

BLOCK **831** LOT **38** QUALIFICATION CODE _____ADDRESS (SITE) **1639 West Princeton Ave, Brick** PERMIT NO. **19-2470**

CONSTRUCTION PERMIT APPLICATION

C-19-003004

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: **1639 West Princeton Ave, Brick, NJ**

2. Name of Owner in Fee: **Costagliola, Nicola**

Tel. _____ e-mail _____

Address **1639 West Princeton** **Brick** **08724**

street municipality zip code

3. Ownership in Fee: Public _____ Private ☒ Municipality _____

4. Principal Contractor: **Trinity Solar** Tel. **(848) 220-9040**

Address **2211 Allenwood Rd.** e-mail _____

Wall, NJ 07719 email: **applications.nj@trinitysolarsystems.com**

License No. OR, if new home, Builder Reg. No. **13VH01244300** Exp. Date **3-31-20**

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. **223292324** FAX: **(848) 220-9139**

5. Architect or Engineer _____ Contact _____

Address _____ e-mail _____

Tel. _____ FAX: _____

6. Responsible Person in Charge once Work has Begun **Charles Bonicker/Danielle DeVito**

Tel. **(732) 780-3779 ext. 9040** FAX: **(848) 220-9139**

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$ 150	☒	
2. Electrical	\$ 200	☒	
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	\$		
8. Subtotal	\$ 44		
9. State Permit Surcharge Fee	\$		
10. Subtotal	\$ 75		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$ 409		

VI. BUILDING/SITE CHARACTERISTICS **7,245 kw** (office use only)

1. Number of Stories		
2. Height of Structure		ft.
3. Area — Largest Floor		sq. ft.
4. New Building Area		sq. ft.
5. Volume of New Structure		cu. ft.
6. Max. Live Load		
7. Max. Occupancy Load		
8. If Industrialized Building: State Approved _____ HUD _____		
9. Total Land Area Disturbed		sq. ft.
10. Flood Hazard Zone		
11. Base Flood Elevation		ft.
12. Wetlands yes _____ no ☐		

IIa. PROPOSED WORK

☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition

☐ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction

☐ Asbestos Abat. -Subch. B ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES (Check all that apply)

	Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
☒ Building	1,636	MF	8/3/19		8-28-19	JD			
☒ Electrical	21,738				9-19-19	TD			
☐ Plumbing	0								
☐ Fire Protection									
☐ Elevator									
TOTAL COST	23374								

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: _____

2. Use Group, Proposed: _____

3. Change in Use Group, Indicate Present: _____

4. No. of dwelling units: **Total Units Income-restricted**

Gained, Sale	
Gained, Rental	
Lost, Sale	
Lost, Rental	

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: _____

2. Use Group, Proposed: _____

3. Change in Use Group, Indicate Present: _____

C. MIXED USE -List secondary use(s): _____

D. Construct. Classification: Present _____ Proposed _____

III. PLAN REVIEW (optional)

- DO YOU WANT:**
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

- | | | | |
|--|---|---|---|
| 1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks | 4. ☐ Refrigeration Systems | 8. ☐ Smoke Control Systems in Open Wells | 12. ☐ Fire Alarm |
| 2. ☐ High Pressure Boilers | 5. ☐ Cross-Connections/Backflow Preventers | 9. ☐ Underground Storage Tanks | |
| 3. ☐ Pressure Vessels | 6. ☐ Hazardous Uses/Places of Assembly | 10. ☐ Swimming Pools, Spas and Hot Tubs | |
| | 7. ☐ Sprinklers/Standpipes | 11. ☐ LPGas Tanks | |

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws:

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

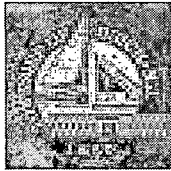
Agent Name **Trinity Solar** _____

Address **2211 Allenwood Rd.**
Wall, NJ 07719 _____

Telephone **848-220-9040** _____

Signature **Thomas Poluek** _____

- III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 11/14/2019
Control Number C-19-003004
Permit Number 19-2470
Permit Issue Date 9/23/2019
Certificate Number 19-2470

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 1639 W. PRINCETON AVE. Brick Township, NJ Block: 831 Lot: 38 Qual: _____
Owner in Fee: NICOLA COSTAGLIAOLA
Owner Address: 1639 W PRINCETON AVE BRICK NJ 08724
Telephone: _____
Contractor Trinity Solar
Address 2211 Allenwood Rd. Wall NJ 07719
Telephone: (732) 780-3779 Fax: (732) 780-6671
License Number or Builders Registration Number: _____ Federal Emp. Number: 22-3292324

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: R-5 Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: SOLAR PANELS - ...INSTALL 7.245 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

Daniel Newman Jr

Construction Official

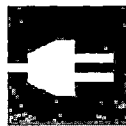
Fee: \$0.00

Check Number: _____

Collected By: _____



ELECTRICAL SUBCODE TECHNICAL SECTION



NEC 2014

Date Received
Control #
Date Issued
Permit #

9/23/19

19-3430

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 831 Lot 38 Qualification Code _____

Work Site Location 1639 West Princeton Ave, Brick, NJ

Owner in Fee: Costagliola, Nicola

Tel. _____ e-mail _____

Address 1639 West Princeton Ave
street municipality zip code

Contractor: **Trinity Solar** Tel. (848) 220-9040

Address 2211 Allenwood Rd. e-mail _____

Wall, NJ 07719 e-mail: applications.nj@trinitysolarsystems.com

Contractor License No. 15474A Exp. Date 3-31-21

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. 223292324 FAX: (848) 220-9139

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

[] Pole/Pad # _____ [] Temporary [] Other _____

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work \$ 21,738

JOB SUMMARY (Office Use Only)		INSPECTIONS		Dates (Month/Day)	
PLAN REVIEW		Type:	Failure	Failure	Approval
[] No Plans Required		Rough	_____	_____	_____
[] Partial -Underslab Utilities Approved		Barrier-Free	_____	_____	_____
Date: _____ Approved by: _____		Trench	_____	_____	_____
[] Electric Plans Approved		Temp. Serv.	_____	_____	_____
Date: <u>9-19-19</u> Approved by: <u>[Signature]</u>		Constr. Serv.	_____	_____	_____
Joint Plan Review Required:		TCO	_____	_____	_____
[] Bldg. [] Plumb. [] Fire. [] Elev.		Other	_____	_____	_____
SUBCODE APPROVAL for PERMIT		Service	_____	_____	_____
Date: <u>9-19-19</u>		Final	_____	_____	_____
Approved by: <u>[Signature]</u>		Barrier-Free	_____	_____	_____
SUBCODE APPROVAL for CERTIFICATE		Temp. Cut-in-Card Date Issued	_____	_____	_____
[] CO [] CCO [] CA		Final Cut-in-Card Date Issued	_____	_____	_____
Date: <u>11-7-19</u>		Annual Pool Inspection	_____	_____	_____
Approved by: <u>[Signature]</u>		Date of Grounding and Bonding Certification	_____	_____	_____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent or owner of record) and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor

sign and seal here:

Print name here: **Charles Bonicker**

[x] Licensed Elec. Contractor [] Certif'd Landscape Irrigation Contr. [] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:

INSTALLATION OF INVERTERS AND PV SOLAR PANELS

QTY.	SIZE	ITEMS	FEE (Office Use Only)
_____	_____	Lighting Fixtures	_____
_____	_____	Receptacles	_____
_____	_____	Switches	_____
_____	_____	Detectors	_____
_____	_____	Light Poles	_____
_____	_____	Motors—Fract. HP	_____
_____	_____	Emergency & Exit Lights	_____
_____	_____	Communications Points	_____
_____	_____	Alarm Devices/E.A.C. Panel	_____
_____	_____	<u>Panel</u>	_____
_____	_____	TOTAL NUMBERS	\$ _____
_____	_____	Pool Permit/with UW Lights	_____
_____	_____	Storable Pool/Spa/Hot Tub	_____
_____	_____	KW Elec. Range/Receptacle	_____
_____	_____	KW Oven/Surface Unit	_____
_____	_____	KW Elec. Water Heater	_____
_____	_____	KW Elec. Dryer/Receptacle	_____
_____	_____	KW Dishwasher	_____
_____	_____	HP Garbage Disposal	_____
_____	_____	KW Central A/C Unit	_____
_____	_____	HP/KW Space Heater/Air Handler	_____
_____	_____	KW Baseboard Heat	_____
_____	_____	HP Motors 1/+ HP	_____
1	60	KW Transformer/Generator AMP	_____
_____	_____	AMP Service Disconnect Disconnect	_____
_____	_____	AMP Subpanels	_____
1	6.0	AMP Motor Control Center KW Inverter	_____
1	7.245	KW Elec. Sign/Outline Light Inverter	_____
_____	_____	KW PV Solar System	_____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____



BUILDING SUBCODE TECHNICAL SECTION



NEC 2014

Date Received
Control #

9/23/19

Date Issued
Permit #

19-2470

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 831 Lot 38 Qualification Code _____

Work Site Location _____

1639 West Princeton Ave, Brick, NJ

Owner/In Fee: Costagliola, Nicola

Tel. X e-mail _____

Address 1639 West Princeton Ave

street

municipality

zip code

Contractor: Trinity Solar Tel. (848) 220-9040

Address 2211 Allenwood Rd. e-mail _____

Wall, NJ 07719

email: applications.nj@trinitysolarsystems.com

Contractor License No. or Builder Registration No. 13VH01244300 Exp. Date 3-31-20

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. 223292324 FAX: (848) 220-9139

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Sign here: Thomas Pollock

Print name here: Tom Pollock

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

INSTALLATION OF MOUNTING AND PV SOLAR SYSTEM ON ROOF.

