



*City of Bristol
Historic District Commission*

**REGULAR MEETING — WEDNESDAY, MARCH 25, 2026
CITY HALL — MEETING ROOM 1-3 — FIRST FLOOR
111 NORTH MAIN STREET
5:00 PM**

INFORMATION TO ACCESS THIS MEETING

Zoom Meeting link:

[https://bristolct-
gov.zoom.us/j/88671335814?pwd=QHDPE7oT7qsNpVjilTXOURNFXbv0IY.](https://bristolct-gov.zoom.us/j/88671335814?pwd=QHDPE7oT7qsNpVjilTXOURNFXbv0IY.1)

1

Meeting Number:

886 7133 5814

Meeting Password:

123456

Join by phone:

1-929-205-6099

AGENDA

1. Call to Order
2. Public Participation
3. Approval of Minutes
 - a. Regular Meeting — February 25, 2026
4. Public Hearings
 - a. Application #2026-03-01 - Request for a Certificate of Appropriateness for the installation of roof-mounted solar (9 panels) at 163 Woodland Street; Assessor's Map 25, Lot 58/12; Scott and Cheryl McNeal, owners; Trinity Solar, LLC, applicant.
5. Correspondence
6. Adjournment

REMINDER: The next regular meeting of the Historic District Commission is Wednesday, April 22, 2026

**BRISTOL HISTORIC DISTRICT COMMISSION
MINUTES
REGULAR MEETING OF MONDAY FEBRUARY 25, 2026
DRAFT MINUTES – SA**

By: Chair Collins

Time: 5:00 P.M.

Place: City Hall

ROLL CALL:

MEMBERS:	NAME	PRESENT	ABSENT
REGULAR MEMBERS:	Andrew E. Collins, Chair	X	
	Karen Stevens, Vice-Chair	X	
	Colleen Nicastro	X	
	Jennifer St. John	X	
	Alicia M. Jennings	X	
ALTERNATE MEMBERS:	Keith Elder		X
	Greg Hartmann	X	
	Jason M. Messier	X	
STAFF:	Robert M. Flanagan, AICP, City Planner	X	

1. Call to Order

Per the order of Chairman Collins, the meeting was called to order at 5:00 P.M. and led all present in the Pledge of Allegiance. With new members on the Commission present the Chair asked for introductions from the members and department staff.

Chairman Collins reminded the Commission the next regular meeting of the Historic District Commission is Wednesday, March 25, 2026.

2. Public Participation

There was no Public Participation.

3. Approval of Minutes

a. Regular Meeting – November 19, 2025

Chair Collins designated regular Commissioners Stevens, Nicastro, St. John, Jennings, and Collins to vote on the November 19, 2025, regular meeting minutes.

Members noted the following correction to the Minutes:

- Section 3 of the Minutes showed all the members voting but not all were present. The request was to have this piece reviewed and updated.
- Additionally, it was noted that the conditions that the approvals are subject to state "after staff review and discussion with the Vice Chairman", when it should say "Chairman".

Motion: Move to approve the minutes of the November 19, 2025, regular meeting, as amended.

By: Commissioner St. John

Seconded: Commissioner Nicastro

For: Stevens, Nicastro, St. John, Jennings, and Collins

Against: None

Abstained: None

All were in favor and the Minutes were accepted into the record as amended.

4. Public Hearings

- a. Application 2026-02-01 – Request for a Certificate of Appropriateness for the replacement of 6 windows at 100 Oakland Street; Assessor's Map 25, Lot 53; Greg Mazares/Southern New England Windows, applicant.

Chair Collins designated regular Commissioners Stevens, Nicastro, St. John, Jennings, and Collins to vote on Application #2026-02-01. Commissioner Hartman cited a Conflict of Interest as a direct neighbor to the applicant and excused himself from the Public Hearing at 5:04pm. The Chair confirmed that the five regular members would be voting while the alternate members would be able to make inquiries about the application but would not be allowed to vote on the application.

The Commission received the following items in their electronic packets:

- a. application #2026-02-01 (3 pages)
- b. location & aerial maps (3 pages)
- c. street view (staff) from 2025 (2 pages)
- d. streetside pictures w/numbering (submitted by applicant)
- e. example of proposed windows
- f. installation package

Ben Burnham from Renewal by Anderson/Southern New England Windows spoke on behalf of the homeowner. The application is for six (6) like-for-like replacement windows that are mostly not main street facing but some are partially visible. The windows will be the same color, grid pattern, and the style to what is there now.

A sample of the windows was shared with the Commission. The windows are a wood polymer composite designed to look like they've been part of the home all along. A "replacement style" process is being used which means all the external features will be preserved such as the existing shutters with older style brackets which will not be touched during the installation. There are over seventy (70) windows in this home that need to be replaced. These six (6) are the first portion of that project. Installation will take one day with one work truck on site.

Commissioner Stevens requested confirmation that all six (6) windows would be identical in size and identical in size to what is currently in place. There were no additional questions presented by the Commission.

No one else spoke in favor of the application
No one spoke against the application

Motion to close the Public Hearing

By: Commissioner Nicastro

Seconded: Commissioner St. John

Discussion: The Commissioners stated their appreciation for the complete and concise application. There were no additional questions.

MOTION: Move to approve Application 2026-02-01 – Request for a Certificate of Appropriateness for the replacement of 6 windows at 100 Oakland Street; Assessor's Map 25, Lot 53; Greg Mazares/Southern New England Windows, applicant, in accordance with the plot plan and information submitted, be APPROVED.

By: Commissioner Stevens

Seconded: Commissioner Nicastro

For: Stevens, Nicastro, St. John, Jennings, and Collins
Against: None
Abstained: None

This Approval is subject to the following conditions:

- 1) Prior to a final Certificate of Occupancy being issued, the Land Use Staff will conduct an inspection to certify compliance with the terms and conditions of the approval.
- 2) Any deviation from the approved plans may require approval of the Commission after staff review and discussion with the Chairman.
- 3) Any transfer or assignment of this permit shall require approval of the Commission.
- 4) This permit may be revoked if the permittee exceeds the conditions or limitations of this permit or has secured the permit through deception or inaccurate information.

Commissioner Hartmann rejoined the meeting at 5:15pm

5. Correspondence

a. Demolition Delay – 2026 Memo to Chief Building Official

The Commission received the following items in their electronic packets:

aa. Memorandum dated January 12, 2026, from Chairman Collins, regarding Delay of Demolition

The City Planner advised the Commissioners that a yearly letter was sent to the city's Chief Building Official as a reminder that any demolition needed in the Historic District requires a 90-day delay and the Commission needs to be notified for a review. This letter is a standard practice item for this purpose.

b. Regular Commissioner Appointment – A. Jennings

The Commission received the following item in their electronic packets:

aa. Letter dated January 15, 2026, from Town and City Clerk, regarding the appointment of Commissioner Alicia Jennings as a Regular Commissioner.

The Chair confirmed that Commissioner Jennings has been reinstated as a Regular Commissioner after having served as an Alternate Commissioner for a time. Commissioner Jennings shared that she is a resident in the city's Historic District and is pleased to serve as a Regular Commission.

c. Alternate Commissioner Appointment – G. Hartmann

The Commission received the following item in their electronic packets:

aa. Letter dated January 15, 2026, from Town and City Clerk, regarding the appointment of Commissioner Gregory Hartmann as an Alternate Commissioner.

The Chair confirmed that Commissioner Hartman has been appointed as an Alternate Commissioner. Commissioner Hartman is a resident of Bradley Street and is retired from the building fasteners industry.

d. Alternate Commissioner Appointment – J. Messier

aa. No correspondence received.

The Chair confirmed that Commissioner Messier has been appointed as an Alternate Commissioner. Commissioner Messier is a resident of 45 Hepworth Street in Forestville and is the Treasurer of the Bristol Historical Society.

The City Planner inquired about the possibility of holding virtual only meetings in the event of a single application or possibly rotating online and in-person as a matter of efficiency. Discussion followed. It was acknowledged that in the event of a repeat or simple application, the virtual only option could be considered, especially on a case-by-case basis.

It was also noted that a meeting previously posted as online and in-person can be moved to virtual in the event of bad weather to continue with the meeting as posted vs. rescheduling.

The City Planner also advised the Commission that the next meeting is Wednesday, March 26, 2026 as a new application has been received for solar panels.

6. Adjournment

MOTION: Move to adjourn at 5:25 P.M.

By: Commissioner Nicastro

Seconded: Commissioner St. John

For: Stevens, Nicastro, St. John, Jennings, and Collins

Against: None

Abstained: None

The meeting adjourned at 5:25 P.M.

Respectfully submitted,

Sharon Arsego
Recording Secretary

Andrew E. Collins, Chairman

Acting Secretary

**BRISTOL HISTORIC DISTRICT COMMISSION
CITY OF BRISTOL, CONNECTICUT
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS**

APPLICATION NO. 2026-03-01
DATE FILED: 3/4/26

The undersigned Applicant hereby applies for approval of a Certificate of Appropriateness for the proposed work described below:

Address of the Property: 163-165 WOODLAND ST BRISTOL CT, 06010

Assessor's Map No.: 25 Assessor's Lot No.(s): 58 Est. Value of Proposed Work: \$16,000

Nature of Proposed Work (check all that apply):

- | | | |
|--|--|---|
| ☐ New Construction/Installation | ☐ Roof | ☐ Fence |
| ☐ Addition/Renovation | ☐ Windows/Doors | ☐ Siding |
| ☐ Alteration/Replacement | ☐ Porch/Deck | ☒ Other |
| ☐ Demolition/Removal | | |

Proposed Work Will Be Done On: ☒ Main Building ☐ Accessory Structure ☐ Other (including land)

Brief Description of Proposed Work: (attach additional sheet if needed) Install roof mounted solar/PV system, 9 panels (3.690 kW DC).

No structural upgrades required.

Has this property been subject to Historic District approval before? ☐ Yes ☒ No

Has the work being proposed on this application already been started and/or completed? ☐ Yes ☒ No

APPLICANT (If more than one, list each separately) CHECK ONE: ☐ owner ☒ other: Contractor

Name: Trinity Solar LLC

Address: 7 McKee Place City: Cheshire State: CT Zip: 06410

Telephone No.: (203) 701-3724 E-Mail: permitting.ct@trinity-solar.com

Signature: _____ Signature (Printed/Typed): Bridgitte Harris, Agent

OWNER(S) OF RECORD (If other than Applicant; if more than one, list each separately)

Name: MCNEAL, SCOTT E; MCNEAL, CHERYL A

Address: 163-165 WOODLAND ST City: BRISTOL State: CT Zip: 06010

Telephone No.: (860) 214-4663 E-Mail: chermcneal@aol.com

Signature: MCNEAL, SCOTT E; MCNEAL, CHERYL A Signature (Printed/Typed): SEE HOMEOWNER AUTH

For Office Use Only

Date of Public Hearing: _____

Building Permit Required? ☐ Yes ☐ No Date of Commission Decision: _____

Decision: ☐ Approved ☐ With Conditions ☐ See Attached
☐ Denied ☐ With Modifications
☐ Withdrawn

Signed: _____

Chairman/Secretary, Bristol Historic District Commission

Date

THIS APPLICATION MUST BE FILED BY 12 NOON ON THE DEADLINE DAY FOR APPLICATION SUBMISSION – NO EXCEPTIONS!

**CITY OF BRISTOL, CONNECTICUT
SUPPLEMENTARY INFORMATION**

For Office Use Only
APPLICATION NO. 2026-03-01

Address or location of property: 163-165 WOODLAND ST BRISTOL CT, 06010

ADDITIONAL INFORMATION/COMMENTS (click inside the box below and begin typing)

ADDITIONAL APPLICANT

Name: _____ CHECK ONE: ☐ owner ☐ other: _____

Address: _____ City: _____ State: _____ Zip: _____

Telephone No.: _____ E-Mail: _____

Signature: _____ Signature – (Printed/Typed) _____

ADDITIONAL OWNER(S) OF RECORD

Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Telephone No.: _____ E-Mail: _____

Signature: _____ Signature – (Printed/Typed) _____

Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Telephone No.: _____ E-Mail: _____

Signature: _____ Signature – (Printed/Typed) _____

(OPTIONAL) SEND COPIES OF ALL CORRESPONDENCE TO:

Name: Trinity Solar LLC

Address: 7 McKee Place City: Cheshire State: CT Zip: 06410

Telephone No.: (203) 701-3724 E-Mail: permitting.ct@trinity-solar.com

08/17 - LUO

**BRISTOL HISTORIC DISTRICT COMMISSION
CITY OF BRISTOL, CONNECTICUT
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS**

The following shall be included as part of this application:

- filing fees – administrative approvals with a estimated value of proposed work under \$1,000 pay no fee but must file an application and be approved by the Chairman of the Commission after staff review.

