



**Historic Preservation Commission
Department of Planning, Housing, and Zoning**

**County Commissioners Hearing Room
400 High Street
Chestertown, Maryland**

AGENDA

June 22, 2023
6:00 p.m.

Members of the public are welcome to attend meetings in person or via conference call.

Public participation and audio-only call-in number:

1. Dial **1-872-239-8359**
2. Enter Conference ID: **804 087 253#**

Members of the public are asked to mute their phones/devices, until the Commission Chair opens the floor for comment.

MINUTES

Request a motion to adopt the minutes of April 6, 2023, as presented.

APPLICATIONS FOR REVIEW

John Kennedy House – Certificate of Appropriateness Application – Installation of Solar Panels
11943 Augustine Herman Hwy, Kennedyville

GENERAL DISCUSSION

Invitation to Serve as a Consulting Party – Cypress Branch Dam Removal Project

Discussion of Member Appointments

STAFF REPORTS

ADJOURN

Meetings are conducted in Open Session unless otherwise indicated. All or part of the Historic Preservation Commission meetings can be held in closed session under the authority of the MD Open Meetings Law by vote of the members. Breaks are at the call of the Chairman. Meetings are subject to audio and video recordings. All applications will be given the time necessary to assure full public participation and a fair and complete review of all projects. Agenda items are subject to change due to cancellations.

Kent County Historic Preservation Commission Meeting Summary

The Kent County Historic Preservation Commission (HPC) met on Thursday, April 6, 2023, at 5:30 p.m. in the County Commissioners' Hearing Room at 400 High Street, Chestertown, Maryland. It was a hybrid meeting, and the following HPC members were in attendance: Elizabeth Beckley (remotely), Jeremy Rothwell, Max Ruehrmund, and Jennifer Moore. Staff in attendance were Mike Moulds, PE, Director of Public Works (remotely); William Mackey, DPHZ Director; Penelope Young-Carrasquillo, Grants Manager; and Campbell Safian, Planning Specialist.

Jeremy Rothwell called the meeting to order at 5:30 p.m.

MINUTES

Mr. Ruehrmund moved to accept the minutes of October 30, 2020, and November 29, 2022, without correction. Ms. Moore seconded the motion. The motion passed with all in favor.

GENERAL DISCUSSION / WORK SESSION

Discussion of the current condition and proposed next steps for Turner's Creek Granary:

- The Department of Public Works (DPW) has installed a fence around the building.
- An application for grant funding from the National Trust for Historic Preservation Bartus Trew Providence Preservation Fund must be submitted before the deadline of June 15, 2023.
- Members of the Commission spoke in opposition to demolishing the granary building to create a memorial or pavilion in the granary's honor.
- It must be determined whether Program Open Space (POS) funding is available to support the building restoration project.
- Before the Commissioners' meeting on April 18, Ms. Beckley and Mr. Ruehrmund will go on-site and assess the current condition of the building to better understand the potential cost of restoration.
- Mr. Moulds and DPW received a cost estimate of roughly \$20,000 to stabilize the building's I-beams.
- The Commission recommends asking Gary Gredell, P.E, Principle of Gredell & Associates, for a cost estimate to update the 2009 Structural Condition Assessment.
- Members of the Commission would like to schedule a phone call with Gail Owings, Executive Director of the Stories of the Chesapeake Heritage Area, to discuss the National Park Service Paul Bruhn Historic Revitalization Grants.
- Potential uses for the granary building, post-restoration, will continue to be explored.
- Mr. Ruehrmund requested a copy of a site plan of the entire property.
- The HPC will present their findings to the County Commissioners at the meeting on April 18 at 6pm.

ADJOURNMENT

Ms. Moore moved to adjourn the meeting. Mr. Ruehrmund seconded. The meeting adjourned at approximately 6:40 p.m.

Elizabeth Beckley, Chair

Campbell Safian, Planning Specialist

cs

DRAFT

Kent County Historic Preservation Commission

Certificate of Appropriateness Application

For Office Use Only
Building Permit # (if applies): _____ Certificate Application #: _____ Date Received: ____/____/____
HPC Hearing Date: ____/____/____ Application Accepted as Complete: ____/____/____
HPC/Staff Decision: Certificate of Appropriateness Granted: ____/____/____
Rejected: ____/____/____
Deferred for Information/Consultation: ____/____/____

Please print or type. Applications must be received at least 10 days prior to the hearing.

1. APPLICANT

Name: Power Factor - Cary Shank
Address: 8240 Beachwood Road
Baltimore, Md. 21222
Home Phone: () - Work Phone: (443) 559 - 0174
Owner Name and Address (if other than applicant):
Francis Bonass, 11943 Augustine Herman Hwy Kennedyville, Md 21645

2. HISTORIC PROPERTY

Name (as listed in Kent Co. Register of Historic Places): Dolly E Baker
Street Address: 11943 Augustine Herman Hwy
Tax Map & Parcel Number: 0021 / 0056 Zoning Classification:

3. TYPE OF CHANGE (check all that apply)

- Fence/Wall, Windows, Excavation/Grading, Porch/Deck, Addition, Utilities, Siding, Accessory Building, New Construction, Relocation, Landscaping, Roofing, Restoration/Repair, In-kind Replacement, Demolition, Other: Solar Panel Installation

- Visible from public way, Not visible from public way

4. FOR PROPERTIES UNDER EASEMENT FROM A HISTORIC PRESERVATION ORGANIZATION:

Please provide written approval of requested change from easement holder.

5. WORK BEING PERFORMED BY:

Architect or Engineer:
Building Contractor: Power Factor - 8240 Beachwood Road Baltimore Md. 21222
Other: Electrician - George Lang - Same as Above

CLERK OF CIRCUIT COURT
KENT COUNTY
2008 AUG 1 AM 9 35

Kent County, Maryland
Historic Preservation District Agreement

LIBER 0578 FOLIO 036

For Official Use Only:

DISTRICT FILE #: HPC-08-001

This Historic Preservation District Agreement, fully signed, executed and dated 31 July 2008 is between the County Commissioners of Kent County and

DOLLY E BAKER

Full Name(s) of Landowner(s) {please print}

- A. This agreement memorializes the understanding between the County Commissioners and the landowner that a historic preservation district shall be established on the land described below after it is executed by the landowner and is recorded in the land records of Kent County, Maryland.
- B. In signing this agreement, the landowner agrees that the following covenants, conditions and restrictions run with the land covered by this agreement.
 - 1) The landowner recognizes that the district designation is perpetual and applies to subsequent owners of the property.
 - 2) The landowner recognizes that the County has the right of enforcement in the event of demolition by neglect or other violations of the ordinance;
 - 3) The landowner agrees not to divide the land for any purpose, including subdivision, off-conveyance and the adjustment of boundary lines, unless the Historic Preservation Commission first has provided written approval of the proposal;
 - 4) The landowner agrees not to construct additions, buildings or structures on the land or make exterior alterations unless the Historic Preservation Commission first has approved a Certificate of Appropriateness. However, nothing the ordinance shall be taken or construed to prevent maintenance that will have no material effect on the exterior fabric or features of a designated landmark, site, structure or district, or to prevent customary farming operations or landscaping that will have no material effect on the historic, archeological, or architectural significance of a designated landmark, site, structure or district.
- C. In consideration for agreeing to the covenants, conditions and restrictions set forth in Section B above, the landowner, with respect to the land covered by the agreement, may be eligible to receive tax credits for approved improvements.

The subject property contains .312 total acres, more or less as referenced below. The subject property is further described in the deed dated 15 DEC 2006 and recorded among the Land Records of Kent County in liber MLM 501, folio 323.

- D. In signing this agreement, the landowner(s) hereby certify that the information contained herein is true and accurate to the best of their knowledge and hereby gives their permission to Kent County to record the district agreement in the land records.

Approved 3/27/07

return to: Carla Garber, 400 High St. Chestertown

KENT COUNTY CIRCUIT COURT (Land Records) MLM 578, p. 0036, MSA_CE57_1090. Date available 09/29/2008. Printed 04/25/2023.

Dally E Baker 1-31-08
 Landowner Date

LIBER 0578 FOLIO 37
 Landowner Date

Landowner Date Landowner Date

Davy H. McCall 7-29-08
 Chairman, Historic Preservation Commission Date

Roy L. Crow 7/29/08
 President, County Commissioners Date

State of Maryland, County of Kent, To Wit;

I hereby certify that on this 31st day of January 2008, before me the subscriber, a Notary Public in and for the State and County aforesaid, personally appeared Dally E. Baker known to me (or satisfactorily proven to be the landowner(s) named in the foregoing agreement and acknowledged that they executed the same for the purposes therein contained and, in my presence, signed and sealed the same.

As Witness my hand and Notarial Seal

Way B. Pinder
 Notary Public

My Commission Expires: 9.1.08

DO NOT NOTARIZE FOR THE LANDOWNER BELOW THIS LINE

State of Maryland, County of Cecil, To Wit;

I hereby certify that on this 29th day of July 2008, before me the subscriber, a Notary Public in and for the State and County aforesaid, personally appeared Davy H. McCall known to me (or satisfactorily proven to be the Chairman of the Historic Preservation Commission of Kent County) and acknowledged that he/she executed the same in that capacity for the purposes therein contained and, in my presence, signed and sealed the same.

As Witness my hand and Notarial Seal

Kimberly Boulden
 Notary Public

My Commission Expires: 10-01-08

State of Maryland, County of Kent, To Wit;

I hereby certify that on this 29th day of July 2008, before me the subscriber, a Notary Public in and for the State and County aforesaid, personally appeared Commissioner Roy W. Crow known to me (or satisfactorily proven to be the President of the County Commissioners of Kent County) and acknowledged that he/she executed the same in that capacity for the purposes therein contained and, in my presence, signed and sealed the same.

As Witness my hand and Notarial Seal

Jamie J. Hester
 Notary Public

My Commission Expires: 10.1.08

8-1-08 THE FOREGOING AGMT FILED FOR RECORD AND IS ACCORDINGLY RECORDED AMONG THE LAND RECORDS OF KENT COUNTY, MARYLAND, IN LIBER MLM NO. 578 FOLIOS 36-37

Mark L. Mumford, CLERK

Approved 3/27/07

KENT COUNTY CIRCUIT COURT (Land Records) MLM 578, p. 0037, MSA_CE57_1090. Date available 09/29/2008. Printed 04/25/2023.



Power Factor LLC
8240 Beachwood Road
Baltimore, Md. 21222
Phone: (443) 559-0174 Fax: (443) 559-0178
www.powerfactorco.com

April 27, 2023

Kent County Maryland
Historic Preservation Commission
400 High Street
Chestertown, Md 21620

Re: Bonass Residence 11943 Augustine Herman Hwy Kennedyville, Md 21645
Solar Panel Installation

To whom it may concern,

I, Francis Bonass, hereby grant my permission to Power Factor to submit any necessary documents required to obtain approval for the install of (44) rooftop module solar system 17.6KW for the above residential location on my behalf.

Should you have any questions and/or concerns please feel free to contact me at 443-480-2933.

Sincerely,

DocuSigned by:
Francis Bonass

Signature

Francis Bonass

Printed Name

5/2/2023

Date

Certificate Of Completion

Envelope Id: 5D8F34542A8849869A98BDC326717D50	Status: Completed
Subject: Complete with DocuSign: Kent County Historic Preservation Owner Affidavit..pdf	
Source Envelope:	
Document Pages: 1	Signatures: 1
Certificate Pages: 4	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelope Stamping: Enabled	Jessica Urban
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	8240 Beachwood Road
	Baltimore, MD 21222
	customerservice@powerfactorco.com
	IP Address: 73.213.150.170

Record Tracking

Status: Original	Holder: Jessica Urban	Location: DocuSign
4/27/2023 7:48:44 AM	customerservice@powerfactorco.com	

Signer Events

Francis Bonass
fdbconstruction@gmail.com
Mr
Security Level: Email, Account Authentication (None)

Signature

DocuSigned by:
Francis Bonass
41FAC6647A8C4B1...