(23)

TYPE OF WORK:

- ☐ New Building
☐ Addition
☐ Rehabilitation
☐ Roofing
☐ Siding
☐ Fence _____ Height (exceeds 6')
☐ Sign _____ Sq. Ft.
☐ Pool
☐ Retaining Wall _____ Sq. Ft.
☐ Asbestos Abatement Subchapter 8
☐ Lead Haz. Abatement NJAC 5:17
☐ Radon Remediation
☒ Other Racking
☐ Demolition

FEE (Office Use Only)

\$ _____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS	Dates (Month/Day)
☐ No Plans Required			Type:	Failure Failure Approval Initial
☒ All	8-28-19	SP	Footings	
☐ Footings/Foundations			Footings Bonding	
☐ Structural/Framework			Foundation	
☐ Exterior			Slab	
☐ Interior			Frame	
			Truss Sys./Bracing	
			Barrier-Free	
Joint Plan Review Required:			Insulation	
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator			Finishes -Base Layer	
			Finishes -Final	
			Energy	
			Mechanical	
			TCO	
			Other	
			Final	11-2-19 MM
			Barrier-Free	

SUBCODE APPROVAL FOR PERMIT

Date: 08-28-19

Approved by: WCK

SUBCODE APPROVAL FOR CERTIFICATE

☐ CO ☐ CCO ☒ CA

Date: 11-07-19

Approved by: WCK

B. BUILDING CHARACTERISTICS

Use Group Present _____ Proposed _____ Constr. Class Present _____ Proposed _____

No. of Stories _____ If Industrialized Building:

Height of Structure _____ ft. State Approved _____ HUD _____

Area — Largest Floor _____ sq. ft. Est. Cost of Bldg. Work:

New Bldg. Area/All Floors _____ sq. ft.

Volume of New Structure _____ cu. ft.

Max. Live Load _____

Max. Occupancy Load _____

1. New Bldg. \$ _____
2. Rehabilitation \$ _____
3. Total (1+ 2) \$ 1,636

U.C.C. F110 (rev. 11/09)
Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.



CONSTRUCTION PERMIT

Date Issued 9/23/19
Control # C-19-003004
Permit # 19-2470

IDENTIFICATION Block: 831 Lot: 38 Qualifier _____
Work Site Location: 1639 W. PRINCETON AVE. Brick Township, NJ Contractor Trinity Solar
Owner in Fee NICOLA COSTAGLIAOLA Address 2211 Allenwood Rd. Wall NJ 07719
1639 W PRINCETON AVE BRICK NJ 08724 Telephone: (732) 780-3779 / Ext.9045
Telephone: _____ Lic. No. or Bldrs. Reg. No. 15821C 13VH01244300 34EB01547400
Federal Employee No. 22-3292324

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☒ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

SOLAR PANELS ...INSTALL 7.245 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$23,374

D. Newman
Construction Official

Date 9/19/19

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☒ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☒ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

PAYMENTS (Office Use Only)

Building	\$150
Electrical	\$200
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$44
CO Fee	
Other	\$0
Total	\$394
Check No. <u>101494</u>	
Cash	\$0
Credit	\$0
Collected By <u>Chad Gervin</u>	

175
469

RECEIVING CLERK _____
DATE REC'D _____

ZONING PERMIT APPLICATION

PERMIT # ZP-A-01036
DATE ISSUED 9/23/19

BLOCK: 831 LOT: 38 QUALIFIER: _____ SITE ADDRESS: 1639 West Princeton Ave

IDENTIFICATION:

1. NAME OF OWNER IN FEE: Costagliola, Nicola

COMPLETE ADDRESS: 1639 West Princeton Ave
Brick, New Jersey 08724

PHONE # [REDACTED] EMAIL [REDACTED]

2. NAME OF APPLICANT: Trinity Solar

APPLICANT ADDRESS: 2211 Allenwood Rd, Wall, NJ 07719

PHONE # (732)780-3779 ext 9040 EMAIL: trinity.permitting@trinitysolarsystems.com

3. RESPONSIBLE PERSON FOR WORK: Charles Bonicker

PHONE# (732)780-3779 ext 9040 FAX# (848)220-9139

4. SIGNATURE OF APPLICANT: Thomas Pollock

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: \$ 75-

OTHER: \$ _____

TOTAL: \$ 75-

REQUIRED BY APPLICANT

RESIDENTIAL: Single Family ✓

COMMERCIAL: _____

EXISTING USE: Single Family SFC

PROPOSED USE Install Solar SFC

BOARD APPROVAL: _____ PB _____ ZB

RESOLUTION#: _____

APPROVAL DATE: _____

PROJECT DESCRIPTION: (PLEASE CHECK APPLICABLE WORK & DESCRIBE)

*NEW BUILDING: _____ *ADDITION _____ *ALTERATION _____ *PORCH _____ *DECK _____

POOL: ABOVE GROUND _____ IN GROUND _____ FENCE: HEIGHT _____ TYPE _____

HEIGHT: _____ (*APPLICABLE)

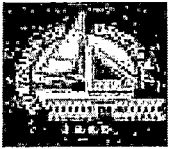
OTHER Install solar panels on roof.

DESCRIPTION: Install 7.245 KW PV solar system with 23 modules using Solar Edge technology. Solar panels will be flat mounted on roof, not to exceed the roof peak.

ZONING REVIEW:

DATE REVIEWED: 8-24-19 DATE DENIED: _____ DATE APPROVED: 8-24-19 INTLS: [Signature]

(SEE BACK PAGE)



Brick Township
401 Chambers Bridge Rd.
Brick, NJ 08723
(732) 262-1041

Date Issued: 9/23/19
Application Number: ZA-19-00992
Application Date: 8/15/2019
Project Number: _____
Permit Number: ZP-19-01036
Fee: \$75.00

Zoning Permit

Worksite **1639 W. PRINCETON AVE.**
Location: **Brick Township, NJ 08724**

Owner: **WIEBOLDT AND SONS LLC**
Address: **858 STENGEL AVENUE**
BRICK, NJ 08724

Applicant: **Trinity Solar**
Address: **2211 Allenwood Rd.**
Wall, NJ 07719

Block: 831 Lot: 38 Qualifier: _____ Zone: R-7.5

This Certifies that an application for the issuance of a Zoning Permit has been examined.

Present Use: Single-Family Residential

☐ Non Conforming Use

☐ Non Conforming Structure

Proposed Use: Single-Family Residential

Work Description:

Solar Energy System - 23- 315W Hanwha Solar, 7.245kW SolarEdge inverter, mounted on the roof of the house.

Additional Zoning Permit is required for additional work.

Application Approved Date: 8/21/2019

Upon review it was determined that the Zoning Permit:

☒ Permitted by Ordinance

☐ Permitted by Variance approved on: _____

☐ Approved with Conditions

☐ Valid Nonconforming Use/Structure is established by

☐ Zoning Board of Adjustment

☐ Zoning Officer



Christopher J. Romano, Zoning Officer

8/21/2019

Date

Christopher Winters

From: Christopher Winters
Sent: Friday, September 20, 2019 9:34 AM
To: applications.nj@trinitysolarsystems.com
Subject: Permit Pickup

Good morning,

You have permits ready

Permit 1
19 Captains Drive
Block 324.13 Lot 25
Total permit fee is \$513.00

Permit 2
1639 W. Princeton Ave
Block 1393.20 Lot 38
Total permit fee is \$469.00

Checks can be made payable to the Township of Brick
Permits are issued Monday through Friday, 8 – 4

Thank you,
Chris Winters
Brick Buildings Department
9/20/19

ENGINEERING PERMIT APPLICATION

RECEIVING CLERK: _____

PERMIT #: _____

BLOCK: 831

LOT: 38

ADDRESS: 1639 West Princeton Ave

IDENTIFICATION:

1. WORK SITE ADDRESS: 1639 West Princeton Ave

2. NAME OF OWNER IN FEE: Costagliola, Nicola

ADDRESS: 1639 West Princeton Ave PHONE #: ()

FAX #: ()

3. PRINCIPAL CONTRACTOR: Trinity Solar

ADDRESS: 2211 Allenwood Road PHONE #: (732) 780-3779

Wall, NJ 07719

FAX #: (648) 220-9139

4. ARCHITECT OR ENGINEER: _____

ADDRESS: _____ PHONE: # ()

5. RESPONSIBLE PERSON FOR WORK: _____

ADDRESS: _____

PHONE #: () FAX #: () E-MAIL: _____

PROJECT DESCRIPTION: ☐ GRADING/CLEARING ☐ ROAD OPENING☐ SOIL REMOVAL/FILL ☐ RETAINING WALL ☐ POOL☐ BULKHEAD/DOCK ☐ DWELLING ☐ TREE REMOVAL☐ OTHER Install 7.945kw solar panels on roof. Panels not to exceed

roof peak.

LENGTH: _____ WIDTH: _____ HEIGHT: _____

FEE SUMMARY:

APPLICATION FEE: \$ _____

REVIEW FEE: \$ _____

INSPECTION FEE: \$ _____

OTHER: \$ _____

BOND(S): \$ _____

TOTAL: \$ _____

SPECIAL CONDITIONS:

OCEAN COUNTY SOILS: _____

DRAINAGE EASEMENTS: _____

UTILITY EASEMENTS: _____

CONSERVATION EASEMENTS: _____

FEMA REQUIREMENTS: _____

D.E.P. PERMITS: _____

BOARD APPROVAL: ☐ PB ☐ ZB

APPLICATION NUMBER: _____

APPROVED DATE: _____

ENGINEERING REVIEW:

DATE RECEIVED: _____ DATE REJECTED: _____ DATE APPROVED: _____ INITIALS: _____

0003/003

01/17/2013 THU 11:31 FAX 7322622941 Brick Comm Dev/Land Use

TOWNSHIP OF BRICK

OCEAN COUNTY, NEW JERSEY
401 CHAMBERS BRIDGE ROAD, BRICK, N.J. 08723

John G. Ducey, Mayor

Township Council:

Susan Lydecker - President
Jim Fozman - Vice President
Heather deJong
Bob Moore
Paul Mummolo
Marianna Pontoriero
Andrea Zapcic



Department of Land Use and Community
Development

Division of Land Use & Planning

732-262-1027

Fax: 732-262-2941

www.twp.brick.nj.us

Date: 8/12/19

**ENGINEERING
PLOT PLAN EXEMPT FORM
(ONLY IF NOT IN A FLOOD ZONE)**

Block: 831 Lot: 38

Property Address: 1639 West Princeton Ave

I, Trinity Solar of 2211 Allenwood Road Wall, NJ 07719
(name) (address)

request to be exempt from the plot plan requirement for an addition, fence, shed, deck,
pool, retaining wall, etc. as outlined in the Township Code, Chapter 245, Section 245-29.

Thomas Pollock

Applicant's Signature

The following shall be submitted with this request:

1. Submit surveys locating existing dwelling and proposed addition. Dimensions of the addition should be included.
2. Proof that the property is not located in a Flood Hazard Area.

Note: Prior to approval a site inspection by the Engineering Department will be performed to verify that the proposed addition will not create a drainage problem.