Estimated Value of Proposed Work (make checks payable to "City of Bristol")

Up to \$5,000	\$50
\$5,001 to \$10,000	\$100
\$10,001 to \$50,000	\$150
\$50,001 to \$100,000	\$200
\$100,001 and greater	\$250

- four copies of plans, maps, sketches, drawings, photographs, or other such documentation as may assist the Commission in its evaluation of the application, such as (but not limited to) the following:
 - photographs of existing building elevations and/or site conditions that will be affected by the proposed work
 - scaled drawing(s) of proposed work that indicates the location, dimensions, materials, colors, etc. of the proposed work; for new construction or an addition, such drawing(s) must clearly show the relationship between the proposed work and the existing structure
 - manufacturers' product literature and/or specification sheets

Application Submission Requirements – Adopted 5-3-12
Bristol Historic District Commission
www.bristolct.gov/hdc

	Demolition & Removal	New Construction	Additions & Alterations	Site Improvements [see Note 1]
SUPPORTING MATERIALS				
Photograph(s) of the existing building/structure (or property, if vacant); photos should be taken at several angles from the adjoining street	M	M	M	M
Close-up photograph(s) of each existing building or site feature proposed to be altered	M		M	M
Manufacturer's product literature for each proposed pre-fabricated feature or material (windows, roof shingles, doors, fences, bricks, etc.); literature should contain a photograph or illustration		M	M	M
Property map; survey map if required by the Building Dept. for the project	M	M	M	M
Architectural drawings (drawn to scale) of all proposed facades, indicating finish material, dimensions, color, and style of each proposed feature		M	M	
Historic photographs of the property [see Note 3]	D		D	D
A written report, prepared and signed by an engineer licensed in Connecticut, regarding the structural condition of the building/structure; such report shall include an explanation of any practical difficulty or hardship which would preclude preservation/rehabilitation of the building/structure	D			
Perspective drawing(s) or equivalent three-dimensional graphic illustration(s) of the proposed building/structure		D		
Photograph(s) of the buildings/structures located immediately adjacent to the subject property; photos should be taken from the adjoining street		M	D	D

NOTES:

- (1) Site improvements include fences, walls, driveways, walkways, etc.
- (2) M = Mandatory (required by the Commission); D = Discretionary (may be required by the Commission).
- (3) Potential sources of historic photographs include the Bristol Historical Society and the Bristol Room at the Bristol Public Library.

**BRISTOL HISTORIC DISTRICT COMMISSION
CITY OF BRISTOL, CONNECTICUT
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS**

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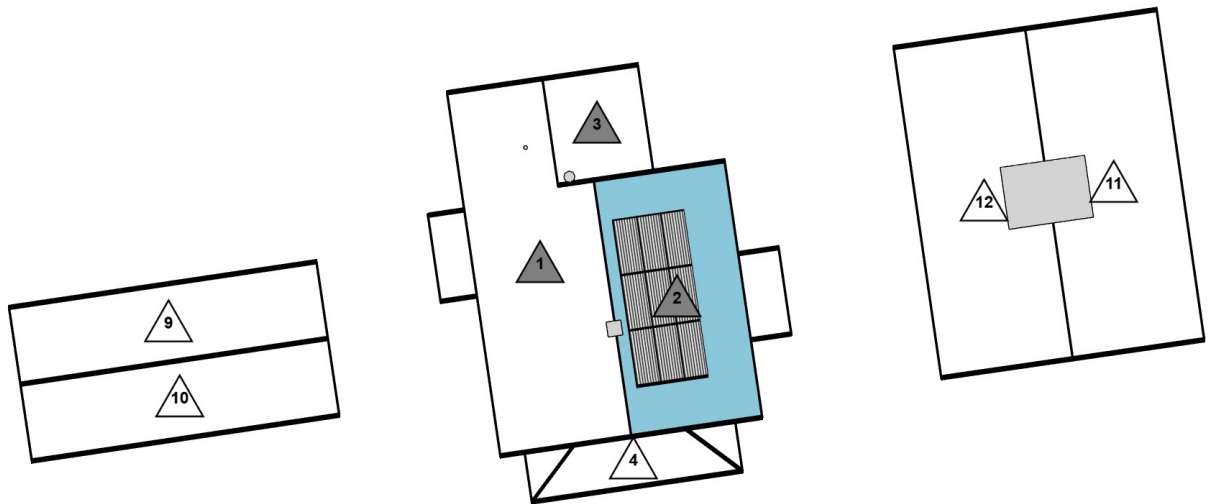
Estimated Value of Proposed Work (make checks payable to "City of Bristol")

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 - manufacturers' product literature and/or specification sheets

- AHJ :**
SETBACKS :
 • EAVE : 12
 • HIP : 2
 • RAKE : 21
 • RIDGE : 7
 • VALLEY : 0

SETBACK NOTES
 Minimum of two (36 IN) Pathways and one must meet driveway or Street or Access Roof.
 Each surface with solar array needs path on or adjacent to it. Access must also meet street or driveway. 33% Rule (Could be 18 IN or 36 IN based on Entire Home Usage)



*ATTENTION MEASURERS : PLEASE CONFIRM MODULE LAYOUT, VENTS & SETBACKS

CUSTOMER INFORMATION

Mcneal, Scott- 165 Woodland street
 Bristol CT



City of Bristol, CT

Property Listing Report

Map Block Lot

25-58/12

Building # 1

PID

11033

Account

0099260

Property Information

Property Location	163 WOODLAND ST
Owner	MCNEAL SCOTT E + CHERYL A SURV
Co-Owner	
Mailing Address	163 WOODLAND ST BRISTOL CT 06010
Land Use	102 Two Family
Land Class	R
Zoning Code	R-15
Census Tract	04051

Neighborhood	30
Acreage	0.11
Utilities	Pub Water,Sewer
Lot Setting/Desc	Level
Book / Page	0996/0556
Additional Info	

Primary Construction Details

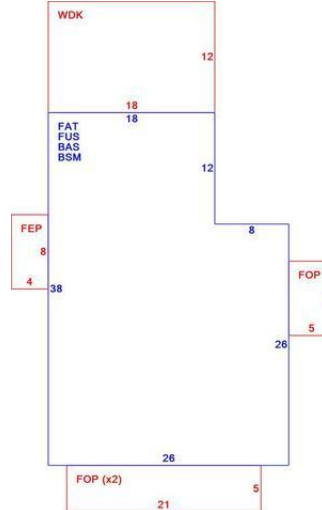
Year Built	1900
Building Desc.	Two Family
Building Style	Multi-Family
Building Grade	NA
Stories	2
Occupancy	2.00
Exterior Walls	Wood Shingle
Exterior Walls 2	NA
Roof Style	Gable
Roof Cover	Asphalt Shingl
Interior Walls	Drywall
Interior Walls 2	NA
Interior Floors 1	Average
Interior Floors 2	

Heating Fuel	Gas
Heating Type	Hot Water
AC Type	01
Bedrooms	05
Full Bathrooms	3
Half Bathrooms	0
Extra Fixtures	1
Total Rooms	11
Bath Style	Average
Kitchen Style	Average
Fin Bsmt Area	0
Fin Bsmt Quality	0
Bsmt Gar	None
Fireplaces	0

Photo



Sketch



(*Industrial / Commercial Details)	
Building Use	Multi-Family
Building Condition	A
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	NA

Valuation Summary

(Assessed value = 70% of Appraised Value)

Sub Areas

Item	Appraised	Assessed	Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Buildings	167500	117250	First Floor	892	892
Extras	0	0	Basement	892	0
Improvements			Attic, Finished	892	178
Outbuildings	0	0	Porch, Enclosed	32	0
Land	43300	30310	Porch, Open	250	0
Total	210800	147560	Upper Story, Finished	892	892

Outbuilding and Extra Features

[illegible]

Pergola	144	0
Wood Deck	216	0
Total Area	4210	1962

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MCNEAL SCOTT E + CHERYL A SURV	0996/0556	1990-06-19	141000

CUSTOMER INFORMATION

Mcneal, Scott-

165 Woodland street
Bristol CT

Annual Usage
null kWh

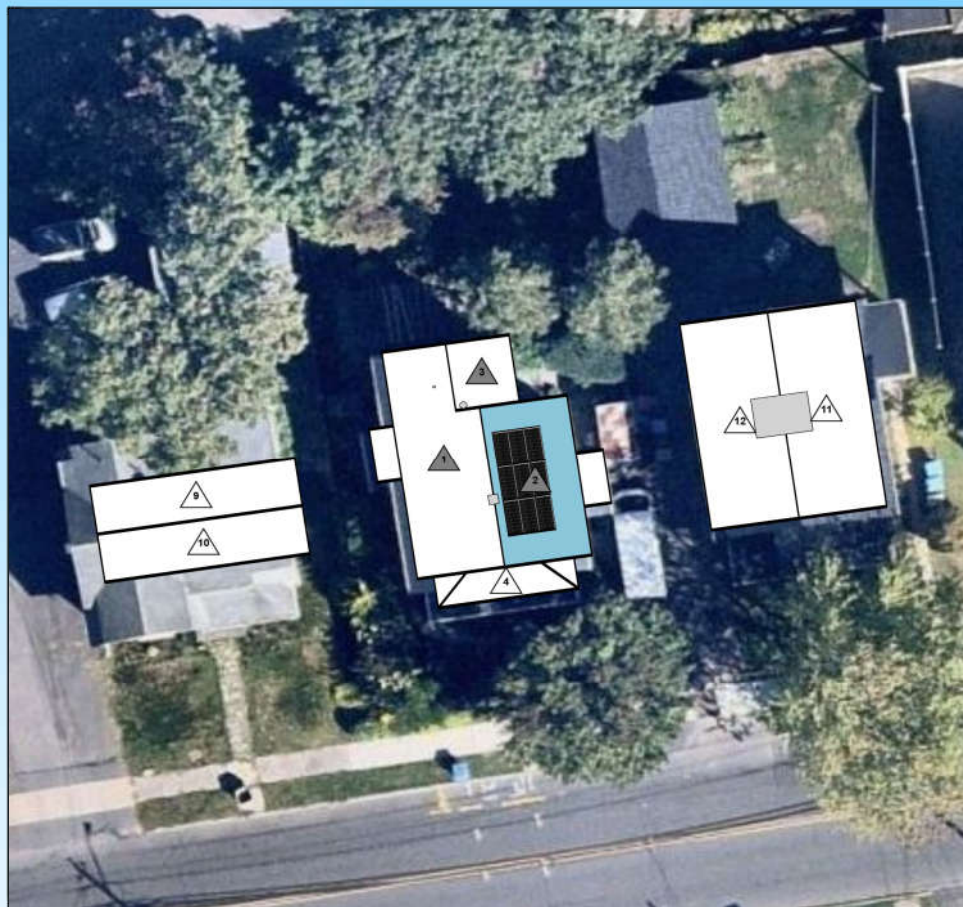
Service Provided by:
Eversource (Formerly
CL&P)

SYSTEM DETAILS

3.69 kW System

9 Hanwha - Q.PEAK
DUO BLK ML-G10.C
plus 410 Modules

Estimated Production:
null kWh
Usage Offset: N/A



X 
Scott McNeal (Feb 16, 2026 20:28:20 EST)

Customer Approval

ANNUAL ENVIRONMENTAL BENEFITS



Energy Equivalent

31 Bulbs



Rainforest Saved

66 Trees



CO2 Emissions Saved

33 Tons



877-SUN-SAVES
www.SUNSAVES.com





City of Bristol, Connecticut Assessment Parcel Map

MBL: 25-58-12_0099260

Account #: 0099260

Address: 163 WOODLAND ST



Approximate Scale: 1 inch = 100 feet

Map Produced May 2025



Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The City of Bristol and its mapping contractors assume no legal responsibility for the information contained herein.



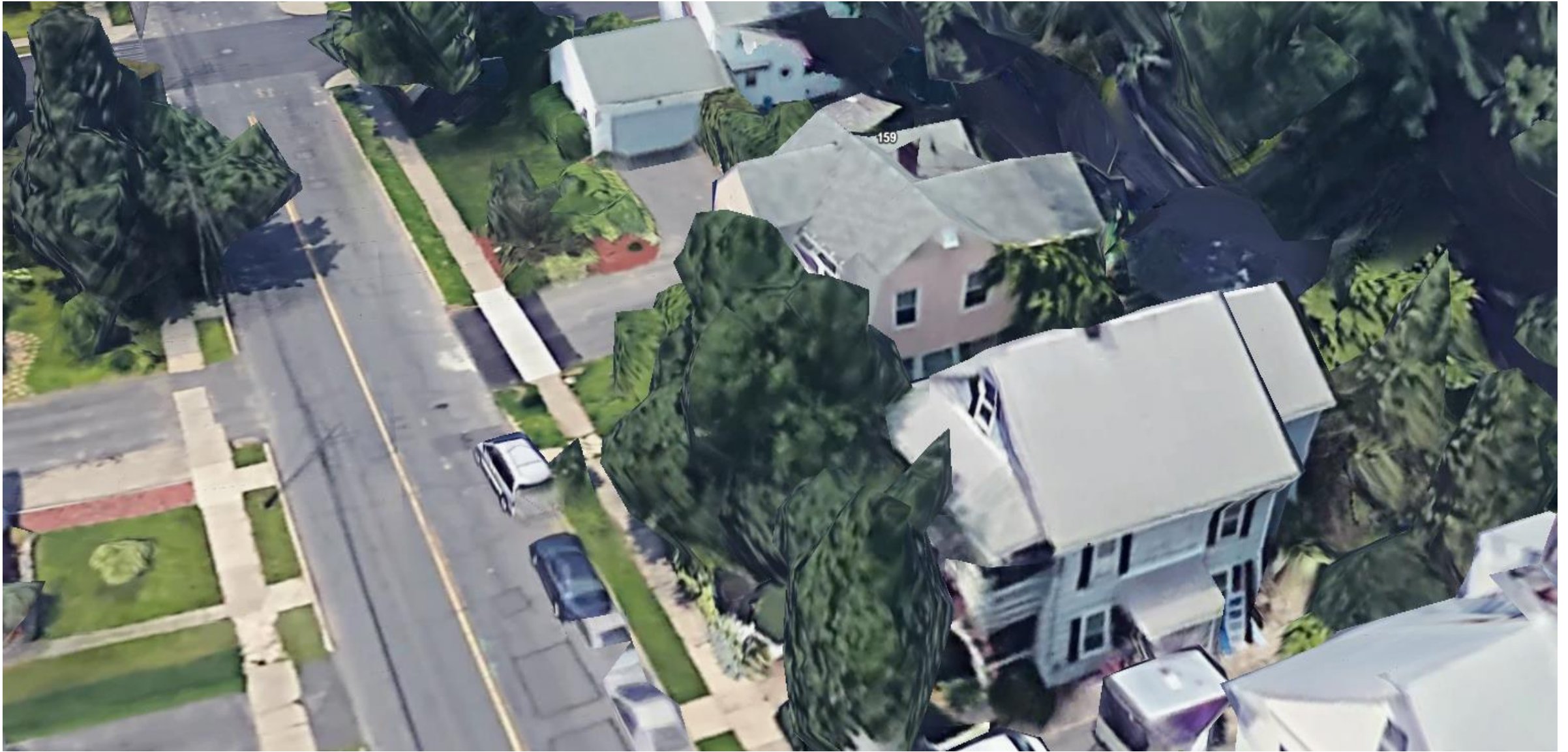
163-165 Woodland St. –Overlook District – Location
Map 25 Lot 58



