services and must be mailed before midnight of the third business day after you signed this contract. The notice must be mailed to: Energy Select LLC, P.O. Box 475, Leonardtown, MD, 20650. If you cancel within 3 days of signing, the seller may not keep any part of your cash down payment.

I hereby cancel this transaction. _____

Date: _____

10. After your 3-day right to cancel expires This Agreement can only be terminated upon mutual agreement. You will be subject to a termination fee which increases as the project progresses and will be determined on a case-by-case basis. Project progress guidelines are 1) Pre-engineering and within 4-7 days after signature, \$1500, 2) Post engineering and past 7 days, \$3000, 3) Post engineering and material staging and before physical work commencement, \$5000, plus a 25% restocking fee on equipment (inverters, racking, batteries, PV modules). Customer will also be liable for any third party financing fees due as a result of cancellation.

11. Contractor agrees to provide the setup of solar system monitoring via wireless network or CAT5 through an existing high-speed wired internet connection. The Owner agrees to provide access to the internet router. The contractor is not responsible for firewall or other network setup and troubleshooting.

12. If due to pre-existing conditions, the Authority Having Jurisdiction (AHJ) requires additional work to meet code requirements, the Contractor is not responsible to meet those requirements. The Owner may contract with the Contractor via written change order to meet AHJ requirements.

13. If financed through a Contractor financing partner, all conditions of this contract are based on receiving lender approval within 60 days of contract signature.

14. Draw payments or signature(s) on loan documents may not be withheld under any circumstances after work is performed as defined under the System Description and Scope of Work.

15. Energy Select is not a tax professional and applications for tax related grants or rebates are the responsibility of the customer, namely the MD state tax credit (which is a first come, first served grant that has budgeted funds which may run out), the Federal Investment Tax Credit (ITC), and any local jurisdiction tax grants or benefits. Energy Select will handle all paperwork for the Solar Renewable Energy Credits (SRECS), System Monitoring, the Utility Interconnection Agreement, and the Maryland Clean Energy Rebate Program.

16. **MISCELLANEOUS.**

A. This Agreement constitutes the complete and exclusive statement of the agreement between the parties. It supersedes all prior written and oral statements, including any prior representation, statement, condition, or warranty. Except as expressly provided otherwise herein, this Agreement may not be amended without the written consent of the parties.

B. The headings herein are inserted as a matter of convenience only and do not define, limit or describe the scope of this Agreement or the intent of the provisions hereof.



**Certificate of Appropriateness Application
Presentation of Information
By Ruth Davis-Rogers**

COA#23-000063

Residential Home

Address: 308 Washington Street

Project Contact: Energy Select (*applicant*)

Project Summary:

This proposed project involves the installation of a solar Photovoltaic Electric system on the roof of this home as a means of energy for the home.

Property Description:

This property is located in the Washington Street Historic District. This historic district consists of a six-block stretch of this prominently sited thoroughfare that includes much of the City of Cumberland's most significant civic, religious, and residential architecture. This wide street, with brick sidewalks shaded by old-growth trees, is architecturally and historically significant. These structures represent the heyday of Cumberland, when the city was the second largest in the state (next to Baltimore) and was recognized as an important center of industry and transportation.

This house, located at 308 Washington Street, retains many of its original exterior features and commands attention. The Secretary of the Interior's Standards for the Treatment of Historic Properties address four types of treatments to properties undergoing renovations: preservation, rehabilitation, restoration, and reconstruction. As stated in the regulations (36 CFR Part 68), "one set of standards ...will apply to a property undergoing treatment, depending upon the property's significance, existing physical condition, the extent of documentation available, and interpretive goals, when applicable. The Standards will be applied taking into consideration the economic and technical feasibility of each project." The purpose of these standards is to provide guidance, not case-specific advice, to historic building owners (and those involved) before beginning work. The renovation of this structure would be rehabilitation. Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, and/or architectural values.

The rapidly growing trend toward retrofitting homes to be more energy efficient has brought an increase in applications for the installation of solar energy systems on buildings within locally designated historic districts. When planning the installation of solar panels the overall objective is to preserve character-defining features and historic fabric while accommodating the need for solar access to the greatest extent possible. All solar panel

installations on historic homes, or homes located in historic districts, must be considered on a case-by-case basis recognizing that the best option will depend on the characteristics of the property under consideration. All solar panel installations should conform to the Secretary of the Interior's Standards for Rehabilitation. Generally speaking, solar panels installed on a historic property in a location that cannot be seen from the ground will generally meet the Secretary of the Interior's Standards for Rehabilitation.

Applicable Standards to consider are:

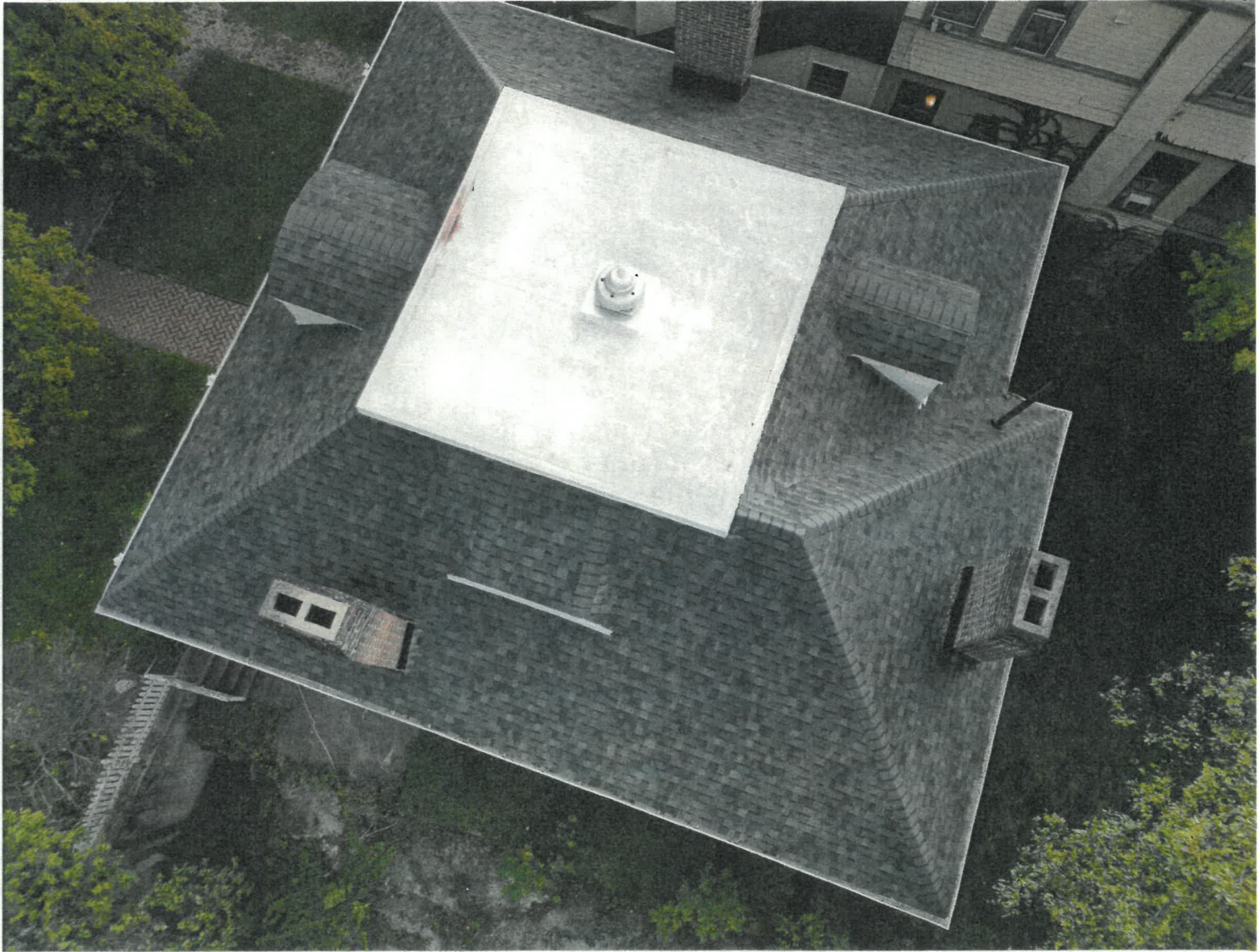
Standard Two: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