FOR OFFICE USE ONLY

Approved on: _____ Signed: _____

Rejected on: _____ Signed: _____

Comments:

Township of Brick

SOLAR PANEL INSTALL CHECKLIST

REVISED 05/04/16

1. Construction Jacket signed & completed – Front and inside the jacket filled out completely.	Yes <u>X</u>	No <u> </u>
2. Zoning Application completely filled out all sections.	Yes <u>X</u>	No <u> </u>
3. Engineering Application completely filled out all sections.	Yes <u>X</u>	No <u> </u>
4. Four true size surveys to scale showing proposed work	Yes <u>X</u>	No <u> </u>
5. Building Subcode Tech completed	Yes <u>X</u>	No <u> </u>
6. Electrical Subcode Tech completed	Yes <u>X</u>	No <u> </u>
7. Copy of Home Improvement Contractor Registration	Yes <u>X</u>	No <u> </u>
8. Two sets of detailed plans showing actual conditions of each installation signed and sealed by a licensed design professional.	Yes <u>X</u>	No <u> </u>

USEFUL TIPS:

- Electric sub-code form must be signed and sealed by NJ licensed contractor.
- If you are cutting down trees, you will need a grading/clearing permit prior to the removal of the trees.

THIS DOCUMENT IS PRINTED ON WATERMARKED PAPER, WITH A MULTI-COLORED
BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY.

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Board of Exam. of Electrical Contractors

HAS LICENSED

TRINITY HEATING & AIR INC DBA TRINITY SOLAR
CHARLES P BONICKER
2211 Allenwood Road
Wall Township NJ 07719

FOR PRACTICE IN NEW JERSEY AS A(N): Electrical Business Permit

02/28/2018 TO 03/31/2021
VALID

34EB01547400
LICENSE/REGISTRATION/CERTIFICATION #


Signature of Licensee/Registrant/Certificate Holder


ACTING DIRECTOR

NOT AN
ELECTRICIAN'S
OR PLUMBER'S
LICENSE

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs

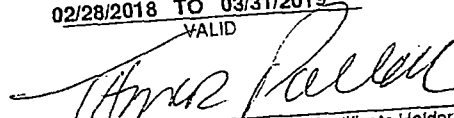
HAS REGISTERED

TRINITY HEATING & AIR, INC.
Tom Pollock
2211 Allenwood Road
Wall NJ 07719

FOR PRACTICE IN NEW JERSEY AS A(N): Home Improvement Contractor

02/28/2018 TO 03/31/2019
VALID

13VH01244300
LICENSE/REGISTRATION/CERTIFICATION #


Signature of Licensee/Registrant/Certificate Holder


ACTING DIRECTOR



Brick Township, NJ
401 Chambers Bridge Rd.
Brick, NJ 08724

RE: Nicola Costagliola
1639 West Princeton Ave
Brick, NJ 08724

NJ Certificate of Authorization 24GA28302300

NJ, Electrical Contractor business permit number 34EB01547400

NJ, HIC reg. # 13VH01244300

For other jurisdictions, please visit: <http://www.trinity-solar.com/about-us/locations-and-licenses>

August 10, 2019

Trinity Solar No.
2019-07-360049

To the Building Official:

The following information constitutes a summary of the relevant design criteria and recommendations for the support of a new photovoltaic [PV] system on the existing roof framing components at the above-referenced location.

Criteria is as follows:

1. Existing roof framing:

Conventional roof framing at Roof R2 is 2x8 at 16 o.c.; existing rafter span= 14' 11"; (horizontal projection)

2. Roof Loading:

- 4.33psf dead load (pounds per square foot - PV panels, mounting rails & hardware)
- 6.3 psf - existing roof loads (2.3 psf - 2x8 framing, 1.5psf roof sheathing, 2.5 psf shingles)
- Ground Snow Load - 20psf - per ATC (Applied Technology Council)
- Wind criteria - Exposure Category B, 122 mph wind equivalent to 23.09psf wind pressure

~~3. Existing Roof modification - none required; existing roof framing is acceptable for PV installation.~~

4. See Installation Drawings Sheet PV-2 for location of roof designations - R2.

The installation, described above, is in general conformance with the manufacturers' specifications and complies with all applicable laws, codes, and ordinances as specified by the International Residential Code/IRS2015 NJ Edition, N.J.A.C. 5:23-3.21 and the NJ Rehabilitation Subcode - N.J.A.C. 5:23-6.

~~The spacing of the mounting brackets cannot exceed a maximum of 48" o.c. between mounting brackets and will be fastened using 5/16" diameter corrosion-resistant steel lag bolts.~~ In order to evenly distribute the load across the roof rafters, there shall be a minimum of 2 mounting brackets per rafter (4" long lag bolts required) and a minimum 2 1/2" penetration (embedment) of all bracket lag bolts beyond the roofing materials; this is adequate to resist all stated live loads above - including wind shear. Per NDS Section 11.1.4, pilot holes not to exceed one-half the diameter of the shank need to be bored into the primary framing members for the full length of the threaded portion of the screw to avoid splitting of the framing member.

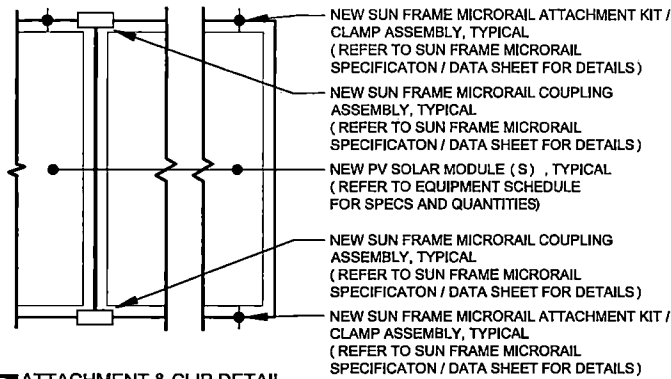
Regards,

Ihor Bojcun, PE
Structural Engineer - Trinity Solar

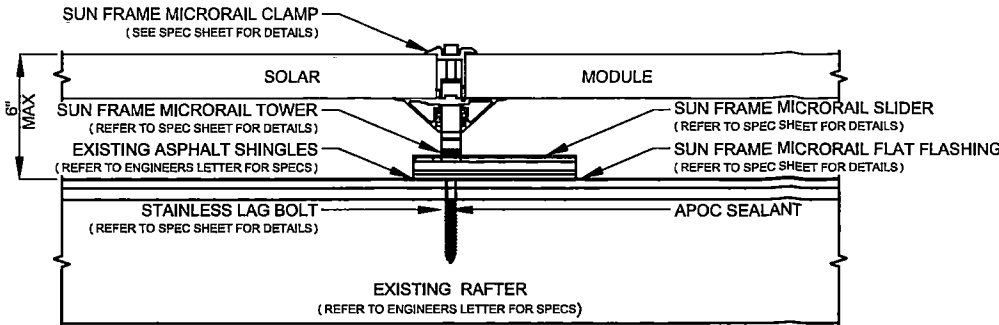
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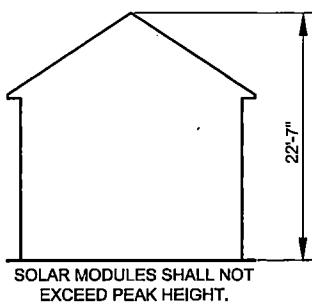
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*DEPICTED MODULES MAY BE PORTRAIT OR LANDSCAPE



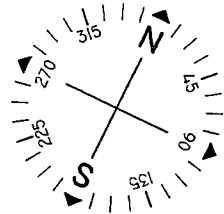
ATTACHMENT & CLIP DETAIL
SCALE: NOT TO SCALE



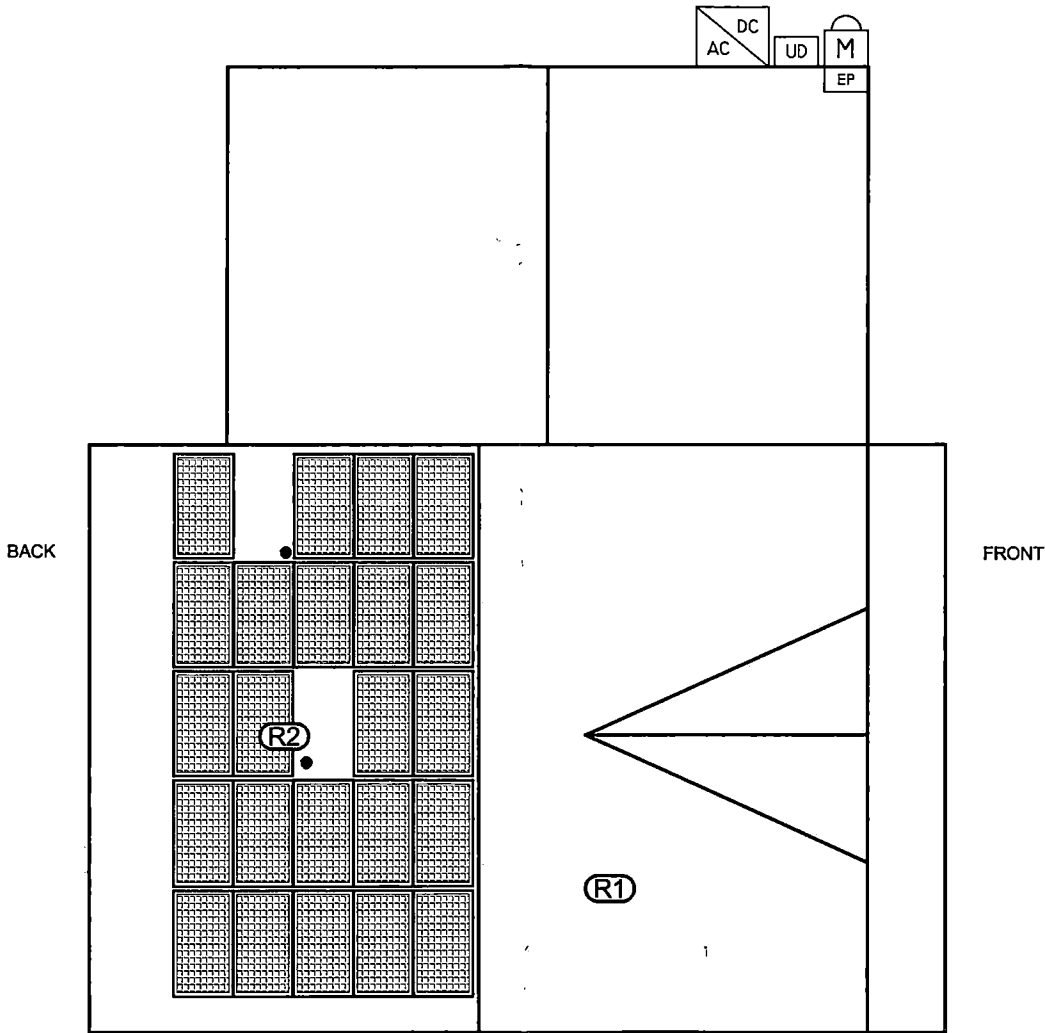
PV MODULE ATTACHMENT ON ASPHALT SHINGLE ROOF
SCALE: NOT TO SCALE



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



ARRAY SCHEDULE



NOTES:

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- 3.) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.
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- 5.) ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING.
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SYMBOL LEGEND

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EP	INDICATES EXISTING ELECTRICAL PANEL LOCATION: INSIDE	P	INDICATES NEW PRODUCTION METER TO BE INSTALLED OUTSIDE.		
D	INDICATES NEW FUSED PV DISCONNECT TO BE INSTALLED INSIDE	DC/AC	INDICATES NEW INVERTER TO BE INSTALLED OUTSIDE. REFER TO EQUIPMENT SCHEDULE FOR SPECS		

PLUMBING SCHEDULE

QTY	SPEC #
23	HANWHA 315 (Q.PEAK DUO BLK-G5 315)
1	SE6000H-US000BNC4
OTHER OBSTRUCTIONS	

EQUIPMENT SCHEDULE

QTY	SPEC #
23	HANWHA 315 (Q.PEAK DUO BLK-G5 315)
1	SE6000H-US000BNC4
OTHER OBSTRUCTIONS	

ROOF 1
MODULES: 0
PITCH: 23°
ORIENTATION: 64°

ROOF 2
MODULES: 23
PITCH: 23°
ORIENTATION: 244

Issued / Revisions

NO.	DESCRIPTION	DATE
P1	ISSUED TO TOWNSHIP FOR PERMIT	8/8/2019

Project Title:

COSTAGLIOLA, NICOLA-
TRINITY ACCT #: 2019-07-360049

Project Address:

1639 WEST PRINCETON AVE
BRICK, NJ 08724
40.075091,-74.136368

Drawing Title:

PROPOSED PV SOLAR SYSTEM

Drawing Information

DRAWING DATE:	8/8/2019
DRAWN BY:	RF
REVISED BY:	

System Information:

DC SYSTEM SIZE:	7.245kW
AC SYSTEM SIZE:	6kW
TOTAL MODULE COUNT:	23
MODULES USED:	HANWHA 315
MODULE SPEC #:	Q.PEAK DUO BLK-G5 315
UTILITY COMPANY:	JCP&L
UTILITY ACCT #:	100136291570
UTILITY METER #:	S323912933
DEAL TYPE:	SUNNOVA

Rev. No.

P1

Sheet

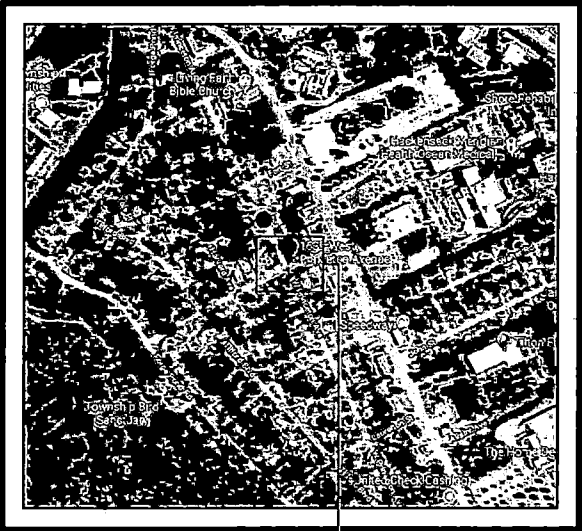
PV - 2



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

INSTALLATION OF NEW
ROOF MOUNTED PV SOLAR SYSTEM
1639 WEST PRINCETON AVE
BRICK, NJ 08724

WEST PRINCETON AVE ●



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-INSTALLATION 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. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DRAWINGS UNTIL REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
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

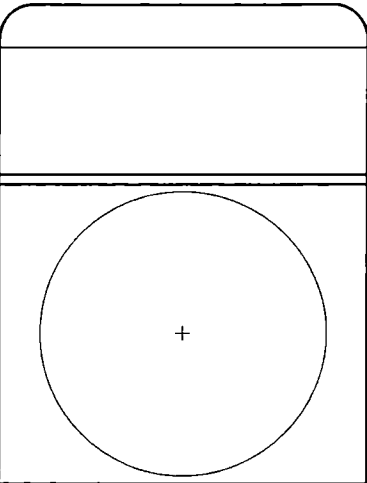
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
KWH	KILO-WATT HOUR
L	LINE
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MTD	MOUNTED
MTG	MOUNTING
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NO #	NUMBER
NTS	NOT TO SCALE
OC	OVER CURRENT 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

TOWNSHIP OF BRICK
RELEASED FOR PERMIT INITIAL DATE
Building Subcode _____
Plumbing Subcode _____
Fire Subcode _____
Electrical Subcode _____
Plan Reviewer _____
Plans Released _____
Construction Official _____

FILE COPY



Issued / Revisions		
P1	ISSUED TO TOWNSHIP FOR PERMIT	8/8/2019
NO.	DESCRIPTION	DATE

Project Title:
COSTAGLIOLA, NICOLA-
TRINITY ACCT #: 2019-07-360049

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BRICK, NJ 08724
40.075091,-74.136368

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PROPOSED PV SOLAR SYSTEM

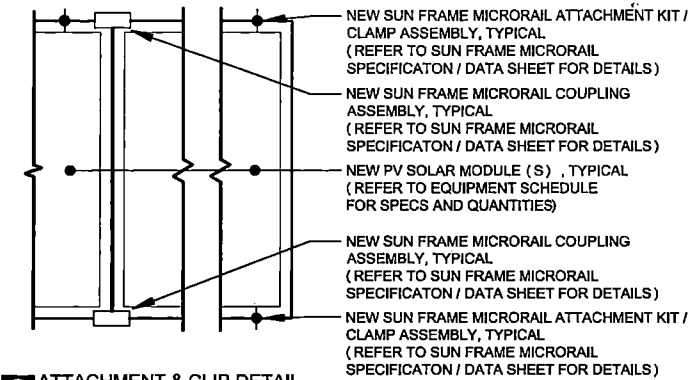
Drawing Information
DRAWING DATE: 8/8/2019
DRAWN BY: RF
REVISED BY:

System Information:
DC SYSTEM SIZE: 7.245kW
AC SYSTEM SIZE: 6kW
TOTAL MODULE COUNT: 23
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MODULE SPEC #: Q.PEAK DUO BLK-G5 315
UTILITY COMPANY: JCP&L
UTILITY ACCT #: 100136291570
UTILITY METER #: S323912933
DEAL TYPE: SUNNOVA

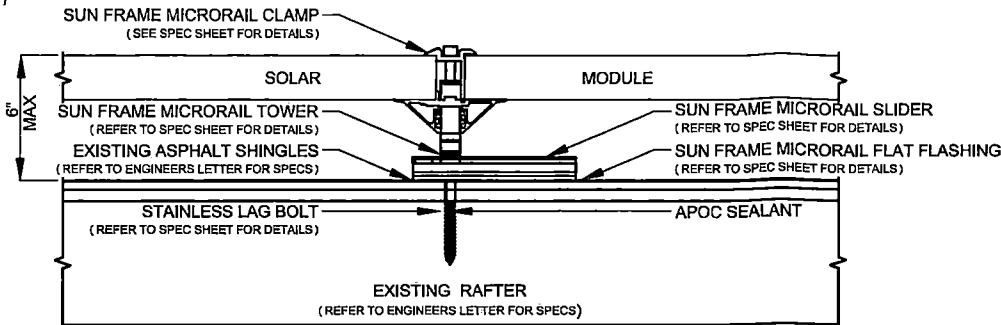
Rev. No.	Sheet
P1	PV - 1



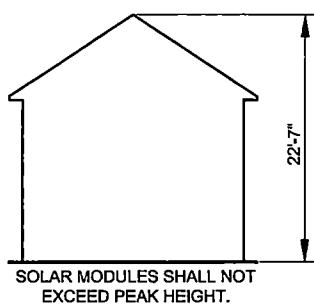
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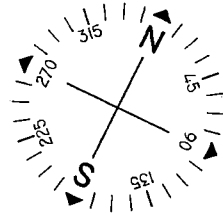
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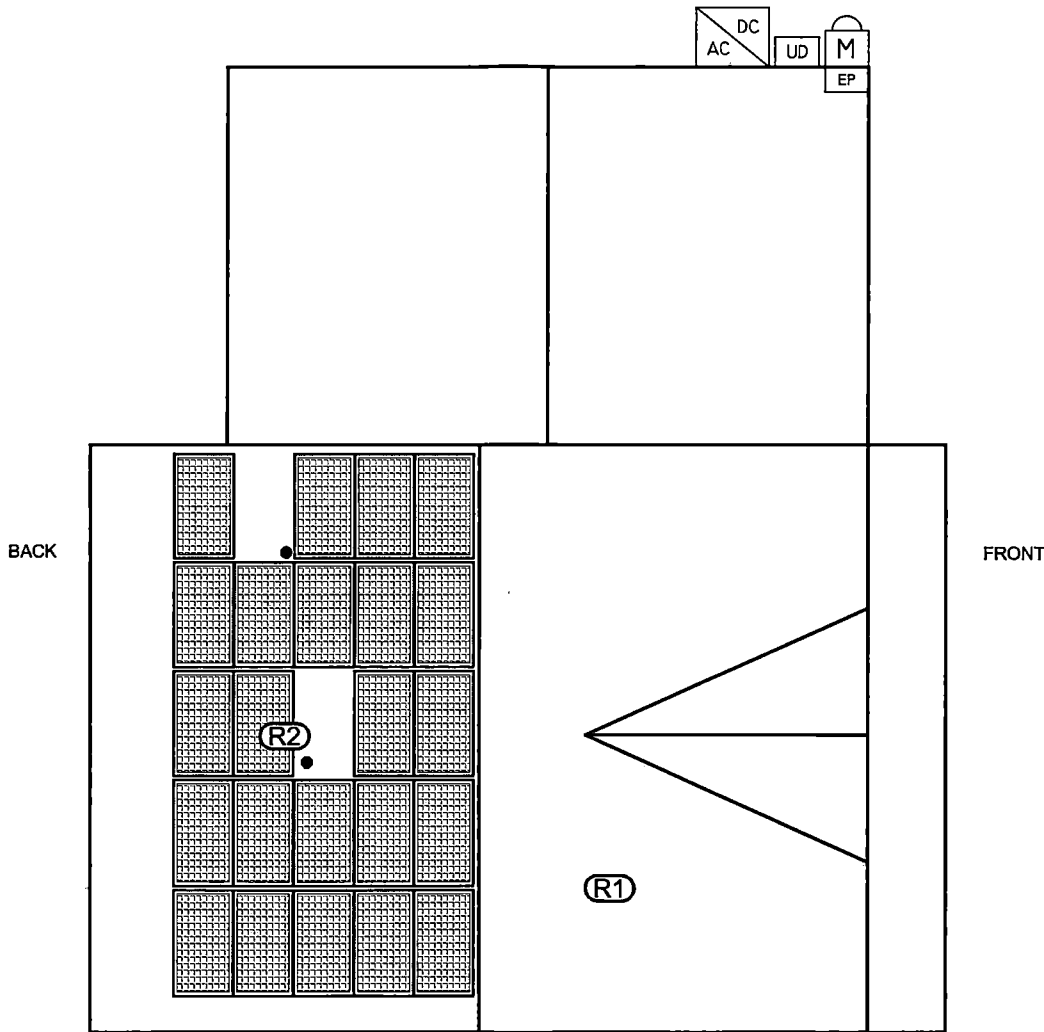
PV MODULE ATTACHMENT ON ASPHALT SHINGLE ROOF
SCALE: NOT TO SCALE