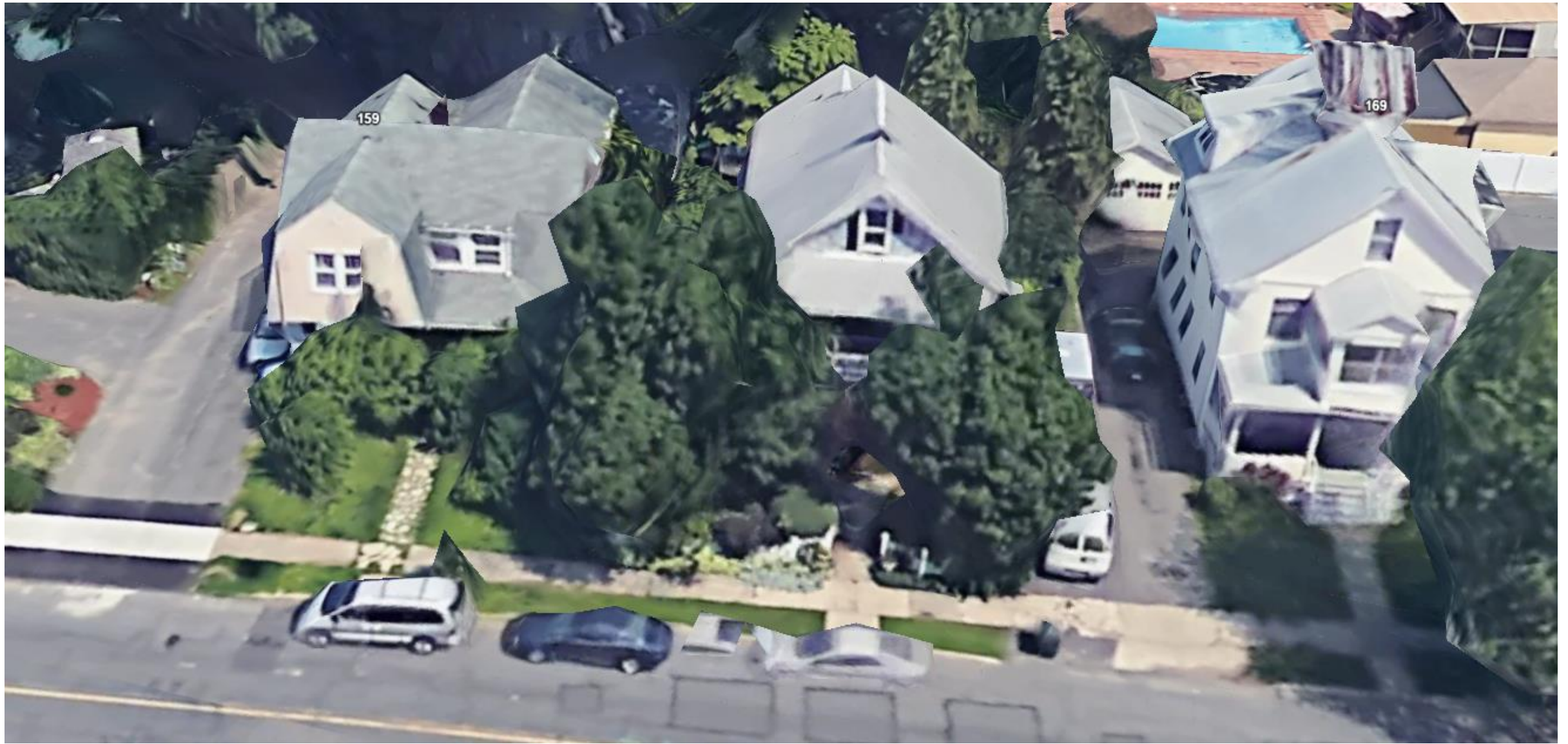
163-165 Woodland St. – Overlook District
Map 25 Lot 58



163-165 Woodland St. – Zoning – R-15
Map 25, Lot 53



163-165 Woodland St. – Google Earth
Map 25 Lot 58



163-165 Woodland St. – Google Earth
Map 25 Lot 58



163-165 Woodland St. – NearMap
Map 25 Lot 58





















HOMEOWNER AUTHORIZATION FORM

I, Scott E Mcneal,
(print name)
am the owner of the property located at address:
165 Woodland street Bristol CT.
(print address)

I hereby authorize Trinity Solar, LLC ("Trinity Solar") and its employees, agents, and subcontractors, to act as my Agent for the limited purpose of applying for and obtaining local building and other permits from the Authority Having Jurisdiction as required for the installation of a Photovoltaic System, Battery System, roofing or other Trinity Solar offerings located on my property, applying and obtaining permission and approval for interconnection with the electric utility company, and registration with any state and/or local incentive program(s).

This authorization includes the transfer/re-administering, and/or cancellation of any existing permits on file for the purpose of updating/applying with an alternate subcontractor.

Without limitation to the generality of the foregoing I specifically authorize Trinity Solar et al. to populate technical details, fill-in, edit, compile, attach drawings, plans, data sheets and other documentation to, date, submit, re-submit, revise, amend, and modify application, submission and certification documents ("Approvals Paperwork"), including those for which signature pages are included herewith for my signature, in furtherance of the related transaction, and I am providing any signatures to Approvals Paperwork for purposes of the foregoing. Trinity Solar will provide copies of Approvals Paperwork upon request by the homeowner. Should I cancel the project, for reasons within my control, after Trinity Solar has paid for any permitting fees, I shall reimburse Trinity Solar for all expenses incurred related hereto.

My authorizations memorialized herein shall remain in full force and effect until revoked. I acknowledge that these authorizations are not required to proceed with the transaction and are not a condition of the related agreement included herewith but are being given for my own convenience and benefit in order to expedite the approvals processes.

Electric Utility Company: Eversource (Formerly CL&P)
Electric Utility Account No.: 5186 175 3069
Electric Meter No.: 035151292
Name on Electric Utility Account: Scott E Mcneal


Scott McNeal (Feb 16, 2026 20:28:20 EST)
Customer Signature
Scott E Mcneal
Print Name
Feb 16, 2026
Date

Corporate Headquarters
2211 Allenwood Road
Wall, New Jersey 07719
www.Trinity-Solar.com

1-877-SUN-SAVES
Ph: 732-780-3779
Fax: 732-780-6671

**FOR INFORMATION ABOUT CONTRACTORS AND THE CONTRACTORS' REGISTRATION ACT,
CONTACT THE NEW JERSEY DEPARTMENT OF LAW AND PUBLIC SAFETY,
DIVISION OF CONSUMERS AFFAIRS AT 1-888-656-6225.**



CT E1 Lic #195559

7 Mckee Place Cheshire, CT 06410
Phone: (203)701-3724 Fax: (203)687-4205

Authorization to Apply for ELECTRICAL PERMIT

The bearer of this letter is authorized as an agent of **TRINITY SOLAR** to sign for the following **ELECTRICAL PERMIT**.
(Sec.20-338b)

Today's Date: **02/24/26** Job Start Date: **05/05/26**

Municipality where work shall be performed

BRISTOL, CT

Job Name

MCNEAL, SCOTT E; MCNEAL, CHERYL A

Job Address

163 WOODLAND ST BRISTOL CT, 06010

Description of Job

Installation of roof mounted solar panels

Name of Authorized Agent

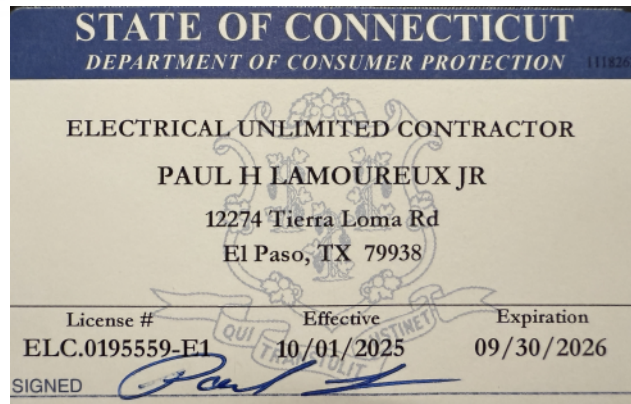
Michele Burby / Steve Labulis / Bridgitte Harris / Nicole Mazzamurro / Amanda Wisniowski

Name of Licensed Contractor: **Paul Lamoureux Jr**

CT License / Reg No: **ELC.0195559-E1**

Signature of Licensed Contractor





Sec. 20-338b. Building permit applications. Who may sign. Any licensed contractor who seeks to obtain a permit from a building official may sign the building permit application personally or delegate the signing of the building permit application to an employee, subcontractor or other agent of the licensed contractor, provided, the licensed contractor's employee, subcontractor or other agent submits to the building official a dated letter on the licensed contractor's letterhead, signed by the licensed contractor, stating that the bearer of the letter is authorized to sign the building permit application as the agent of the licensed contractor. The letter shall not be a copy or a facsimile, but shall be an original letter bearing the original signature of the licensed contractor. The letter shall also include: (1) The name of the municipality where the work is to be performed; (2) the job name or a description of the job; (3) the starting date of the job; (4) the name of the licensed contractor; (5) the name of the licensed contractor's agent; and (6) the license numbers of all contractors to be involved in the work. 20



CT HIC Lic #6371385

7 McKee Place Cheshire, CT 06410
Phone: (203) 701-3724 Fax: (203) 687-4205

Authorization to Apply for BUILDING PERMIT

The bearer of this letter is authorized as an agent of **TRINITY SOLAR** to sign for the following **BUILDING PERMIT** (Sec.20-338b)

Today's Date: **02/24/26**

Job Start Date: **05/05/26**

Municipality where work shall be performed

BRISTOL, CT

Job Name

MCNEAL, SCOTT E; MCNEAL, CHERYL A

Job Address

163 WOODLAND ST BRISTOL CT, 06010

Description of Job

Installation of roof mounted solar panels

Name of Authorized Agent

Michele Burby / Steve Labulis / Bridgitte Harris / Nicole Mazzamurro / Nicole Riedinger / Amanda Wisniowski

Name of Licensed Contractor: **TRINITY SOLAR LLC.**

CT License / Reg No: **HIC.0671385**

Signature of Licensed Contractor

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION

HOME IMPROVEMENT CONTRACTOR

TRINITY SOLAR LLC

7 MCKEE PL

CHESHIRE, CT 06410-1119

TRINITY SOLAR

Registration #

HIC.0671385

Effective

04/01/2025

Expiration

03/31/2026

SIGNED

Sec. 20-338b. Building permit applications. Who may sign. Any licensed contractor who seeks to obtain a permit from a building official may sign the building permit application personally or delegate the signing of the building permit application to an employee, subcontractor or other agent of the licensed contractor, provided, the licensed contractor's employee, subcontractor or other agent submits to the building official a dated letter on the licensed contractor's letterhead, signed by the licensed contractor, stating that the bearer of the letter is authorized to sign the building permit application as the agent of the licensed contractor. The letter shall not be a copy or a facsimile, but shall be an original letter bearing the original signature of the licensed contractor. The letter shall also include: (1) The name of the municipality where the work is to be performed, (2) the job name or a description of the job; (3) the starting date of the job; (4) the name of the licensed contractor; (5) the name of the licensed contractor's agent; and (6) the license numbers of all contractors to be involved in the work



Bristol, CT
111 N. Main St.
Bristol, CT 06010

RE: CHERYL A MCNEAL
165 Woodland street
Bristol, CT 06010

To the Building Official:

This evaluation assesses the capacity of the existing roof framing to support the additional loads from the proposed photovoltaic (PV) system. Trinity Solar, LLC has confirmed the structure is permitted by the local jurisdiction and has provided all relevant documentation. As of the evaluation date, no deficiencies in the structure have been reported. Based on the provided documentation and lack of reported concerns, the existing structure is evaluated as being in good condition and capable of supporting the existing loads. If new information or evidence indicates structural deficiencies, this office must be notified immediately, and installation must cease until the concerns are addressed. This evaluation is strictly limited to structural elements directly supporting the PV system and excludes unrelated components. All spans listed below are horizontal projections.

1. Existing Roof Framing:

- Conventional roof framing at R2: 2x5 at 24"o.c.; existing rafter span is the max unsupported span = 12'-6"

2. Roof Loading:

- 3.00psf - PV array load (PV panels, mounting rails, and hardware)
- 4.31psf - Existing roof dead load (0.80psf - 2x5 at 24"o.c. roof rafters, 3.51psf - roof covering)
- 35psf - Ground snow load - per AHJ (Authority Having Jurisdiction); 20psf - Roof live load
- Exposure Category B, 120mph basic wind speed

3. Existing Roof Modification:

- R2 - Per IEBC 2021 502.4 & 503.3, increase in design load is less than 5%; not required to meet code requirements for new structure. No structural modification required.