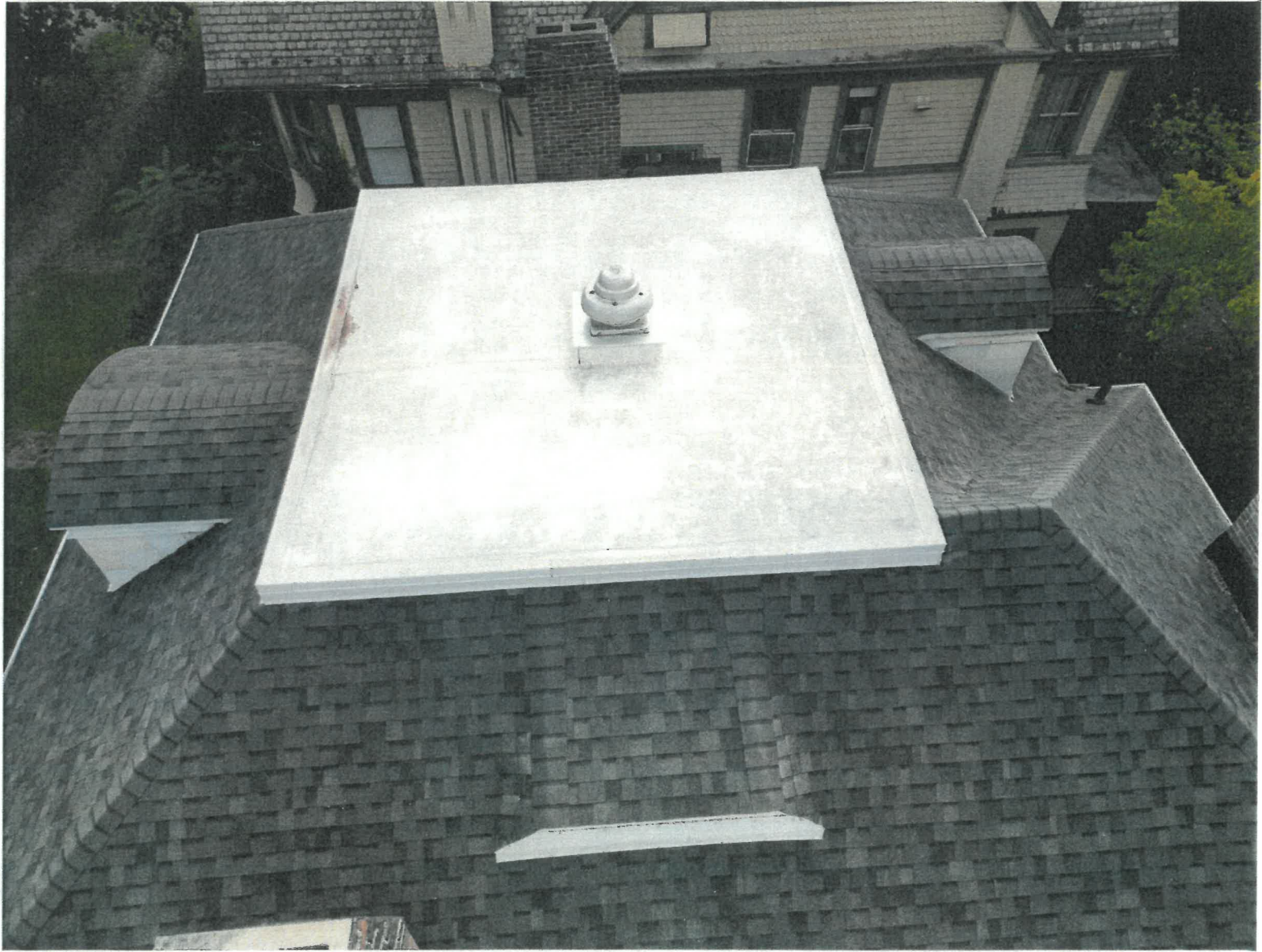
Standard Nine: New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