Signature Adoption: Pre-selected Style
Using IP Address: 174.216.148.231
Signed using mobile

Timestamp

Sent: 4/27/2023 7:50:38 AM
Viewed: 5/2/2023 7:23:54 AM
Signed: 5/2/2023 7:24:10 AM

Electronic Record and Signature Disclosure:

Accepted: 5/2/2023 7:23:54 AM
ID: eab9302f-fdcb-486d-8364-f6baef7e43f2

In Person Signer Events**Signature****Timestamp****Editor Delivery Events****Status****Timestamp****Agent Delivery Events****Status****Timestamp****Intermediary Delivery Events****Status****Timestamp****Certified Delivery Events****Status****Timestamp****Carbon Copy Events****Status****Timestamp****Witness Events****Signature****Timestamp****Notary Events****Signature****Timestamp****Envelope Summary Events****Status****Timestamps**

Envelope Sent	Hashed/Encrypted	4/27/2023 7:50:38 AM
Certified Delivered	Security Checked	5/2/2023 7:23:54 AM
Signing Complete	Security Checked	5/2/2023 7:24:10 AM
Completed	Security Checked	5/2/2023 7:24:10 AM

Payment Events**Status****Timestamps****Electronic Record and Signature Disclosure**

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Power Factor LLC (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Power Factor LLC:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: customerservice@powerfactorco.com

To advise Power Factor LLC of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at customerservice@powerfactorco.com and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Power Factor LLC

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to customerservice@powerfactorco.com and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Power Factor LLC

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an email to customerservice@powerfactorco.com and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

By selecting the check-box next to 'I agree to use electronic records and signatures', you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Power Factor LLC as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Power Factor LLC during the course of your relationship with Power Factor LLC.

The County Commissioners of Kent County

ROY W. CROW
PRESIDENT
KENNEDYVILLE, MD

RONALD H. FITHIAN
MEMBER
ROCK HALL, MD

WILLIAM W. PICKRUM
MEMBER
CHESTERTOWN, MD

R. Clayton Mitchell, Jr.
Kent County Government Center
400 High Street
Chestertown, Maryland 21620
TELEPHONE 410-778-4600
FACSIMILE 410-778-7482
E-MAIL kentcounty@kentgov.org
www.kentcounty.com

SUSANNE HAYMAN
COUNTY ADMINISTRATOR
JANICE F. FLETCHER
EXECUTIVE ASSISTANT
THOMAS N. YEAGER
COUNTY ATTORNEY

April 15, 2008

Ms. Dolly Baker
11154 Augustine Herman Highway
Chestertown, MD 21620

Re: Designation of a Local Historic Site
John Kennedy House
11943 Augustine Herman Highway

Dear Ms. Baker:

The Board of County Commissioners held a hearing on April 8 to designate The John Kennedy House located on 11943 Augustine Herman Highway as a Historic Site and to list the property in the Kent County Register of Historic Places. Following written and oral testimony, the Board finds that the structure is historically significant. The Board based its decision on the following:

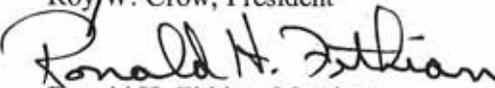
- Designation complies with the goals of the Comprehensive Plan to preserve the cultural, historical and archeological resources of Kent County.
- The structure is one of the oldest houses in Kennedyville and is associated with John Kennedy, founder of the village.
- The structure is one of two 3-story double brick houses in Kennedyville.
- The structure possesses distinctive architectural characteristics and reflects the influence of mid-19th Century Pennsylvania building techniques.

As a result of the April 8 hearing, we wish to designate The John Kennedy House as a Historic Site and list the property in the Kent County Register of Historic Places.

Very truly yours,

THE COUNTY COMMISSIONERS
OF KENT COUNTY, MARYLAND


Roy W. Crow, President


Ronald H. Fithian, Member

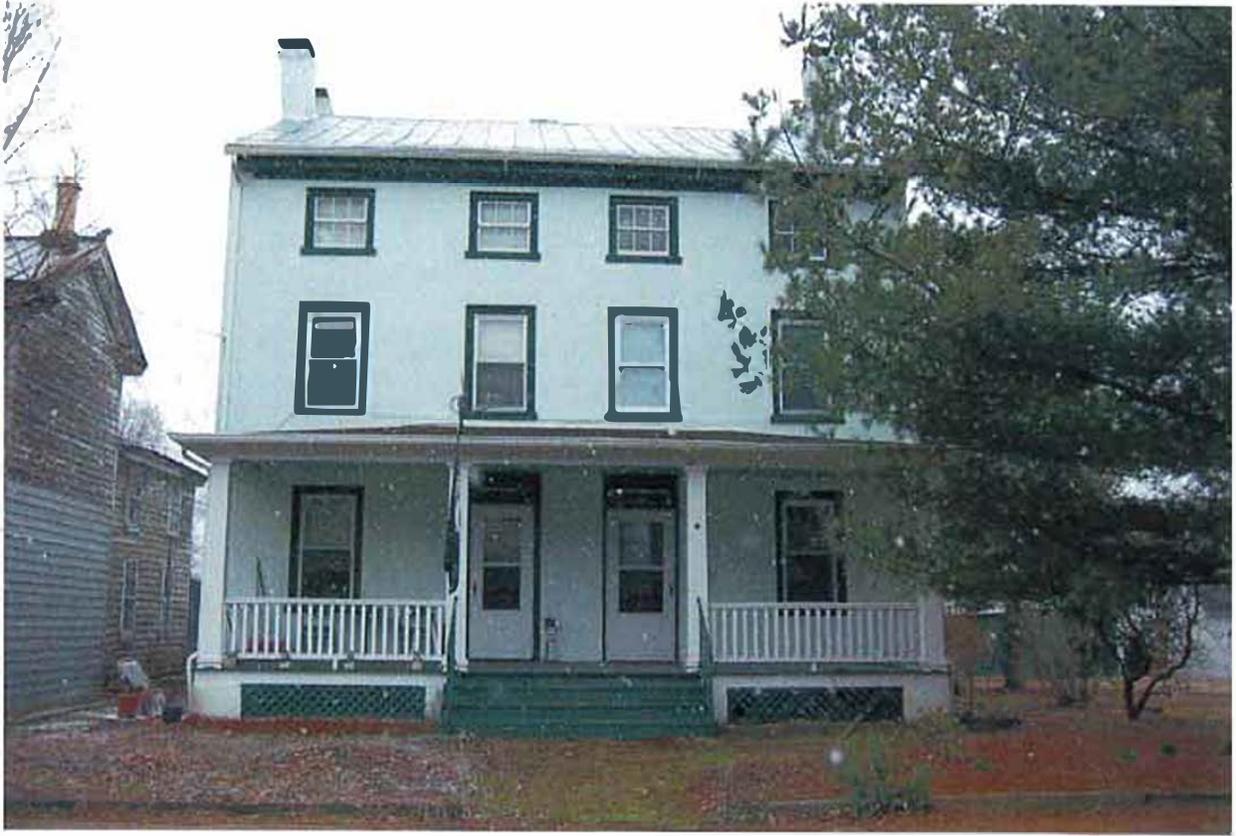

William W. Pickrum, Member

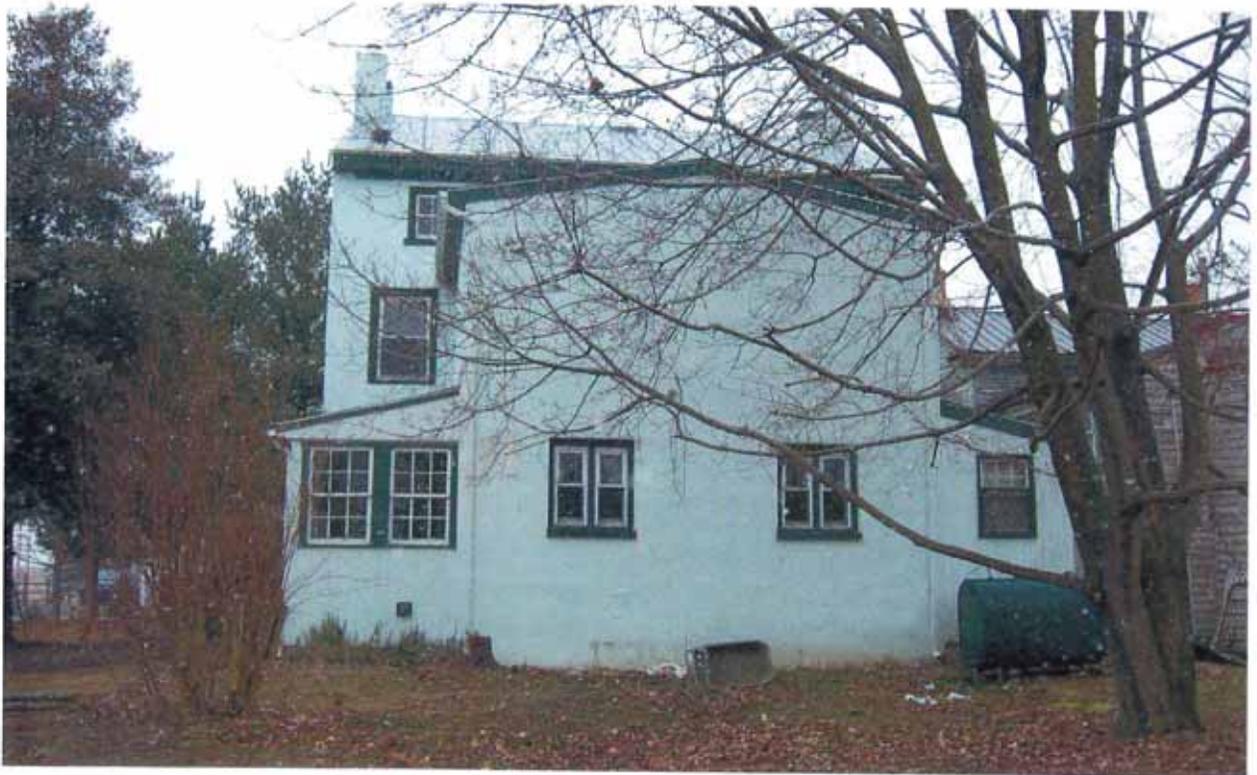


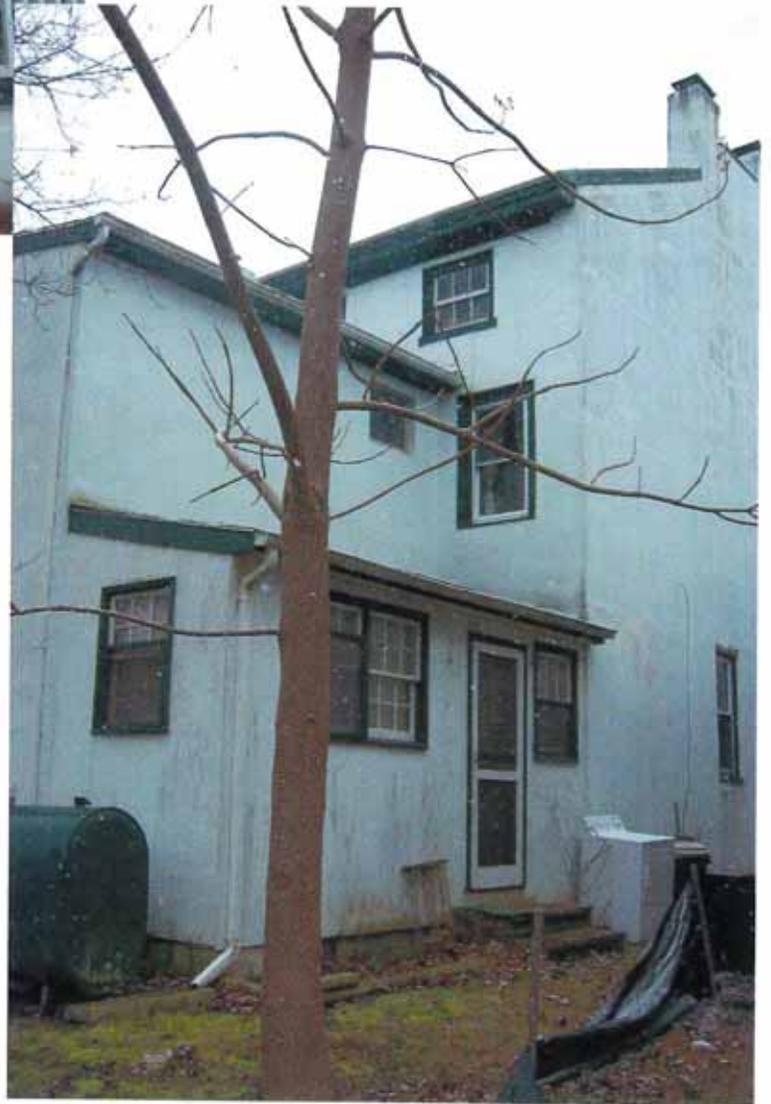
KCC/smb

Cc: **Carla Gerber, Community Planner**
Davy McCall, Chairman
Historic Preservation Commission

Recycled Paper







PHOTOVOLTAIC ROOF MOUNT SYSTEM

22 MODULES-ROOF MOUNTED - 8.800 kWDC, 7.678 kWAC

11943 AUGUSTINE HERMAN HWY, KENNEDYVILLE, MD 21645, USA

SYSTEM SUMMARY:

- (N) 22 - HANWHA SOLAR Q.PEAK DUO BLK ML-G10+ 400 (400W) MODULES
- (N) 22 - ENPHASE ENERGY IQ8A-72-2-US MICRO-INVERTERS [240V]
- (N) 01 - JUNCTION BOX
- (E) 200A MAIN SERVICE PANEL WITH NO MAIN BREAKER
- (E) 150A MAIN SERVICE DISCONNECT
- (N) 60A FUSED AC DISCONNECT
- (N) ENPHASE IQ COMBINER BOX 4

DESIGN CRITERIA:

- ROOF TYPE: - ASPHALT SHINGLE
- NUMBER OF LAYERS: - 01
- ROOF FRAME: - 2"x4" RAFTERS @ 24" O.C.
- STORY: - TWO STORY
- SNOW LOAD : - 25 PSF
- WIND SPEED :- 112 MPH
- WIND EXPOSURE:- C
- RISK CATEGORY:- II

GOVERNING CODES:

- 2015 INTERNATIONAL BUILDING CODE (IBC)
- 2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2015 INTERNATIONAL MECHANICAL CODE (IMC)
- 2015 INTERNATIONAL FIRE CODE (IFC)
- 2014 NATIONAL ELECTRICAL CODE (NEC)

SHEET INDEX

PV-0	COVER SHEET
PV-1	SITE PLAN WITH ROOF PLAN
PV-2	ROOF PLAN WITH MODULES
PV-3	ATTACHMENT DETAILS
PV-4	ELECTRICAL LINE DIAGRAM WITH CALCULATION
PV-5	PLACARD & WARNING LABELS
PV-6+	EQUIPMENT SPEC SHEETS

INTERCONNECTION METHOD : LINE SIDE TAP



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 54037
 EXPIRATION DATE: 3/6/2023

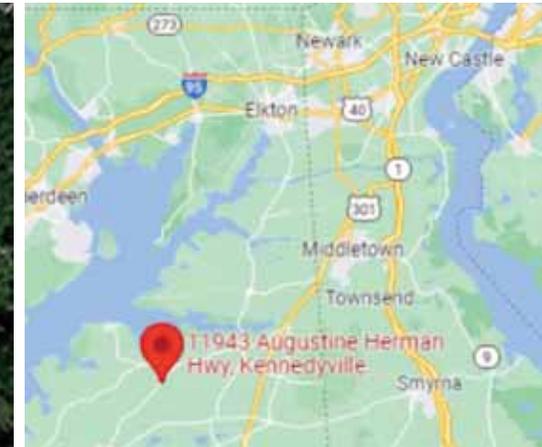
STAMPED 02/01/2023

GENERAL NOTES

- THE CONTRACTOR/INSTALLER OF THE SOLAR PV SYSTEM OVER EXISTING ROOF SHALL CONFORM TO OSHA REQUIREMENTS DURING THE CONSTRUCTION PHASE. JOB SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR/INSTALLER.
- REFER TO ELECTRICAL DRAWING PV-4 FOR PANEL DETAILED INFORMATION.
- IN CASE OF CONFLICT BETWEEN STRUCTURAL DRAWINGS AND ELECTRICAL DRAWINGS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
- THE CONTRACTOR/INSTALLER SHALL VERIFY ALL EXISTING BUILDING INFORMATION SHOWN (DIMENSIONS, ROOF TOP PROJECTIONS, ETC.) AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATIONS OF PV SYSTEM.
- THE CONTRACTOR/INSTALLER SHALL VERIFY AND COORDINATE EXISTING OPENINGS, ROOF TOP UNITS, VENT PIPES, ETC. SHOWN ON DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTORS/INSTALLER'S RESPONSIBILITY TO NOTIFY ENGINEER PRIOR TO PERFORMING THE WORK.
- ALL CONSTRUCTION IS TO BE PERFORMED IN STRICT CONFORMANCE WITH ALL APPLICABLE TOWN, COUNTY & STATE REGULATIONS AND/OR ANY OTHER GOVERNING BODIES.
- DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS. CONTRACTOR MUST CONDUCT ROOF SURVEY TO VERIFY DIMENSIONS SHOWN ON PLAN PRIOR TO INSTALLATION. IF THERE IS A DISCREPANCY IT IS CONTRACTOR/INSTALLER'S RESPONSIBILITY TO NOTIFY THE ENGINEER IMMEDIATELY.

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 & 75 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 BOXES, 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 E.G.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE



1 | AERIAL PHOTO
 PV-0 | SCALE: NTS

2 | VICINITY MAP
 PV-0 | SCALE: NTS



DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL:
 CHAT.POWUR.COM

VERSION

DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR

PROJECT NAME

FRANCIS BONASS 262348
 11943 AUGUSTINE HERMAN HWY,
 KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME

COVER SHEET

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER

PV-0

● **ROOF ACCESS POINT** SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.

STRUCTURAL NOTES :

1. THESE PLANS ARE STAMPED FOR STRUCTURAL CODE COMPLIANCE OF THE ROOF FRAMING SUPPORTING THE PROPOSED PV INSTALLATION ONLY.
2. THESE PLANS ARE NOT STAMPED FOR WATER LEAKAGE.
3. PV MODULES, RACKING, AND ATTACHMENT COMPONENTS MUST FOLLOW MANUFACTURER GUIDELINES AND REQUIREMENTS.
4. PLEASE SEE THE ACCOMPANYING STRUCTURAL CALCULATIONS REPORT FOR ADDITIONAL INFORMATION.
5. PRIOR TO COMMENCEMENT OF WORK, THE SOLAR INSTALLER SHALL VERIFY THE ROOF FRAMING INFO BEFORE INSTALLATION AND NOTIFY THE E.O.R. IF THERE IS ANY INCONSISTENCY BETWEEN SITE VERIFICATION AND FOLLOWING: **2x4 RAFTERS @ 24" OC SPACING WITH MAX UNSUPPORTED SPAN EQUAL OR LESS THAN 9 FT.**

NOTE:
3/4" OR GREATER EMT CONDUIT RUN (7/8 INCHES ABOVE ROOF)

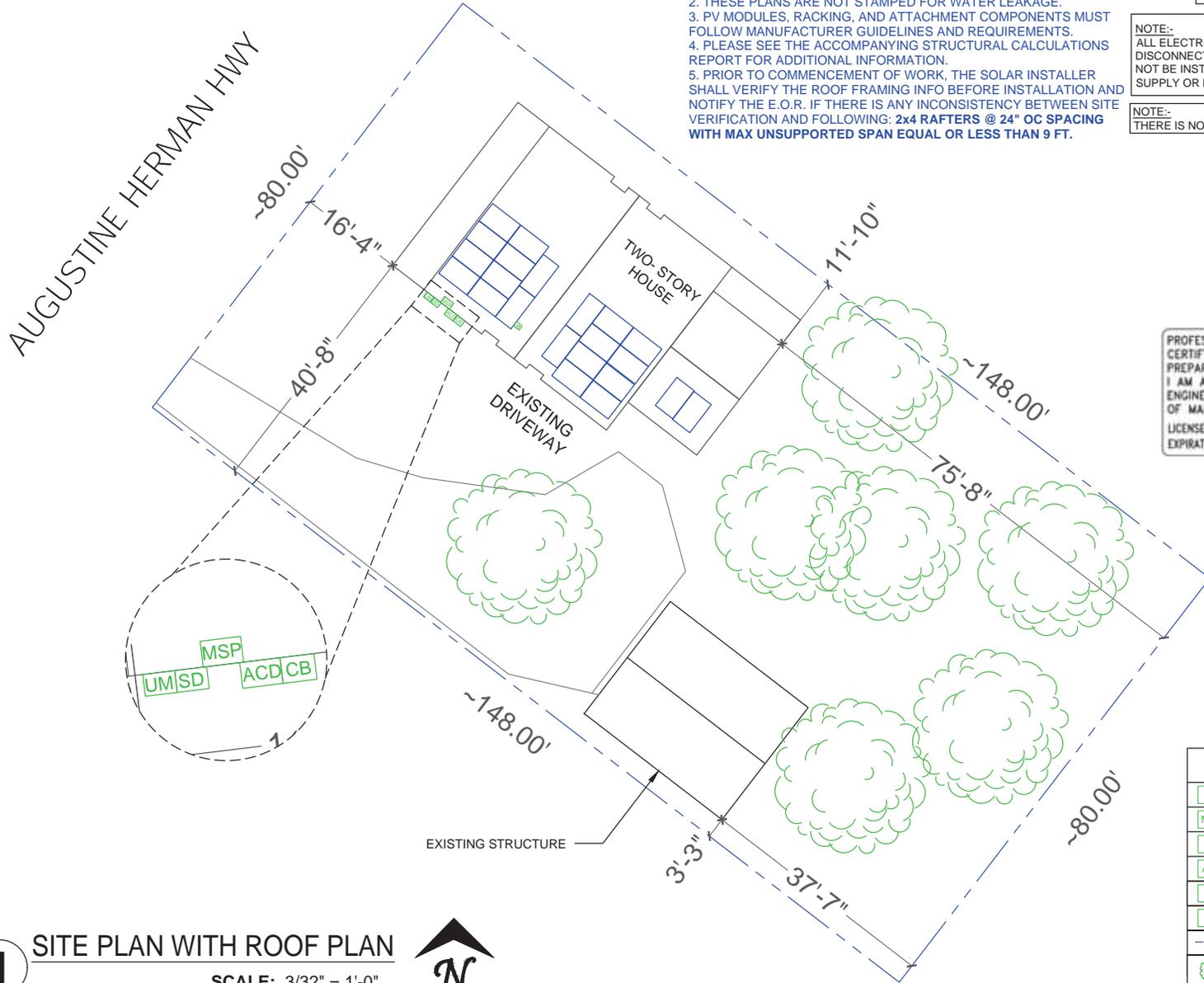
NOTE:-
ALL ELECTRICAL EQUIPMENT, COMBINERS, DISCONNECTS, MAIN SERVICE PANELS, ETC. SHALL NOT BE INSTALLED WITHIN 3' OF THE GAS METERS' SUPPLY OR DEMAND PIPING.

NOTE:-
THERE IS NO FENCE AND GATE IN THIS PROPERTY



PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 54037
EXPIRATION DATE: 3/6/2023

STAMPED 02/01/2023



1 SITE PLAN WITH ROOF PLAN
SCALE: 3/32" = 1'-0"



LEGEND	
	UTILITY METER
	MAIN SERVICE PANEL
	MAIN SERVICE DISCONNECT
	AC DISCONNECT
	ENPHASE IQ COMBINER 4
	JUNCTION BOX
	PROPERTY LINE
	TREES



DESIGN SUPPORT DAY OF INSTALL:
CHAT.POWUR.COM

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR

PROJECT NAME
FRANCIS BONASS 262348
11943 AUGUSTINE HERMAN HWY,
KENNEDYVILLE, MD 21645 USA
APN# 1502003538
UTILITY: DELMARVA POWER
AHJ: KENT COUNTY

SHEET NAME
SITE PLAN WITH
ROOF PLAN

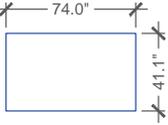
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 22 MODULES
 MODULE TYPE = HANWHA SOLAR Q.PEAK DUO BLK ML-G10+ 400 (400W) MODULES
 MODULE WEIGHT = 48.5 LBS / 22.0 KG.
 MODULE DIMENSIONS = 74.0" X 41.1" = 21.12 SF
 UNIT WEIGHT OF ARRAY = 2.30 PSF
 DISTRIBUTED DEAD LOAD = 2.57 PSF
 AVERAGE ROOF POINT DEAD LOAD = 21.37 LBS
 TOTAL SYSTEM WEIGHT: 1196.82 LBS

PHOTOVOLTAIC MODULES
 HANWHA SOLAR Q.PEAK DUO BLK
 ML-G10+ 400 (400W)



ARRAY AREA & ROOF AREA CALC'S		
AREA OF NEW ARRAY (Sq. Ft.)	AREA OF ROOF(PLAN VIEW) (Sq. Ft.)	TOTAL ROOF AREA COVERED BY ARRAY %
464.66	1722.12	27%
27% ROOF AREA (ARRAY <33% OF ROOF AREA)		

