BLOCK 9606 LOT 17 QUALIFICATION CODE _____ ADDRESS (SITE) 553 Nicholas Rd PERMIT NO. 17-3632

CONSTRUCTION PERMIT APPLICATION

C-17-004498

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

I. IDENTIFICATION

1. Proposed Work Site at: 553 Nicholas Rd BRICK NJ
2. Name of Owner in Fee: Gurto Residence
   Tel. ( ) e-mail
   Address 553 Nicholas Rd (street) BRICK (municipality) 08724 (zip code)
3. Ownership in Fee: Public _____ Private X
4. Principal Contractor: **Reliable Power & Solar** Tel. (732) 367-1166
   Address **1085 Route 9** e-mail solardesign@getrpsnow.com
   Howell, NJ 07731
   License No. OR, if new home, Builder Reg. No. **11223B** Exp. Date 3/31/18
   Home Improvement Contractor Registration No. or Exemption Reason (if applicable): **13VHO5266200**
   Federal Emp. ID No. **16-1732531** FAX: (732) 942-3979
5. Architect or Engineer Cirangle Architects Contact LARRY
   Address 14 Plaza Nine Manalapan NJ e-mail
   Tel. (732) 303-7822 FAX: ( )
6. Responsible Person in Charge once Work has Begun **Chris DiPasquale**
   Tel. (732) 367-1166 FAX: (732) 942-3979

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$ 375		
2. Electrical	225		
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee	117		
10. Subtotal	2 $ 75		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$ 792		

VI. BUILDING/SITE CHARACTERISTICS (office use only)

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area — Largest Floor _____ sq. ft.
4. New Building Area 26.1 kw 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. 8 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

Solar panels

IIb. SUBCODES (Check all that apply)

FOR OFFICE USE ONLY (Optional)

	Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Resubmission Dates Rejection	Re-viewer
☒ Building	7493.76	MFF	10/11/17		10-17-17	[illegible]			
☒ Electrical	54456.26				10/24/17	PJK			
☐ Plumbing									
☐ Fire Protection									
☐ Elevator									
TOTAL COST	61,950								

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

Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued	1/25/2018
Control Number	C-17-004498
Permit Number	17-3632
Permit Issue Date	10/31/2017
Certificate Number	17-3632

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 553 NICHOLAS RD. Brick Township, NJ Block: 966 Lot: 17 Qual:

Owner in Fee: GURTO, NATHON

Owner Address: 553 NICHOLAS RD BRICK NJ 08724

Telephone:

Contractor Reliable Power & Solar, Inc.

Address 1085 Route 9 Howell NJ 07731

Telephone: (732) 367-1166 Fax: (732) 942-3979

License Number or Builders Registration Number: 11223B 13VH05266200 Federal Emp. Number: 16-1732531

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 26.1 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:

David J. Newman Jr

Construction Official

Fee: $0.00
Check Number:
Collected By:

OFFICE USE ONLY

RECEIVED
OCT 13 2017
ZONING

ZONING REVIEW:

DATE REVIEWED: 10/13/17 DATE DENIED: — DATE APPROVED: 10/13/17 INTLS: SGR

DATE:	COMMENTS:	INITIALS:
10/13/17	SENT TO Owm	SGR

RECEIVING CLERK _____
DATE REC'D _____

ZONING PERMIT APPLICATION

PERMIT # 27-17-01337
DATE ISSUED 10/31/17

BLOCK: 9606 LOT: 17 QUALIFIER: — SITE ADDRESS: 533 Nicholas Rd

IDENTIFICATION:

1. NAME OF OWNER IN FEE: Gurto Residence
COMPLETE ADDRESS: 533 Nicholas Rd
Brick NJ 08724
PHONE # — EMAIL: —

2. NAME OF APPLICANT: Reliable Power & Solar
APPLICANT ADDRESS: 1085 Rt 9
Howell NJ 07731
PHONE # 732-367-1166 EMAIL: Solardesign@getRPSnow.com

3. RESPONSIBLE PERSON FOR WORK: Chris DiPasquale
PHONE# 732-367-1166 FAX# 732-942-3979

4. SIGNATURE OF APPLICANT: [signature]

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: $ 75-
OTHER: $
TOTAL: $ 75-

REQUIRED BY APPLICANT

RESIDENTIAL: ✓
COMMERCIAL: _____
EXISTING USE: SFR
PROPOSED USE: SFR

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 _____ MATERIAL _____

HEIGHT: _____ (*IF APPLICABLE)

OTHER Rooftop mounted solar panel system

DESCRIPTION: Rail/Rack mount

ZONING REVIEW:
DATE REVIEWED: 10-11-17 DATE DENIED: _____ DATE APPROVED: 10-11-17 INTLS: [illegible]

(SEE BACK PAGE)

CONSTRUCTION PERMIT

Date Issued 10/31/17
Control # C-17-004498
Permit # 17-3632

IDENTIFICATION Block: 966 Lot: 17 Qualifier
Work Site Location: 553 NICHOLAS RD. Brick Township, NJ
Contractor Reliable Power & Solar, Inc.
Address 1085 Route 9 Howell NJ 07731
Owner in Fee GURTO, NATHON
553 NICHOLAS RD. BRICK NJ 08724
Telephone: (732) 367-1166
Lic. No. or Bldrs. Reg. No. 13VH05266200 11223B 13VH05266200
Telephone:
Federal Employee. No. 16-1732531

Is hereby granted permission to perform the following work:

- [x] BUILDING
- [ ] PLUMBING
- [ ] LEAD HAZARD ABATEMENT
- [x] ELECTRICAL
- [ ] FIRE PROTECTION
- [ ] DEMOLITION
- [ ] ELEVATOR DEVICES
- [ ] ASBESTOS ABATEMENT (Subchapter 8 only)
- [ ] OTHER

DESCRIPTION OF WORK:
SOLAR PANELS ...INSTALL 26.1 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

PAYMENTS (Office Use Only)

Building	$375
Electrical	$225
Plumbing	$0
Fire Protection	$0
Elevator Devices	$0
Other	$0.00
DCA Training Fee	$117
CO Fee	
Other	$0
Total	$717
Check No.	1565
Cash	$0
Credit	$0
Collected By	Cw

+75
$792.