4. Attachments:

- The maximum allowable spacing of the UNIRAC - STRONGHOLD* attachments cannot exceed more than 48" / 48" (EXPOSED / NON-EXPOSED) for R2. Attachments to be fastened using min. quantity (1) 5/16" x 4" Lag Bolt, with 2.5" min. penetration depth into the structural member is required - this is adequate to resist all stated demand loads above. Install attachments, rails, and panels per manufacturer requirements. In multi-row PV layouts, there shall be a minimum of two mounting brackets per rafter/truss chord. Stagger attachments to distribute load.
- ~UNIRAC - STRONGHOLD - *ATTACHMENT TO BE SECURED TO RAFTERS $\geq$ 2x4.
- CONTRACTOR TO INFORM THIS OFFICE IF ANY ITEM ABOVE DIFFERS FROM SITE CONDITIONS.

The installation, described above, is in general conformance with the manufacturers' specifications and complies with all applicable laws, codes, and ordinances as specified by applicable codes, including the 2021 IRC, 2022 CT State Building Code and ASCE 7-16.

Only the portions of the roof directly involved in the PV installation are evaluated. Trinity Solar is not responsible for pre-existing construction defects in other areas of the structure. IF, AT ANY TIME DURING INSTALLATION, THE ROOF FRAMING MEMBERS OR ROOF COVERING APPEAR UNSTABLE OR EXHIBIT NON-UNIFORM DEFLECTION, THE CONTRACTOR SHALL NOTIFY THIS OFFICE IMMEDIATELY AND AWAIT FURTHER GUIDANCE BEFORE PROCEEDING.

Regards,
Ayracon Almaraz, PE
Structural Engineer - Trinity Solar



License No. 37304



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/29/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, LLC 300 Fellowship Road Suite 200 Mount Laurel NJ 08054	CONTACT NAME: Alexander Gillikin PHONE (A/C, No, Ext): 856-482-9900 E-MAIL ADDRESS: CherryHill.BSD.CertM@AJG.com	FAX (A/C, No): 856-482-1888
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A: National Union Fire Insurance Company of Pittsburg		19445
INSURER B: Evanston Insurance Company		35378
INSURER C: Vantage Risk Specialty Insurance Company		16275
INSURER D: Navigators Specialty Insurance Company		36056
INSURER E: Endurance American Specialty Ins Co		41718
INSURER F: Liberty Insurance Underwriters Inc		19917

COVERAGES**CERTIFICATE NUMBER:** 981417036**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☐ LOC OTHER:			MKLV7ENV106507	6/1/2025	6/1/2026	EACH OCCURRENCE \$ 3,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 25,000 PERSONAL & ADV INJURY \$ 3,000,000 GENERAL AGGREGATE \$ 3,000,000 PRODUCTS - COMP/OP AGG \$ 3,000,000 \$
A	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			2960145	6/1/2025	6/1/2026	COMBINED SINGLE LIMIT (Ea accident) \$ 5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	UMBRELLA LIAB ☒ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$			P03XC0000083860 NY25EXCZ0L0HKIC ELD30006989103 1000231834-09	6/1/2025 6/1/2025 6/1/2025 6/1/2025	6/1/2026 6/1/2026 6/1/2026 6/1/2026	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 LIMIT x OF \$5,000,000 \$ 16,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☒ Y ☐ N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	13188225	6/1/2025	6/1/2026	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 5,000,000 E.L. DISEASE - EA EMPLOYEE \$ 5,000,000 E.L. DISEASE - POLICY LIMIT \$ 5,000,000
A	AUTOMOBILE COMP. / COLLISION DEDUCT.			2960145	6/1/2025	6/1/2026	ALL OTHER UNITS TRUCK-TRACTORS AND SEMI-TRAILERS \$250/\$500 \$250/\$500

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

EXCESS LIABILITY - CONT.
Carrier: Columbia Casualty Company
Policy #: 7039650582
Policy Period: 6/1/2025 - 6/1/2026
Limit: \$5,000,000 xs \$21,000,000

See Attached...

CERTIFICATE HOLDER**CANCELLATION**

Evidence of Insurance.

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ADDITIONAL REMARKS SCHEDULE

AGENCY Arthur J. Gallagher Risk Management Services, LLC		NAMED INSURED Trinity Solar LLC 7 McKee Place Cheshire, CT 06410
POLICY NUMBER		
CARRIER	NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
 FORM NUMBER: 25 FORM TITLE: CERTIFICATE OF LIABILITY INSURANCE

Evidence of Insurance

INSTALLATION OF NEW ROOF MOUNTED PV SOLAR SYSTEM

165 WOODLAND STREET
BRISTOL, CT 06010

WOODLAND STREET ●



VICINITY MAP
SCALE: NTS

SITE

GENERAL NOTES

1. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS CONTAINED IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
2. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTION CONTAINED IN THE COMPLETE MANUAL.
3. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR READING AND UNDERSTANDING ALL DRAWINGS, COMPONENT AND INVERTER MANUALS PRIOR TO INSTALLATION. THE INSTALLATION CONTRACTOR IS ALSO REQUIRED TO HAVE ALL COMPONENT SWITCHES IN THE OFF POSITION AND FUSES REMOVED PRIOR TO THE INSTALLATION OF ALL FUSE BEARING SYSTEM COMPONENTS.
4. ONCE THE PHOTOVOLTAIC MODULES ARE MOUNTED, THE INSTALLATION CONTRACTOR SHOULD HAVE A MINIMUM OF ONE ELECTRICIAN WHO HAS ATTENDED A SOLAR PHOTOVOLTAIC INSTALLATION COURSE ON SITE.
5. FOR SAFETY, IT IS RECOMMENDED THAT THE INSTALLATION CREW ALWAYS HAVE A MINIMUM OF TWO PERSONS WORKING TOGETHER AND THAT EACH OF THE INSTALLATION CREW MEMBERS BE TRAINED IN FIRST AID AND CPR.
6. THIS SOLAR PHOTOVOLTAIC SYSTEM IS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRICAL CODE. ANY LOCAL CODE WHICH MAY SUPERSEDE THE NEC SHALL GOVERN.
7. ALL SYSTEM COMPONENTS TO BE INSTALLED WITH THIS SYSTEM ARE TO BE "UL" LISTED. ALL EQUIPMENT WILL BE NEMA 3R OUTDOOR RATED UNLESS INDOORS.

GENERAL NOTES

IF ISSUED DRAWING IS MARKED WITH A REVISION CHARACTER OTHER THAN "A", PLEASE BE ADVISED THAT FINAL EQUIPMENT AND/OR SYSTEM CHARACTERISTICS ARE SUBJECT TO CHANGE DUE TO AVAILABILITY OF EQUIPMENT.

GENERAL NOTES CONTINUED

8. THE DC VOLTAGE FROM THE PANELS IS ALWAYS PRESENT AT THE DC DISCONNECT ENCLOSURE AND THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THE PHOTOVOLTAIC SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE EXPOSED TO LIGHT.
9. ALL PORTIONS OF THIS SOLAR PHOTOVOLTAIC SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 690 & 705.
10. PRIOR TO THE INSTALLATION OF THIS PHOTOVOLTAIC SYSTEM, THE INSTALLATION CONTRACTOR SHALL ATTEND A PRE-INSTALLTION MEETING FOR THE REVIEW OF THE INSTALLATION PROCEDURES, SCHEDULES, SAFETY AND COORDINATION.
11. PRIOR TO THE SYSTEM START UP THE INSTALLATION CONTRACTOR SHALL ASSIST IN PERFORMING ALL INITIAL HARDWARE CHECKS AND DC WIRING CONDUCTIVITY CHECKS.
12. FOR THE PROPER MAINTENANCE AND ISOLATION OF THE INVERTERS REFER TO THE ISOLATION PROCEDURES IN THE OPERATION MANUAL.
13. THE LOCATION OF PROPOSED ELECTRIC AND TELEPHONE UTILITIES ARE SUBJECT TO FINAL APPROVAL OF THE APPROPRIATE UTILITY COMPANIES AND OWNERS.
14. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH:
 - A) CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS AND REQUIREMENTS

GENERAL NOTES CONTINUED

14. B) CURRENT PREVAILING UTILITY COMPANY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS
15. THIS SET OF PLANS HAVE BEEN PREPARED FOR THE PURPOSE OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. ONCE APPROVED, THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL SYSTEM COMPONENTS AS DESCRIBED IN THE DRAWING PACKAGE.
16. ALL INFORMATION SHOWN MUST BE CERTIFIED PRIOR TO USE FOR CONSTRUCTION ACTIVITIES.

ABBREVIATIONS

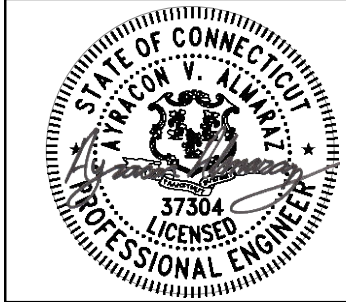
AMP	AMPERE
AC	ALTERNATING CURRENT
AL	ALUMINUM
AF	AMP. FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
C	CONDUIT (GENERIC TERM OF RACEWAY, PROVIDE AS SPECIFIED)
CB	COMBINER BOX
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT SWITCH
DWG	DRAWING
EC	ELECTRICAL SYSTEM INSTALLER
EMT	ELECTRICAL METALLIC TUBING
FS	FUSIBLE SWITCH
FU	FUSE
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
HZ	FREQUENCY (CYCLES PER SECOND)

ABBREVIATIONS CONTINUED

JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
KWH	KILO-WATT HOUR
L	LINE
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MTD	MOUNTED
MTG	MOUNTING
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NO #	NUMBER
NTS	NOT TO SCALE
OCP	OVER CURRENT PROTECTION
P	POLE
PB	PULL BOX
PH Ø	PHASE
PVC	POLY-VINYL CHLORIDE CONDUIT
PWR	POWER
QTY	QUANTITY
RGS	RIGID GALVANIZED STEEL
SN	SOLID NEUTRAL
JSWBD	SWITCHBOARD
TYP	TYPICAL
U.O.I.	UNLESS OTHERWISE INDICATED
WP	WEATHERPROOF
XFMR	TRANSFORMER
+72	MOUNT 72 INCHES TO BOTTOM OF ABOVE FINISHED FLOOR OR GRADE

SHEET INDEX

- PV-1 COVER SHEET W/ SITE INFO & NOTES
PV-2 ROOF PLAN W/ MODULE LOCATIONS
PV-3 ELECTRICAL 3 LINE DIAGRAM
AP APPENDIX



Issued / Revisions

NO.	DESCRIPTION	DATE
P1	ISSUED TO TOWNSHIP FOR PERMIT	2/20/2026

Project Title:

MCNEAL, SCOTT
TRINITY ACCT #: 2026-02-1488461

Project Address:

165 WOODLAND STREET
BRISTOL, CT 06010
41.6807, -72.9352

Drawing Title:

PROPOSED PV SOLAR SYSTEM

Drawing Information

DRAWING DATE:	2/20/2026
DRAWN BY:	RF
REVISED BY:	

System Information:

DC SYSTEM SIZE:	3.69kW
AC SYSTEM SIZE:	3.8kW
MODULE COUNT:	9
MODULES USED:	HANWHA 410
MODULE SPEC #:	Q.PEAK DUO BLK ML-G10.C+ 410
UTILITY COMPANY:	EVERSOURCE
UTILITY ACCT #:	5186 175 3069
UTILITY METER #:	035151292
DEAL TYPE:	GOODLEAP

Rev. No.

P1

Sheet

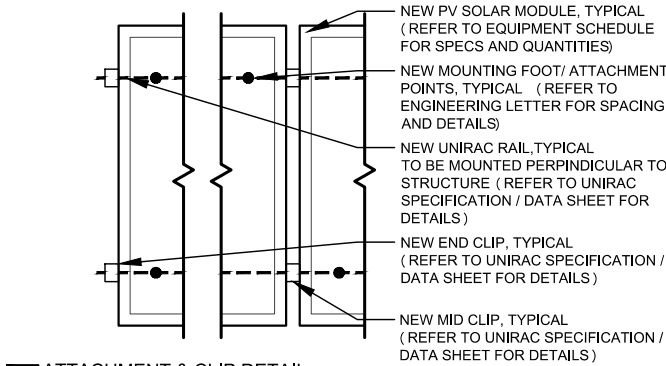
PV - 1

Trinity
SOLAR

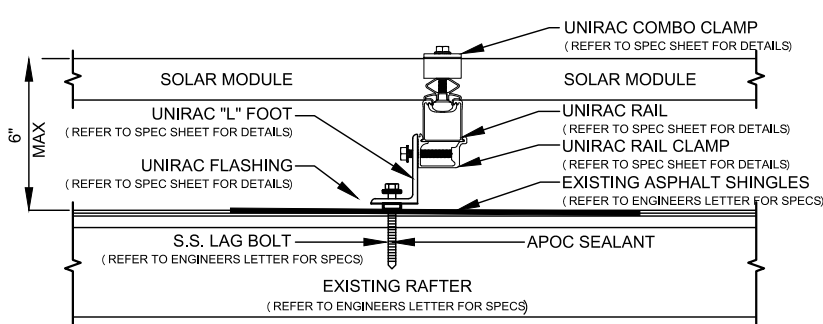
2211 Allenwood Road
Wall, New Jersey 07719

877-786-7283
www.Trinity-Solar.com

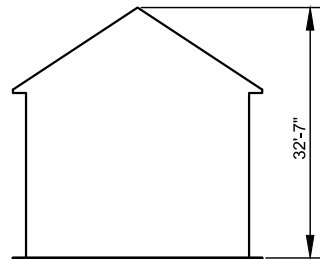
NOTES : *REFER TO MODULE SPECS FOR MODULE DIMENSIONS
*DEPICTED MODULES MAY BE PORTRAIT OR LANDSCAPE