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



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ORIENTATION: 64°

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PITCH: 23°
ORIENTATION: 244

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UTILITY METER #:	S323912933
DEAL TYPE:	SUNNOVA

Rev. No.

P1

Sheet

PV - 2



2211 Allenwood Road
Wall, New Jersey 07719

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

1.) LICENSED ELECTRICIAN ASSUMES ALL RESPONSIBILITY FOR DETERMINING ONSITE CONDITIONS AND EXECUTING INSTALLATION IN ACCORDANCE WITH NEC 2014

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(1) THROUGH (5)

6.) PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO OPERATE WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT AS PER NEC 690.35

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 CARRYING 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.)OVERCURRENT PROTECTION FOR CONDUCTORS
CONNECTED TO THE SUPPLY SIDE OF A SERVICE SHALL BE
LOCATED WITHIN 10' OF THE POINT OF CONNECTION NEC
705.31**

12.) 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(D)(2)(3)(b)

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

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

REQUIRED CONDUCTOR AMPACITY PER STRING
[NEC 690.8(B)(1)]: $(15.00 \times 1.25)1 = 18.75A$

AWG #10, DERATED AMPACITY
 AMBIENT TEMP: 33°C, TEMP DERATING FACTOR: .96
 RACEWAY DERATING = 4 CCC: 0.80
 $(40 \times .96) 0.80 = 30.72A$

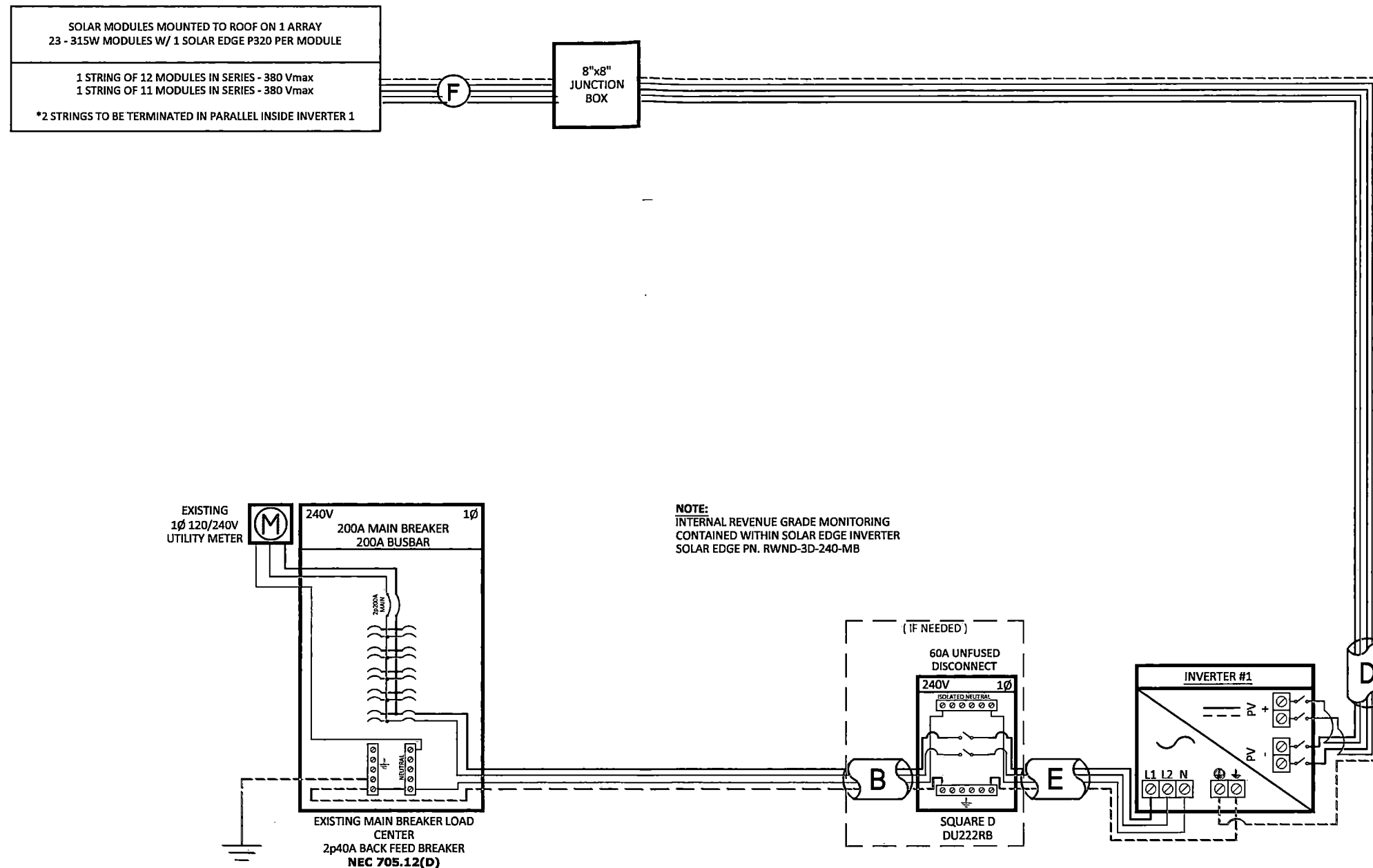
30.72A $\geq$ 18.75A, THEREFORE WIRE SIZE IS VALID

TOTAL AC REQUIRED CONDUCTOR AMPACITY
25.00A*1.25 = 31.25A

AWG #8, DERATED AMPACITY
AMBIENT TEMP: 30°C, TEMP DERATING: 1.0
RACEWAY DERATING ≤ 3 CCC: N/A
55A*1.0 = 55A

55A $\geq$ 31.25A, THEREFORE AC WIRE SIZE IS VALID

CALCULATION FOR PV OVERCURRENT PROTECTION
TOTAL INVERTER CURRENT: 25.00A
 $25.00A \times 1.25 = 31.25A$
→ 40A OVERCURRENT PROTECTION IS VALID



PV MODULE SPECIFICATIONS	
HANWHA 315 (Q,PEAK DUO BLK-G5 315)	
Imp	9.41
Vmp	33.46
Voc	40.29
Isc	9.89

INVERTER #1 - SE6000H-US000BNC4			
DC		AC	
Imp	16.5	Pout	6000
Vmp	380	Imax	25
Voc	480	OCPDmin	31.25
Isc	30	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 GEC TO EXISTING GROUND ROD
B	3/4" CONDUIT W/ 2-#8 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND
C	3/4" CONDUIT W/ 4-#10 THWN-2, 1-#10 THWN-2 GROUND
D	3/4" CONDUIT W/ 4-#10 THWN-2, 1-#10 THWN-2 GROUND
E	3/4" CONDUIT W/ 2-#8 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND
F	#10 PV WIRE (FREE AIR) W/ #6 BARE COPPER BOND TO ARRAY

Issued/Revisions

P1	ISSUED TO TOWNSHIP FOR PERMIT	8/8/2019
NO.	DESCRIPTION	DATE

Project Title:

COSTAGLIOLA, NICOLA-
TRINITY ACCT #: 2019-07-360049

Project Address:

1639 WEST PRINCETON AVE
BRICK, NJ 08724
40.075091,-74.136368

Drawing Title:

PROPOSED PV SOLAR SYSTEM

Drawing Information

DRAWING DATE:	8/8/2019
DRAWN BY:	RF
REVISED BY:	

System Information:

DC SYSTEM SIZE:	7.245kW
AC SYSTEM SIZE:	6kW
TOTAL MODULE COUNT:	23
MODULES USED:	HANWHA 315
MODULE SPEC #:	Q.PEAK DUO BLK-G5 315
UTILITY COMPANY:	JCP&L
UTILITY ACCT #:	100136291570
UTILITY METER #:	S323912933
DEAL TYPE:	SUNNOVA

Rev. No.

P1

Sheet

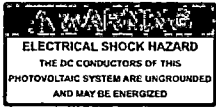
PV - 3)



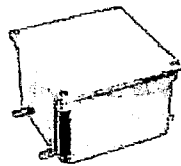
2211 Allenwood Road
Wall, New Jersey 07719

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

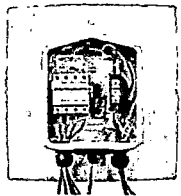
NOTES:
1.) REFER TO SHEET PV-3 FOR SITE SPECIFIC VALUES REQUIRED BY NEC 690
2.) STICKERS, LABELS, AND PLACKARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.