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 $61,949

D. Newman Jr. 10/26/17
Construction Official Date

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

1 WHITE - INSPECTOR 2 CANARY - OFFICE 3 PINK - TAX ASSESSOR 4 GOLD - APPLICANT

10/31/17 00155843638
XXX3 SERU 003
13632
BUILDING $375.00
ELECTRIC $225.00
DCA $117.00
CO $75.00
CHECK $792.00

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.

- [x] 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:

- [x] 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".

- [x] A complete copy of released plans must be kept on the job site.

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

OFFICE USE ONLY

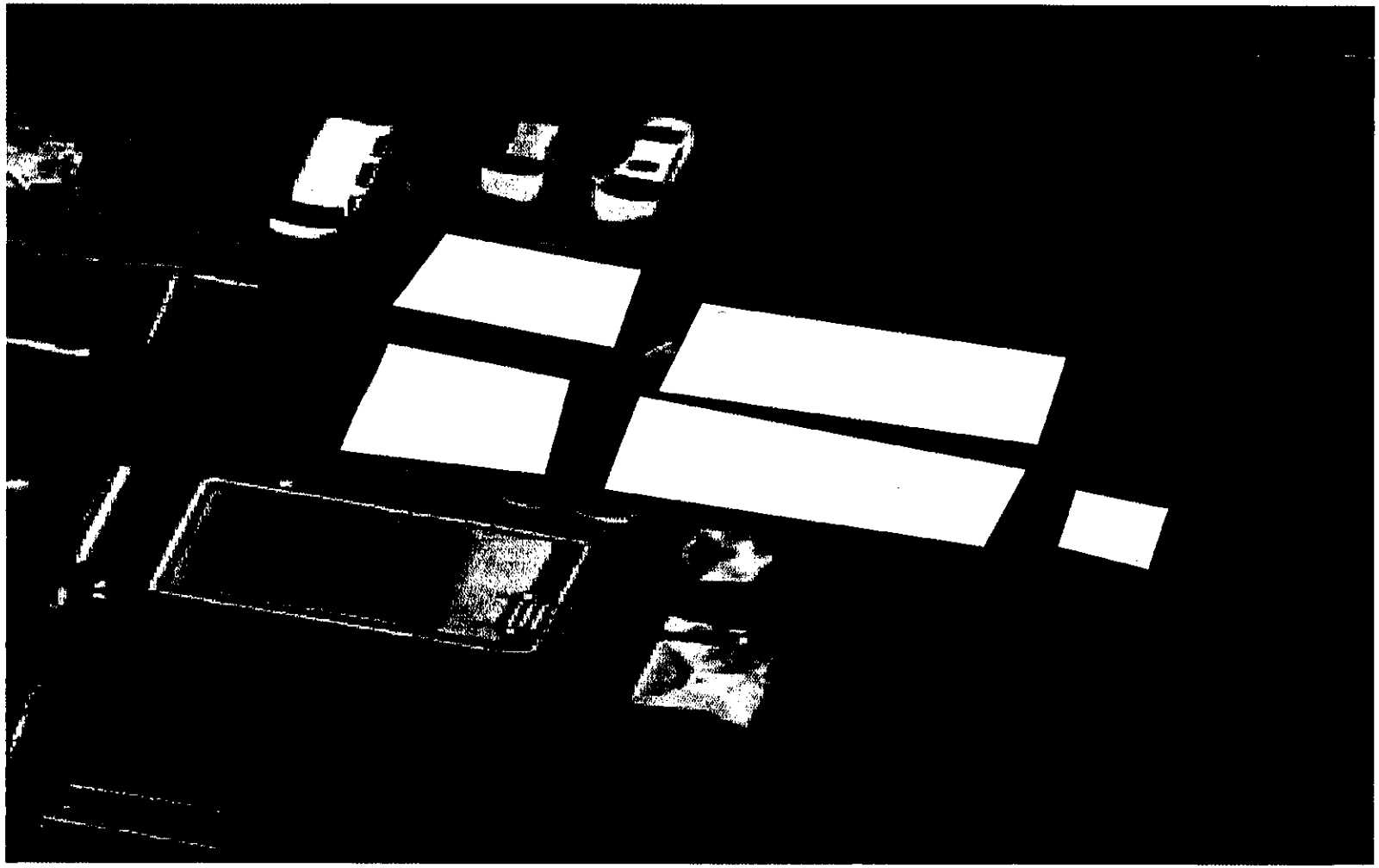
RECEIVED
OCT 13 2017
ZONING

ZONING REVIEW:

DATE REVIEWED: 10/13/17 DATE DENIED: — DATE APPROVED: 10/13/17 INTLS: SGR

DATE:	COMMENTS:	INITIALS:
10/13/17	SENT TO Owen	SGR

Gurto Residence
533 Nicholas Road
Brick, NJ 08724



ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received 10/31/17
Control #
Date Issued
Permit # 17-3632

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

Block 9606 Lot 17 Qualification Code

Work Site Location 553 Nicholas Rd
Brick NJ 08724

Owner in Fee Gurto Residence

Address 553 Nicholas Rd
BRICK NJ 08724

Tel (—)

Contractor Reliable Power & Solar

Address 1085 Rt 9
Howell, NJ 07731

Tel (732) 367-1166 FAX (732) 942-3979

Contractor License No. 13VH05266200

Federal Emp. No. 16-1732531

B. ELECTRICAL CHARACTERISTICS

Use Group Present Proposed

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

Building Occupied as Utility Co. JCP&L

Est. Cost of Elec. Work $ 54,456.26

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 and perform the work listed on this application.