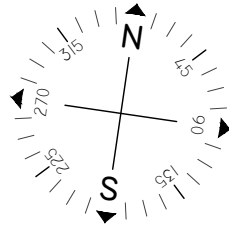
ATTACHMENT & CLIP DETAIL
SCALE: NOT TO SCALE



PV MODULE ATTACHMENT ON ASPHALT SHINGLE ROOF
SCALE: NOT TO SCALE



HEIGHT FROM GROUND LEVEL TO PEAK OF ROOF
SCALE: NOT TO SCALE



ARRAY SCHEDULE

ROOF 1
MODULES: 0
PITCH: 40°
ORIENTATION: 262°

ROOF 2
MODULES: 9
PITCH: 40°
ORIENTATION: 82°

ROOF 3
MODULES: 0
PITCH: 40°
ORIENTATION: 82°

ROOF 4
MODULES: 0
PITCH: 28°
ORIENTATION: 172°

ROOF 5
MODULES: 0
PITCH: 20°
ORIENTATION: 82°

ROOF 6
MODULES: 0
PITCH: 25°
ORIENTATION: 262°

ROOF 7
MODULES: 0
PITCH: 28°
ORIENTATION: 262°

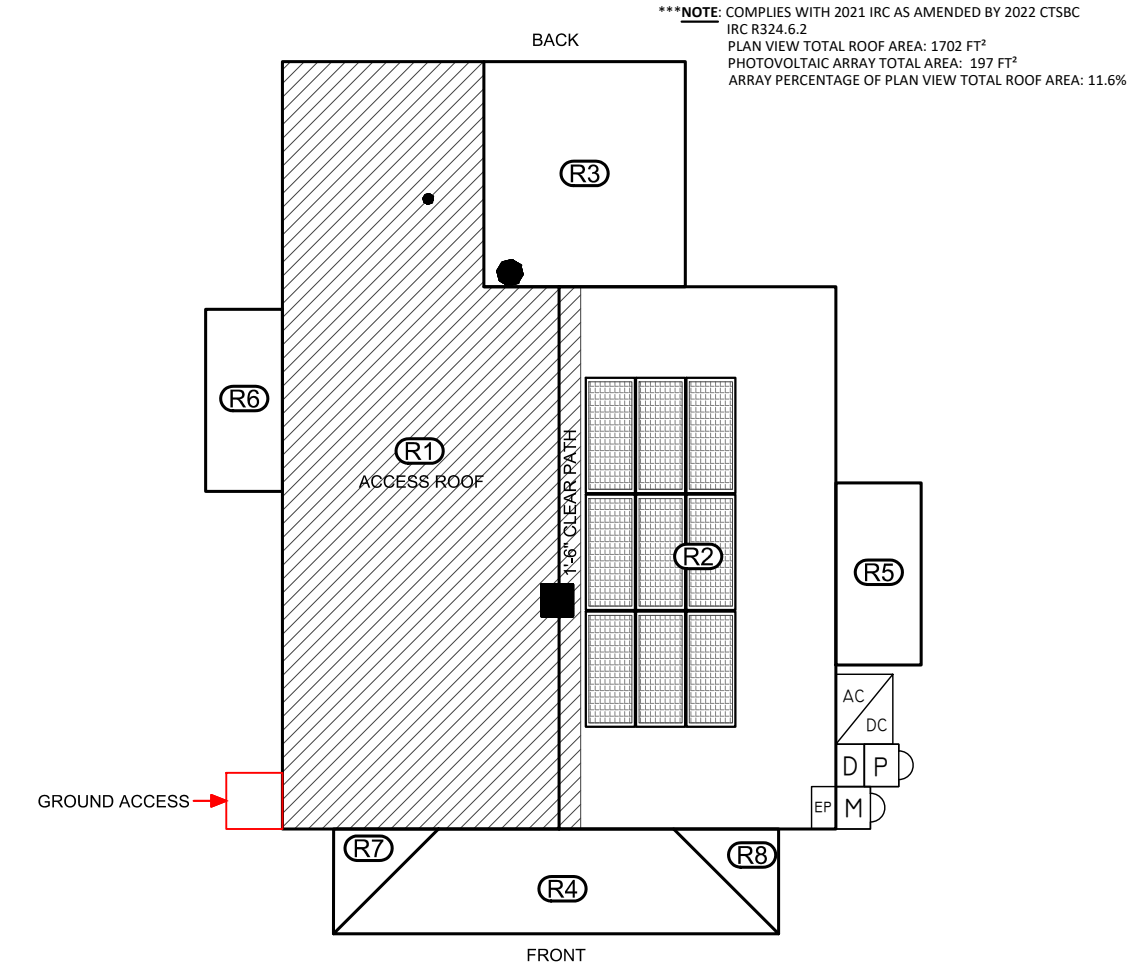
ROOF 8
MODULES: 0
PITCH: 28°
ORIENTATION: 82°

ROOF 9
MODULES: 0
PITCH: 36°
ORIENTATION: 352°

ROOF 10
MODULES: 0
PITCH: 36°
ORIENTATION: 172°

ROOF 11
MODULES: 0
PITCH: 41°
ORIENTATION: 82°

ROOF 12
MODULES: 0
PITCH: 41°
ORIENTATION: 262°

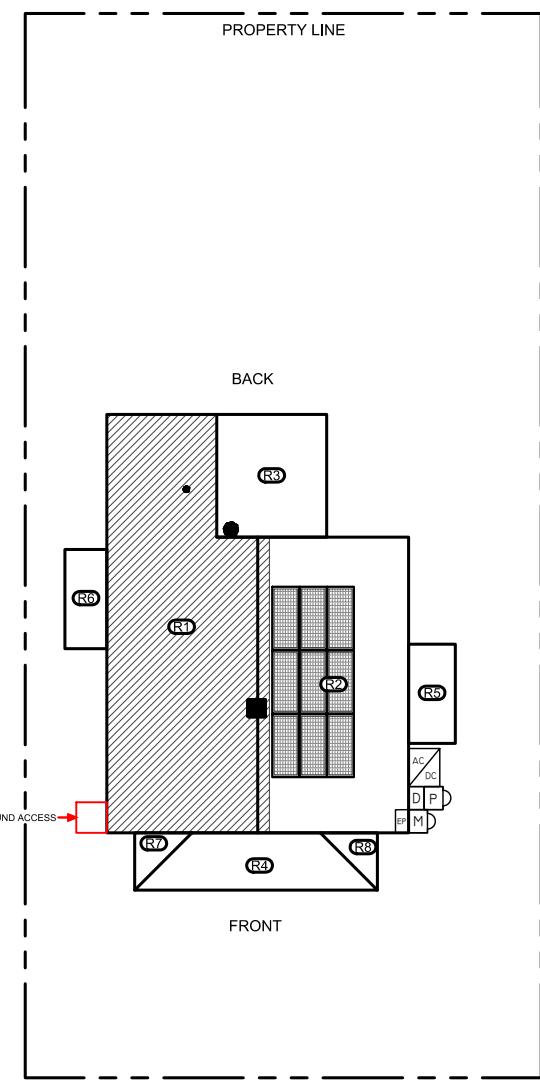


NOTES:

- 1.) ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 2.) ARRAY BONDING TO COMPLY WITH MANUFACTURER SPECIFICATION.
- 3.) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.
- 4.) AN AC DISCONNECT SHALL BE GROUPED WITH INVERTER (S) NEC 690.13 (E) .
- 5.) ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING.
- 6.) ROOFTOP SOLAR INSTALLATION ONLY PV ARRAY SHALL NOT EXTEND BEYOND THE EXISTING ROOF EDGE.

SYMBOL LEGEND

	INDICATES ROOF DESIGNATION . REFER TO ARRAY SCHEDULE FOR MORE INFORMATION		INDICATES NEW UNFUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE)		INDICATES NEW PV ONLY SUBPANEL TO BE INSTALLED
	INDICATES EXISTING METER LOCATION		INDICATES NEW PV SOLAR MODULE. RED MODULES INDICATE PANELS THAT USE MICRO INVERTERS. REFER TO EQUIPMENT SCHEDULE FOR SPECS.		INDICATES NEW DC DISCONNECT
	INDICATES EXISTING ELECTRICAL PANEL LOCATION: INSIDE		INDICATES NEW PRODUCTION METER TO BE INSTALLED OUTSIDE.		INDICATES EXISTING SERVICE DISCONNECT
	INDICATES NEW FUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE)		INDICATES NEW INVERTER TO BE INSTALLED OUTSIDE. REFER TO EQUIPMENT SCHEDULE FOR SPECS		INDICATES EXISTING TRANSFER SWITCH



PLUMBING SCHEDULE

QTY	SPEC #
9	HANWHA 410 (Q.PEAK DUO BLK ML-G10.C+ 410)
1	USE11400H-USSKBEZ8 (SE3800H-US)
9	U650 SE OPTIMIZERS
9	UNIRAC 171RLM1-US NXT UMount RAIL - 171" MILL (US)
6	UNIRAC RLSPLCM2-US NXT UMount RAIL SPLICE (US)

EQUIPMENT SCHEDULE

QTY	SPEC #
9	HANWHA 410 (Q.PEAK DUO BLK ML-G10.C+ 410)
1	USE11400H-USSKBEZ8 (SE3800H-US)
9	U650 SE OPTIMIZERS
9	UNIRAC 171RLM1-US NXT UMount RAIL - 171" MILL (US)
6	UNIRAC RLSPLCM2-US NXT UMount RAIL SPLICE (US)

OTHER OBSTRUCTIONS

--	--



Issued / Revisions

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UTILITY ACCT #:	5186 175 3069
UTILITY METER #:	035151292
DEAL TYPE:	GOODLEAP

Rev. No.

P1

Sheet

PV - 2



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ARRAY CIRCUIT WIRING NOTES
1.) LICENSED ELECTRICIAN ASSUMES ALL RESPONSIBILITY FOR DETERMINING ONSITE CONDITIONS AND EXECUTING INSTALLATION IN ACCORDANCE WITH
NEC 2020

2.) LOWEST EXPECTED AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. LOWEST EXPECTED AMBIENT TEMP = -16°C

3.) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMP = 33°C

4.) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN A ROOF-MOUNTED SUNLIT CONDUIT AT LEAST 0.5" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES)

5.) PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT CONTROLS SPECIFIC CONDUCTORS IN ACCORDANCE WITH **NEC 690.12(A) THROUGH (D)**

6.) PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO OPERATE WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT PER **NEC 690.41 (A)(4)**

7.) UNGROUNDED DC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED WITH THE FOLLOWING OUTER FINISH:
POSITIVE CONDUCTORS = RED
NEGATIVE CONDUCTORS = BLACK
NEC 210.5(C)(2)

8.) ARRAY AND SUB ARRAY CONDUCTORS SHALL BE #10 PV WIRE TYPE RHW-2 OR EQUIVELANT AND SHALL BE PROTECTED BY CONDUIT WHERE EXPOSED TO DIRECT SUNLIGHT. SUB ARRAY CONDUIT LONGER THAN 24" SHALL CONTAIN ≤ 20 CURRENT CARYING CONDUCTORS AND WHERE EXPOSED TO DIRECT SUNLIGHT SHALL CONTAIN ≤ 9 CURRENT CARRYING CONDUCTORS.

9.) ALL WIRE LENGTHS SHALL BE LESS THAN 100' UNLESS OTHERWISE NOTED

10.) FLEXIBLE CONDUIT SHALL NOT BE INSTALLED ON ROOFTOP AND SHALL BE LIMITED TO 12" IF USED OUTDOORS

11.) DISCONNECTS FED BY SUPPLY-SIDE SOURCE CONDUCTORS SHALL BE BONDED AND CONNECTED TO GROUNDING SYSTEM IN ACCORDANCE WITH **NEC 250.24**

12.)OVERCURRENT PROTECTION FOR CONDUCTORS CONNECTED TO THE SUPPLY SIDE OF A SERVICE SHALL BE LOCATED WITHIN 10' OF THE POINT OF CONNECTION NEC **690.9(A)(3)(2)**

13.) WHERE TWO SOURCES FEED A BUSSBAR, ONE A UTILITY AND THE OTHER AN INVERTER, PV BACKFEED BREAKER(S) SHALL BE LOCATED OPPOSITE FROM UTILITY **NEC 705.12(B)(3)(2)**

14.) ALL SOLAR SYSTEM LOAD CENTERS TO CONTAIN ONLY GENERATION CIRCUITS AND NO UNUSED POSITIONS OR LOADS

15.) ALL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE A **NEMA 3R** RATING

CALCULATIONS FOR CURRENT CARRYING CONDUCTORS
REQUIRED CONDUCTOR AMPACITY PER STRING
[NEC 690.8(B)(1)]: (15.00*1.25)1 = 18.75A

AWG #10, DERATED AMPACITY
AMBIENT TEMP: 33°C, TEMP DERATING FACTOR: .96
RACEWAY DERATING = 2 CCC: 1.00
(40*.96)1.00 = 38.40A