WARNING: PHOTOVOLTAIC
POWER SOURCE



DC Junction Box

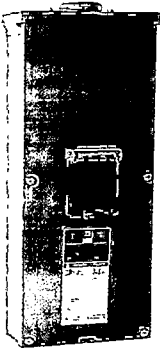
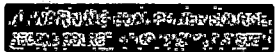


Soladeck



DC Conduit

If Taps



Existing Electrical Service Disconnect

2014 NEC

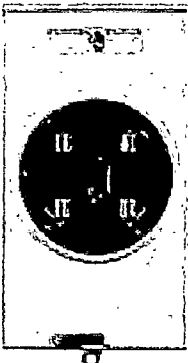
If Taps

MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT



Fusible Photovoltaic
AC Disconnect

CAUTION: SOLAR ELECTRIC
SYSTEM CONNECTED

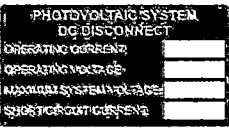


Utility Meter
Socket

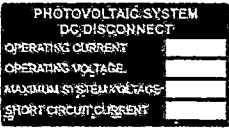
On AC Disconnect
Closest to Inverter

PHOTOVOLTAIC SYSTEM
EQUIPPED WITH
RAPID SHUTDOWN

On DC Disconnect
of Inverter



Inverter(s)



DC Disconnect

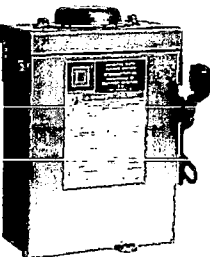
If Taps



If Backfeed Breaker



Main Service Panel



Unfused Photovoltaic
AC Disconnect



Solar Meter Socket

powered by
Q.ANTUM DUO

Q.PEAK DUO BLK-G5 300-320

Q.ANTUM SOLAR MODULE

The new Q.PEAK DUO BLK-G5 solar module from Q CELLS impresses with its outstanding visual appearance and particularly high performance on a small surface thanks to the innovative Q.ANTUM DUO technology. Q.ANTUM's world-record-holding cell concept has now been combined with state-of-the-art circuitry half cells and a six-busbar design, thus achieving outstanding performance under real conditions — both with low-intensity solar radiation as well as on hot, clear summer days.



Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.3%.



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 Tra.Q™.



EXTREME WEATHER RATING
High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa) regarding IEC.

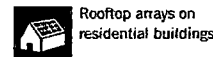


A RELIABLE INVESTMENT
Inclusive 12-year product warranty and 25-year linear performance guarantee².

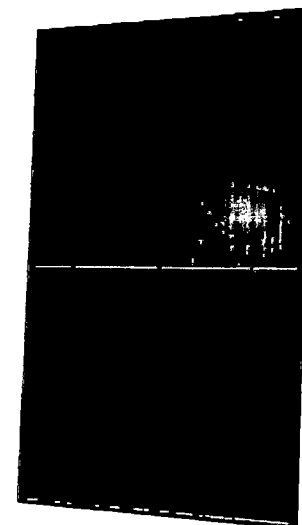


STATE OF THE ART MODULE TECHNOLOGY
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

THE IDEAL SOLUTION FOR:



Engineered in Germany



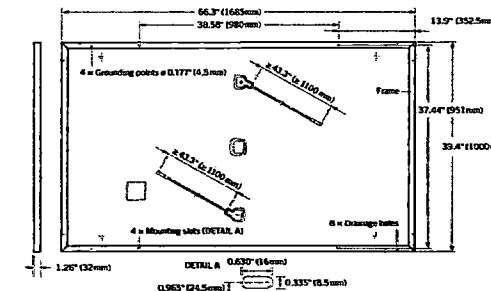
¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)

² See data sheet on rear for further information.

Q CELLS

MECHANICAL SPECIFICATION

Format	66.3 in x 39.4 in x 1.26 in (including frame) (1685 mm x 1000 mm x 32 mm)
Weight	41.2 lbs (18.7 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 x 20 monocrystalline Q.ANTUM solar half-cells
Junction box	2.76-3.35 in x 1.97-2.76 in x 0.51-0.83 in (70-85 mm x 50-70 mm x 13-21 mm), decentralized, IP67
Cable	4 mm ² Solar cable; (+) ≥ 43.3 in (1100 mm), (-) ≥ 43.3 in (1100 mm)
Connector	Multi-Contact MC4, IP65 and IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS				300	305	310	315	320
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5W / -0W)								
Minimum	Power at MPP ²	P _{MPP}	[W]	300	305	310	315	320
	Short Circuit Current*	I _{SC}	[A]	9.72	9.78	9.83	9.89	9.94
	Open Circuit Voltage*	V _{OC}	[V]	39.48	39.75	40.02	40.29	40.56
	Current at MPP*	I _{MPP}	[A]	9.25	9.31	9.36	9.41	9.47
	Voltage at MPP*	V _{MPP}	[V]	32.43	32.78	33.12	33.46	33.80
	Efficiency ²	η	[%]	≥17.8	≥18.1	≥18.4	≥18.7	≥19.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC ³								
Minimum	Power at MPP ²	P _{MPP}	[W]	222.3	226.0	229.7	233.5	237.2
	Short Circuit Current*	I _{SC}	[A]	7.84	7.88	7.93	7.97	8.02
	Open Circuit Voltage*	V _{OC}	[V]	36.93	37.18	37.43	37.69	37.94
	Current at MPP*	I _{MPP}	[A]	7.28	7.32	7.36	7.41	7.45
	Voltage at MPP*	V _{MPP}	[V]	30.55	30.88	31.20	31.52	31.84

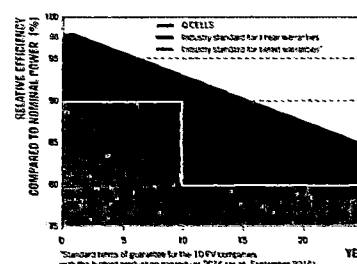
¹ 1000 W/m², 25°C, spectrum AM 1.5G

² Measurement tolerances STC ± 3%; NOC ± 5%

³ 800 W/m², NOCT, spectrum AM 1.5G

* typical values, actual values may differ

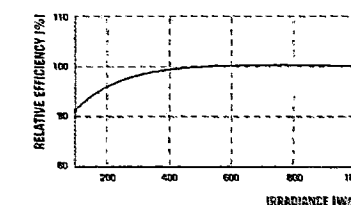
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year.
Thereafter max. 0.54% degradation per year.
At least 93.1% of nominal power up to 10 years.
At least 85% of nominal power up to 25 years.

All data within measurement tolerances.
Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.28
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.37	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 1000 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL) ²	[lbs/ft ²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40°F up to +185°F (-40°C up to +85°C)
Design load, pull (UL) ²	[lbs/ft ²]	55.6 (2666 Pa)	² see installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703; VDE Quality Tested; CE-compliant;
IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A



PACKAGING INFORMATION

Number of Modules per Pallet	32
Number of Pallets per 53' Trailer	30
Number of Pallets per 40' High Cube Container	26
Pallet Dimensions (L x W x H)	69.3 in x 45.3 in x 46.9 in (1760 mm x 1150 mm x 1190 mm)
Pallet Weight	1415 lbs (642 kg)

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

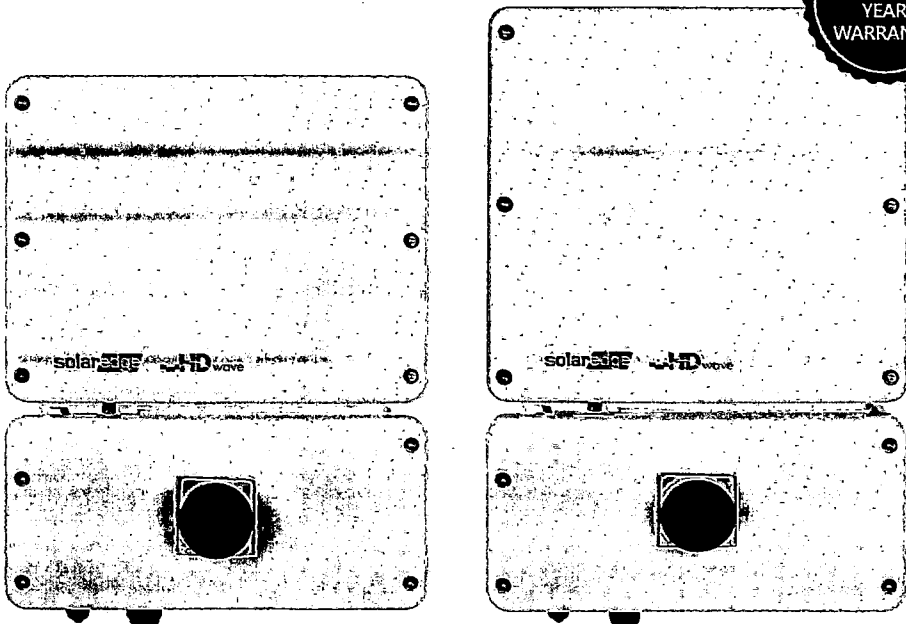
Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

Specifications subject to technical changes © Hanwha Q CELLS Q.PEAK DUO BLK-G5_300-320_2017-11_Rev01_NA

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US



Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

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solaredge

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 ^{Hz}							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, adjustable -0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V ¹	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V ²	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k Ω Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

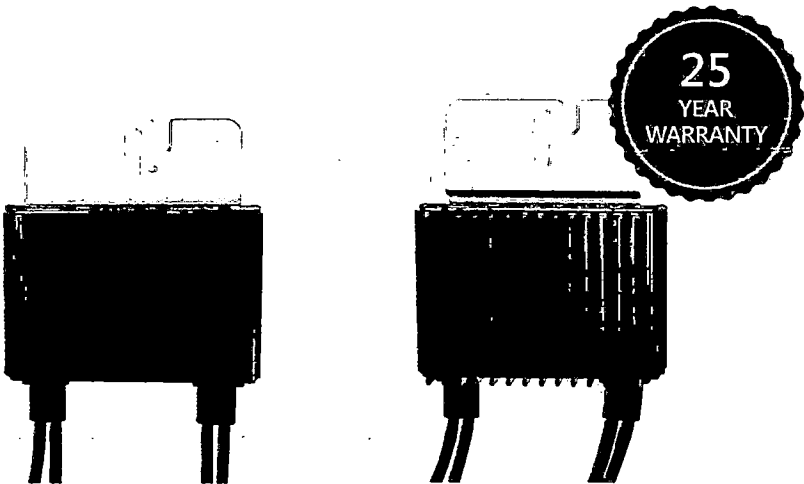
¹ For other regions' settings please contact SolarEdge support

² A higher current source may be used; the inverter will limit its input current to the values stated

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

For North America

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)
---	-------------------------------	--	---	------------------------------------	---------------------------------	--------------------------------------