Applicant's Signature/Contractor Stamp and Signature Louis D. Pasquale

[✓] Licensed Elec. Contractor [ ] Certified Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
~~90~~	~~290w~~	~~Switches~~ ~~Solar Panels~~	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
1		26.1 Kw size	
		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	
		KW Transformer/Generator	
4	~~200~~	AMP ~~Service~~ ~~Net Meter~~	
1	~~100~~	AMP Subpanels Disconnect	
1	~~100~~	AMP ~~Motor Control Center~~	
		KW Elec. Sign/Outline Light	
2	SE10,000 - SolarEdge Inverters		
	10		

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

JOB SUMMARY (Office Use Only)

PLAN REVIEW — Date — Initial

[ ] No Plans Required

Joint Plan Review Required:
[ ] Building [ ] Plumbing
[ ] Fire [ ] Elevator
[✓] Elec. Plans Approved

Date: 10/25/17
Approved by:

SUBCODE APPROVAL
[ ] CO [ ] CCO [✓] CA

Date: 1/22/18
Approved by:

INSPECTIONS Type:	Failure	Failure	Approval	Initial
Rough Solar			12-8-17	
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final			1-19-18	
Barrier-Free				

Dates (Month/Day)

Temp. Cut-in-Card Date Issued
Final Cut-in-Card Date Issued
Annual Pool Inspection
Date of Grounding and Bonding Certification

U.C.C. F120 (rev. 07/03) 1 White = Inspector Copy 2 Canary = Office Copy 3 Pink = Office Copy 4 Gold = Applicant Copy

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 **Reliable Power & Solar**
Address **1085 Route 9**
Howell, NJ 07731
Telephone **732 367-1166**
Signature _____

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

IV. ( ) HOME ELEVATION: Include Home Elevation Contractor Certification as per N.J.S.A. 52:27D-123.16.

BUILDING SUBCODE
TECHNICAL SECTION

Date Received 10/31/17
Control # 17-3632
Date Issued
Permit #

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

Block 966 Lot 17 Qualification Code
Work Site Location 533 Nicholas Rd
Brick NJ
Owner in Fee: Gurto Residence
Address 533 Nicholas Rd
Brick NJ 08724
Tel. (—) —
Contractor Reliable Power & Solar
Address 1085 Rt 9, Howell, NJ 07731
Tel. (732) 367-1166 FAX: (732) 942-3979
Contractor License No. or Builder Registration No. 13VH05266200
Federal Emp. No. 16-1732531

C. CERTIFICATION (LIEN OR OATH)
I hereby certify that I am the owner of record and the applicant for this application.
Signature: Chris Gurto

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
Installation of pre-engineered solar racking system to accommodate photovoltaic modules.
See drawings enclosed.

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required		
[✓] All	10-19-17	
[ ] Footing		
[ ] Foundation		
[ ] Frame		
[ ] Other		

Subcode ~~Joint~~ Plan Review ~~Required~~ Appl.: 10/20/17
[ ] Elec. [ ] Plumb. [ ] Fire [ ] Elevator

SUBCODE APPROVAL
[ ] CO [ ] CCO [✓] CA
Date: 01/19/18
Approved by:

INSPECTIONS Type:	Failure	Dates (Month/Day) Failure	Approval	Initial
Footing				
Footing Bonding				
Foundation				
Slab				
Frame				
Truss Sys./Bracing				
Barrier-Free				
Insulation				
Finishes -Base Layer				
Finishes -Final				
Energy				
Mechanical				
TCO				
Other				
Final			1-19-18	
Barrier-Free				

TYPE OF WORK:
[ ] New Building
[ ] Addition
[ ] Rehabilitation
[ ] Roofing
[ ] Siding
[ ] Fence _____ Height (exceeds 6')
[ ] Sign _____ Sq. Ft.
[ ] Pool
[ ] Asbestos Abatement Subchapter 8
[ ] Lead Haz. Abatement NJAC 5:17
[X] Other Photovoltaic System Install
[ ] Demolition

FEE (Office Use Only)
$

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

B. BUILDING CHARACTERISTICS

Use Group Present Proposed
Constr. Class Present Proposed
No. of Stories 2
Height of Structure 24 ft Ft.
Area — Largest Floor 1000 Sq. Ft.
New Bldg. Area/All Floors 0 Sq. Ft.
Volume of New Structure 0 Cu. Ft.
Total Land Area Disturbed 0 Sq. Ft.

Est. Cost of Bldg. Work:
1. New Bldg. $ 0
2. Rehabilitation $ 7,493.76
3. Total (1+ 2) $ 7,493.76

U.C.C. F110 (rev. 07/03)
1 White = Inspector Copy
2 Canary = Office Copy
3 Pink = Office Copy
4 Hard = Applicant Copy

Brick Township
401 Chambers Bridge Rd.

Brick, NJ 08723
(732) 262-1336

Date Issued: 10/31/17
Application Number: ZA-17-01299
Application Date: 10/11/2017
Project Number:
Permit Number: ZP-17-01337
Fee: $75.00

Zoning Permit

Worksite **553 NICHOLAS RD.**
Location: **Brick Township, NJ 08724**

Block: **966**
Lot: **17**
Qualifier:
Zone: **R-10**

Owner: **GURTO, NATHON**
Address: **553 NICHOLAS RD**
BRICK, NJ 08724

Applicant: **Reliable Power & Solar, Inc.**
Address: **1085 Route 9**
Howell, NJ 07731

Application Approved Date: 10/11/2017

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

Use is:
Nonconforming Use is: Single-Family Residential

Work Description:
Solar Energy System - 90- 290W Trina Solar, 26.1kW AZIMUTH micro-inverters, mounted on the roof of the house.

Additional Zoning Permit is required for additional work.