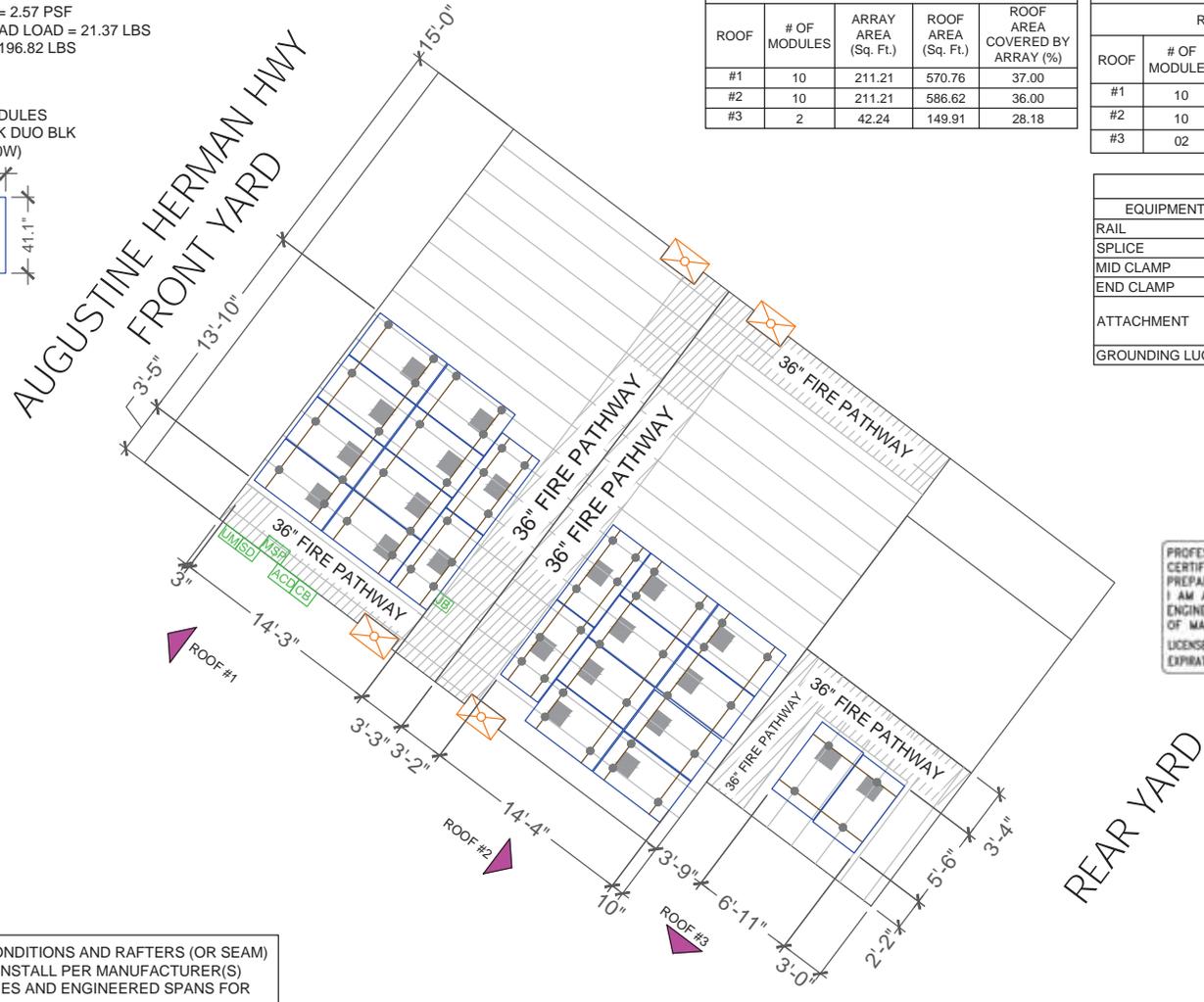
NOTE:
 3/4" OR GREATER EMT CONDUIT RUN (7/8 INCHES ABOVE ROOF)

ARRAY AREA & ROOF AREA CALC'S		
AREA OF NEW ARRAY (Sq. Ft.)	AREA OF ROOF(PLAN VIEW) (Sq. Ft.)	TOTAL ROOF AREA COVERED BY ARRAY %
464.66	1722.12	27%
27% ROOF AREA (ARRAY >33% OF ROOF AREA)		

ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	10	211.21	570.76	37.00
#2	10	211.21	586.62	36.00
#3	2	42.24	149.91	28.18

ROOF DESCRIPTION					
ROOF TYPE				ASPHALT SHINGLE ROOF	
ROOF	# OF MODULES	ROOF TILT	AZIMUTH	RAFTERS SIZE	RAFTERS SPACING
#1	10	26°	308°	2"x4"	24" O.C.
#2	10	26°	128°	2"x4"	24" O.C.
#3	02	10°	218°	2"x4"	24" O.C.

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
RAIL	14	UNIRAC SM LIGHT RAIL 168" MILL
SPLICE	00	BND SPLICE BAR PRO SERIES MILL
MID CLAMP	30	UNIVERSAL AF SERIES MID CLAMP
END CLAMP	28	UNIVERSAL AF SERIES END CLAMP
ATTACHMENT	56	UNIRAC FLASHLOC DUO ATTACHMENTS
GROUNDING LUG	7	GROUND LUG



NOTE: ACTUAL ROOF CONDITIONS AND RAFTERS (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS

1 ROOF PLAN WITH MODULES
 SCALE: 1/8" = 1'-0"



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 LICENSE NO. 54037
 EXPIRATION DATE: 3/6/2023

STAMPED 02/01/2023

LEGEND	
[UM]	UTILITY METER
[MSP]	MAIN SERVICE PANEL
[SD]	MAIN SERVICE DISCONNECT
[CB]	ENPHASE IQ COMBINER 4
[ACD]	AC DISCONNECT
[JB]	JUNCTION BOX
—	SM LIGHT RAIL
■	MICRO-INVERTER
●	ROOF ATTACHMENT @ 48" O.C.
○	VENT, ATTIC FAN (ROOF OBSTRUCTION)
⊠	CHIMNEY



DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL: CHAT.POWUR.COM

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR

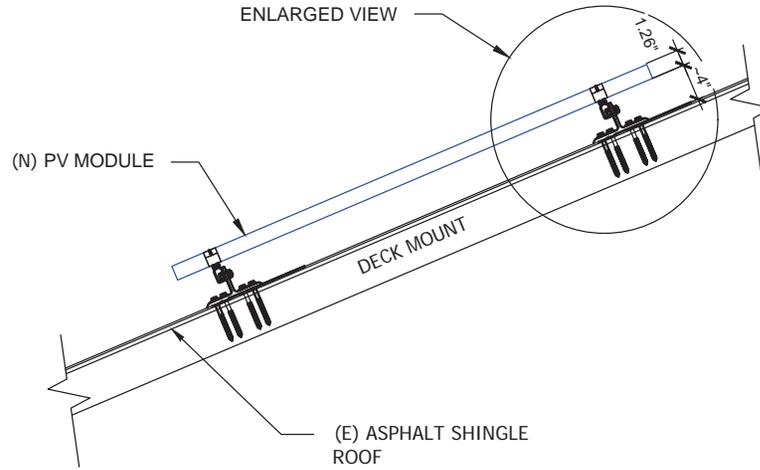
PROJECT NAME
 FRANCIS BONASS 262348
 11943 AUGUSTINE HERMAN HWY,
 KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME
 ROOF PLAN WITH MODULES

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-2

NOTE: ACTUAL ROOF CONDITIONS AND RAFTERS (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 54037
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STAMPED 02/01/2023

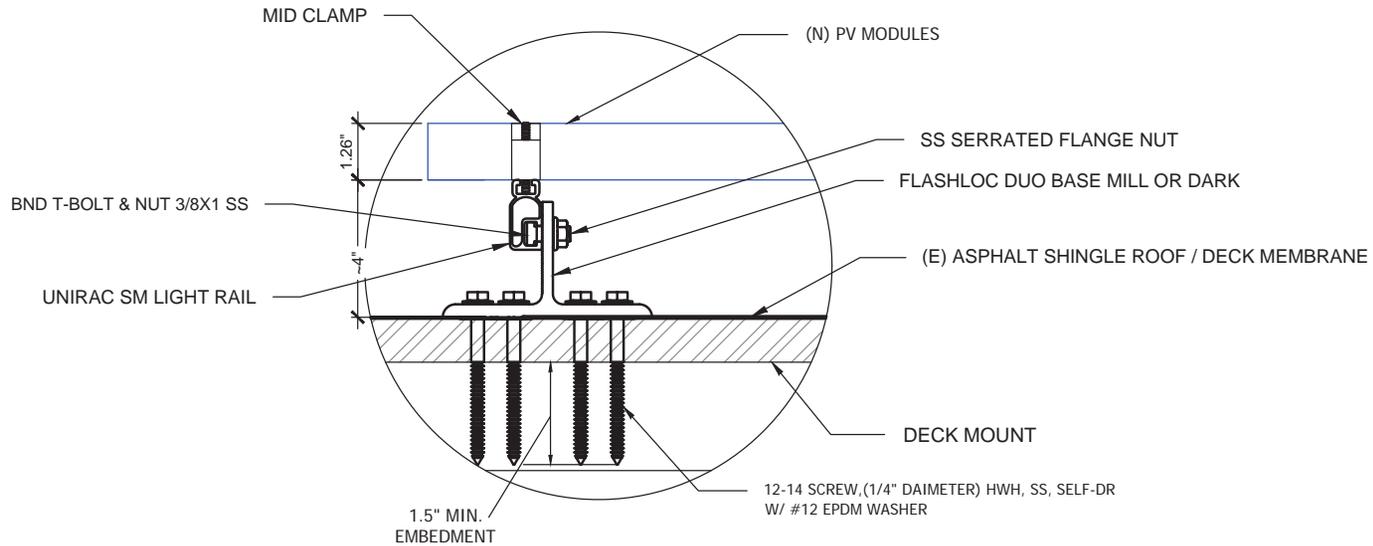
1 ATTACHMENT DETAIL
SCALE: NTS



DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL:
CHAT.POWUR.COM

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR



2 ATTACHMENT DETAIL (ENLARGED VIEW)
SCALE: NTS

PROJECT NAME
FRANCIS BONASS 262348
11943 AUGUSTINE HERMAN HWY,
KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME
**ATTACHMENT
 DETAIL**

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

SHEET NUMBER
PV-3

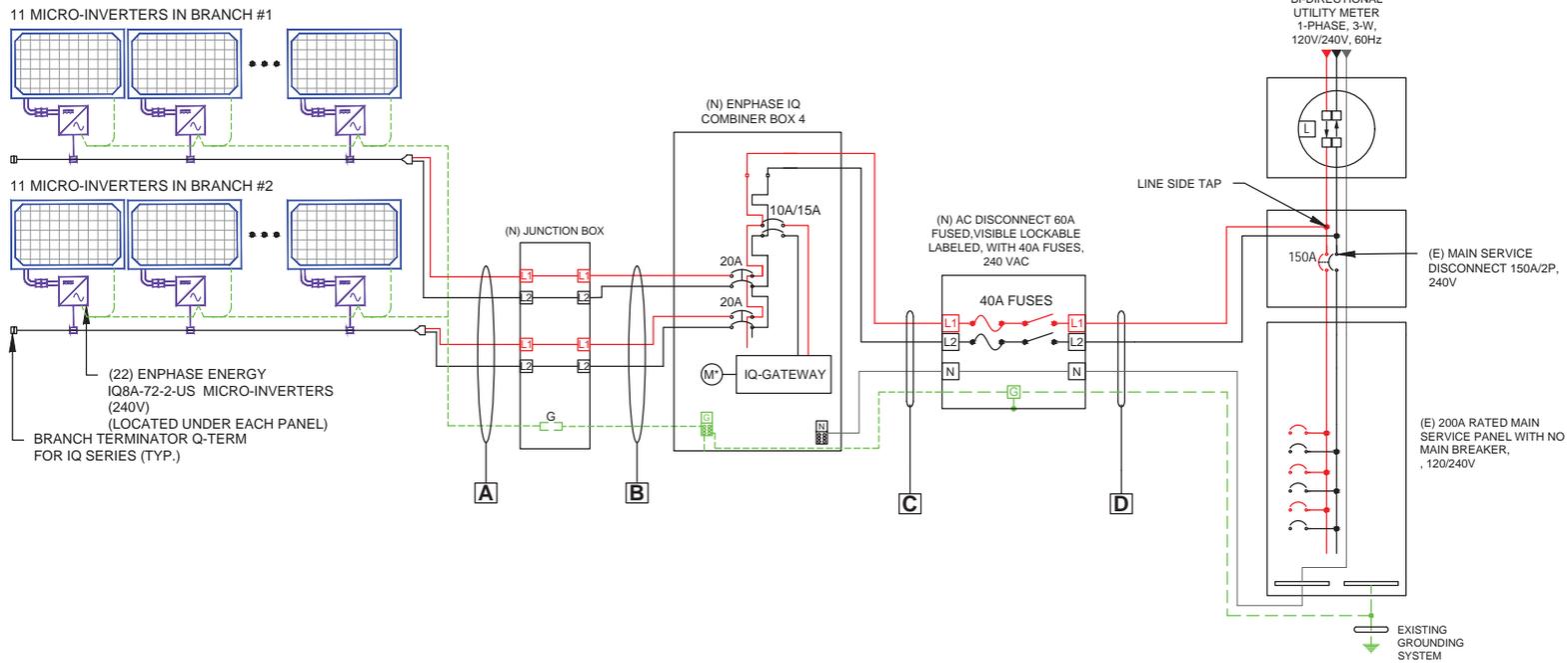
SERVICE INFO.
 UTILITY PROVIDER: DELMARVA POWER
 MAIN SERVICE VOLTAGE: 240V
 MAIN PANEL BRAND: SQUARE D
 MAIN SERVICE PANEL: (E) 200A
 MAIN CIRCUIT BREAKER RATING: (E) 150A
 MAIN SERVICE LOCATION: SOUTH-WEST
 SERVICE FEED SOURCE: OVERHEAD