308 Washington Street





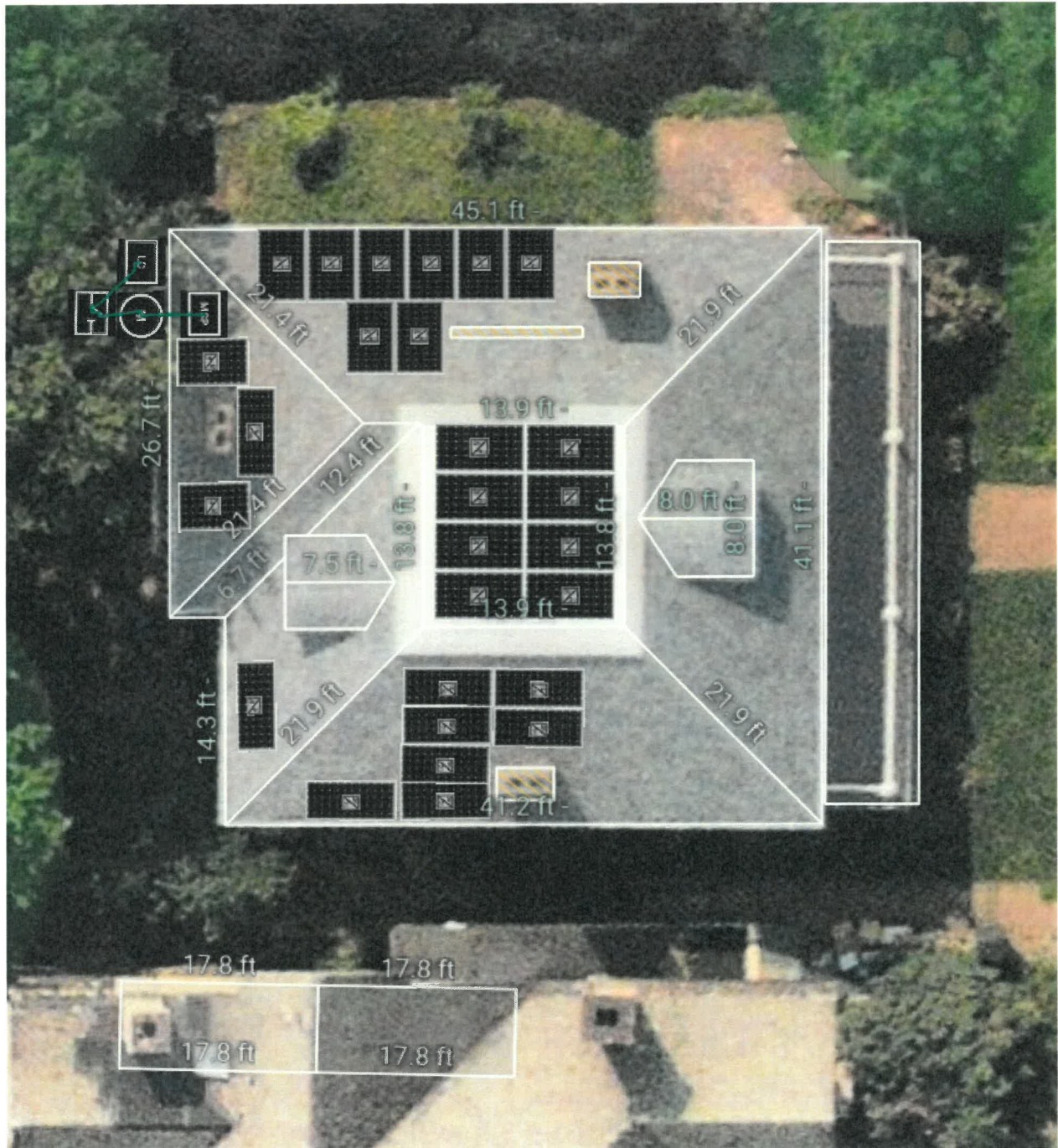




Customer: Derek Call
Address: 308 Washington Street
Cumberland, MD

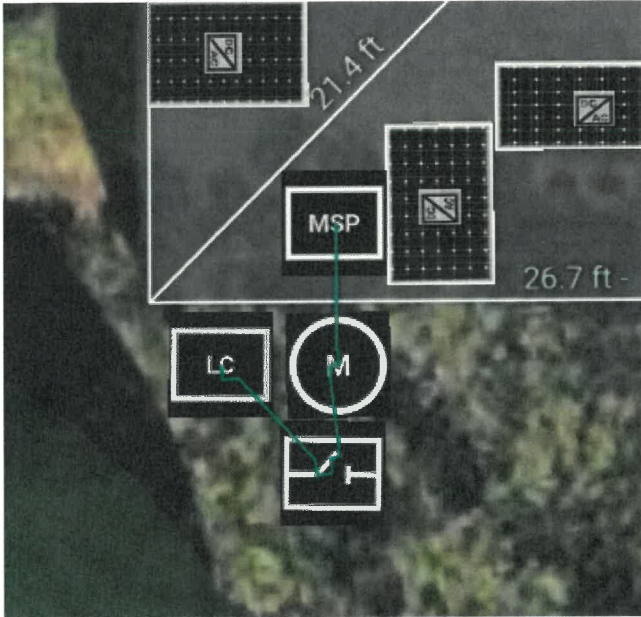
System size: 10.80 kW
Yr 1 Production: 8,786 kWh
Designer: Zach Schoonover
Date: November 7th, 2023

Site Assessment



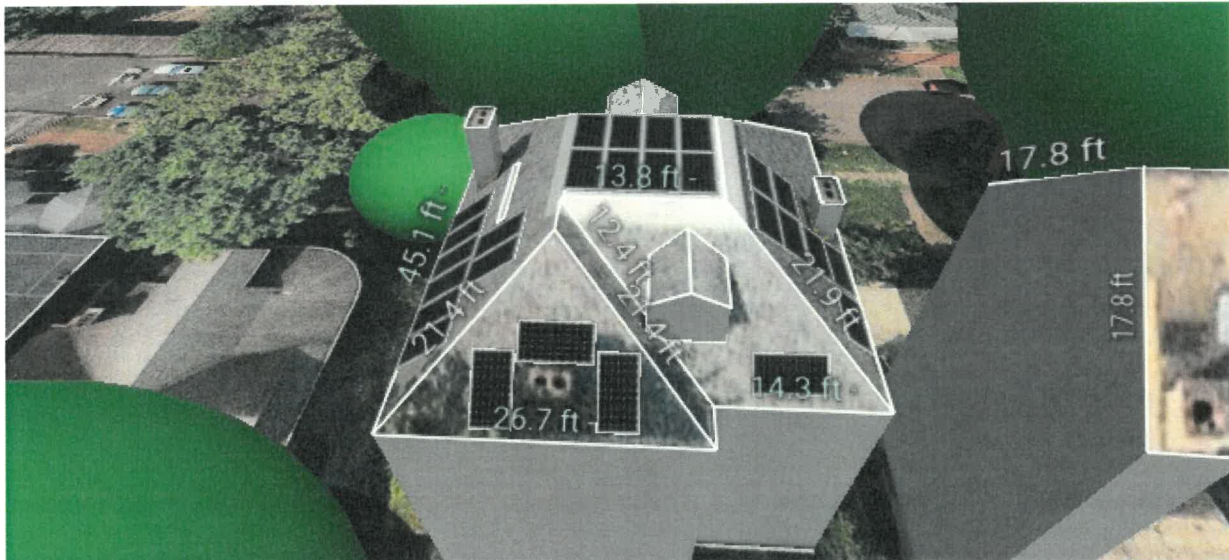
Site Assessment

Customer: Derek Call
Address: 308 Washington Street
Cumberland, MD

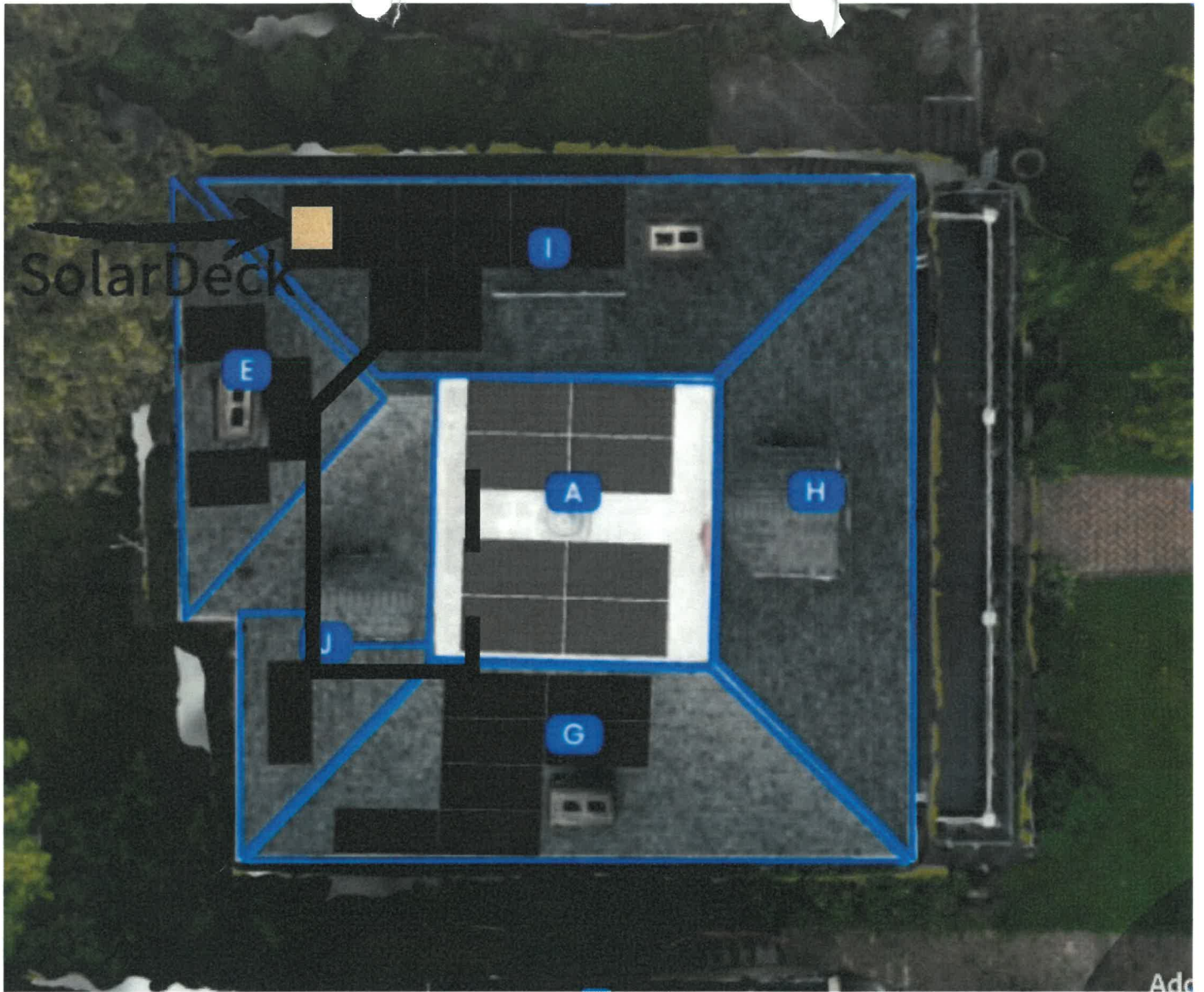


Component List

Manufacturer	Model	Quantity
Silfab Solar	SIL-400 HC+	27
Enphase Energy Inc.	IQ8PLUS-72-2-US	27
Enphase Energy Inc.	X-IQ-AM1-240-4	1
(none)	Meter	1
Square D	Non-Fused 100A AC D/C	1