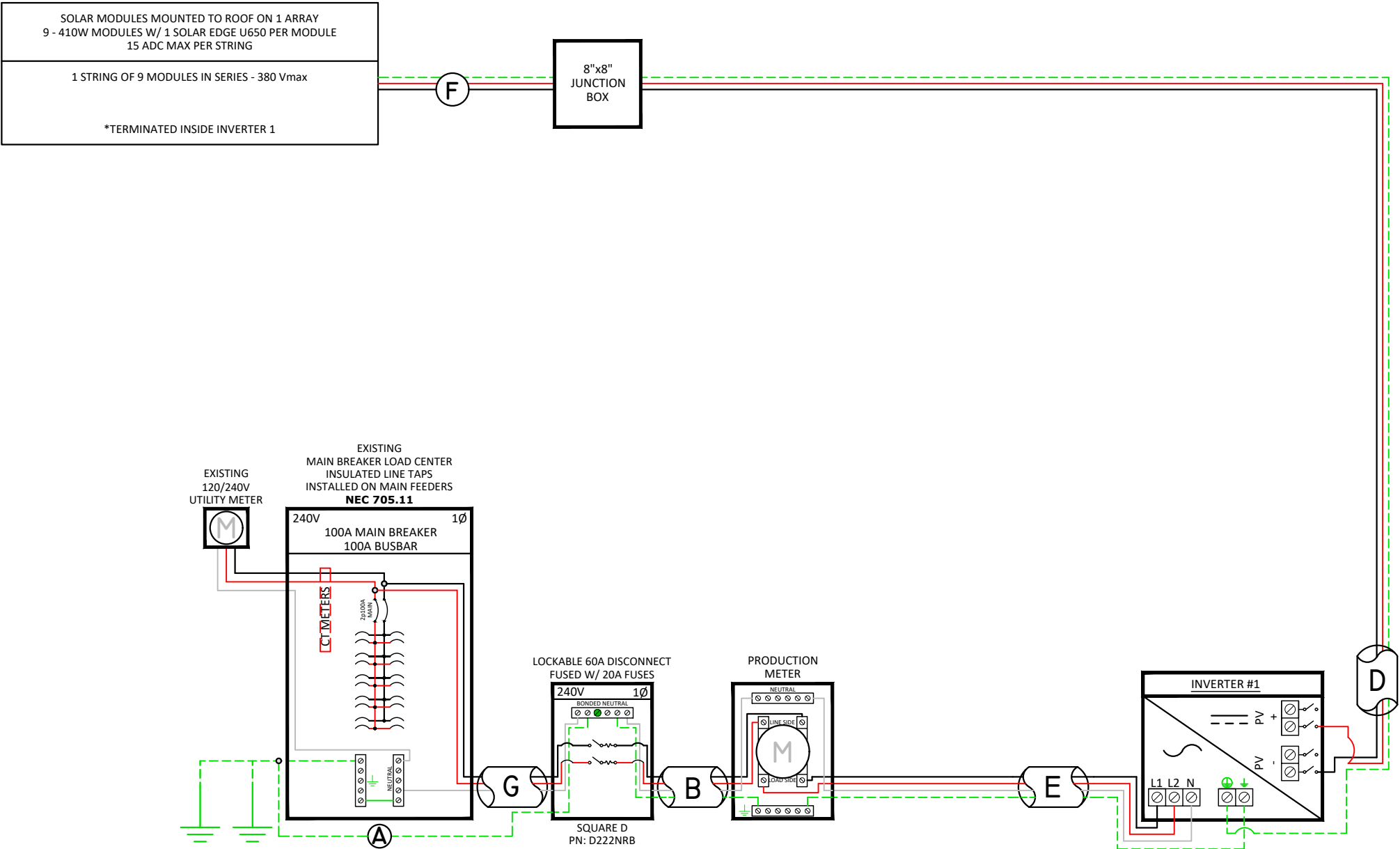
38.40A ≥ 18.75A, THEREFORE WIRE SIZE IS VALID

TOTAL AC REQUIRED CONDUCTOR AMPACITY
16.00A*1.25 = 20.00A

AWG #10, DERATED AMPACITY
AMBIENT TEMP: 30°C, TEMP DERATING: 1.0
RACEWAY DERATING ≤ 3 CCC: N/A
40A*1.0 = 40A

40A ≥ 20.00A, THEREFORE AC WIRE SIZE IS VALID

CALCULATION FOR PV OVERCURRENT PROTECTION
TOTAL INVERTER CURRENT: 16.00A
16.00A*1.25 = 20.00A
--> 20A OVERCURRENT PROTECTION IS VALID



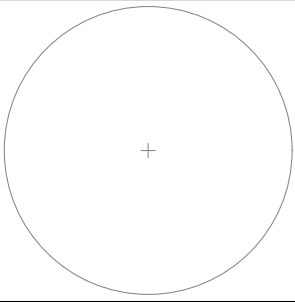
PV MODULE SPECIFICATIONS	
HANWHA 410 (Q.PEAK DUO BLK ML-G10.C+ 410)	
Imp	10.89
Vmp	37.64
Voc	45.37
Isc	11.2

INVERTER #1 - USE11400H-USSKBEZ8 (SE3800H-US)			
DC		AC	
Imp	9.71	Pout	3800
Vmp	380	Imax	16
Voc	480	OCPDmin	20
Isc	15	Vnom	240

NOTE: CONDUIT TYPE SHALL BE CHOSEN BY THE INSTALLATION CONTRACTOR TO MEET OR EXCEED NEC AND LOCAL AHJD REQUIREMENTS

A	#6 THWN-2 TO GEC
B	1" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND
C	1" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2 GROUND
D	1" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2 GROUND
E	3/4" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND
F	#10 PV WIRE (FREE AIR) W/ #6 BARE COPPER BOND TO ARRAY
G	1" CONDUIT W/ 2-#6 THWN-2, 1-#6 THWN-2

Engineer / License Holder:



Issued / Revisions

NO.	DESCRIPTION	DATE
P1	ISSUED TO TOWNSHIP FOR PERMIT	2/20/2026

Project Title:

MCNEAL, SCOTT

TRINITY ACCT #: 2026-02-1488461

Project Address:

165 WOODLAND STREET
BRISTOL, CT 06010
41.6807, -72.9352

Drawing Title:

PROPOSED PV SOLAR SYSTEM

Drawing Information

DRAWING DATE: 2/20/2026
DRAWN BY: RF
REVISED BY:

System Information:

DC SYSTEM SIZE: 3.69kW
AC SYSTEM SIZE: 3.8kW
MODULE COUNT: 9
MODULES USED: HANWHA 410
MODULE SPEC #: Q.PEAK DUO BLK ML-G10.C+ 410
UTILITY COMPANY: EVERSOURCE
UTILITY ACCT #: 5186 175 3069
UTILITY METER #: 035151292
DEAL TYPE: GOODLEAP

Rev. No.

P1

Sheet

PV - 3

Trinity
SOLAR

2211 Allenwood Road
Wall, New Jersey 07719

877-786-7283
www.Trinity-Solar.com

MATERIAL LIST

(FOR INTERNAL USE ONLY)

JOB NAME: MCNEAL, SCOTT
ADDRESS: 165 Woodland street
Bristol, CT 06010
41.6807, -72.9352



25.616 ESTIMATED PERSONNEL HOURS

1.07 DAYS

0.8 DAYS

0.53 DAYS

- 9 HANWHA 410's (3.69KW)
- 1 ARRAY
- 32' PEAK TO GROUND
- 0 PORTRAIT & 9 LANDSCAPED
- 1 INVERTER(S) INSTALLED OUTSIDE
- NO TRENCH

(CREW OF 3)

(CREW OF 4)

(CREW OF 6)

	<u>ESTIMATED</u>	<u>SENT TO JOB</u>	<u>USED</u>
☐ HANWHA 410 (Q.PEAK DUO BLK ML-G10.C+ 410)	9	—	—
☐ U650 SE OPTIMIZERS	9	—	—
☐ USE11400H-USSKBEZ8 (SE3800H-US)	1	—	—
☐ 60A OUTDOOR FUSED DISCONNECT W/ (2) 20A FUSES	1	—	—
☐ 60A OUTDOOR NON-FUSED DISCONNECT	1	—	—
☐ SOLADECK BOX(ES) & HAYCO CONNECTOR(S)	1	—	—
☐ PV LEAD WIRE	50'	—	—
☐ INSULATED BUG BITES (TAPS)	2	—	—
☐ SOLAREGE CONSUMPTION CTs (SECT-SPL-225-T-20)	2	—	—
☐ UNIRAC 171RLM1-US NXT UMOUNT RAIL - 171" MILL (US)	9	—	—
☐ UNIRAC RLSPLCM2-US NXT UMOUNT RAIL SPLICE (US)	6	—	—
☐ UNIRAC CCLAMPD1 NXT UMOUNT COMBO CLAMP - DARK	24	—	—
☐ GROUNDING LUG(S)	1	—	—
☐ UNIRAC SHCLMPD2 STRONGHOLD RAIL CLAMP DARK	36	—	—
☐ UNIRAC 004055D FLASHKIT PRO	36	—	—
☐ UNIRAC MLPEMNT MLPE MOUNT	9	—	—
☐ UNIRAC ENDCAPD1 NXT UMOUNT RL & CLMP CAP KIT	12	—	—

INSTALLATION OF NEW
ROOF MOUNTED PV SOLAR SYSTEM

MCNEAL, SCOTT
165 WOODLAND STREET
BRISTOL, CT 06010
41.6807, -72.9352

APPENDIX

CONTENTS
LABELS, STICKERS, AND PLACARDS
EQUIPMENT DATA SHEETS

- NOTES:**
- 1.) COMPLIES WITH NEC 2020
 - 2.) REFER TO SHEET PV-3 FOR SITE SPECIFIC VALUES REQUIRED BY NEC 690
 - 3.) STICKERS, LABELS, AND PLACKARDS SHALL BE OF SUFFICIENT DURRABILITY TO WITHSTAND THE ENVIROMENT INVOLVED

To be located on all DC junction boxes
and every 10' on DC conduit

**WARNING: PHOTOVOLTAIC
POWER SOURCE**
NEC 690.31(D)(2)



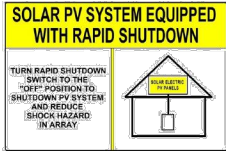
DC Junction Box



Soladeck



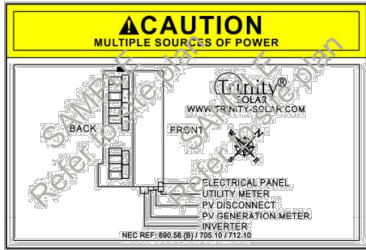
DC Conduit



NEC 690.56(C)



Service Disconnect



NEC 705.10

**RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**
690.56(C)(2)

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT
NOMINAL OPERATING AC VOLTAGE
NEC 690.54



Photovoltaic
AC Disconnect

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT
NOMINAL OPERATING AC VOLTAGE
NEC 690.54



Load Center
(To Combine Inverters)

**RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**
690.56(C)(2)

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
NEC 690.13(B)

**PHOTOVOLTAIC
DC DISCONNECT**
NEC 690.4(B)

**MAXIMUM DC VOLTAGE
OF PV SYSTEM**
NEC 690.53



Inverter(s)

**PHOTOVOLTAIC
DC DISCONNECT**
NEC 690.4(B)

**MAXIMUM DC VOLTAGE
OF PV SYSTEM**
NEC 690.53



DC Disconnect

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
NEC 690.13(B)



Enphase Envoy Box

**Trinity[®]
SOLAR**

2211 Allenwood Road 877-786-7283
Wall, New Jersey 07719 www.Trinity-Solar.com

Q.PEAK DUO BLK ML-G10+ SERIES

395-415 Wp | 132 Cells
21.1% Maximum Module Efficiency
Domestic Content Option Available

MODEL *Q.PEAK DUO BLK ML-G10+
Q.PEAK DUO BLK ML-G10.C+



Includes Domestic Content
This product contains U.S. manufactured components which can contribute to qualifying for the 10% domestic content bonus to applicable tax credits under the Inflation Reduction Act of 2022.¹



Breaking the 21% efficiency barrier
Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 21.1%.



A reliable investment
Inclusive 25-year product warranty and 25-year linear performance warranty.²



Enduring high performance
Long-term yield security with Anti LeTID Technology, Anti PID Technology³ and Hot-Spot Protect.



Extreme weather rating
High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



Far beyond the standard
Qcells' comprehensive quality program ensures high long-term yields and the reliability of your solar system.

¹ This statement should not be relied on as tax advice and is subject to change based on changes made to the Inflation Reduction Act and its implementing rules and regulations. Please consult a qualified tax professional for specific guidance.
² See data sheet on rear for further information.
³ APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 96 h)

The ideal solution for:
Rooftop arrays on residential buildings

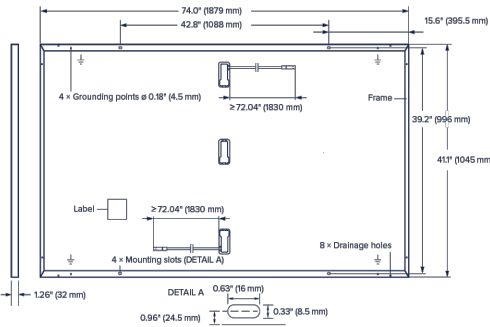
***DCA Module Option:**
DCA 17 module has material code 'MD06G100A-017' printed on the module power label.



Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 72.04 in (1830 mm), (-) ≥ 72.04 in (1830 mm)
Connector	Stäubli MC4; IP68

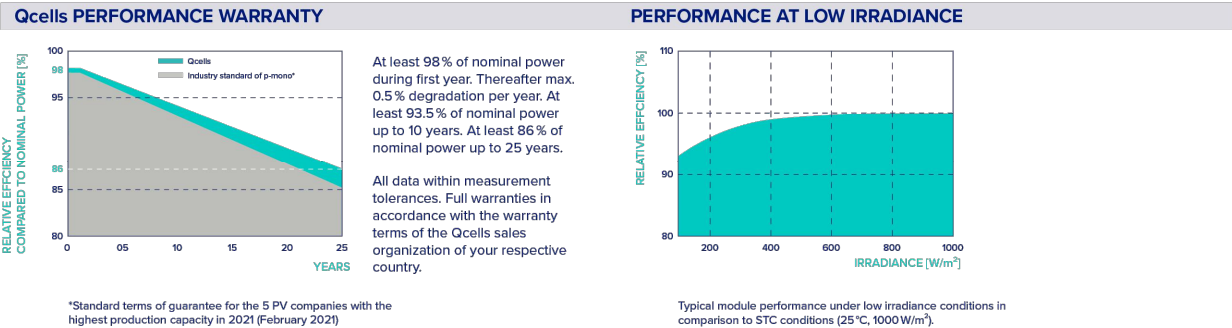


Electrical Characteristics

POWER CLASS			395	400	405	410	415
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	395	400	405	410	415
	Short Circuit Current ¹	I _{SC} [A]	11.10	11.14	11.17	11.20	11.23
	Open Circuit Voltage ¹	V _{OC} [V]	45.27	45.30	45.34	45.37	45.41
	Current at MPP	I _{MPP} [A]	10.71	10.77	10.83	10.89	10.95
	Voltage at MPP	V _{MPP} [V]	36.88	37.13	37.39	37.64	37.89
	Efficiency ¹	η [%]	≥20.1	≥20.4	≥20.6	≥20.9	≥21.1

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	296.3	300.1	303.8	307.6	311.3
	Short Circuit Current	I _{SC} [A]	8.95	8.97	9.00	9.03	9.05
	Open Circuit Voltage	V _{OC} [V]	42.69	42.72	42.76	42.79	42.83
	Current at MPP	I _{MPP} [A]	8.46	8.51	8.57	8.62	8.68
	Voltage at MPP	V _{MPP} [V]	35.03	35.25	35.46	35.68	35.89

¹Measurement tolerances P_{MPP} ± 3%; I_{SC}; V_{OC} ± 5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5



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	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V _{sys} [V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 2
Max. Design Load, Push/Pull ³	[lbs/ft ²]	75 (3600 Pa)/55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push/Pull ³	[lbs/ft ²]	113 (5400 Pa)/84 (4000 Pa)		

³ See Installation Manual

Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),



*Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.
Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc. 300 Spectrum Center Drive, Suite 500, Irvine, CA 92618, USA | TEL: +1 (949) 748 5996 | EMAIL: na.support@qcells.com | WEB: www.qcells.com



/

SolarEdge Home Hub Inverter

USA Domestic Content Eligible

Single Phase, for North America

SE3800H-US / SE5700H-US / SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNB78					
Model Number ⁽¹⁾	SE3800H-US	SE5700H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT – AC ON GRID						
Maximum AC Power Output	3800 @ 240V 3300 @ 208V	5760 @ 240V 5000 @ 208V	7600 @ 240V 6600 @208V	10,000 @ 240V 8700 @ 208V	11,400 @ 240V 10,000 @ 208V	W
AC Output Voltage (Nominal)	208 / 240					Vac
AC Output Voltage (Range)	183 – 264					Vac
AC Frequency Range (min - nom - max)	59.3 – 60 – 60.5 ⁽²⁾					Hz
Maximum Continuous Output Current	16	24	32	42	47.8	A
Maximum Fault Current / Duration	74 / 50					Aac / μs
GFDI Threshold	1					A
Total Harmonic Distortion (THD)	< 3					%
Power Factor	1, adjustable -0.85 to 0.85					
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes					
Charge Battery from AC (if allowed)	Yes					
Typical Nighttime Power Consumption	< 2.5					W
OUTPUT – AC STANDALONE (BACKUP) ⁽³⁾						
Rated AC Power in Standalone Operation ⁽⁴⁾	12,500 ⁽⁵⁾⁽⁶⁾					W
Maximum Continuous Output Current in Standalone Operation	52					A
Locked Rotor Amperage (LRA) ⁽⁷⁾	Up to 106					A
AC L-L Output Voltage Range in Standalone Operation	211 – 264					Vac
AC L-N Output Voltage Range in Standalone Operation	105 – 132					Vac
AC Frequency Range in Standalone Operation (min - nom - max)	55 – 60 – 65					Hz
GFDI	1					A
THD	< 5					%
INPUT – DC (PV AND BATTERY)						
Transformer-less, Ungrounded	Yes					
Maximum Input Voltage	480					Vdc
Nominal DC Input Voltage	380					Vdc
Reverse-Polarity Protection	Yes					
Ground-Fault Isolation Detection	600kΩ Sensitivity					
Maximum Input Short Circuit Current	45					Adc
Maximum Inverter Efficiency	99.2					%
CEC Weighted Efficiency	98.5	99			99 @ 240V 98.5 @ 208V	%
2-Pole Disconnection	Yes					
DC CONNECTION – PV						
Maximum Input Power	7600 @ 240V 6600 @ 208V	11,520 @ 240V 10,000 @ 208V	15,200 @ 240V 13,200 @ 208V	20,000 @ 240V 17,400 @ 208V	22,800 @ 240V 20,000 @ 208V	W
Maximum Input Current	20 @ 240V 17 @ 208V	30 @ 240V 26 @ 208V	40 @ 240V 35 @ 208V	53 @ 240V 46 @ 208V	60 @ 240V 53 @ 208V	Adc
Number of Ports	3					
Maximum Current per Port	40					Adc

(1) These specifications apply to inverters with part number SExxxxH-USMNB78 and connection unit model number DCD-1PH-US-PXH-F-x.

(2) For other regional settings please refer to the [SolarEdge Inverters, Power Control Options](#) application note.

(3) Not designed for non-grid connected applications and requires AC for commissioning. Standalone (backup) functionality is only supported for the 240V grid.

(4) For models SE7600H-US and below, the Rated AC Power in Standalone Operation is configurable between 7,600W with a Maximum Continuous Output Current of 32A or 12,500W with a Maximum Continuous Output Current of 52A, from firmware version 4.23.xx.

(5) Operational only at ambient temperatures up to 86°F / 30°C. Above 86°F / 30°C, the Maximum Rated AC Power in Standalone Operation is 11,400W.

(6) Available only for single inverter installations. In multi-inverter installations, the Maximum Rated AC Power in Standalone Operation is 11,400W.

(7) For more information about LRA (Locked Rotor Amperage) values, see the [SolarEdge Home Hub Inverter LRA](#) application note.

/

SolarEdge Home Hub Inverter

USA Domestic Content Eligible

Single Phase, for North America

SE3800H-US / SE5700H-US / SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNB78					
Model Number ⁽¹⁾	SE3800H-US	SE5700H-US	SE7600H-US	SE10000H-US	SE11400H-US	
DC CONNECTION – BATTERY						
Supported Battery Types	SolarEdge Home Battery 400V					
Number of Batteries per Inverter	Up to 3					
Maximum Continuous Power (Charge and Discharge) ⁽⁸⁾	12,500					W
Number of Ports	2					
Maximum Current per Port	40					Adc
2-pole Disconnection	Up to the inverter’s rated standalone power					
SMART ENERGY CAPABILITIES						
Consumption Metering	Built-in ⁽⁹⁾					
Standalone & Battery Storage	With Backup Interface (purchased separately) for service up to 200A; up to 3 inverters					
EV Charging	Direct connection to the SolarEdge Home EV Charger ⁽¹⁰⁾					
ADDITIONAL FEATURES						
Supported Communication Interfaces	RS485, Ethernet, Cellular ⁽¹¹⁾ , Wi-Fi (optional) ⁽¹²⁾ , SolarEdge Home Network ⁽¹³⁾ (optional)					
Revenue Grade Metering, ANSI C12.20	Built-in ⁽⁹⁾					
Integrated AC, DC, and Communication Connection Unit	Yes					
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi Access Point for local connection					
DC Voltage Rapid Shutdown (PV and Battery)	Yes, NEC 690.12					
STANDARD COMPLIANCE						
Safety	UL 1741, UL 1741SA, UL 1741SB, UL 1699B, CSA 22.2#107.1, C22.2#330, C22.3#9, ANSI/CAN/UL 9540					
Grid Connection Standards	IEEE1547-2018 and IEEE-1547.1 Rule 21, Rule 14H					
Emissions	FCC Part 15 Class B					
Power Control System (PCS)	UL 1741 PCS ⁽¹⁴⁾					
INSTALLATION SPECIFICATIONS						
AC Terminals	L1, L2, N terminal blocks, PE busbar for inverter connection L1, L2 terminal blocks, PE busbar for EV Charger AC connection					
DC Terminals	3 x terminal block pairs for PV input, 2 x terminal block pair for battery input					
AC Output and EV AC Output Conduit Size / AWG Range	1" maximum / 14 – 4 AWG					
DC Input (PV and Battery) Conduit Size / AWG Range	1" maximum / 14 – 6 AWG					
Dimensions with Connection Unit (H x W x D)	21.06 x 14.6 x 8.2 / 535 x 370 x 208					in / mm
Weight with Connection Unit	44.9 / 20.3					lb / kg
Noise	< 50					dBA
Cooling	Natural Convection					
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽¹⁵⁾					°F / °C
Protection Rating	NEMA 4X					

(8) Discharge power is limited up to the inverter’s rated AC power for on-grid applications, and up to 12.5 kW for standalone applications, as well as up to the installed batteries’ rating.

(9) For consumption metering current transformers should be ordered separately: SECT-SPL-225A-T-20 or SEACT1250-400NA-20. Revenue grade metering is only for production metering.

(10) For more information about the SolarEdge Home EV Charger, refer to the [SolarEdge Home EV Charger](#) datasheet.

(11) Purchased separately. Information concerning the data plan terms & conditions is available in [SolarEdge Communication Plan Terms and Conditions](#).

(12) External Wi-Fi antenna for wider range provided with the inverter’s package. Refer to the [Antenna for Wi-Fi and ZigBee Wireless Communications](#) datasheet.

(13) SolarEdge Home Network Plugin ENET-HBNP-01 purchased separately. For more information, refer to the [SolarEdge Home Network Plugin](#) datasheet.

(14) Only part numbers USExxxxH-USMNX7x support the PCS meter.

(15) Full power up to at least 122°F / 50°C. For power derating information refer to the [Temperature Derating for North America](#) technical note.

Power Optimizer

USA Domestic Content Eligible*

For North America

U650 / U650B



SolarEdge's USA-manufactured offering for PV power optimization at the module level

- Eligible for domestic content: SolarEdge USA-manufactured Power Optimizers*, when paired with certain SolarEdge inverters, are intended to be eligible for the enhanced federal income tax credit for domestic content
 - Specifically designed to work with SolarEdge inverters
 - Supports high open circuit voltage (Voc) modules with U650B
 - U650B provides improved design flexibility of multifaceted, complex roofs, with extended output voltage that reduces yield factor losses
 - Superior efficiency (99.5%)
 - Mitigates diverse types of module mismatch loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
 - Faster installations with simplified wire management and easy assembly using a single bolt
 - Compatible with a wide range of modules, including high-powered and bifacial PV modules
 - Advanced safety:
 - Patented Sense Connect technology, designed to automatically detect and prevent potential electric arcs at the connector level before an arc is created
 - Patented SafeDC™ – module-level voltage shutdown, for installer and firefighter safety
 - Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

* Manufactured by SolarEdge with the intent to be eligible for inclusion under the elective safe harbor in calculating the Domestic Cost Percentage under the “Rooftop (MLPE)” category (under IRS Notice 2024-41). The PCBA, Electrical Parts, and Enclosure are domestically manufactured to meet the requirements of eligibility to be considered for the ITC domestic content bonus adder. SolarEdge does not provide tax and/or legal advice. You should consult with your own legal and/or tax advisor(s) regarding the eligibility of your project for the ITC or PTC, including the 10% domestic content bonus, to determine how the applicable rules apply to your particular project. The forward-looking statements in this datasheet are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative



POWER OPTIMIZER

Power Optimizer

USA Domestic Content Eligible, for North America

U650 / U650B

	U650	U650B	Units
INPUT			
Rated Input DC Power ⁽¹⁾	650		W
Absolute Maximum Input Voltage (Voc)	60	100	Vdc
MPPT Operating Range	8 – 60	12.5 – 100	Vdc
Maximum Input Current (Maximum Isc of Connected PV Module)	15		Adc
Maximum Input Short Circuit Current ⁽²⁾	18.75		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overvoltage Category	II		
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)			
Maximum Output Current	15		Adc
Maximum Output Voltage	60	80	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer	1 ± 0.1		Vdc
STANDARD COMPLIANCE			
Photovoltaic Rapid Shutdown System	CSA C22.2#330, NEC 2014 – 2023		
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3		
Safety	CSA C22.2#107.1, IEC 62109-1 (Class II safety), UL 1741		
Material	UL 94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 30 / 5.07 x 6.10 x 1.18	129 x 165 x 45 / 5.07 x 6.49 x 1.77	mm / in
Weight	720 / 1.6	790 / 1.74	gr / lb
Input Connector	MC4		
Input Wire Length	0.1 / 0.32		m / ft
Output Connector	MC4		
Output Wire Length	(+) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32		m / ft
Operating Temperature Range ⁽³⁾	-40 to +85		°C
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 – 100		%

(1) The Rated Power of the module at STC will not exceed the power optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) The Maximum Input Short Circuit Current is adjusted for worst case conditions of ambient temperature, irradiance, bifacial gain, and so on, in accordance with NEC and CSA.
(3) Power derating is applied for ambient temperatures above +85°C / +185°F for U650 and for ambient temperatures above +75°C / 167°F for U650B. Refer to the [Power Optimizers Temperature Derating](#) technical note for details.

PV System Design Using a SolarEdge Inverter ⁽⁴⁾		SolarEdge Home Wave / Hub Single Phase	Three Phase for 208V Grid	Three Phase for 277/480V Grid	Units
Minimum String Length (Power Optimizers)	U650	8	10	18	
	U650B	6	8	14	
Maximum String Length (Power Optimizers)		25		50 ⁽⁵⁾	
Maximum Usable Power Delivered per String		5700	6000	12,750	W
Maximum Allowed Connected Power per String ⁽⁶⁾⁽⁷⁾	Inverters with Rated AC Power ≤ 5700W	Per the inverter's maximum input DC power ⁽⁸⁾	One string: 7200 Two strings or more: 7800	15,000	W
	Inverters with Rated AC Power of 6000W	5700			
	Inverters with Rated AC Power ≥ 7600W	6800, only when connected to at least two strings			
Parallel Strings of Different Lengths or Orientations		Yes			

(4) It is not allowed to mix U650 or U650B Power Optimizers with P-series Power Optimizers in new installations in the same string.
(5) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
(6) For the 208V grid, the maximum is permitted only when the difference in connected power between strings is 1,000W or less.
(7) For the 240V or 277/480V grids, the maximum is permitted only when the difference in connected power between strings 2,000W or less.
(8) Refer to the [Single String Design Guidelines](#) application note for more details.