AMBIENT TEMPERATURE SPECIFICATIONS				
RECORD LOW TEMP	AMBIENT TEMP (HIGH TEMP 2%)	CONDUIT HEIGHT	CONDUCTOR TEMPERATURE RATE (ON ROOF)	CONDUCTOR TEMPERATURE RATE (OFF ROOF)
-13°	33°	7/8 "	90°	75°

SOLAR MODULE SPECIFICATIONS						
MANUFACTURER / MODEL #	VMP	IMP	VOC	ISC	TEMPERATURE COEFFICIENT OF Voc	# OF MODULES
HANWHA SOLAR Q.PEAK DUO BLK ML-G10+ 400 (400W)	37.13	10.77	45.30	11.14	-0.27%/°C	22
MODULE DIMENSION		74.0" L x 41.1" W x 1.26" D				

SYSTEM SIZE:- 22 x 400W = 8.800 kWDC
 SYSTEM SIZE:- 22 x 349W = 7.678 kWAC

INVERTER SPECIFICATIONS			
MANUFACTURER / MODEL #	QUANTITY	NOMINAL OUTPUT VOLTAGE	NOMINAL OUTPUT CURRENT
ENPHASE ENERGY IQ8A-72-2-US	22	240 VAC	1.45A



WIRE TAG	CONDUIT	WIRE QTY	WIRE GAUGE	WIRE TYPE	TEMP. RATING	WIRE AMPACITY (A)	TEMP. DERATE	CONDUIT FILL DERATE	DERATED AMPACITY (A)	INVERTER QTY.	DESIGN CURRENT (A)	GROUND SIZE	GROUND WIRE TYPE
A	OPEN AIR	2	12 AWG	Q-CABLES	90°C	30	0.96	1.0	28.80	11	15.95	06 AWG	BARE CU GND
B	3/4" EMT	4	10 AWG 12 AWG	THWN-2 NM-B CABLES WHERE RUN INDOORS	90°C	40 30	0.96	0.8	30.72 23.04	11	15.95	10 AWG	THWN-2
C	3/4" EMT	3	8 AWG	THWN	75°C	50	0.94	1.0	47.00	22	31.90	10 AWG	THWN
D	3/4" EMT	3	6 AWG	THWN	75°C	65	0.94	1.0	61.10	22	31.90	8 AWG	THWN

1 ELECTRICAL LINE DIAGRAM WITH CALCULATION
 SCALE: NTS

power
 DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL:
 CHAT.POWER.COM

VERSION		
DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR

PROJECT NAME
 FRANCIS BONASS 262348
 11943 AUGUSTINE HERMAN HWY,
 KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME
 ELECTRICAL LINE
 DIAGRAM
 WITH CALCULATION
 SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-4

WARNING
ELECTRIC SHOCK HAZARD
 DO NOT TOUCH TERMINALS
 TERMINALS ON BOTH LINE AND
 LOAD SIDES MAY BE ENERGIZED
 IN THE OPEN POSITION

LABEL LOCATION:
 AC DISCONNECT, POINT OF INTERCONNECTION
 PER CODE: NEC 690.17(E)

**WARNING: PHOTOVOLTAIC
 POWER SOURCE**

LABEL LOCATION:
 CONDUIT, COMBINER BOX
 (PER CODE: NEC 690.31(G)(3)(4))

**WARNING DUAL POWER SOURCE
 SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

LABEL LOCATION:
 POINT OF INTERCONNECTION
 (PER CODE: NEC 705.12(D)(3) & NEC 690.64)

ADHESIVE FASTENED SIGNS:
 - THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT
 WHERE IT IS INSTALLED. (NEC 110.21(B)(3))
 - WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD
 APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD
 COMPLY WITH ANSI Z535.4 (NEC 110.21(B) FIELD MARKING).
 - ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF
 PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER
 RESISTANT [IFC 605.11.1.3]

**PHOTOVOLTAIC SYSTEM AC DISCONNECT
 RATED AC OPERATING CURRENT 31.90 AMPS
 AC NOMINAL OPERATING VOLTAGE 240 VOLTS**

LABEL LOCATION:
 AC DISCONNECT, POINT OF INTERCONNECTION
 (PER CODE: NEC690.54 & NEC690.13(B))

**WARNING
 INVERTER OUTPUT CONNECTION DO NOT
 RELOCATE THIS OVERCURRENT DEVICE**

LABEL LOCATION:
 POINT OF INTERCONNECTION
 (PER CODE: NEC 705.12 (D)(2)(3b))
 [Not required if panelboard is rated not less than sum of ampere ratings
 of all overcurrent devices supplying it]

SOLAR DISCONNECT

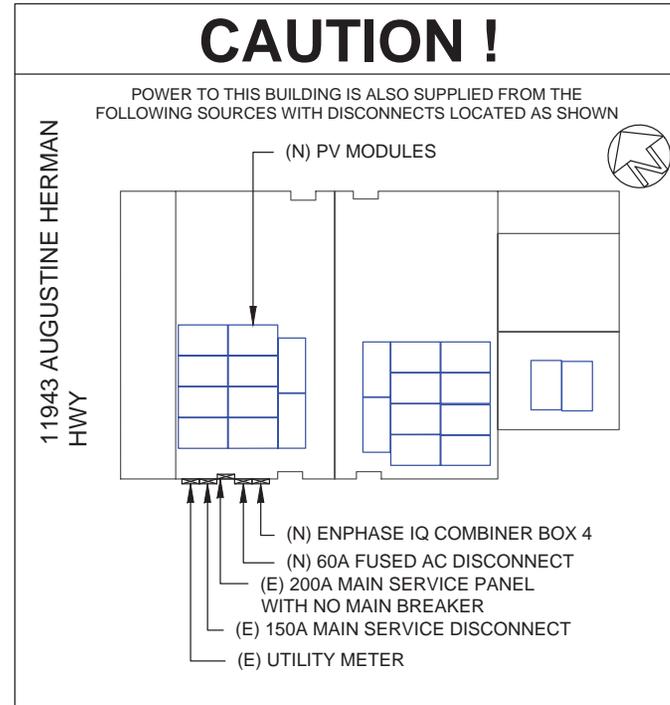
LABEL LOCATION:
 DISCONNECT, POINT OF INTERCONNECTION
 (PER CODE: NEC690.13(B))

**PHOTOVOLTAIC SYSTEM
 EQUIPPED WITH
 RAPID SHUTDOWN**

LABEL LOCATION:
 UTILITY SERVICE ENTRANCE/METER, INVERTER/DC
 DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER
 LOCATIONS AS REQUIRED BY LOCAL AHJ.
 PER CODE(S): NEC 2014: 690.56(C), IFC 2012: 605.11.1

**MAIN PHOTOVOLTAIC
 SYSTEM DISCONNECT**

LABEL LOCATION:
 MAIN SERVICE DISCONNECT / UTILITY METER
 (PER CODE: NEC 690.13(B))



DEL MAR, CA 92014, USA

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 11943 AUGUSTINE HERMAN HWY,
 KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME
 WARNING LABELS &
 PLACARD

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-5



Q.PEAK DUO BLK ML-G10+

385-405

ENDURING HIGH PERFORMANCE



- BREAKING THE 20% EFFICIENCY BARRIER**
Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.
- THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY**
Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry. The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.
- INNOVATIVE ALL-WEATHER TECHNOLOGY**
Optimal yields, whatever the weather with excellent low-light and temperature behavior.
- ENDURING HIGH PERFORMANCE**
Long-term yield security with Anti-LiD Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tri-Q™.
- EXTREME WEATHER RATING**
High-tech aluminum alloy frame, certified for high-snow (5400 Pa) and wind loads (4000 Pa).
- A RELIABLE INVESTMENT**
Inclusive 25-year product warranty and 25-year linear performance warranty².

¹ IFT test conditions according to IEC/IEC 61215-4:2016, method a) (850V, 30V)
² See data sheet on page 6 for further information.

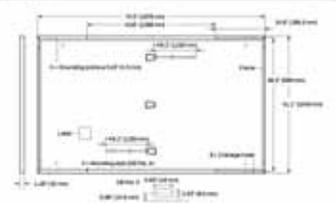
THE IDEAL SOLUTION FOR:
Roofing panels on residential buildings

Engineered in Germany



MECHANICAL SPECIFICATION

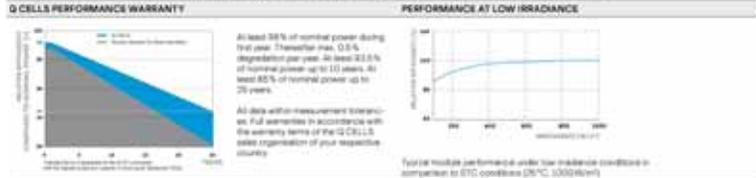
Format	78.5in x 41.1in x 1.26in (including frame)
Weight	48.5lbs (22.0kg)
Front Cover	0.13in (3.2mm) thermally processed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 x 22 monocrystalline Q.ANTUM solar half cells
Junction Box	3.06 x 3.98in x 1.26 x 2.36in x 5.59 x 4.73in (83 x 103 mm x 32 x 60 mm x 15 x 58 mm), IP67 with bypass diodes
Cable	4mm ² Solar cable, 1 x 48.2in (1250mm), 2 x 49.2in (1250mm)
Connector	36Vdc MCA, IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS		385	390	395	405	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC (POWER TOLERANCE ±0.6% ±0.1% OW)						
Power at MPP	P_{MPP} [W]	385	390	395	400	405
Short-Circuit Current	I_{sc} [A]	11.04	11.07	11.10	11.14	11.17
Open-Circuit Voltage	V_{oc} [V]	49.19	49.23	49.27	49.30	49.34
Current at MPP	I_{MPP} [A]	10.69	10.65	10.71	10.77	10.83
Voltage at MPP	V_{MPP} [V]	36.26	36.62	36.88	37.13	37.29
Efficiency ¹	η [%]	219.9	219.9	220.1	220.4	220.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²						
Power at MPP	P_{MPP} [W]	299.9	292.6	296.3	300.1	303.9
Short-Circuit Current	I_{sc} [A]	8.90	8.92	8.95	8.97	8.99
Open-Circuit Voltage	V_{oc} [V]	42.62	42.65	42.69	42.72	42.76
Current at MPP	I_{MPP} [A]	8.35	8.41	8.46	8.51	8.57
Voltage at MPP	V_{MPP} [V]	34.59	34.81	35.03	35.25	35.46

Measurement tolerance: P_{MPP} ± 3%, I_{sc} , V_{oc} ± 0.5% at STC, 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 +1000W/m², 10MOT, spectrum AM 1.5
Q CELLS PERFORMANCE WARRANTY PERFORMANCE AT LOW IRRADIANCE



TEMPERATURE COEFFICIENTS					
Temperature Coefficient of I_{sc}	α [%/K]	-0.04	Temperature Coefficient of V_{oc}	β [%/K]	-0.27
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°C]	52.6 ± 0.4 (at 1.3°C)

PROPERTIES FOR SYSTEM DESIGN			
Maximum System Voltage V_{max} [V]	1000 (IEC) / 1000 (UL)	PV module classification	Class B
Maximum Series Fuse Rating [A DC]	20	Fuse Rating based on ANSI / UL E1730	TYPE 2
Max. Tensile Load, Pull / Push ¹ [lbs/ft ²]	76 (3600Pa) / 95 (4380Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +135°F (-40°C up to +55°C)
Min. Tensile Load, Pull / Push ¹ [lbs/ft ²]	113 (5100Pa) / 84 (3800Pa)		

QUALIFICATIONS AND CERTIFICATES	PACKAGING INFORMATION
<ul style="list-style-type: none"> UL 6170, CE certified Quality Certificate: TÜV Rheinland ISO 9001:2015, ISO 14001:2015 US Patent No. 8,963,208 case sets IEC 61215 Certification 	

Note: Installation instructions must be followed. See the installation and operating manual for details or technical service department for further information on approved installation and use of the product.