INPUT							
Rated Input DC Power ¹	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 ²	83 ³	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8					98.6	%
Overvoltage Category	II						

OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60				85		Vdc

OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)							
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc

STANDARD COMPLIANCE							
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3						
Safety	IEC62109-1 (class II safety), UL1741						
RoHS	Yes						

INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage	1000					Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in	
Weight (including cables)	630 / 1.4	750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb	
Input Connector	MC4 ⁴					
Output Wire Type / Connector	Double Insulated; MC4					
Output Wire Length	0.95 / 3.0	1.2 / 3.9			m / ft	
Input Wire Length	0.16 / 0.52					m / ft
Operating Temperature Range	-40 - +85 / -40 - +185					°C / °F
Protection Rating	IP68 / NEMA6P					
Relative Humidity	0 - 100					%

¹ - Rated STC power of the module. Module of up to +5% power tolerance allowed
² - NEC 2017 requires max input voltage be not more than 80V
³ - For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter ⁽⁴⁾⁽⁵⁾		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8		10	18	
	P405 / P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50 ⁶	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁷	12750 ⁸	W
Parallel Strings of Different Lengths or Orientations		Yes				

⁽⁴⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
⁽⁵⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
⁽⁶⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
⁽⁷⁾ For SE14.4KUS/SE43.2KUS: it is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W
⁽⁸⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: it is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W

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CE RoHS



POWER DISTRIBUTION

BUG-BITES™

Insulation Piercing Connectors

Eliminates need for conductor insulation stripping

No taping required after installation

For copper to copper, copper to aluminum, or aluminum to aluminum applications

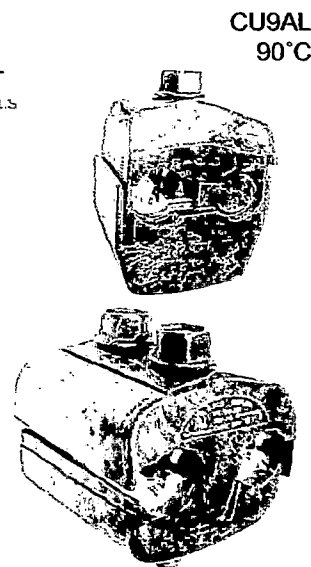
For use on insulated conductor only

IPC SERIES

NAED NUMBER	CATALOG NUMBER	WIRE RANGE		VOLTS	BOLTS	TORQUE FT-LBS	CTN QTY	EST. SHIPPING	
		MAIN	TAP					WEIGHT (lbs)	UNIT
13110	IPC 1002	1/0 - 8	2 - 8	300	1	16	12	2.63	CTN
13107	*IPC 4006	4/0 - 4	6 - 14	600	1	13	12	1.90	CTN
13108	*IPC 4020	4/0 - 2	2/0 - 6	600	1	25	12	4.08	CTN
13109	*IPC 2540	250 - 1	4/0 - 6	600	1	30	6	4.17	CTN
13113	IPC 3540	350 - 4/0	4/0 - 10	300	1	25	6	4.17	CTN
13114	IPC 3535	350 - 4/0	350 - 4/0	300	2	25	6	7.63	CTN
13116	†IPC 5012	500 - 250	10 - 12	300	1	25	4	2.85	CTN
13104	*IPC 5025	500 - 250	250 - 4	600	1	55	4	4.06	CTN
13105	*IPC 5050	500 - 300	500 - 250	600	1	75	1	2.64	EA
13106	*IPC 7550	750 - 500	500 - 350	600	1	75	1	2.62	EA

*600 Volts, balance 300 Volts (for 480V grounded Y systems)

† Not CSA certified



CU9AL
90°C

CAUTION
Use Bug-Bites on
insulated cable only!
Do not install on bare cable.

GUTTER TAP CONNECTORS

High strength aluminum alloy 6061-T6, tin-plated

Lay-in designed main conductor remains continuous

Tap parallel or perpendicular to main

GP SERIES

NAED NUMBER	CATALOG NUMBER	CONDUCTOR RANGE		APPROX. DIMENSIONS (IN)			CTN QTY	EST. SHIPPING	
		MAIN	TAP	H	W	L		WEIGHT (lbs)	UNIT
13117	GP 2*	2 - 12	4 - 12 SOL	7/8	5/8	1 ³ / ₁₆	24	1.43	CTN
13118	GP 10	1/0 - 2	1/0 - 12 SOL	1	3/4	1 ¹ / ₄	12	1.19	CTN
13119	GP 250	250 - 1/0	250 - 6	1 ¹ / ₁₆	1 ¹ / ₁₆	2 ¹ / ₁₆	12	2.54	CTN
13121	GP 350	350 - 4/0	350 - 6	1 ⁷ / ₁₆	1 ¹ / ₄	2 ¹ / ₁₆	6	2.75	CTN
13122	GP 500	500 - 350	500 - 2	1 ¹ / ₄	1 ¹ / ₄	3 ¹ / ₁₆	6	3.10	CTN
13123	GP 750	750 - 500	500 - 2	2	1 ¹ / ₂	3 ³ / ₁₆	3	2.5	CTN

*GP2 has slotted screws.

Oxide-inhibitor is recommended for added corrosion protection.

Snap-on insulating covers for use with GP connectors

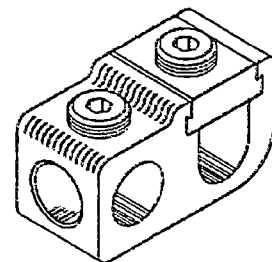
GPC SERIES

NAED NUMBER	CATALOG NUMBER	FOR USE WITH CONNECTOR	COLOR	APPROX. DIMENSIONS (IN)			CTN QTY	EST. SHIPPING	
				H	W	L		WEIGHT (lbs)	UNIT
13137	GPC 2	GP2	YELLOW	1 ¹ / ₁₆	1 ² / ₁₆	1 ¹ / ₃₂	12	0.46	CTN
13138	GPC 10	GP1/0	GRAY	1 ¹ / ₄	2 ¹ / ₃₂	2 ¹ / ₁₆	6	0.36	CTN
13140	GPC 250	GP250	RED	1 ¹ / ₁₆	2 ¹ / ₁₆	3 ¹ / ₁₆	6	0.40	CTN
13141	GPC 350	GP350	YELLOW	1 ¹ / ₄	3 ¹ / ₁₆	3 ¹ / ₄	3	0.42	CTN
13142	GPC 500	GP500	BLUE	2 ¹ / ₃₂	3 ¹ / ₁₆	4 ¹ / ₁₆	3	0.46	CTN
13134	GPC 750	GP750	ORANGE	2 ¹ / ₃₂	3 ¹ / ₁₆	4 ¹ / ₁₆	3	0.65	CTN



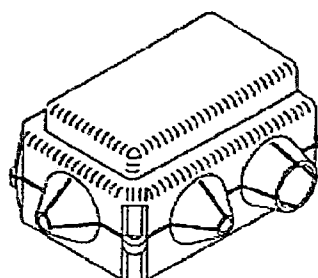
Dual-Rated

CU9AL
600V 90°C



For copper-to-copper,
copper-to-aluminum,
aluminum-to-aluminum

600V 90°C
For indoor use only

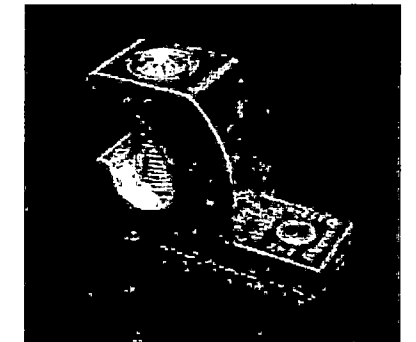


Grounding Connectors

TYPE: LI Lay-In Connector

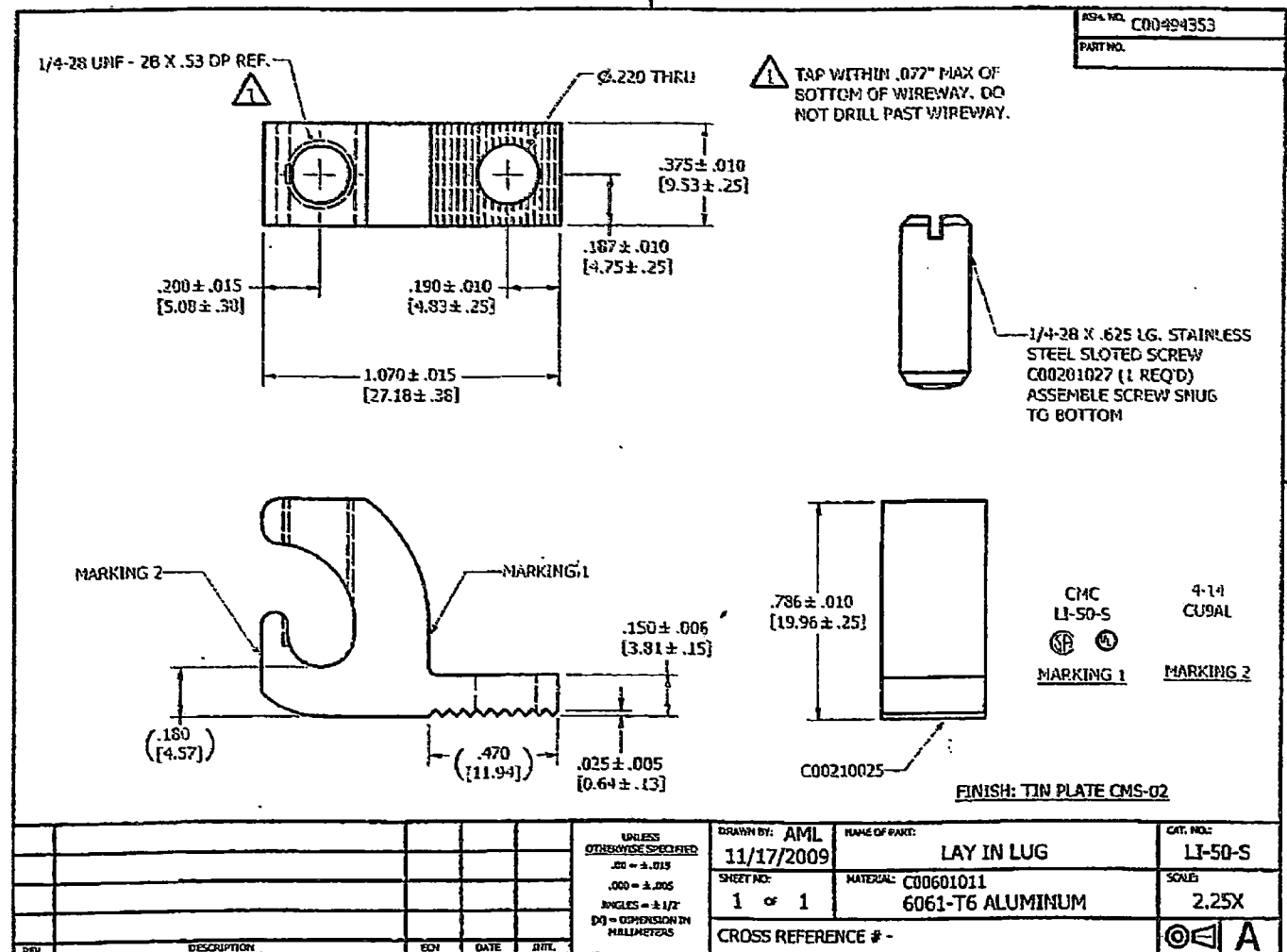


CMC® LI-S ground connectors are manufactured from high strength 6061-T6 aluminum alloy to insure both maximum strength and conductivity. They are dual rated for both copper and aluminum conductors and are electro tin plated to provide low contact resistance and protection against corrosion. They are designed for use on conduit grounding bushings. The open-faced design allows the installer to quickly lay-in the grounding conductor as a jumper to multiple conduits with no break in the ground conductor.