INSULATION-PIERCING TAP CONNECTORS
CONECTORES DE DERIVACIÓN QUE PERFORAN EL AISLAMIENTO

Installation Instructions:



Warning

Improperly installed electrical wiring can be dangerous and cause electrical fires. The connector chosen must be sized to the wires being used. Consult local building code before doing any electrical work. For assistance, refer to an instructional book or consult a qualified electrician.



Warning

Contact with electricity can cause serious injury or death. Use on insulated cable only. [RHH, RHW(-2), THHN, THHW, THW, THWN, USE, XHHW(-2). Consult factory for other insulation types]. If the installation is to be made on an energized run, the tap conductor must be under no load and must not be grounded. Use electrically insulated gloves. De-energize the run cable if there are any questions of these conditions being met.

- Determine the direction for the tap conductor to exit and discard one end cap. **See figure 1.**
- Position the main (or feeder) side of the connector around the run cable and tighten the bolt finger tight. **See figure 2.** If required, loosen the bolt slightly to allow the connector to open completely. **DISASSEMBLY NOT RECOMMENDED.** The plastic “Turbo” spacer holds the connector open which eases installation and ensures proper connections.
- Cut the end of the tap cable squarely. **DO NOT STRIP CABLE INSULATION.**
- Insert the tap cable into the tap side of the connector until it is seated in the remaining end cap. **See figure 3.**
- Continue tightening the torque regulating bolt with a standard box or socket wrench until the torque regulating piece breaks away. If the connector has two (2) assembly bolts, alternately tighten until the hexagonal torque devices break away. **See figures 4a & 4b.** Note that the plastic “turbo” spacer on the side will also break. To make the installation even easier and to relieve torque from the cables, a second wrench can be used on the hexagonal piece on the bottom of the connector.

DO NOT use gripping type pliers, pipe, open ended or adjustable wrenches as these may damage the hexagonal torque regulating device. A torque wrench is not required.

MAKE SURE ONLY THE TOP HEXAGONAL TORQUE DEVICE OF THE BOLT HEAD IS USED FOR ASSEMBLY. THE SECOND HEX PIECE [CLOSER TO THE BODY OF THE CONNECTOR] IS USED FOR DISASSEMBLY.

Note: The torque regulating bolt ensures the correct torque is applied to the conductors without using a torque wrench. Important information such as run and tap ranges, voltage ratings and material/temperature ratings is marked on the connector.

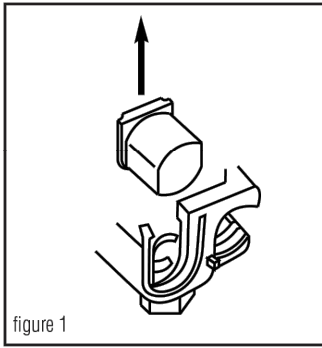


figure 1

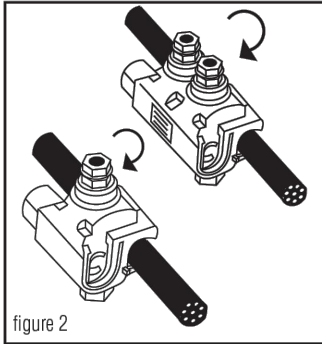


figure 2

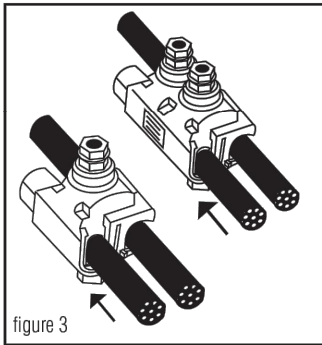


figure 3

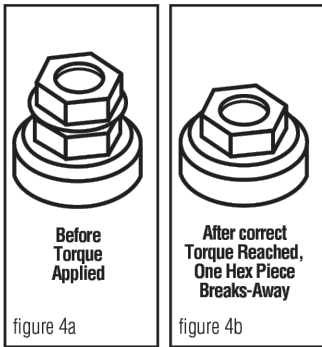


figure 4a

figure 4b

Instalación Instrucciones:



Advertencia

Los cables eléctricos mal instalados pueden ser peligrosos y provocar incendios. El conector escogido debe ser de un tamaño adecuado para los cables que se utilicen. Consulte los códigos de construcción locales antes de efectuar trabajos eléctricos. Si necesita ayuda, consulte un libro de instrucciones o consulte con un electricista capacitado.



Advertencia

Use sólo en cable aislado. [RHH, RHW(-2), THHN, THHW, THW, THWN, USE, XHHW(-2). Consulte con la fábrica para obtener información sobre otros tipos de aislamiento]. Si se va a hacer la instalación sobre un cable con corriente el conductor derivado debe estar libre de carga y no debe estar aterado. Use guantes con aislamiento eléctrico. Quite le la corriente al cable del cual se hace la derivación si no se pueden cumplir estas condiciones. El contacto con electricidad puede producir lesiones graves o mortales.

- Determine la dirección en la que el conductor derivado saldrá y deseche la tapa terminal sobrante. **Vea la ilustración 1.**
 - Coloque el lado principal (o de alimentación) del conector alrededor del cual se hace la derivación y apriete firmemente el dedo del perno. **Vea la ilustración 2.** Si hace falta, afloje el perno ligeramente para permitir que el conector se abra completamente. **NO ES RECOMENDABLE DESARMAR EL CONECTOR.** El espaciador “Turbo” de plástico mantiene al conector abierto, lo cual facilita la instalación y asegura que las conexiones se hagan correctamente.
 - Corte el extremo del cable de derivación perpendicularmente a su eje. **NO PELE EL AISLAMIENTO DEL CABLE.**
 - Inserte el cable de derivación en el lado de derivación del conector hasta que tope contra la tapa terminal que queda. **Vea la ilustración 3.**
 - Continué apretando este perno que regula la torsión con una llave estándar o de cubo hasta que la pieza que regula la torsión se parta y se separe. Si el conector tiene dos (2) pernos de ensamblaje, apriéte los alternativamente hasta que el dispositivo de regulación de torció se parta. **Vea la ilustración 4a y 4b.** Observe que el espaciador “turbo” de plástico en el costado también se fracturará. Para hacer esta instalación aún más fácil y para aliviar la torsión de los cables, se puede usar una segunda llave sobre la pieza hexagonal al fondo del conector.
- NO USE alicates de presión, llaves de turbo, llaves comunes o ajustables** ya que éstas pueden dañar el dispositivo hexagonal que regula la torsión. No se requiere una llave de torsión.
- ASEGÚRESE QUE SE USE, PARA EL ENSAMBLADO, SÓLO EL DISPOSITIVO SUPERIOR DE REGULACIÓN DE TORSIÓN DE LA CABEZA DEL PERNO. LA SEGUNDA PIEZA HEXAGONAL (LA MÁS CERCANA AL CUERPO DEL CONECTOR) SE USA SÓLO PARA DESARMAR EL CONECTOR.**

Nota: El perno regulador de torsión garantiza la aplicación de la torsión correcta a los conductores sin usar una llave de torsión. La información importante de longitud de cable pelado y de toma, las clasificaciones de materiales y temperatura está marcada en el conector.

B-TAP[®] INSULATION PIERCING TAP CONNECTORS TORQUE AND CURRENT RATINGS

(Solid and/or Stranded)

CATALOG#	MAIN	TAP	NOMINAL TORQUE	TAP CURRENT RATIING (IN AMPS)*
BTC2/0-14	2/0-4	10-14 ⁺	80 IN. LBS.	40
BTC1/0-10	1/0-8	2-10 ⁺⁺	80 IN. LBS.	130
BTC4/0-10	4/0-3	2-10⁺⁺⁺	125 IN. LBS.	130
BTC4/0-6	4/0-2	1/0-6	160 IN. LBS.	170
BTC4/0-2	4/0-2	4/0-2	160 IN. LBS.	260
BTC250-6	250-4	4/0-6	160 IN. LBS.	260
BTC250-4	250-1	3/0-4	160 IN. LBS.	225
BTC250-2	250-1/0	4/0-2	160 IN. LBS.	260
BTC350-1/0	350-1/0	350-1/0	330 IN. LBS.	350
BTC500-4	500-2/0	4/0-4	330 IN. LBS.	260
BTC500-1/0	500-4/0	350-1/0	330 IN. LBS.	350
BTC500-14	750-3/0	10-14 ⁺⁺⁺	80 IN. LBS.	40
BTC750-250	750-250	500-250	330 IN. LBS.	430

+10-14 Cu SOLID/STRANDED; 10-12 Al SOLID/STRANDED

++2-10 Cu SOLID/STRANDED; 2-10 Al STRANDED

+++2-10 Cu SOLID/STRANDED; 2-8 Al STRANDED

++++10-14 Cu SOLID/STRANDED; 10-12 Al STRANDED

Full line is 600V dual-rated, 194°F(90°C)

* Based on NEC Table 310-16 1996 (Not more than 3 insulated conductors in a raceway at ambient temperature of 30° C) for the largest tap wire size.



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.



ADVERTENCIA: Cáncer y Daño Reproductivo - www.P65Warnings.ca.gov.

One year limited warranty. See idealind.com for more information.

Garantía limitada de un año. Visite www.idealind.com para obtener detalles de la garantía.

NXT UMOUNT™



DESIGN & INTEGRATION

- Seamless, integrated wire management system elevates the install via the new open channel rail.
- State-of-the-art internal splice is interference free and offers true structural integrity that can even be installed in a cantilever!

VERSATILITY & AESTHETICS

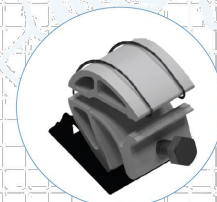
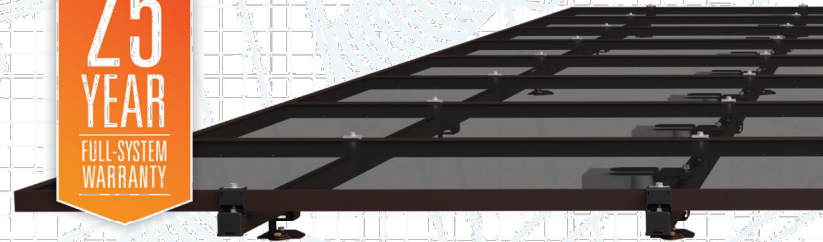
- Unparalleled versatility supporting a vast array of roof attachments. Whether it's flashing or no flashing, the NXT UMOUNT™ system has got you covered!
- Refined finishing touches are visually sleek and functionally superior.

EFFICIENCY & EASE OF INSTALLATION

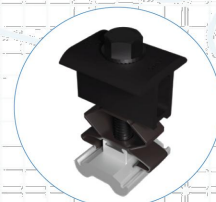
- Universal module clamps and combo lug / MLPE mounts result in fewer SKUs and maximum component value.
- Open-slot STRONGHOLD attachments deliver quick, reliable, waterproof installations via Flashloc or pre-applied butyl sealants.
- With our click-in rail & clamps, you'll spend significantly less time on the roof, making installations quicker and hassle-free.

WHY NXT UMOUNT?

Introducing NXT UMOUNT™, a revolutionary product by Unirac that stands as the ultimate testament to over two decades of engineering experience. Its thoughtful design, backed by rigorous engineering, world-class support, and a reliable supply chain, encapsulates the best of DESIGN, SIMPLICITY, and VALUE. This innovative solar racking solution brings unparalleled versatility to solar installations, effectively representing the NXT level of solar mounting systems.



NXT UMOUNT™
HIDDEN END CLAMP



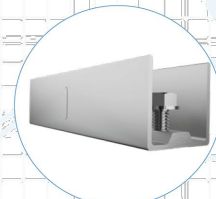
NXT UMOUNT™
COMBO CLAMP
Available in Dark
and Mill



STRONGHOLD™
RAIL CLAMP
Available in Dark
and Mill



NXT UMOUNT™ RAIL
Available in
Dark and Mill



NXT UMOUNT™ RAIL SPLICE



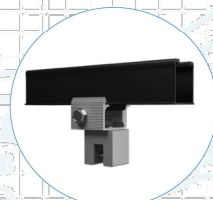
NXT UMOUNT™
MLPE & LUG CLAMP



STRONGHOLD™
ATTACHMENT KIT
Available in Dark
and Mill



STRONGHOLD™ BUTYL
ATTACHMENT KIT
Available in Dark
and Mill



NXT UMOUNT™
METAL ROOF RAIL CLAMP

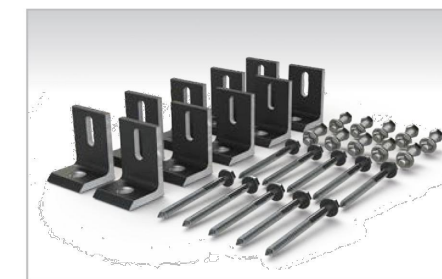
FLASHKIT PRO



FLASHKIT PRO is the complete attachment solution for composition shingle roofs. Featuring Unirac's patented **SHED & SEAL** technology, a weather proof system which provides the ultimate protection against roof leaks. Kitted in 10 packs for maximum convenience, flashings and hardware are available in Mill or Dark finishes. With **FLASHKIT pro**, you have everything you need for a quick, professional installation.



TRUSTED WATER SEAL FLASHINGS
FEATURING **SHED & SEAL** TECHNOLOGY



YOUR COMPLETE SOLUTION
Flashings, lags, continuous slot L-Feet and hardware



CONVENIENT 10 PACKS
Packaged for speed and ease of handling

THE COMPLETE ROOF ATTACHMENT SOLUTION

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