Power by Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1405, Irvine, CA 92618, USA | TEL: +1 949 788 58 06 | EMAIL: help@usa.q-cells.com | WEB: www.q-cells.us



DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL:
CHAT.POWUR.COM

VERSION

DESCRIPTION	DATE	REV
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11943 AUGUSTINE HERMAN HWY,
KENNEDYVILLE, MD 21645 USA
APN# 1502003538
UTILITY: DELMARVA POWER
AHJ: KENT COUNTY

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-6



IQ8M and IQ8A 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 IQ Battery, 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 tested warranty of up to 25 years.



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



IQ8 Series Microinverters are UL listed as PV Rapid Shutdown Equipment and conform with various regulations, when 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) and IEEE 1547-2018 (UL 1741-SB)

Note:

IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, etc.) in the same system.

*Only when installed with IQ System Controller 2, meets UL 1741.
**G8M and G8A support split-phase 240V installations only.

IQ8M and IQ8A Microinverters

INPUT DATA (AC)	IQ8M-72-0-68	IQ8A-72-0-68
Commonly used module pairings†	W 290 - 450	290 - 500
Module compatibility	34-cell / 108 half-cell, 60-cell / 120 half-cell, 66-cell / 132 half-cell and 72-cell / 144 half-cell	
MPPT voltage range	V 30 - 45	32 - 45
Operating range	V	16 - 56
Min. / Max. start voltage	V	22 / 58
Max. input DC voltage	V	60
Max. continuous input DC current	A	12
Max. input DC short-circuit current	A	25
Max. module I _{sc}	A	20
Overvoltage class DC port	II	II
DC port backfeed current	mA	0
PV array configuration	1 x 1 (grounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit)	
OUTPUT DATA (AC)	IQ8M-72-0-68	IQ8A-72-0-68
Peak output power	W 330	366
Max. continuous output power	W 320	349
Nominal (L-L) voltage / range‡	V	240 / 211 - 264
Max. continuous output current	A	145
Nominal frequency	Hz	60
Extended frequency range	Hz	47 - 68
AC short circuit fault current over 3 cycles	A	2
Max. units per 20 A (L-L) branch circuit‡		11
Total harmonic distortion	%	<5%
Overvoltage class AC port	II	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	%	97.8
CEC weighted efficiency	%	97.5
Night-time power consumption	W	60
MECHANICAL DATA		
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)	
Relative humidity range	4% to 95% (condensing)	
DC Connector type	MC4	
Dimensions (H x W x D)	212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")	
Weight	1.06 kg (2.34 lbs)	
Cooling	Natural convection - no fans	
Approved for wet locations	Yes	
Pollution degree	PDB	
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure	
Invasion, category / UV exposure rating	NEMA Type 6 / outdoor	
COMPLIANCE		
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547-2018 (UL 1741-SB), FCC Part 15 Class B, ICES-003 Class B, CAN / CSA-C22.2 NO. 1071-01 This product is UL listed as PV Rapid Shutdown Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.3-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conduction, when installed according to manufacturer's instructions.	

†2-panel PV modules with voltage above this limit may result in additional clipping losses. See the compatibility calculator at <https://uk.enphase.com/module-compatibility>. ‡Nominal voltage range can be extended beyond nominal frequency by the utility. (UL) Units may vary. Refer to local requirements to define the number of microinverters per branch in your area.



DEL MAR, CA 92014, USA

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11943 AUGUSTINE HERMAN HWY,
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APN# 1502003538
UTILITY: DELMARVA POWER
AHJ: KENT COUNTY

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-7

Enphase IQ Combiner 4/4C

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



X-IQ-AM1-240-4C

X-IQ-AM1-240-4



To learn more about Enphase offerings, visit enphase.com

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-M1-06-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)
- 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



Enphase IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated renewable PV production metering (ANSI CT2 20 v1.0 SR) and consumption monitoring (v1.2 FN). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated renewable grade PV production metering (ANSI CT2 20 v1.0 SR) and consumption monitoring (v1.2 FN). Includes Enphase 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.

ACCESSORIES AND REPLACEMENT PARTS

Streamline Communications Kit (COMMS-CELLMODEM-M1-06)	Includes COMMS 407-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Streamline sales.
CELLMODEM-M1-06-SP-05	4G based LTE-M1 cellular modem with 5-year Sprint data plan.
CELLMODEM-M1-06-AT-05	4G based LTE-M1 cellular modem with 5-year AT&T data plan.
Circuit Breakers	Supports Eaton BR210, BR215, BR220, BR225, BR230, BR235, and BR240 circuit breakers.
BRK-15A-2-240V	Circuit breaker, 2 pole, 15A, Eaton BR210
BRK-15A-2-240V	Circuit breaker, 2 pole, 15A, Eaton BR215
BRK-20A-2P-240V	Circuit breaker, 2 pole, 20A, Eaton BR220
BRK-15A-2P-240V-B	Circuit breaker, 2 pole, 15A, Eaton BR210B with built down kit support
BRK-20A-2P-240V-B	Circuit breaker, 2 pole, 20A, Eaton BR220B with built down kit support
PLC-B1	Power line carrier communication bridge pack, quantity - one pair
KA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
KA-PLUG-230-1	Accessory receptacle for Power Line Carrier to IQ Combiner 4/4C (required for PLC-B1)
KA-ENV-PCBA-1	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	100/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fault current rating (output)	90 A
Branch circuits (series 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 / 15A with IQ Gateway breaker included
Production metering CT	200 A solid core (pre-installed and wired to IQ Gateway)
Consumption monitoring CT (CT 200 SPL1T)	A pair of 200 A split core current transformers

MECHANICAL DATA

Dimensions (WxHxD)	31.5 x 46.5 x 76.8 cm (14.7" x 18.3" x 3.02") Height x 21.8" (53.5 cm) with mounting brackets.
Weight	7.1 kg (15.5 lbs)
Ambient temperature range	40° C to +40° C (104° to 110° F)
Coating	Natural corrosion, 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 30A breaker inputs: 14 to 4 AWG copper conductors 40 A breaker branch input: 4 to 1/0 AWG copper conductors Main lug combined output: 10 to 3/0 AWG copper conductors Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing
ANSI/UL	75 2000 meters (8,560 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modems). Note that an Enphase Mobile Connect cellular modem is required for all Enphase installations.
Ethernet	Optional, RJ45, Cat5E (or Cat 6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ Combiner	UL 1191, CAN/CSA C22.2 No. 107.1, 47 CFR Part 15, Class B, ICES 003 Production metering ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering accuracy class 2.5
Compliance, IQ Gateway	UL 5401-1/CAN/CSA Z23.2 No. 61010-1

To learn more about Enphase offerings, visit enphase.com

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DEL MAR, CA 92014, USA

DESIGN SUPPORT DAY OF INSTALL:
CHAT.POWUR.COM

VERSION

DESCRIPTION	DATE	REV
INITIAL RELEASE	01/11/2023	UR

PROJECT NAME

FRANCIS BONASS 262348
11943 AUGUSTINE HERMAN HWY,
KENNEDYVILLE, MD 21645 USA
APN# 1502003538
UTILITY: DELMARVA POWER
AHJ: KENT COUNTY

SHEET NAME

SPEC SHEETS

SHEET SIZE

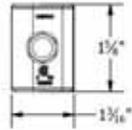
ANSI B
11" X 17"

SHEET NUMBER

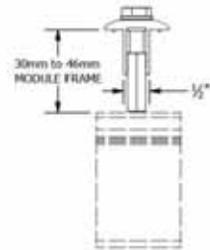
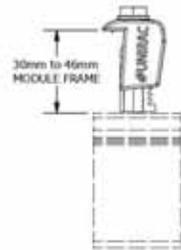
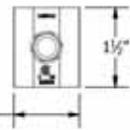
PV-8

PART # TABLE	
P/N	DESCRIPTION
302045M	UNIVERSAL AF MID CLAMP - MILL
302045D	UNIVERSAL AF MID CLAMP - DRK
302050M	UNIVERSAL AF END CLAMP - MILL
302050D	UNIVERSAL AF END CLAMP - DRK

UNIVERSAL AF
END CLAMP

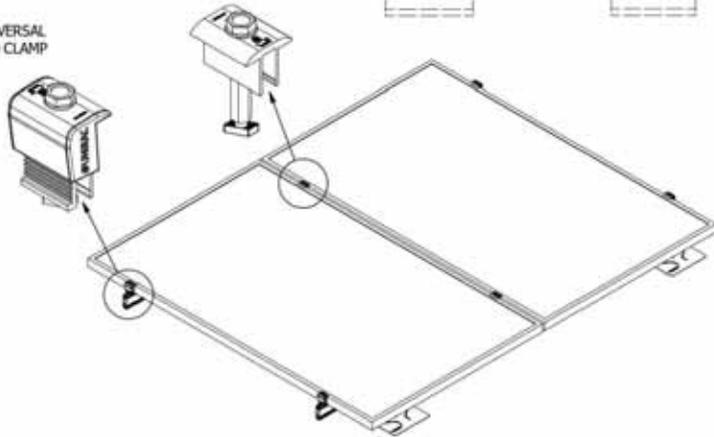


UNIVERSAL AF
MID CLAMP



UNIVERSAL
MID CLAMP

UNIVERSAL
END CLAMP



UNIRAC
1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM

PRODUCT LINE: SOLARMOUNT
DRAWING TYPE: PART & ASSEMBLY
DESCRIPTION: UNIVERSAL AF
CLAMPS
REVISION DATE: 9/28/2020

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

SM-A01B
SHEET

PART # TABLE		
P/N	DESCRIPTION	LENGTH
315168M	SM LIGHT RAIL 168" MILL	168"
315168D	SM LIGHT RAIL 168" DRK	168"
315240M	SM LIGHT RAIL 240" MILL	240"
315240D	SM LIGHT RAIL 240" DRK	240"

UNIRAC
1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM

PRODUCT LINE: SOLARMOUNT
DRAWING TYPE: PART DETAIL
DESCRIPTION: LIGHT RAIL
REVISION DATE: 9/11/2017

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

SM-P02
SHEET



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11943 AUGUSTINE HERMAN HWY,
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APN# 1502003538
UTILITY: DELMARVA POWER
AHJ: KENT COUNTY

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9

FLASHLOC™ DUO

THE MOST VERSATILE DIRECT TO DECK ATTACHMENT



FLASHLOC™ DUO is the most versatile direct to deck and rafter attachment for composition shingle and rolled comp roofs. The all-in-one mount installs fast — no kneeling on hot roofs to install flashing, no prying or cutting shingles, no pulling nails. Simply drive the required number of screws to secure the mount and inject sealant into the base. FLASHLOC's patented TRIPLE SEAL technology preserves the roof and protects the penetration with a permanent pressure seal. Kitted with two rafter screws, sealant and hardware for maximum convenience (deck screws sold separately). Don't just divert water, **LOC it out!**



PROTECT THE ROOF

Install a high-strength waterproof attachment without lifting, prying or damaging shingles.

APR 2017 FLASHLOC DUO V2



LOC OUT WATER

With an water shield **1**, rubber reinforcing gasket **2** and pressurized sealant chamber **3**, the Triple Seal technology delivers a 100% waterproof connection.



HIGH-SPEED INSTALL

Simply drive the required number of screws and inject sealant into the port **4** to create a permanent pressure seal.

FLASHLOC™ DUO

INSTALLATION GUIDE



PRE-INSTALL: CLEAN SURFACE AND MARK LOCATION

Ensure existing roof structure is capable of supporting loads prescribed in Flashloc Duo D&E Guide. Clean roof surface of dirt, debris, snow and ice.

Snap chalk lines for attachment rows. On shingle roofs, snap lines 1/4" below upslope edge of shingle course. This line will be used to align the upper edge of the mount.

NOTE: Space mounts per span charts found in FLASHLOC DUO state certification letters.

STEP ONE: SECURE

ATTACHING TO A RAFTER: Place FLASHLOC DUO over rafter location and align upper edge of mount with horizontal chalk line. Secure mount with the two (2) provided rafter screws. BACKFILL ALL PILOT HOLES WITH SEALANT.



ATTACHING TO SHEATHING: Place FLASHLOC DUO over desired location and align upper edge of mount with horizontal chalk line. Secure mount with the two (2) provided rafter screws. Next, secure mount with four (4) deck screws by drilling through the FLASHLOC DUO deck mount hole locations. Unirac recommends using a drill as opposed to an impact gun to prevent over-tightening or stripping roof sheathing.

IMPORTANT: SECURELY ATTACH MOUNT BUT DO NOT OVERTIGHTEN SCREWS.