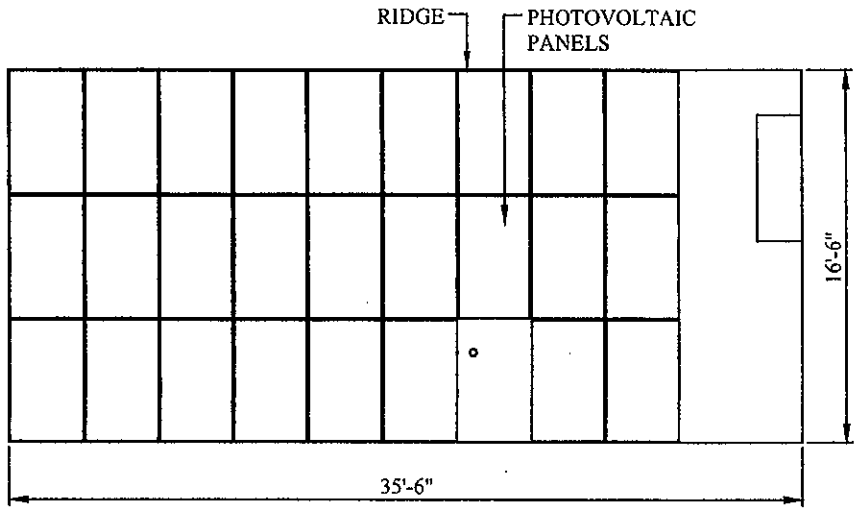
Upon review it was determined that the Zoning Permit:

- ☑ Permitted by Ordinance
- ☐ Permitted by Variance approved on:
- ☑ Valid Nonconforming Use is established by
  - ☐ Zoning Board of Adjustment
  - ☑ Zoning Officer

Christopher J. Romano, Assistant Zoning Officer — Date: 10/11/2017

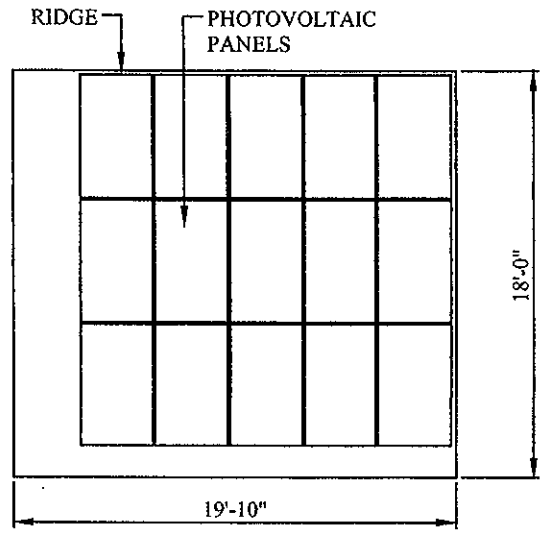
Sean Kinnevy, Zoning Officer — **Date:** 10/13/17

26 -290W PANELS
7.54 KW
27° SLOPE, 16° AZIMUTH



FRONT MIDDLE ROOF PLAN
SCALE: 1/8" = 1'-0"

15 -290W PANELS
4.35 KW
27° SLOPE, 16° AZIMUTH



FRONT RIGHT ROOF PLAN
SCALE: 1/8" = 1'-0"

Zoning Review
Approval
By: [illegible]
Date: 10/11/17

DIMENSIONS ARE RELATIVE TO SLOPE

NOTE: EXISTING STRUCTURE IS ADEQUATE TO SUPPORT
DESIGN SNOW LOAD OF 25 PSF / ROOF TL 35 PSF
DESIGN BASIC WIND SPEED OF 125 MPH / 24 PSF
ADDITIONAL DEAD LOAD OF SOLAR PANELS AT 3 PSF
WITH ALUMINUM RAIL MOUNTING SYSTEM

PANEL SUMMARY :
90 - 290W PANELS
26.1 KW

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project

GURTO RESIDENCE
533 NICHOLAS ROAD
BRICK, NJ 08724

RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

NJ License No. 10677
PA License No. RA-013290B

Cirangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7822

Date 09/26/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-2
Drawn KC	
Chkd LSC	

ENGINEERING PERMIT APPLICATION

RECEIVING CLERK: _____

PERMIT #: _____

BLOCK: 91de LOT: 17 ADDRESS: 533 Nicholas Rd

IDENTIFICATION:

1 WORK SITE ADDRESS: 533 Nicholas Rd

2 NAME OF OWNER IN FEE: Giunto Residence

ADDRESS: 533 Nicholas Rd PHONE: [redacted]

Brick NJ 08724 FAX # ( )