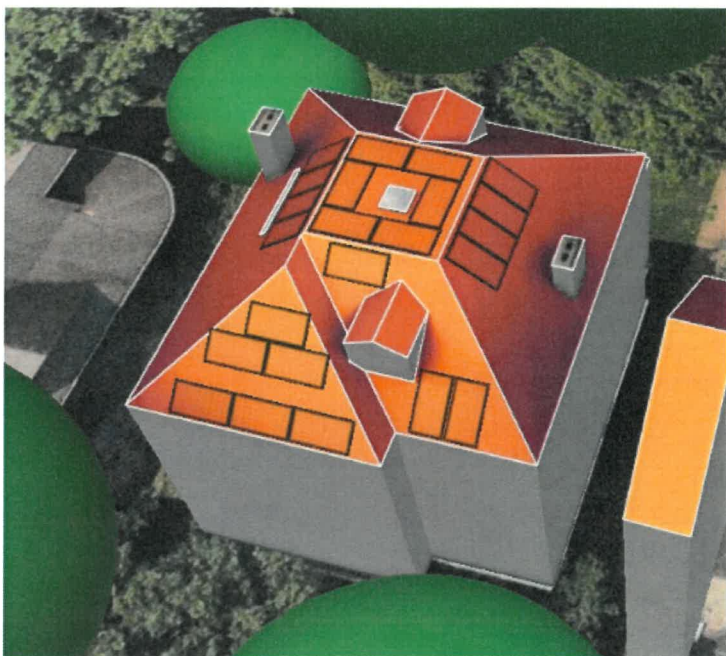


Notes:





ENERGY SELECT
SOLAR + SOLUTIONS



Derek Call

**308 Washington Street,
Cumberland, MD**

Your New Solar System:

System Size: 9.2 kW

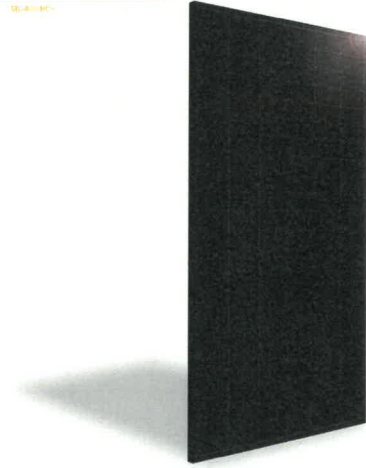
Year One Production: 9,462 kWh

Number of Solar Panels: 23

Electrical Usage Covered by Solar: 52%

SILFAB PRIME

660W (40°C)



RELIABLE ENERGY. DIRECT FROM THE SOURCE.

Designed to outperform.
Dependable, durable, high-performance
solar panels engineered for North
American homeowners.

SILFABSOLAR.COM



ELECTRICAL SPECIFICATIONS		460	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	460	268
Maximum power voltage (Vmp)	V	26.05	21.50
Maximum power current (Imp)	A	11.10	8.50
Open circuit voltage (Voc)	V	43.82	40.35
Short circuit current (Isc)	A	11.58	9.36
Module efficiency	%	20.2%	18.8%
Maximum system voltage (VDC)	V		1000
Series fuse rating	A		20
Power Tolerance	Wp		0 to +10

Measurement conditions: STC 1000 W/m², AM 1.5, Temperature 25 °C, NOCT 800 W/m², AM 1.5. Measurement uncertainty ± 3%.
Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by 6% and power by 6 to 10%.

MECHANICAL PROPERTIES / COMPONENTS		METRIC	IMPERIAL
Module weight		21.2kg (46.7lb)	47lbs (21.4kg)
Dimensions (H x L x D)		1514 mm x 1036 mm x 35 mm	75.3 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*		5400 Pa rear load / 5400 Pa front load ± 25 mm at 83 km/h	112.8 lbf/ft ² rear load / 112.8 lbf/ft ² front load ± 1 in at 51.6 mph
Hail impact resistance		120 Hail balls (6 mm) MPVC 9 balls @ 83 x 168 mm	132 Hail balls (6 mm) PCVC 9 balls @ 3.28 x 6.63 in
Cells		112 mm high transmittance, tempered, 50% anti-reflective coating	4.41 in high transmittance, tempered, 50% anti-reflective coating
Glass		1.58 mm, ± 0.1 mm, MC4 front Staubli High durability, abrasion hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	0.158 in high transmittance, tempered, 50% anti-reflective coating 0.62 in, ± 0.22 in (25AWG), MC4 front Staubli
Cables and connectors (refer to installation manual)		Anodized Aluminum (Black)	
Backsheet		1 (E666-30)04047 610 max DC marking voltage, 30A max forward rectified current	
Frame		UL 3763 Certified, IEC 61739 Certified, IP68 rated	
Spacers/standoffs			
Junction Box			

TEMPERATURE RATINGS		WARRANTIES	
Temperature Coefficient Isc	+0.04 %/°C	Module product workmanship warranty	25 years**
Temperature Coefficient Voc	-0.28 %/°C	Linear power performance guarantee	30 years
Temperature Coefficient Pmax	-0.36 %/°C		± 0.5 % and 1.0 yr ± 0.5 % and 2.0 yr ± 0.5 % and 200 yr
NOCT (± 2 °C)	45 °C		
Operating temperature	-40 to 85 °C		

CERTIFICATIONS		SHIPPING SPECS	
Product	UL 61215-1-2017 Ed. 1***, UL 61215-2-2017 Ed. 1***, UL 61730-1-2017 Ed. 1***, UL 61730-2-2017 Ed. 1***, CSA C22.394.790-2018 Ed. 1***, CSA C22.394.790-2018 Ed. 2***, IEC 61215-1-2016 Ed. 1***, IEC 61215-2-2016 Ed. 1***, IEC 61730-1-2016 Ed. 1***, IEC 61730-2-2016 Ed. 2***, IEC 61730-2-2016 Ed. 3***, IEC 61730-2-2016 Ed. 4***, IEC 61730-2-2016 Ed. 5***, IEC 61730-2-2016 Ed. 6***, IEC 61730-2-2016 Ed. 7***, IEC 61730-2-2016 Ed. 8***, IEC 61730-2-2016 Ed. 9***, IEC 61730-2-2016 Ed. 10***, IEC 61730-2-2016 Ed. 11***, IEC 61730-2-2016 Ed. 12***, IEC 61730-2-2016 Ed. 13***, IEC 61730-2-2016 Ed. 14***, IEC 61730-2-2016 Ed. 15***, IEC 61730-2-2016 Ed. 16***, IEC 61730-2-2016 Ed. 17***, IEC 61730-2-2016 Ed. 18***, IEC 61730-2-2016 Ed. 19***, IEC 61730-2-2016 Ed. 20***, IEC 61730-2-2016 Ed. 21***, IEC 61730-2-2016 Ed. 22***, IEC 61730-2-2016 Ed. 23***, IEC 61730-2-2016 Ed. 24***, IEC 61730-2-2016 Ed. 25***, IEC 61730-2-2016 Ed. 26***, IEC 61730-2-2016 Ed. 27***, IEC 61730-2-2016 Ed. 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IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ3 Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included O-DCC-2 adapter cable with plug-and-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

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IQ8SE-05-000H-01-EN-US-2021-10-19

Easy to install

- Lightweight and compact with plug-and-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 Series Microinverters

ENPH® DATA SHEET	IQ8-80-2-015	IQ8P-80-72-2-015	IQ8M-72-2-015	IQ8A-72-2-015	IQ8M-240-72-2-015	IQ8M-168-72-2-015
Commonly used module pairings ⁽¹⁾	W 235 – 350	235 – 440	260 – 480	295 – 500	320 – 540 ⁽²⁾	295 – 500 ⁽²⁾
Module compatibility	60-cell/120 half-cell		60-cell/120 half-cell and 72-cell/144 half-cell			
MPPT voltage range	V 27 – 37	29 – 45	33 – 45	38 – 45	38 – 45	38 – 45
Operating range	V 25 – 48			25 – 58		
Min/max start voltage	V 30 / 48			30 / 58		
Max input DC voltage	V 50			60		
Max DC current ⁽³⁾ [module in]	A			15		
Overvoltage class DC port				II		
DC port backfeed current	mA			0		
PV array configuration	1) Ungrounded array; No additional DC side protection required. AC side protection requires max 20A per branch circuit					
OUTPUT DATA [AC]	IQ8-80-2-015	IQ8P-80-72-2-015	IQ8M-72-2-015	IQ8A-72-2-015	IQ8M-240-72-2-015	IQ8M-168-72-2-015
Peak output power	VA 245	300	350	366	384	368
Max continuous output power	VA 240	290	325	349	380	360
Nominal 0-L voltage/range ⁽⁴⁾			240 / 215 – 264			208 / 183 – 250
Max continuous output current	A 1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz		60			
Extended frequency range	Hz		50 – 68			
Max units per 20 A (L-L) branch circuit ⁽⁵⁾	16	13	11	11	10	9
Total harmonic distortion				<5%		
Overvoltage class AC port				II		
AC port backfeed current	mA			30		
Power factor setting				1.0		
Grid-tied power factor (adjustable)				0.85 leading – 0.85 lagging		
Peak efficiency	% 97.6	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	% 97	97	97	97.5	97	97
Nighttime power consumption	W			60		
Mechanical Data						
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)					
Relative humidity range	4% to 100% (condensing)					
DC Connector type	MC4					
Dimensions (HxWxD)	212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")					
Weight	1.08 kg (2.38 lbs)					
Cooling	Natural convection – no fans					
Approved for wet locations	Yes					
Acoustic noise at 1m	<50 dBA					
Pollution degree	P03					
Enclosure	Class II double-insulated, corrosion resistant polymer enclosure					
Environ. category / UV exposure rating	NEMA Type 6 / outdoor					
Compliance	CA Rule 21 (UL 1741-SA), UL 62109-1, UL747/IEEE1947, FCC Part 15 Class B, IEC61000-3 Class B, CAN/CSA-C22.2 No. 1073-01					
Certifications	This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.2-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.					