STEP TWO: SEAL

Insert tip of UNIRAC approved sealant into port and inject until sealant exits vent. Continue array installation, attaching rails to mounts with provided T-bells. Follow sealant manufacturer's instructions. Follow sealant manufacturer's cold weather application guidelines, if applicable.

NOTE: When FLASHLOC DUO is installed over gap between shingle tabs or vertical joints, fill gap/joint with sealant between mount and upslope edge of shingle course.

CUT SHINGLES AS REQUIRED. DO NOT INSTALL THE FLASHLOC SLIDER ACROSS THICKNESS VARIATIONS GREATER THAN 1/8" SUCH AS THOSE FOUND IN HIGH DEFINITION SHINGLES.

NOTE: When installing included rail attachment hardware, torque T-bolt nut to 30 ft-lbs.

NOTE: If an exploratory hole falls outside of the area covered by the sealant, flash hole accordingly.

NOTE: Read and comply with the Flashloc Duo Design & Engineering Guide prior to design and installation of the system.

USE ONLY UNIRAC APPROVED SEALANTS. PLEASE CONTACT UNIRAC FOR FULL LIST OF COMPATIBLE SEALANTS.



FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702



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SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-10



CODE COMPLIANCE NOTES

INSTALLATION GUIDE PAGE **C**

SYSTEM LEVEL FIRE CLASSIFICATION

The system fire class rating requires installation in the manner specified in the SOLARMOUNT Installation Guide. SOLARMOUNT has been classified to the system level fire portion of UL2703. SOLARMOUNT has achieved system-level performance for steep sloped roofs. The fire classification rating is only valid on roof pitches greater than 2:12 (slopes > 2 inches per foot, or 9.5 degrees). The system is to be mounted over fire resistant roof covering rated for the application. There is no required minimum or maximum height (orientation above the roof deck) to maintain the system fire rating for SOLARMOUNT Module Types, System Level Fire Ratings, and Mitigation Requirements are listed below:

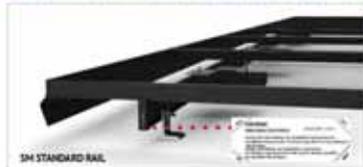
Rail Type	Module Fire Type	System Level Fire Rating	Rail Direction	Module Orientation	Mitigation Required
Standard & HD Rails	1, 2, 3 with Metal Frame; 10 with Metal Frame; 10, 11, 12, 13, 14 & 15	Class A, Class B & Class C	East-West North-South	Landscape OR Portrait Landscape OR Portrait	None Required None Required
Light Rail	1 & 2	Class A, Class B & Class C	East-West North-South	Landscape OR Portrait Landscape OR Portrait	None Required None Required
Standard, Light, & HD Rails	4 & 7	Class A, Class B & Class C	East-West North-South	Landscape OR Portrait Landscape OR Portrait	None Required None Required

This rating system may be used to ground and/or mount a PV module complying with UL2703 or UL4703 only when the specific module has been evaluated for grounding and/or mounting to compliance with the included instructions.

UL2703 CERTIFICATION MARKING LABEL

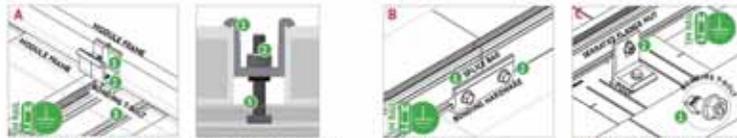
Unirac SOLARMOUNT is listed to UL 2703. Certification marking is embossed on all rail clamps as shown. Labels with additional information will be provided. After the racking system is fully assembled, a single label should be applied to the SOLARMOUNT rail at the edge of the array. Before applying the label, the corners of the label that do not pertain to the system being installed must be removed so that only the installed system type is showing.

Note: The sticker label should be placed such that it is visible, but not outward facing.



BONDING CONNECTION GROUND PATHS

INSTALLATION GUIDE PAGE **D**



- BONDING MIDCLAMP ASSEMBLY**
 - Assemble mid clamp with stainless steel mounting pins that pierce module frame according to bond module to stainless through clamp.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
- BONDING MIDCLAMP ASSEMBLY**
 - Assemble mid clamp with stainless steel mounting pins that pierce module frame according to bond module to stainless through clamp.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
 - Stainless steel nut inserts aluminum clamp to stainless steel T-bolt.
- BONDING RAIL SPLICE BAR**
 - Remove splice bar from rail and insert into rail.
 - Remove splice bar from rail and insert into rail.
 - Remove splice bar from rail and insert into rail.
- RAIL TO L-FOOT w/BONDING T-BOLT**
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.

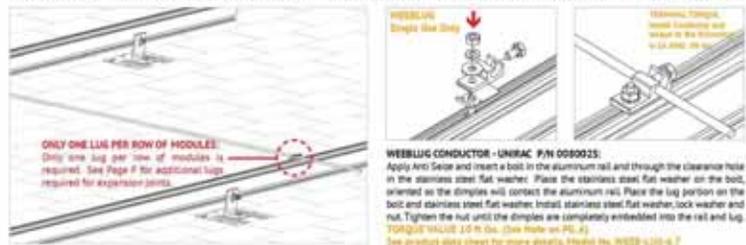


- BONDING MICROINVERTER MOUNT**
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
- RACK SYSTEM GROUND**
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
- WEERLUG FOR RACK LUG**
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.
 - Remove T-bolt from rail and insert into rail.



STANDARD SYSTEM GROUNDING

INSTALLATION GUIDE PAGE **K**



WEERLUG CONDUCTOR - UNIRAC P/N 0509025:
Apply Anti-Seize and insert a bolt in the aluminum rail and through the clearance hole in the stainless steel flat washer. Place the stainless steel flat washer on the bolt, oriented so the dimples will contact the aluminum rail. Place the lug portion on the bolt and stainless steel flat washer. Install stainless steel flat washer, lock washer and nut. Tighten the nut until the dimples are completely embedded into the rail and lug. TORQUE VALUE: 12 ft-lbs. (See Note on P. 4)

GROUNDING LUG MOUNTING DETAILS:
Details are provided for both the WEER and face products. The WEERlug has a grounding symbol located on the lug assembly. The face lug has a green colored set screw for grounding indication purposes. Installation must be in accordance with NFPA 70E, however the electrical designer of record should refer to the latest revision of NEC for actual grounding conductor cable size.

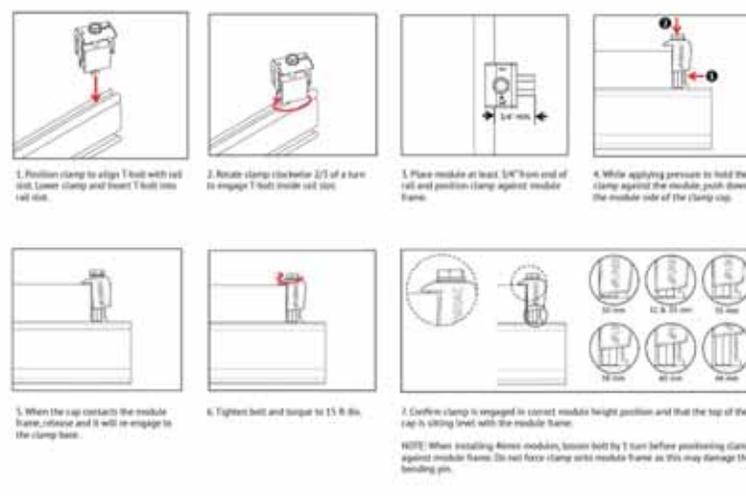
GROUNDING LUG - BOLT SIZE & DRILL SIZE	BOLT SIZE	DRILL SIZE
WEERlug	1/4"	N/A. Place in top 1/16" flat slot.
FACE LUG	#10-32	7/32"

- Torque value depends on conductor size.
- See product data sheet for torque value.



APPENDIX C: UNIVERSAL AF ENDCLAMP INSTALLATION GUIDE

PAGE **A**



- 1. Position clamp to align T-bolt with rail slot. Lower clamp and insert T-bolt into rail slot.
- 2. Rotate clamp clockwise 2/3 of a turn to engage T-bolt inside rail slot.
- 3. Place module at least 1/4" from end of rail and position clamp against module frame.
- 4. While applying pressure to hold the clamp against the module, push down on the module side of the clamp cap.
- 5. When the cap contacts the module frame, release and it will engage to the clamp base.
- 6. Tighten belt and torque to 15 ft-lbs.
- 7. Confirm clamp is engaged in correct module height position and that the top of the cap is sitting level with the module frame.



DEL MAR, CA 92014, USA

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VERSION		
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 FRANCIS BONASS 262348
 11943 AUGUSTINE HERMAN HWY,
 KENNEDYVILLE, MD 21645 USA
 APN# 1502003538
 UTILITY: DELMARVA POWER
 AHJ: KENT COUNTY

SHEET NAME
 SPEC SHEETS

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-11



Certificate of Compliance

Certificate: 70131735 **Master Contract:** 266909
Project: 80128750 **Date Issued:** 2022-06-08
Issued To: Unirac
1411 Broadway NE
Albuquerque, New Mexico, 87102
United States
Attention: Rob D'Anastasio

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Michael Hoffnagle
Michael Hoffnagle



PRODUCTS

CLASS - C531302 - POWER SUPPLIES - PHOTOVOLTAICS-PV Racking and clamping systems
CLASS - C531382 - POWER SUPPLIES - PHOTOVOLTAICS-PV Racking and clamping systems -
Certified to US Standards



Certificate: 70131735
Project: 80128750

Master Contract: 266909
Date Issued: 2022-06-08

Models:	SM	- SOLARMOUNT Flush-to-Roof is an extruded aluminum rail PV racking system that is installed parallel to the roof in landscape or portrait orientations.
	ULA	- Unirac Large Array is a ground mount system using the SolarMount (SM) platform for the bonding and grounding of PV modules.

Solarmount

The system listed is designed to provide bonding/grounding, and mechanical stability for photovoltaic modules. The system is secured to the roof with the L-Foot components through the roofing material to building structure. Modules are secured to the racking system with stainless steel or aluminum mid clamps and Aluminum end clamps. The modules are bonded to the racking system with the stainless-steel bonding mid clamps with piercing points. The system is grounded with 10 AWG copper wire to bonding/grounding lugs. Fire ratings of Class A with Type 1, 2, 3 (with metallic frame), 4 (with trim), 5 (with trim), 10 (with metallic frame), 19, 22, 25, 29, or 30 for steep slope. Tested at 5" interstitial gap which allows installation at any stand-off height.

The grounding of the system is intended to comply with the latest edition of the National Electrical Code, to include NEC 250 & 690. Local codes compliance is required, in addition to national codes. All grounding/bonding connections are to be torqued in accordance with the Installation Manual and the settings used during the certification testing for the current edition of the project report.

The system may employ optimizers/micro-inverters and used for grounding when installed per installation instructions.

UL 2703 Mechanical Load ratings:

Downward Design Load (lb/ft ²)	113.5
Upward Design Load (lb/ft ²)	50.7
Down-Slope Load (lb/ft ²)	16.13

Test Loads:

Downward Load (lb/ft ²)	170.20
Upward Load (lb/ft ²)	76.07
Down-Slope Load (lb/ft ²)	24.2



DEL MAR, CA 92014, USA

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AHJ: KENT COUNTY

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-13



02-01-2023

Powur PBC

2683 Via De La Valle #321G

Subject: Structural Certification for Installation of Residential Solar
re job: Francis Bonass (262346)

11943 Augustine Herman Hwy, Kennedyville, MD 21645, USA

Attn.: To Whom It May Concern

Observation of the condition of the existing framing system was performed by an audit team of Powur PBC

After review of the field observation data, structural capacity calculations were performed in accordance with applicable building codes to determine adequacy of the existing roof framing supporting the proposed panel layout. Please see full Structural Calculations report for details regarding calculations performed and limits of scope of work and liability. The design criteria and structural adequacy are summarized below:

Design Criteria:

Code: IBC 2015, ASCE 7-10, Ult Wind Speed: 115 mph, Ground Snow: 25 psf, Min Snow Roof: 0 psf

ROOF 1: Shingle roofing supported by 2x4 Rafter @ 24 in. OC spacing. The roof is sloped at approximately 26 degrees and has a max beam span of 8.4 ft between supports. Roof is adequate to support the imposed loads. Therefore, no structural upgrades are required.

ROOF 2: Shingle roofing supported by 2x4 Rafter @ 24 in. OC spacing. The roof is sloped at approximately 10 degrees and has a max beam span of 9.0 ft between supports. Roof is adequate to support the imposed loads. Therefore, no structural upgrades are required.