3 PRINCIPAL CONTRACTOR: Reliable Power & Solar

ADDRESS: 1085 Rt 9 PHONE # 732 367 1166

Howell NJ 07731 FAX # 732 942 3979

4 ARCHITECT OR ENGINEER: Triangle Architects

ADDRESS: 14 Plaza Drive, Manalapan PHONE # 732 303 7822

5 RESPONSIBLE PERSON FOR WORK: Chris DiPasquale

ADDRESS: 1085 Rt 9, Howell NJ 07731

PHONE # 732 367 1166 FAX # 732 942 3979 E-MAIL: Solardesign@GETRESNOW.com

PROJECT DESCRIPTION: ☐ GRADING/CLEARING ☐ ROAD OPENING

☐ SOIL REMOVAL/FILL ☐ RETAINING WALL ☐ POOL

☐ BULKHEAD/DOCK ☐ DWELLING ☐ TREE REMOVAL

☒ OTHER Solar Roof Top Mounted Panels

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

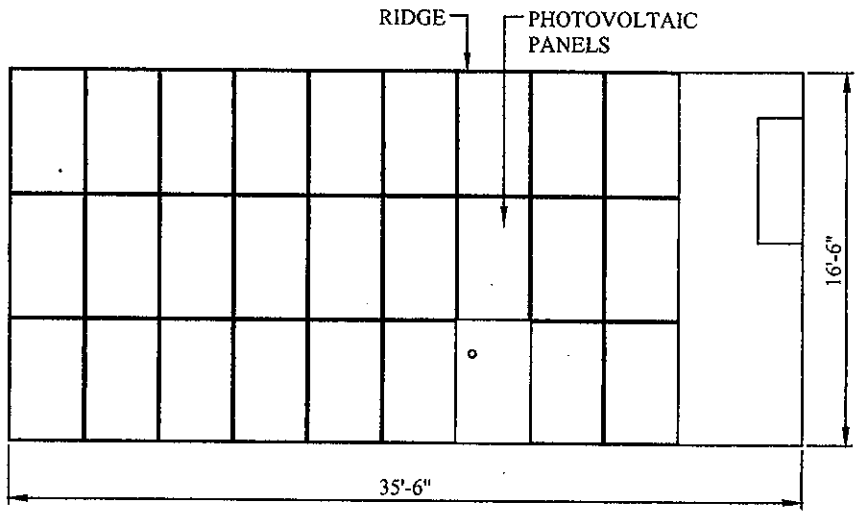
APPLICATION NUMBER: _____

APPROVED DATE: _____

ENGINEERING REVIEW

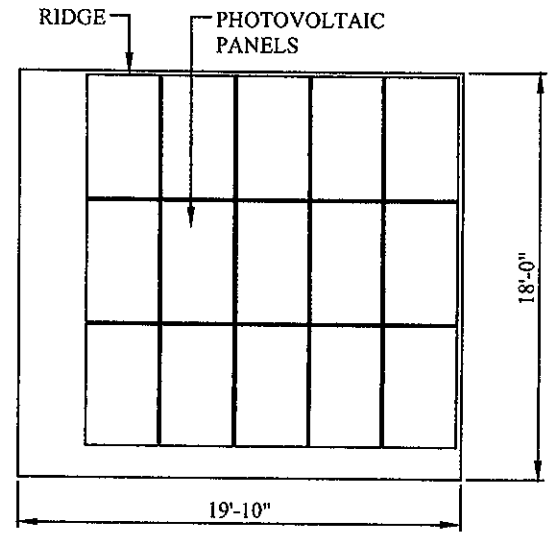
DATE RECEIVED _____ DATE REJECTED _____ DATE APPROVED _____ INITIALS _____

26 -290W PANELS
7.54 KW
27° SLOPE, 16° AZIMUTH



FRONT MIDDLE ROOF PLAN
SCALE: 1/8" = 1'-0"

15 -290W PANELS
4.35 KW
27° SLOPE, 16° AZIMUTH



FRONT RIGHT ROOF PLAN
SCALE: 1/8" = 1'-0"

DIMENSIONS ARE RELATIVE TO SLOPE

NOTE: EXISTING STRUCTURE IS ADEQUATE TO SUPPORT
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90 - 290W PANELS
26.1 KW

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project

GURTO RESIDENCE
533 NICHOLAS ROAD
BRICK, NJ 08724

RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

NJ License No. 10677
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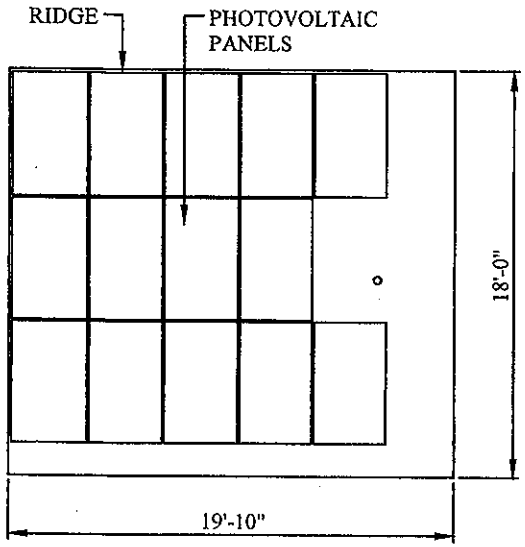
Cirangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7622

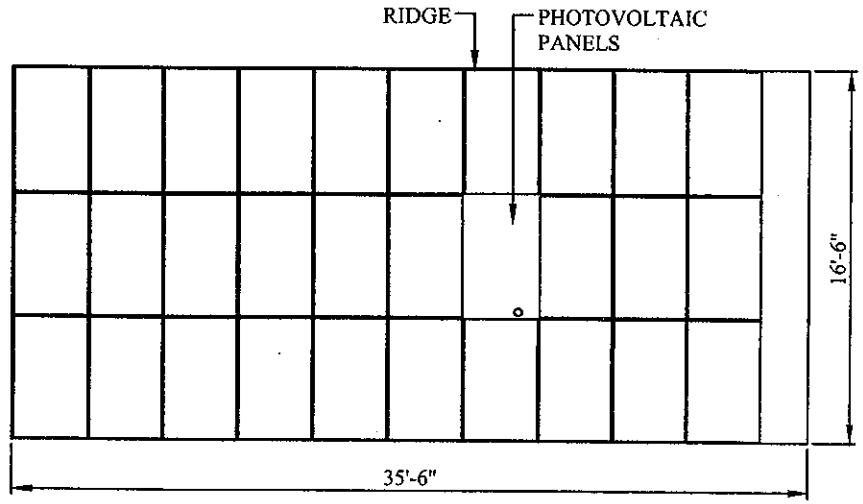
Date 09/26/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-2
Drawn KC	
Chkd LSC	

14 -290W PANELS
4.06 KW
27° SLOPE, 196° AZIMUTH



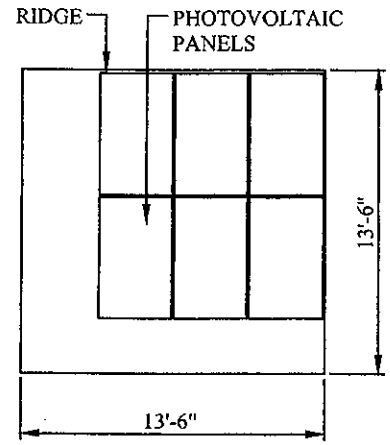
REAR LEFT ROOF PLAN
SCALE: 1/8" = 1'-0"

29 -290W PANELS
8.41 KW
27° SLOPE, 196° AZIMUTH



REAR MIDDLE ROOF PLAN
SCALE: 1/8" = 1'-0"

6 -290W PANELS
1.74 KW
27° SLOPE, 196° AZIMUTH



REAR RIGHT ROOF PLAN
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PANEL SUMMARY :
90 - 290W PANELS
26.1 KW

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project

GURTO RESIDENCE
533 NICHOLAS ROAD
BRICK, NJ 08724

RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

NJ License No. 10677
PA License No. RA-013290B

Cirangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7822

Date 08/16/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-1
Drawn KC	
Chkd LSC	