(1) The IQ8M-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility>. (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ Combiner 4/4C



XIQ-AMI-240-4C
X2IQ-AMI-240-4C (IEEE 1547.2:2018)

XIQ-AMI-240-4
X2IQ-AMI-240-4 (IEEE 1547.2:2018)

The **IQ Combiner 4/4C** with IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure. It streamlines IQ Microinverters 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 Gateway for communication and control
- Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Supports Wi-Fi, Ethernet, or cellular connectivity
- Optional AC receptacles available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Mounts on single stud with centered brackets
- Supports bottom, back and side conduit entry
- Allows up to four 2-pole branch circuits for 240VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKUs
- UL listed
- X2IQ-AMI-240-4 and X2IQ-AMI-240-4C comply with IEEE 1547.2:2018 (UL 1741-SB, 3rd Ed.)

IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4	IQ Combiner 4 with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 1.0.91) and consumption monitoring (± 2.5%). Includes a silver solar shield to match the IQ Battery and IQ System Controller 2 and to deflect heat.
XIQ-AMI-240-4	
X2IQ-AMI-240-4 (IEEE 1547.2:2018)	
IQ Combiner 4C	IQ Combiner 4C with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 1.0.91) and consumption monitoring (± 2.5%). Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.
XIQ-AMI-240-4C	
X2IQ-AMI-240-4C (IEEE 1547.2:2018)	
ACCESSORIES AND REPLACEMENT PARTS (not included, order separately)	
Supported microinverters	MSX107, and IQE (Do not mix IQE7 Microinverters with IQE)
Communications kit	Includes COMMS KIT-01 and CELLMODEM-M1-06-SP-05 with 5 year Sprint data plan
CELLMODEM-M1-06-SP-05	4G based LTE-M1 cellular modem with 5 year Sprint data plan
CELLMODEM-M1-06-AT-S5	4G based LTE-M1 cellular modem with 5 year AT&T data plan
Circuit breakers	Supports Eaton BR215, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers.
BR02 10A 2-240V	Circuit breaker, 2-pole, 10A, Eaton BR215
BR02 15A 2-240V	Circuit breaker, 2-pole, 15A, Eaton BR215
BR02 20A 2P 240V	Circuit breaker, 2-pole, 20A, Eaton BR220
BR02 15A 2P 240V B	Circuit breaker, 2-pole, 15A, Eaton BR215B with hand down kit support
BR02 20A 2P 240V B	Circuit breaker, 2-pole, 20A, Eaton BR220B with hand down kit support
IA-SOL-ASHIELD-D-18	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC 01)
XIQ-NA-HD-125A	Hold-down kit for Eaton circuit breaker with screws
Consumption monitoring CT (CT 200-SP1, NECT-200-CLAMP)	A pair of 200A split core current transformers
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240VAC, 60 Hz
Eaton BR series busbar rating	125A
Max. continuous current rating	65A
Max. continuous current rating (input from Photostage)	64A
Max. fuse/circuit rating (output)	90A
Branch circuits (pole and/or stack-up)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation/95A with IQ Gateway breaker included
IQ Gateway breaker	10A or 16A rating CE/Starline/Eaton included
Production metering CT	200A split core pre-installed and wired to IQ Gateway
MECHANICAL DATA	
Dimensions (mm/inch)	27.8 cm x 48.8 cm x 11.6 cm (10.93 in x 19.2 in x 4.58 in); Weight is 5.8 lb (2.6 kg) with mounting brackets.
Weight	7.2 kg (15.8 lb)
Ambient temperature range	-40°C to 60°C (-40°F to 140°F)
Cooling	Natural convection plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"> 20A to 60A breaker inputs: 14 to 4 AWG copper conductors 80A breaker branch input: 4 to 1/8 AWG copper conductors Main bus combined output: 10 to 2/0 AWG copper conductors Main and ground, 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	Up to 3,500 meters (11,482 feet)
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	IEEE 802.11n/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-S5 (4G based LTE-M1 cellular modems). Note that a Mobile Connect cellular modem is required for all Enphase Energy Systems that are not
Ethernet	Optional, IEEE 802.3, Cat5E (or Cat6) UTP Ethernet cable (not included)
COMPLIANCE	
Compliance, IQ Combiner	CA Rule 21 (R 1741.5A) IEEE 1547.2:2018 - UL 1741-SB, 3rd Ed. (X2IQ-AMI-240-4 and X2IQ-AMI-240-4C) CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 009 Production metering: ANSI C12.20 accuracy class 2.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60969 IYANCSA 22 2 No. 61010-1
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To learn more about Enphase offerings, visit enphase.com
IQ-C-4-4C-DS-0103-EN-US-12-29-2022



IQ-C-4-4C-DS-0103-EN-US-12-29-2022



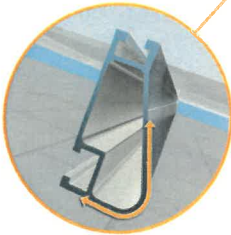
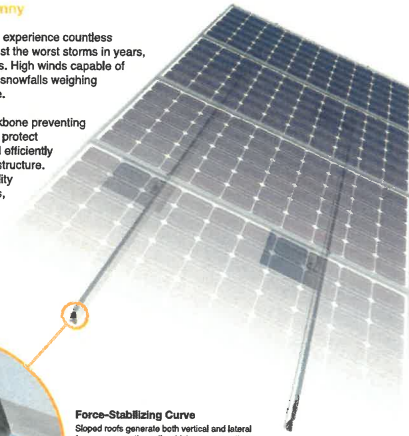
XR Rail Family

Tech Brief

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.

Compatible with Flat & Pitched Roofs



XR Rails are compatible with FlashFoot and other pitched roof attachments.



IronRidge offers a range of tilt leg options for flat roof mounting applications.

Corrosion-Resistant Materials

All XR Rails are made of 6000-series aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



Tech Brief

XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



XR10

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

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



XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 10 feet.

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



XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans up to 12 feet for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The table below was prepared in compliance with applicable engineering codes and standards.* Values are based on the following criteria: ASCE 7-16, Gable Roof Flush Mount, Roof Zones 1 & 2a, Exposure B, Roof Slope of 8 to 20 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed certification letters.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	6'	8'	10'	12'	
None	90						
	120						
	140	XR10		XR100		XR1000	
20	90						
	120						
	140						
30	90						
	120						
	140						
40	90						
	120						
	140						
80	120						
	140						
120	120						
	140						

*Table is meant to be a simplified span chart for conveying general rail capabilities. Use approved certification letters for actual design guidance.



UFO Family of Components

Tech Brief

Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL 2703 standard.