90°C RATING (486B LISTED)

Catalog Number	Fig. No.	Cond. Range AWG	Stud Size*	Dimensions, Inches		
				H	W	L
LI-50S	1	4 - 14	0.22	0.78	0.38	1.07
LI-112S	1	1/0 - 14	0.27	1.17	0.6	1.5
LI-200S	2	3/0 - 6	0.33	1.56	0.8	2
LI-252S	2	250 - 6	0.33	1.79	0.8	2.2



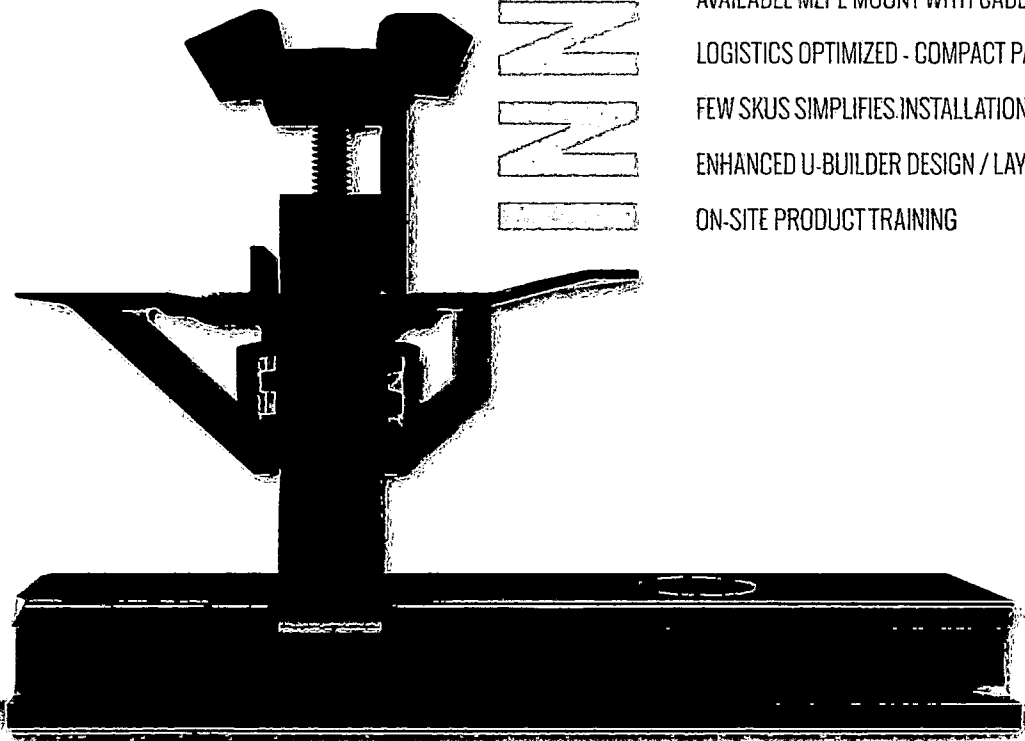
www.greaves-usa.com

11 Heritage Park, Clinton, CT 06413 • Phone 860-664-4505 • Fax 860-664-4546
TOLL FREE 1-800-243-1130 (Outside CT)

SUNFRAME MICRORAIL ■■ UNIRAC

SUNFRAME MICRORAIL™ (SFM) is a hybrid racking system including a structural front Trimrail™ for fastest array alignment and superior aesthetics. Minimize total labor with pre-assembled parts, integrated bonding hardware and one tool installation. Compact packaging with few SKUs lowers logistics costs from the warehouse to the roof. Patented mounting components provide post-install height adjustment and allow for removal of individual panels for maintenance.

INNOVATION



LESS RAIL, MORE PERFORMANCE

INDUSTRY LEADING FEATURES

- STRUCTURAL FRONT TRIMRAIL
- FASTEST ARRAY ALIGNMENT & SUPERIOR AESTHETICS
- POST-INSTALL HEIGHT ADJUSTMENT
- LEVEL MODULES ANYTIME DURING INSTALLATION
- SINGLE MODULE ACCESS
- REMOVE SINGLE PANELS FOR ARRAY MAINTENANCE
- SINGLE TOOL INSTALLATION
- QUICK & EASY ARRAY ALIGNMENT
- TRIMRAIL WITH SEAMLESS MODULE MOUNTING
- MIXED ARRAYS - PORTRAIT & LANDSCAPE ORIENTATION
- AVAILABLE MLPE MOUNT WITH CABLE MANAGEMENT
- LOGISTICS OPTIMIZED - COMPACT PACKAGING
- FEW SKUS SIMPLIFIES INSTALLATION
- ENHANCED U-BUILDER DESIGN / LAYOUT TOOL
- ON-SITE PRODUCT TRAINING

SUNFRAME MICRORAIL ■■ UNIRAC

LESS RAIL, MORE PERFORMANCE SOLAR SHOULD BE SIMPLE

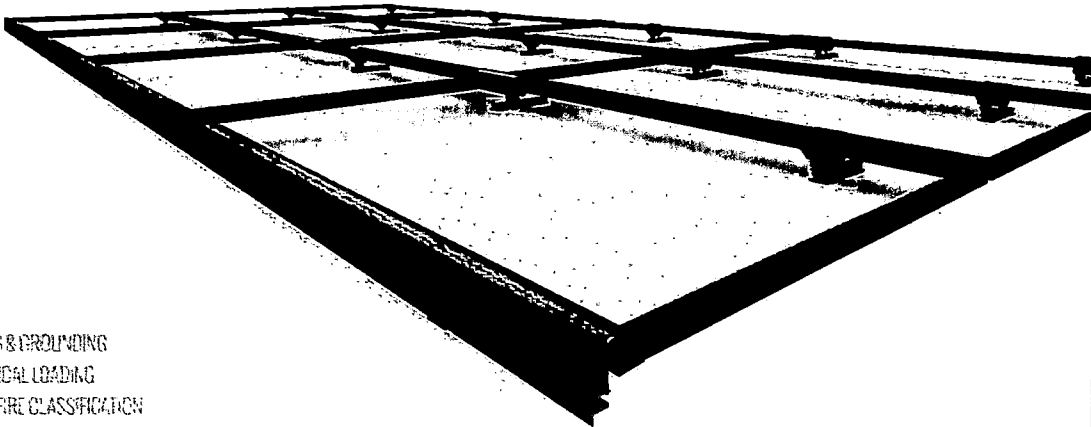
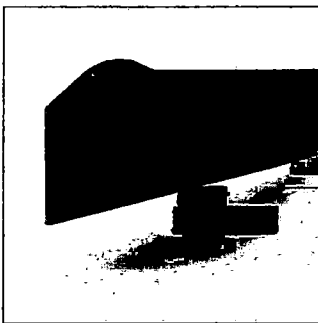
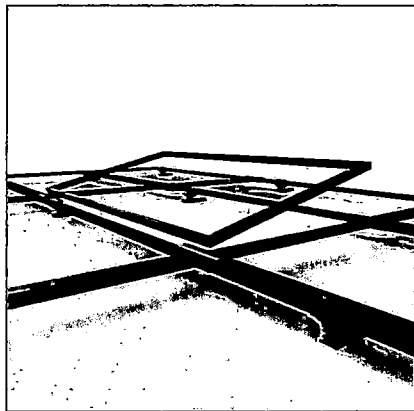
No unique module type or frame required for installation
Accommodates the most common frame heights: 32mm, 35mm, 40mm & 46mm

Design around the roof, not the racking: Portrait, Landscape or Mixed module orientation
Maximize power on the roof, install up to 25% more with modules in landscape orientation

UL2703 Listed. Accommodate the most stringent AHJ requirements
Stagger roof attachments & use attached splice for extra strength and flexibility
Lose All the Copper and Lugs. Bonding and grounding thru Enphase M215 & M250 Microinverters

Full wire management solution allows pre-management of wires before module installation
Engage Wire Management Clip. MLPE Mount & Heyco Dual PV wire trunk cable clips

Small components, Compact packaging & Pre-assembled parts
A third less volume than traditional racking. Fit several jobs-worth of racking on a single truck



LISTED **UL2703** BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM WIRE CLASSIFICATION

COLLABORATION WITH INDUSTRY LEADING INSTALLERS - FIELD TESTED & VERIFIED

Technical Specifications	
Materials	All extruded components: 6005A-T61 or 6061-T6 Aluminum
Hardware	Passivated Stainless Steel
Adjustability	1" vertical post-install height adjustment 6" north-south adjustability mount anywhere along east-west edges of modules
Spans and Cantilevers	See Design and Installation guide for span and cantilever tables
Flashing	Uses industry standard flashing technologies and tested to UL441 Rain Test
Certifications	
Grounding/Bonding	UL2703 - see installation manual for specific module approvals
Mechanical Load	UL2703 - Tested to standard module capacities, see installation module list and design load ratings
Fire Resistance	UL2703 - Class A, B and C Type 1 and Type 2 modules Landscape and Portrait Orientations

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT IN THE RACKING INDUSTRY