02-01-2023

Current Renewables Engineering Inc.
Professional Engineer
info@currentrenewableseng.com





United States Department of the Interior

FISH AND WILDLIFE SERVICE



Maryland Fishery Resources Office
177 Admiral Cochrane Dr.
Annapolis, MD 21401

RE: Cypress Branch Dam Removal Project in Kent County, Millington, Maryland, NHPA
Section 106 Compliance, Invite to Potential Consulting Parties

Dear Mr. Carper and Ms. Gerber,

The purpose of this letter is to inform you of the Cypress Branch Dam Removal Project in Kent County, Millington, Maryland, and to invite you to become a consulting party in the Section 106 consultation process in accordance with the National Historic Preservation Act (NHPA). The U.S. Fish and Wildlife Service invites the Kent County Historic Preservation Commission to consult in the removal of the Cypress Branch Dam Removal Project, considered an undertaking under the National Historic Preservation Act (NHPA).

The United States Fish and Wildlife Service (USFWS), acting as the lead federal agency is entering into the Section 106 consultation process in accordance with the NHPA with the State of Maryland – Maryland Department of Natural Resources (dam owner) and the Maryland Historical Trust with additional consultation partners including American Rivers.

Cypress Branch Mill Pond Dam is located on Maryland Department of Natural Resources (MD DNR), Maryland Park Service land in Millington, MD. The GPS coordinates for the project are 39.261159, -75.827442. The Cypress Branch Mill Pond Dam Removal project is a cooperative effort by the MD Department of Natural Resources, the U.S. Fish and Wildlife Service, and American Rivers. Primary funding for the project is from the USFWS from the Hurricane Sandy Resilience Fund. Through a grant agreement with the USFWS, the design and construction of the project will be administered by American Rivers. The purpose of the dam removal is to restore Cypress Branch to riverine conditions to ensure fish and aquatic species can pass upstream and downstream without impediments (see attached USGS Site Location Maps and Aerial Overview Map). The priority species for this dam removal project are Blueback Herring and Alewife, two migratory species that move upstream to spawn each spring and return downstream after they have spawned.

The Cypress Branch Mill Pond Dam has been determined eligible for listing on the National Register of Historic Places (NRHP) under criterion A due to its significance to the Historic District. The exact construction date of the Cypress Mill Dam is unknown, there is a history of dams and mill ponds in the area starting in the eighteenth century. However, based on the aggregate in the concrete, H&P estimates that the Dam was constructed 1900 c. Eligibility was determined due to trends in history related to the mill history of the area and the Town of Millington. Based on the deed and historical research conducted for the project, it appears that

the Cypress Mill Pond and Dam funneled water to mill races that powered mills in the Town of Millington. Since the dam is eligible for the NRHP, removal will cause an Adverse Effect and will require a Memorandum of Agreement (MOA). USFWS is collaboratively working with the State of Maryland, Maryland Historic Trust, and interested parties to determine appropriate mitigation measures and will collaboratively develop the MOA these parties. Please note that the project team, in concurrence with the Maryland Historic Trust, believe that the undertaking will have no effect on significant archeological resources and that no further archeological investigations are warranted for this undertaking.

We respectfully request your response to me by June 23, 2023, if your organization would like to serve as a consulting party in the section 106 consultation. It is assumed that if USFWS is not contacted by this date that your organization is not interested in serving as a consulting party. Please call (410-852-6201) or email me (alexander_vidal@fws.gov) of your interest to participate or if you have questions about this request.

Sincerely,

Alexander Vidal
Fish and Wildlife Biologist
US Fish and Wildlife Service
Maryland Fish and Wildlife Conservation Office

CC: Ms. Jessie Thomas-Blate, American Rivers
Mr. Mark Secrist, US Fish and Wildlife Service
Mr. Jim Thompson, MD Department of Natural Resources
Ms. Becky Roman, Maryland Historical Trust
Mr. Shane Johnston, MD Department of Natural Resources



Figure 1. Top of the Earthen Dam at Cypress Branch



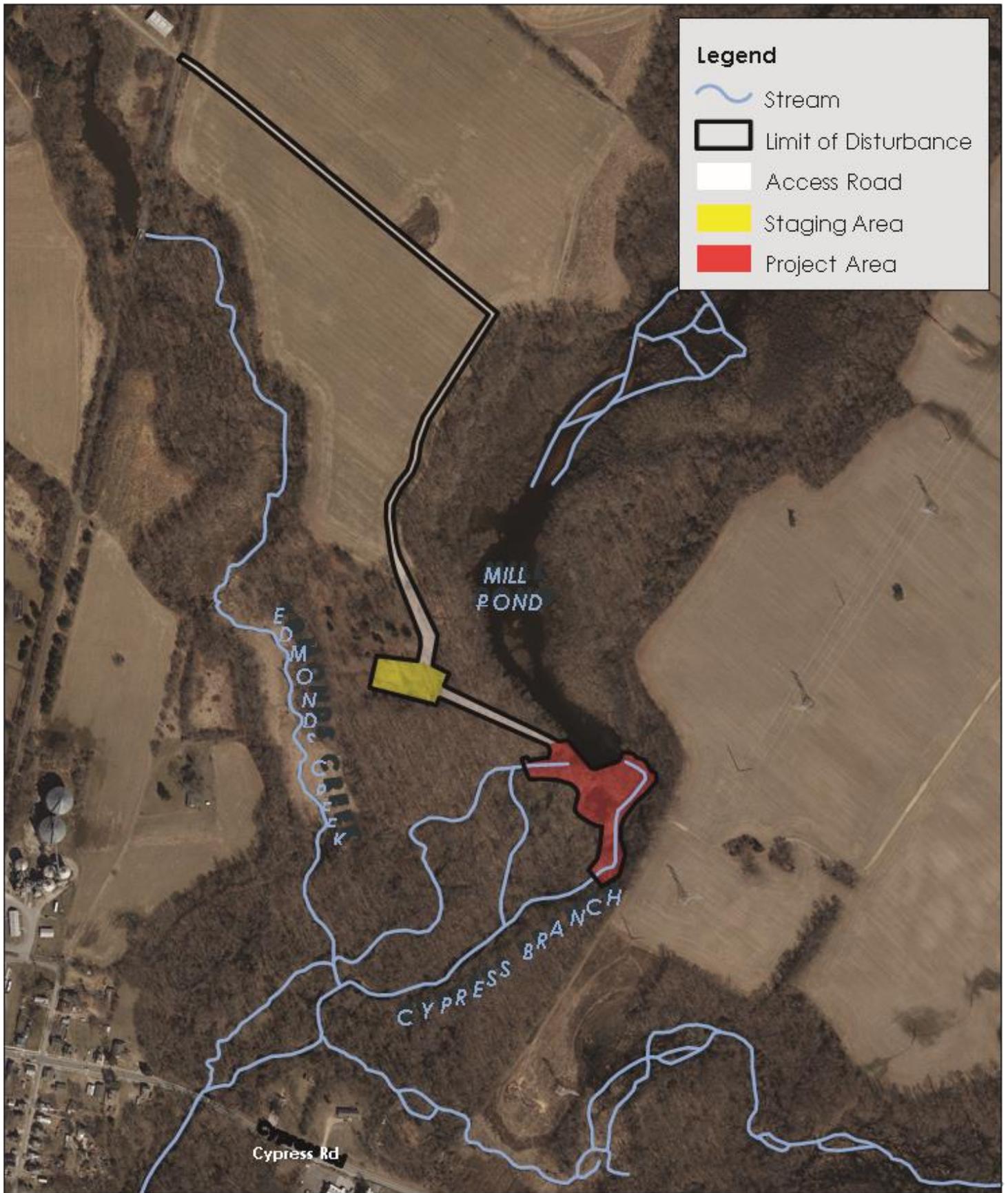
Figure 2. cement spillway on Cypress Branch to be removed looking upstream toward Mill Pond



Figure 3. Side view of cement spillway looking upstream toward the Mill Pond



Figure 4. Rubble and cement at breach in earthen dam looking upstream toward Mill Pond



NOTES:
 1. Limit of disturbance is approximate.
 2. Streams digitized using 2019 orthoimagery.
 3. 2019 orthoimagery obtained from MD IMAP website:
imap.maryland.gov/

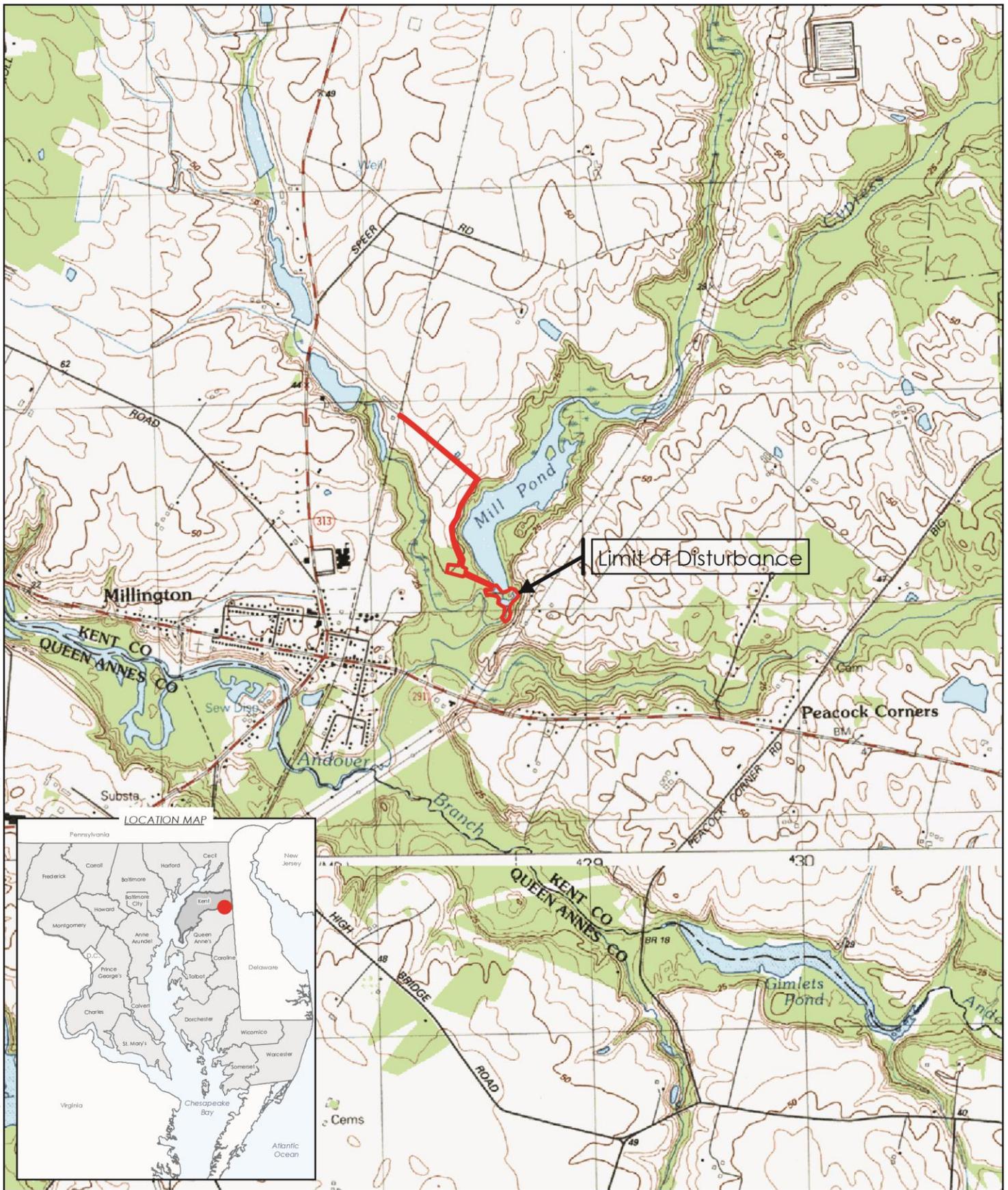
AERIAL OVERVIEW MAP

CYPRESS BRANCH DAM REMOVAL
 AMERICAN RIVERS
 KENT COUNTY, MARYLAND



0 250 500 Feet
 Map Projection: NAD 1983 2011 StatePlane Maryland FIPS 1900 FT US

File: P:\0605\Projects\0605023\GIS\MXD\USGS.mxd, 2/10/2021, Drawn by Tropper, Copyright Princeton Hydro, LLC



- NOTES:
1. Limit of disturbance is approximate.
 2. USGS topographic digital raster graphics obtained from Terrain Navigator Pro, Millington and Sudlersville, MD quadrangles.

USGS SITE LOCATION MAP

CYPRESS BRANCH DAM REMOVAL
AMERICAN RIVERS
KENT COUNTY, MARYLAND



Map Projection: NAD 1983 2011 StatePlane Maryland FIPS 1900 FT US