CIRANGLE ARCHITECTS

14 PLAZA NINE
MANALAPAN, NJ 07726
732-303-7822 PHONE
732-303-7833 FAX

September 27, 2017

Zoning Review
Approval
By: ar Ray Sator
Date: 10-11-17

Brick Township Municipal Building
Building Department
401 Chambersbridge Road
Brick, NJ 08723

Attn: Mr. Michael Vecchio: Subcode Official

FILE COPY

Re: Solar Panel/Support Rack Installation
Gurto Residence
553 Nicholas Road
Brick, NJ 08724
CA Project No. 1703-105

TOWNSHIP OF BRICK

RELEASED FOR PERMIT	INITIAL	DATE
Building Subcode		
Plumbing Subcode		
Fire Subcode		
Electrical Subcode	PJC	10/25/17
Plan Reviewer	JR	10-19-17
Plans Released		
Construction Official		

Dear Mr. Vecchio,

I am writing to address and certify the following items regarding the proposed installation of 90 roof mounted panels as manufactured by Trinasolar: Photovoltaic Module, TSM-290PA05 (41.0 lbs/panel x 90 = 3,690 lbs total), and support racks (900 lbs total) as manufactured by SnapNrack. The system shall be located over a roof area of approximately 1,584 sq ft. The contractor shall install the panels and support racks as per the code compliant planning and assembly Installation Manual: Series 100 as provided by SnapNrack.

1. The existing building is a 1 story wood framed structure with 6:12 pitch roofs. The existing roof rafter assembly can adequately support the proposed panel/rack installation using 5/16" dia. x 4" long stainless steel lag bolts @ 48" oc under IRC 2015, New Jersey edition, for materials, loads, and stresses: live load conditions based on wind loads of 125 mph (3 second gust) and exposure 'C' and Chapter 3: Building Planning, Section 301.2.1: Wind Limitations. This lag bolt fastening spacing correlates to the existing rafter spacing. There are no modifications required to the existing roof framing.

2. Support rack anchorage will comply with wind loads of 125 mph (3 second gust) as required by the IRC 2015, New Jersey edition, Chapter 3: Building Planning.

3. Photovoltaic Modules shall resist wind pressure of 24 lbs per square foot based on 125 mph wind speed and exposure 'C.'

4. Design snow load = 20 psf and roof TL = 40 psf (30 psf live / 10 psf dead).

5. The additional dead load of the solar panels and aluminum rail mounting system is 3 lbs per square foot.

This is to certify that as per our code/structural review, the proposed solar panel /support rail installation shown on Cirangle Architects Drawings A-1, A-2, A-3, & A-4 (dated September 26, 2017) meets or exceeds the code parameters and structural requirements cited in this letter.

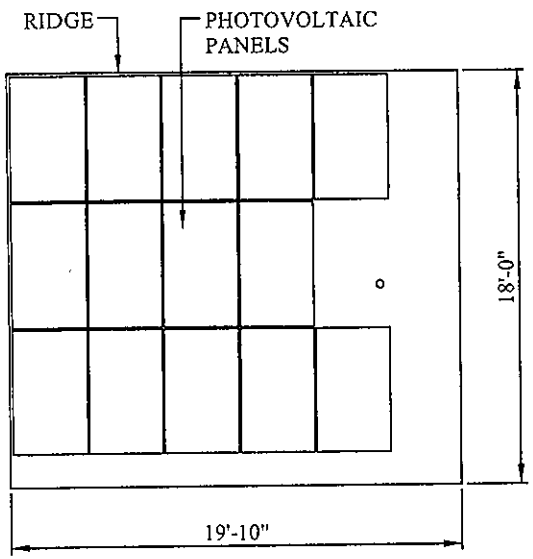
Please feel free to contact me if you have any questions regarding these items.

Thank you,

Lawrence S. Cirangle
Registered Architect
NJ License No. 10677

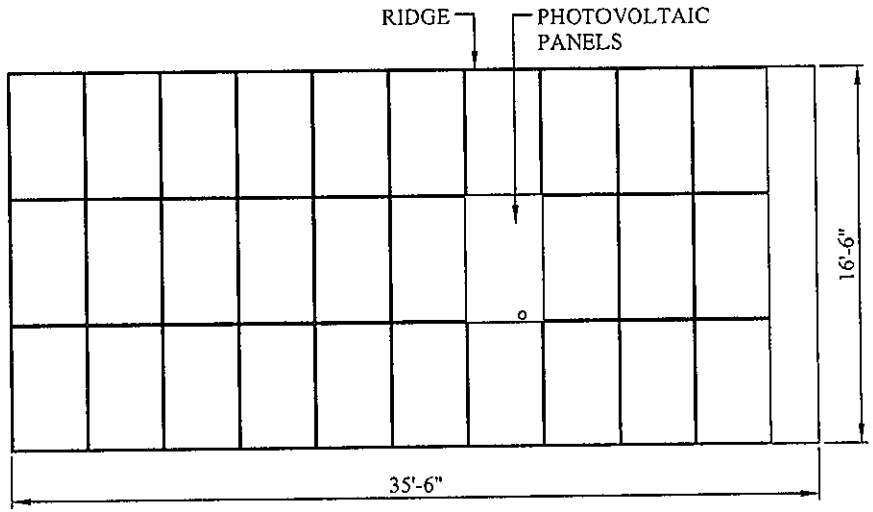
cc: C. Di Pasquale (RPS)

14 -290W PANELS
4.06 KW
27° SLOPE, 196° AZIMUTH



REAR LEFT ROOF PLAN
SCALE: 1/8" = 1'-0"

29 -290W PANELS
8.41 KW
27° SLOPE, 196° AZIMUTH



REAR MIDDLE ROOF PLAN
SCALE: 1/8" = 1'-0"