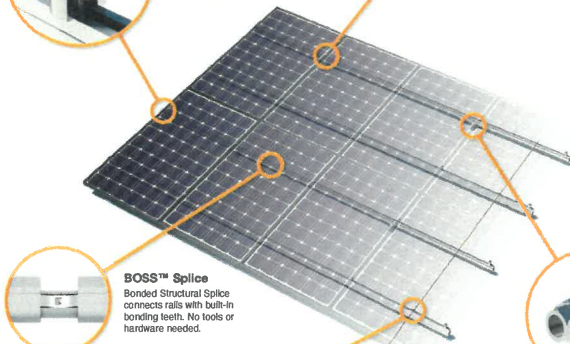
UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



Universal Fastening Object (UFO)
The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.



Stopper Sleeve
The Stopper Sleeve snaps onto the UFO, converting it into a bonded end clamp.



BOSS™ Splice
Bonded Structural Splice connects rails with built-in bonding teeth. No tools or hardware needed.



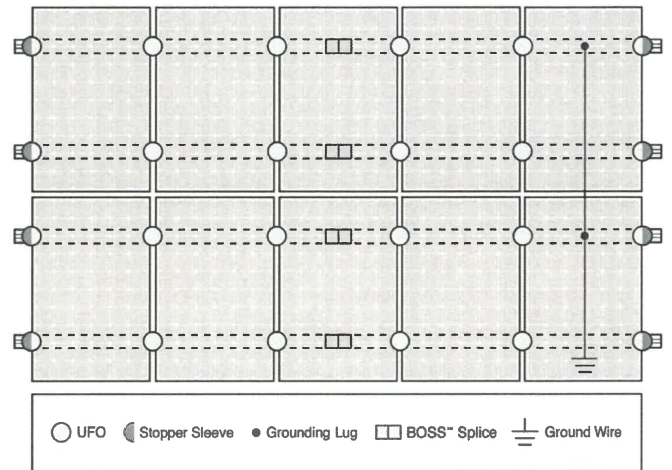
Grounding Lug
A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



Bonded Attachments
The bonding ball attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system.

System Diagram

Tech Brief



Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to IronRidge.com/UFO

Feature	Cross-System Compatibility		
	Flush Mount	Tilt Mount	Ground Mount
XR Rails	✓	✓	XR100 & XR1000
UFO/Stopper	✓	✓	✓
BOSS™ Splice	✓	✓	N/A
Grounding Lugs	1 per Row	1 per Row	1 per Array
Microinverters & Power Optimizers	Compatible with most MLPE manufacturers. Refer to system installation manual.		
Fire Rating	Class A	Class A	N/A
Modules	Tested or Evaluated with over 400 Framed Modules. Refer to installation manuals for a detailed list.		

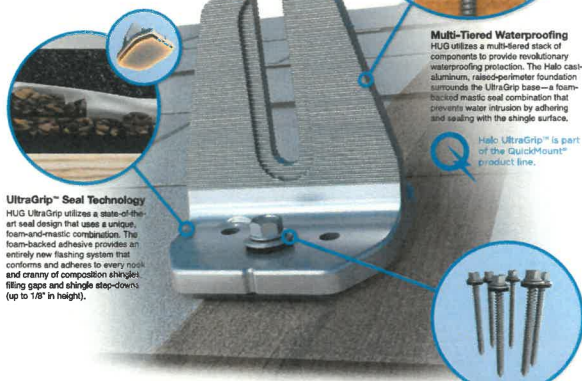


Tech Brief

The Respect Your Roof Deserves

When integrating with a home, solar attachments must be dependable for the lifetime of the rooftop. Due to recent innovations, many asphalt shingles have bonded courses. A mount that protects without the need to pry shingles can really speed things up.

Halo UltraGrip™ (HUG™) is here to respect the roof. Its Halo is a cast-aluminum barrier that encases the UltraGrip, our industrial-grade, foam-and-mastic seal. This allows HUG to accelerate the installation process and provide the utmost in waterproofing protection. Give your roof a HUG.™



Multi-Tiered Waterproofing
HUG utilizes a multi-tiered stack of components to provide revolutionary waterproofing protection. The Halo cast-aluminum, raised-perimeter foundation surrounds the UltraGrip base—a foam-backed mastic seal combination that prevents water intrusion by adhering and sealing with the shingle surface.

Halo UltraGrip™ is part of the QuickMount™ product line.

UltraGrip™ Seal Technology
HUG UltraGrip utilizes a state-of-the-art seal design that uses a unique, foam-and-mastic combination. The foam-backed adhesive provides an entirely new flashing system that conforms and adheres to every nook and cranny of composition shingles, filling gaps and shingle step-downs (up to 1/8" in height).

Rafter Mount



Deck Mount



Rafter & Deck Mounting Options
Mount HUG to the roof rafters, the roof deck, or both with our custom-engineered RD (rafter-deck) Structural Screw. The RD Structural Screw anchors HUG to the roof with an EPDM sealing washer, completing the stack of waterproofing barriers. See backside for more installation information.

Triple Rated & Certified to Respect the Roof™
UL 2703, 441 (27)
TAS 100(A)-95
Intertek

Adaptive, Rafter-Friendly Installation

Tech Brief



Hit the rafter? Good to go!
When you hit a rafter, you can mount out. Only 2 RD Structural Screws are needed.



Miss the rafter? Try it again.
Place another screw to the left or right of the rafter. Install two and you're done.



Still no luck? Install the rest.
If more than 2 screws miss the rafter, install six screws to secure yourself.

Trusted Strength & Less Hassle



Structural capacities of HUG™ were reviewed in many load directions, with racking rail running cross-slope or up-slope in relation to roof pitch.

For further details, see the HUG certification letters for attaching to rafters and decking.

IronRidge designed the HUG, in combination with the RD Structural Screw to streamline installs, which means the following:

- No prying shingles
- No roof nail interference
- No pilot holes necessary
- No sealant (in most cases)
- No butyl shims needed

Attachment Loading

The rafter-mounted HUG has been tested and rated to support 1004 (lbs) of uplift and 368 (lbs) of lateral load.

Structural Design

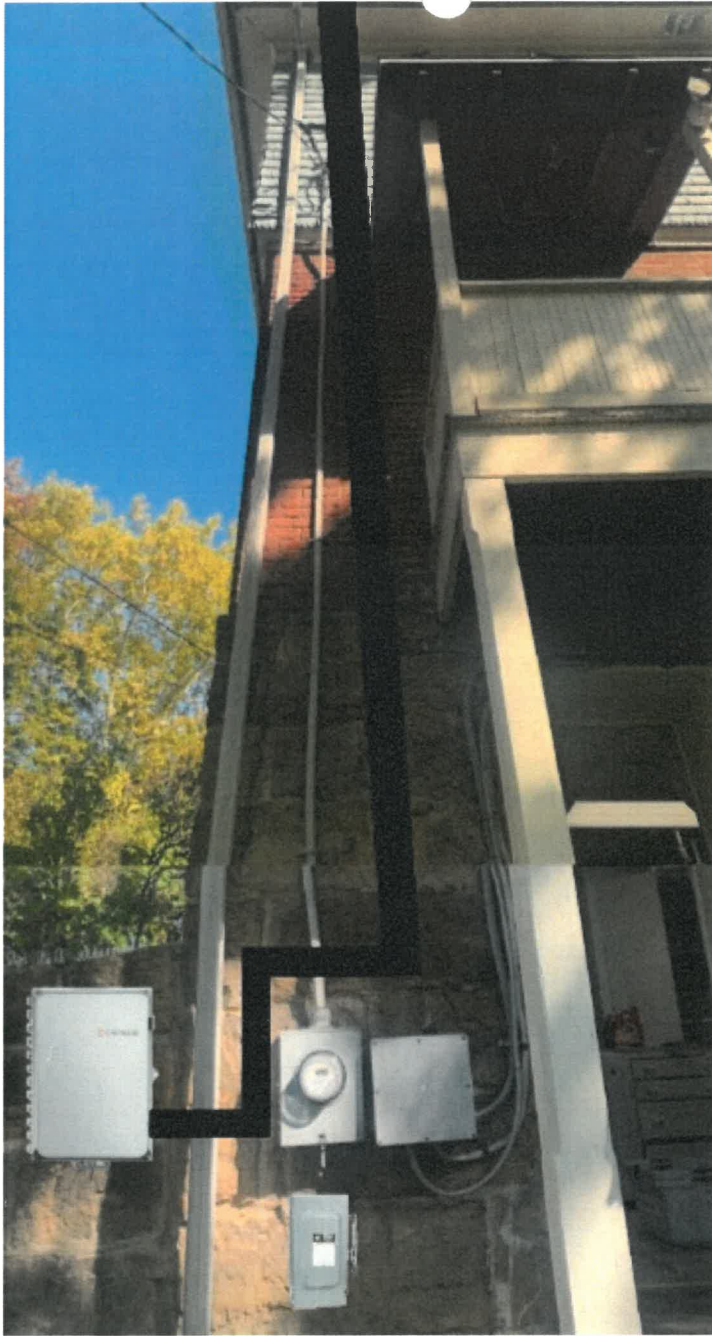
Parts are designed and certified for compliance with the International Building Code & ASCE/SEI-7.