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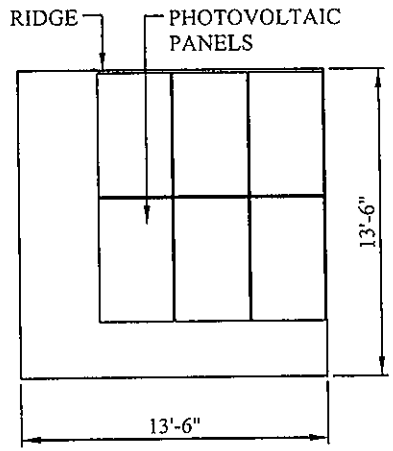
27° SLOPE, 196° AZIMUTH



REAR RIGHT ROOF PLAN
SCALE: 1/8" = 1'-0"

DIMENSIONS ARE RELATIVE TO SLOPE

NOTE: EXISTING STRUCTURE IS ADEQUATE TO SUPPORT
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ADDITIONAL DEAD LOAD OF SOLAR PANELS AT 3 PSF
WITH ALUMINUM RAIL MOUNTING SYSTEM

PANEL SUMMARY :
90 - 290W PANELS
26.1 KW

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project

GURTO RESIDENCE
553 NICHOLAS ROAD
BRICK, NJ 08724

RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

NJ License No. 10673
PA License No. RA-013290B

Triangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7822

Date 08/16/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-1
Drawn KC	
Chkd LSC	

26 -290W PANELS
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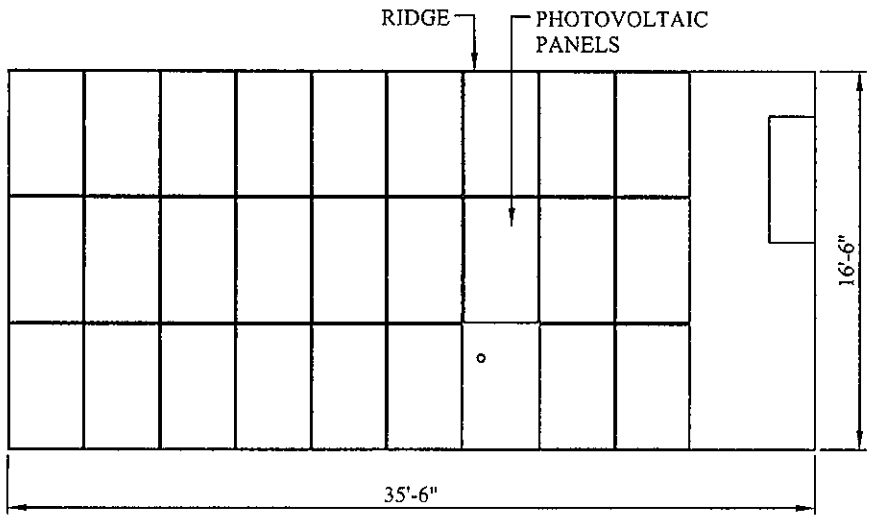

FRONT MIDDLE ROOF PLAN
SCALE: 1/8" = 1'-0"

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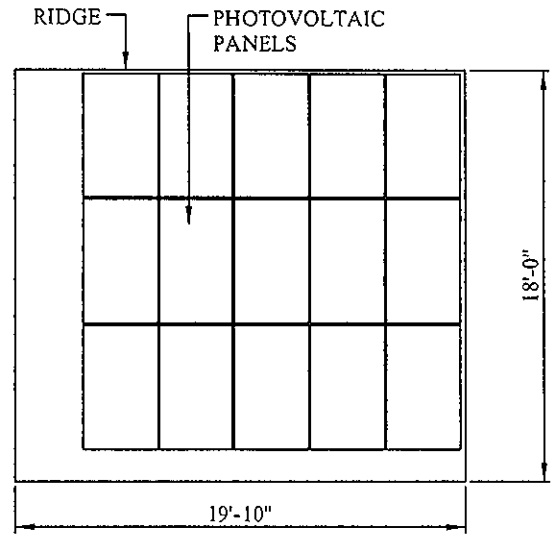
27° SLOPE, 16° AZIMUTH



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TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project

GURTO RESIDENCE
533 NICHOLAS ROAD
BRICK, NJ 08724

RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

NJ License No. 10677
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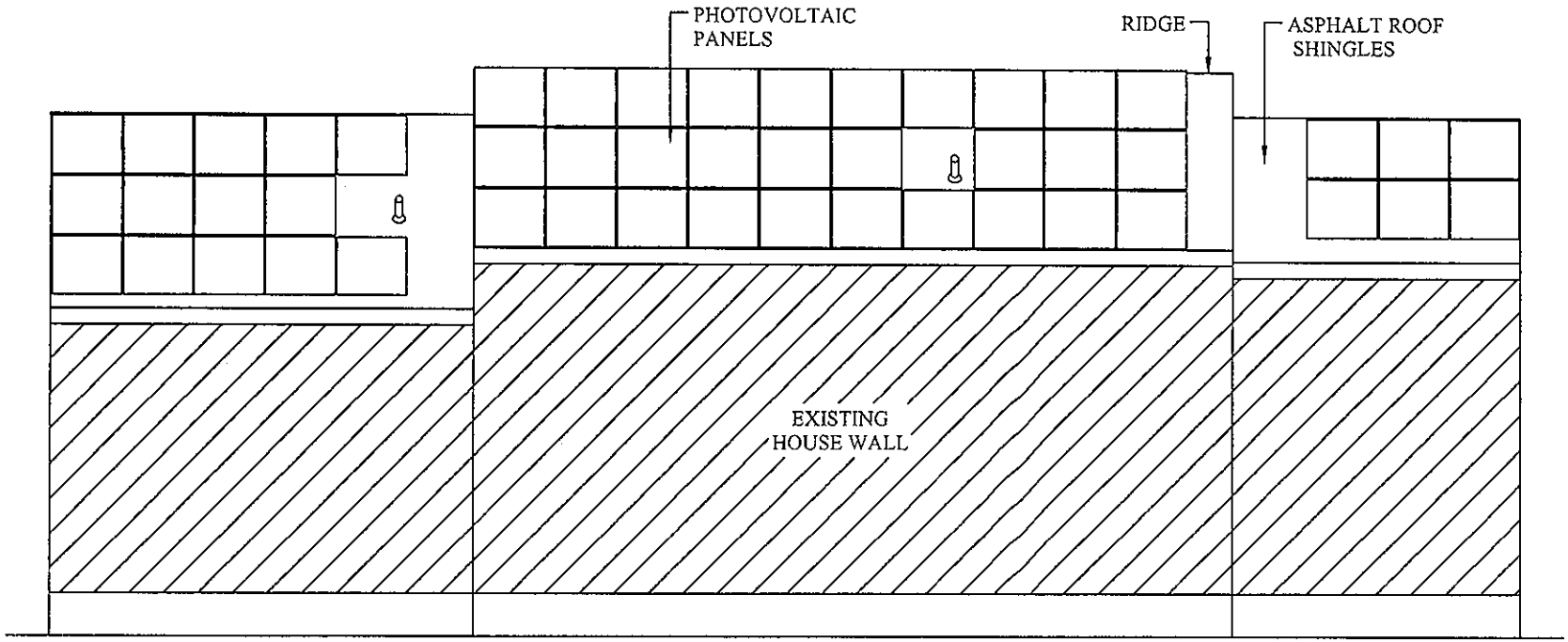
Cirangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7822