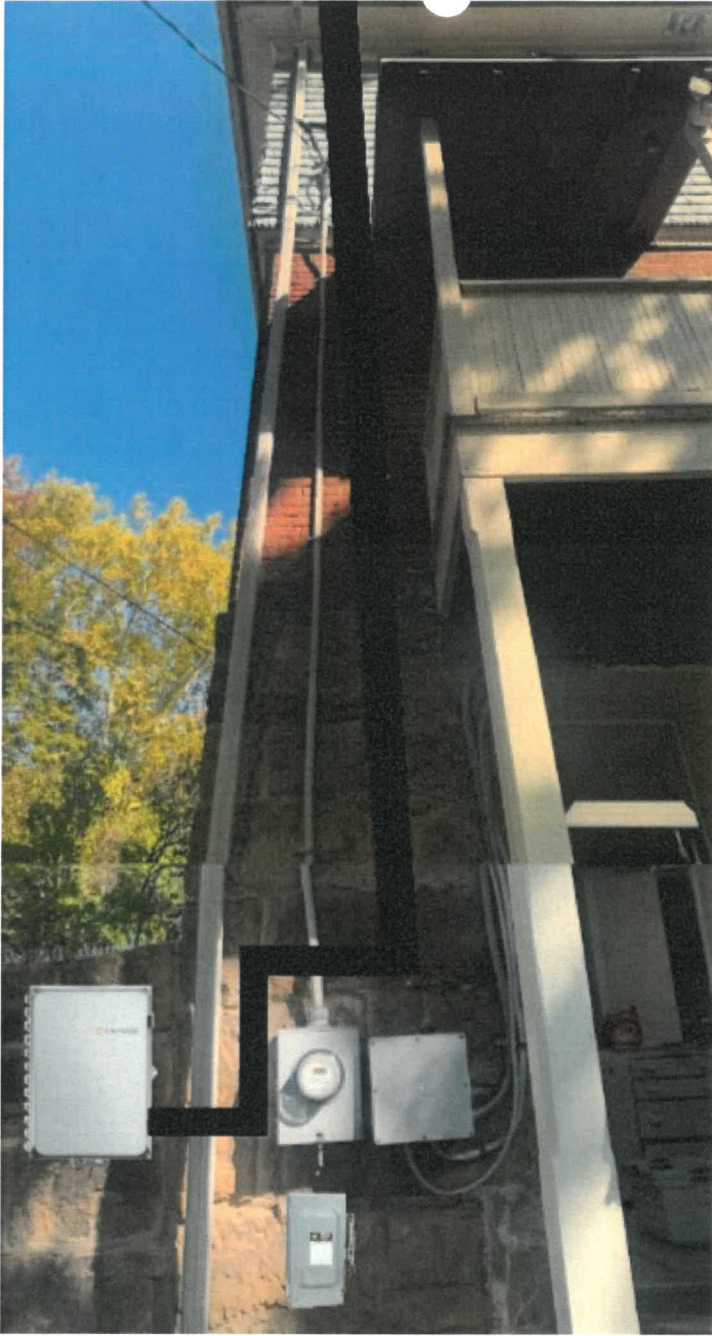
Water Seal Ratings

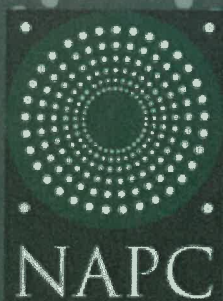
HUG passed both the UL 441 Section 27 "Rain Test" and TAS 100(A)-95 "Wind Driven Rain Test" by Intertek.

UL 2703 System

Systems conform to UL 2703 mechanical and bonding requirements. See Flush Mount Manual for more info.







National Alliance of Preservation Commissions

Sample Guidelines for Solar Systems in Historic Districts

education + advocacy + training

The rapidly growing trend toward retrofitting homes to be more energy efficient has brought an increase in the number of applications for installing solar energy systems on buildings within locally designated historic districts. The increase in solar systems applications in recent years has prompted numerous local preservation commissions to hastily develop guidelines for them with varying degrees of success.

The following Sample Guidelines for Solar Systems for Locally Designated Historic Properties were developed in 2009 by Kimberly Kooles, NAPC support staff and revised by Caty Rushing in 2011. They are intended to serve as a starting point for local preservation commissions developing their own guidelines for solar systems.



Types of Systems:

- **Photovoltaic**

A photovoltaic system (or PV system) is a system which uses one or more solar panels to convert sunlight into electricity. It consists of multiple components, including the photovoltaic modules, mechanical and electrical connections and mountings and means of regulating and/or modifying the electrical output.



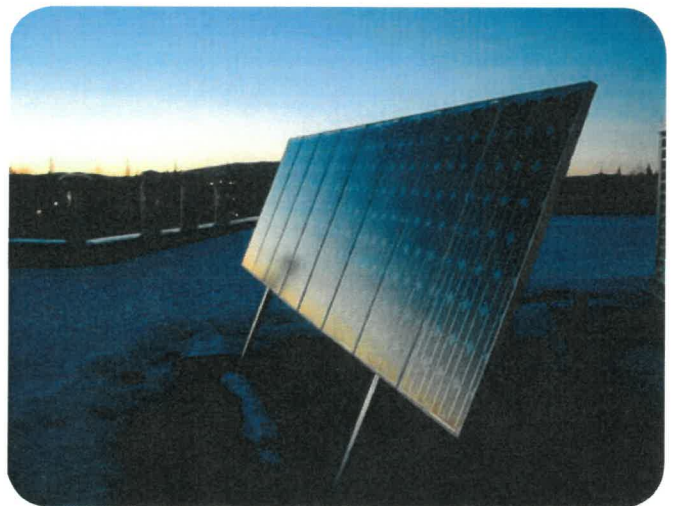
- **Solar Shingles**

Solar shingles, also called photovoltaic shingles, are solar cells designed to look like conventional asphalt shingles. There are several varieties of solar shingles, including shingle-sized solid panels that take the place of a number of conventional shingles in a strip, semi-rigid designs containing several silicon solar cells that are sized more like conventional shingles, and newer systems using various thin film solar cell technologies that match conventional shingles both in size and flexibility



- **Freestanding**

Freestanding PV panels or freestanding arrays allow the benefits of renewable solar power without disrupting the roofline or altering the house. They are placed away from the residence and connected through an underground wiring. When a roof may be blocked by trees or not receiving direct sunlight, the mobility of a freestanding panel allows the ability to move into optimal sunlight areas that may change seasonally.



Sample Guidelines for Solar Systems for Locally Designated Historic Projects

When planning the installation of solar panels the overall objective is to preserve character-defining features and historic fabric while accommodating the need for solar access to the greatest extent possible. All solar panel installations must be considered on a case by case basis recognizing that the best option will depend on the characteristics of the property under consideration. Some guidelines apply to virtually all installation options and are repeated in each section.

All solar panel installations should conform to the Secretary of the Interior's Standards for Rehabilitation.

Applicable Standards are:

Standard Two: 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.

Standard Nine: 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.



1 Primary Elevations

For most properties, locating solar panels on the primary facade is the least desirable option because it will have the greatest adverse effect on the property's character defining features. All other options should be thoroughly explored.

- Utilization of low-profile solar panels is recommended. Solar shingles laminates, glazing, or similar materials should not replace original or historic materials. Use of solar systems in windows or on walls, siding, and shutters should be avoided.
- Panels should be installed flat and not alter the slope of the roof. Installation of panels must be reversible and not damage to the historic integrity of the resource and district.
- Solar panels should be positioned behind existing architectural features such as parapets, dormers, and chimneys to limit their visibility.
- Use solar panels and mounting systems that are compatible in color to established roof materials. Mechanical equipment associated with the photovoltaic system should be treated to be as unobtrusive as possible.



These solar panels low profile and location make them unobtrusive even though they are visible from the public right of way. Photo by Paul Trudeau

2 Secondary Elevations

- Solar panels should be installed on rear slopes or other locations not easily visible from the public right-of-way. Panels should be installed flat and not alter the slope of the roof. Installation of panels must be reversible and not damage the historic integrity of the resource and district.
- Flat roof structures should have solar panels set back from the roof edge to minimize visibility. Pitch and elevation should be adjusted to reduce visibility from public right-of-way.
- Solar panels should be positioned behind existing architectural features such as parapets, dormers, and chimneys to limit their visibility.

2 Secondary Elevations (Continued)

- Use solar panels and mounting systems that are compatible in color to established roof materials. Mechanical equipment associated with the solar panel system should be painted or treated to be as unobtrusive as possible
- Use of solar systems in non-historic windows or on walls, siding, or shutters should be installed as to limit visibility from the public right of way.

3 Historic Accessory Structures



Solar panels placed on an accessory structure not visible from the public right of way should still follow the slope of the roof and have a low profile. Photo courtesy of Dan Corson

- Solar panels should be installed on rear slopes or other locations not highly visible from the public right-of-way. Panels should be installed flat and not alter the slope of the roof. Installation of panels must be reversible and not damage the historic integrity of the resource and district.
 - Flat roof structures should have solar panel installations set back from the roof edge to minimize visibility. Pitch and elevation should be adjusted to reduce visibility from public right-of-way.
 - Solar panel installations should be positioned behind existing architectural features such as parapets, dormers, and chimneys to limit their visibility.
- Use solar panels and mounting systems that are compatible in color to the property's roof materials. Mechanical equipment associated with the photovoltaic system should be as unobtrusive as possible.
 - Use of solar systems in non-historic windows or on walls, siding and shutters should be installed as to limit visibility from the public right of way.

4 Freestanding or Detached

- Freestanding or detached on-site solar panels should be installed in locations that minimize visibility from the public right of way. These systems should be screened from the public right of way with materials elsewhere in the district such as fencing or vegetation of suitable scale for the district and setting.
- Placement and design should not detract from the historic character of the site or destroy historic landscape materials.



Freestanding solar panels should be installed in locations that minimize visibility from the public right of way.

Consideration to the visibility of solar panels from neighboring properties should be taken, without infringing upon the required solar access.

5 New Construction On-Site

- Solar panels should be integrated into the initial design of new construction or infill projects, when possible, to assure cohesion of design within a historic context.
- Solar panels should be installed on rear slopes or other locations not highly visible from the public right of way whenever possible. Panels should be installed flat and not alter the slope of the roof.
- Flat roof structures should have solar panels set back from the roof edge to minimize visibility. Pitch and elevation should be adjusted to reduce visibility from the public right-of-way.
- Use solar panels and mounting systems that are compatible in color to established roof materials. Mechanical equipment associated with the solar panel system should be treated to be as unobtrusive as possible.
- Use of solar systems in windows or on walls, siding, or shutters should be installed with limited visibility from the public right-of-way.

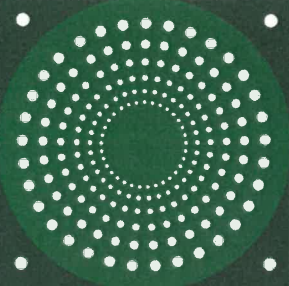
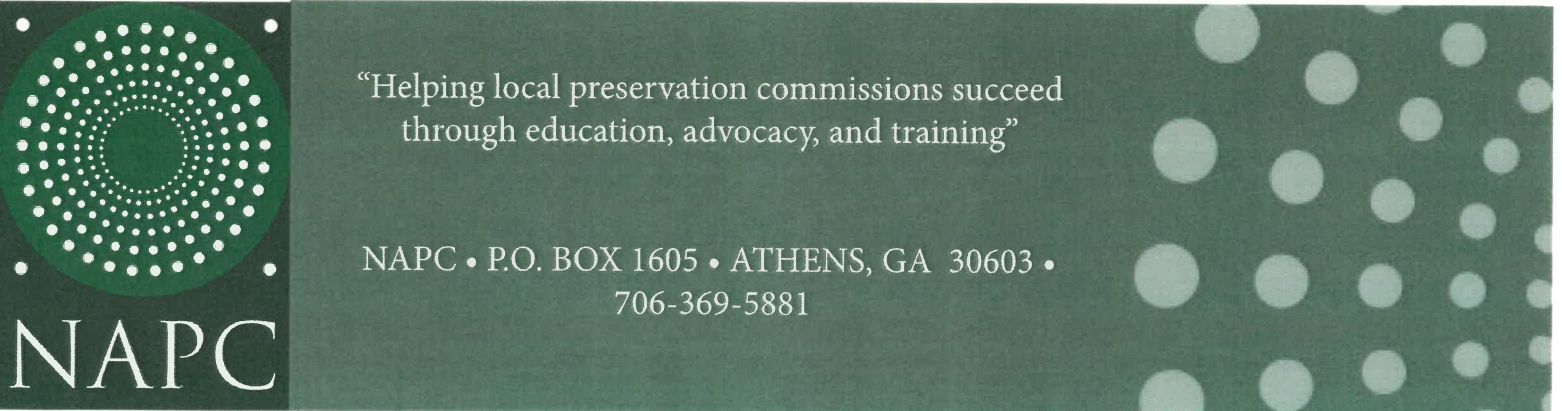


Not Recommended for Any Reason

- Removal of historic roofing materials during the installation of solar systems.
- Removing or otherwise altering historic roof configuration – dormers, chimneys, or other features – to add solar systems.
- Any other installation procedure that will cause irreversible changes to historic features or materials.

When considering retrofitting measures, historic building owners should keep in mind that there are no permanent solutions. One can only meet the standards being applied today with today's materials and techniques. In the future, it is likely that the standards and the technologies will change and a whole new retrofitting plan may be necessary. Thus, owners of historic buildings should limit retrofitting measures to those that achieve reasonable energy savings, at reasonable costs, with the least intrusion or impact on the character of the building.

(National Park Service. Preservation Brief 3: Conserving Energy in Historic Buildings. Available from <http://www.nps.gov/history/hps/TPS/briefs/brief03.htm#Preservation%20Retrofitting>. Accessed on August 10, 2009.)



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Technical Preservation Services

Solar Panels on Historic Properties

Installing solar panels and meeting the Secretary of the Interior's Standards for Rehabilitation

Solar panels installed on a historic property in a location that cannot be seen from the ground will generally meet the Secretary of the Interior's Standards for Rehabilitation. Conversely, an installation that negatively impacts the historic character of a property will not meet the Standards. But what about the grey area between out-of-sight and obviously obtrusive installations?



See examples of solar panels on historic properties

- [Solar panels on a new addition \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-new-addition.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-new-addition.htm)
- [Solar panels on a flat roof \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-flat-roof.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-flat-roof.htm)
- [Pole-mounted array of solar panels \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-pole-mounted-array.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-pole-mounted-array.htm)
- [Solar panel on a low-slope gable \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-low-slope-gable.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-low-slope-gable.htm)
- [Solar panels on a cross gable \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-cross-gable.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-cross-gable.htm)
- [Solar panels on a rear porch roof \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-rear-porch-roof.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-rear-porch-roof.htm)
- [Avoiding the impact of solar panels on a cultural landscape \(https://www.nps.gov/articles/000/solar-panels-on-historic-properties-avoiding-impact-cultural-landscape.htm\)](https://www.nps.gov/articles/000/solar-panels-on-historic-properties-avoiding-impact-cultural-landscape.htm)

Although every project is different and must be evaluated on its own merit, the National Park Service has developed this information on how to apply the Standards to the installation of solar panels.

This "invisible" installation of solar panels on a historic industrial building—hidden behind a low parapet—meets the Standards for Rehabilitation.