Date 09/26/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-2
Drawn KC	
Chkd LSC	



REAR HOUSE ELEVATION
N.T.S.

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

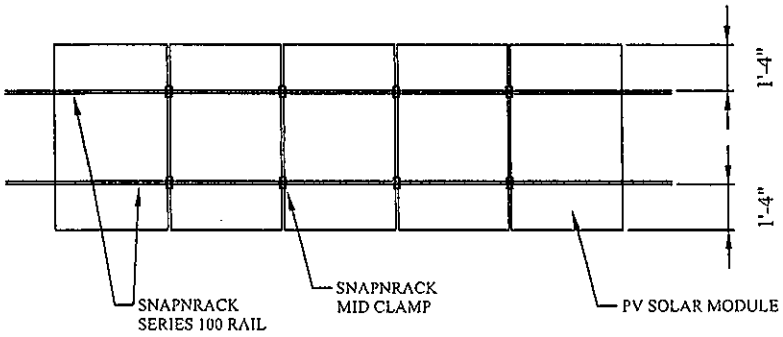
Project

GURTO RESIDENCE
533 NICHOLAS ROAD
BRICK, NJ 08724

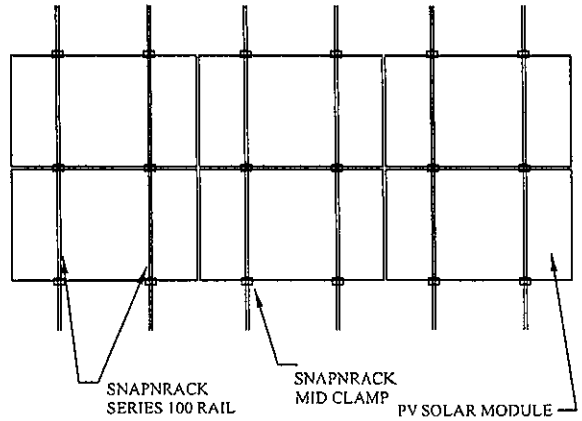
RPS
RELIABLE POWER & SOLAR
1085 ROUTE 9
HOWELL, NJ 07731
732-367-1166

Girangle Architects
ARCHITECTURE, INTERIOR DESIGN
14 PLAZA NINE
MANALAPAN, N.J. 07726
(732) 303-7822

Date 09/26/2017	Project No. 1703-105
Scale 1/8" : 1'-0"	Sheet No. A-3
Drawn KC	
Chkd LSC	



PORTRAIT LAYOUT DETAIL
N.T.S.



LANDSCAPE LAYOUT DETAIL
N.T.S.

GENERAL NOTES:

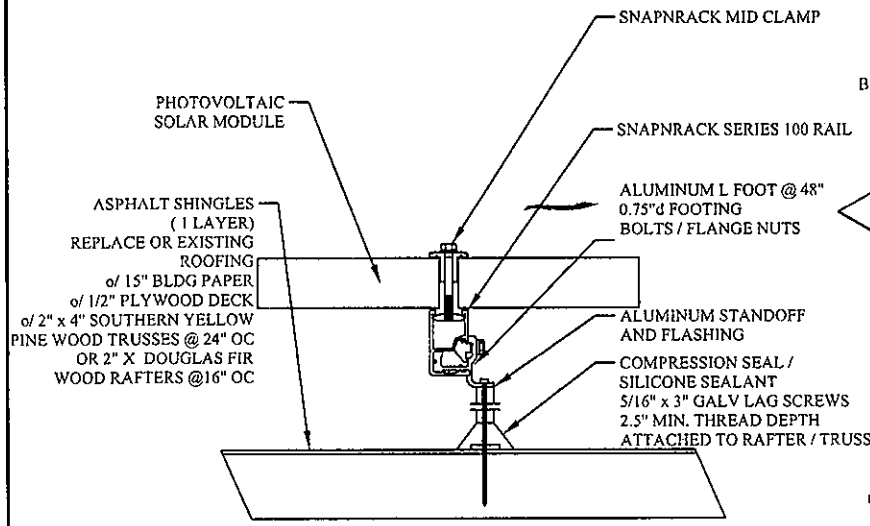
1. Installers shall visit the site of the proposed work and be fully acquainted with the existing conditions prior to installation in order that all requirements and conditions are fully understood. All areas and conditions indicated on the drawing must be verified by installers and subcontractors at the site prior to start of work.

2. Unknown or hidden structural deficiencies or dimensional discrepancies relating to the existing structure or the renovated area must be reported to Architect immediately upon discovery.
All changes to plan must be approved by Architect. Methods and systems of erection, demolition and reconstruction and jobsite safety is the responsibility of the contractor.

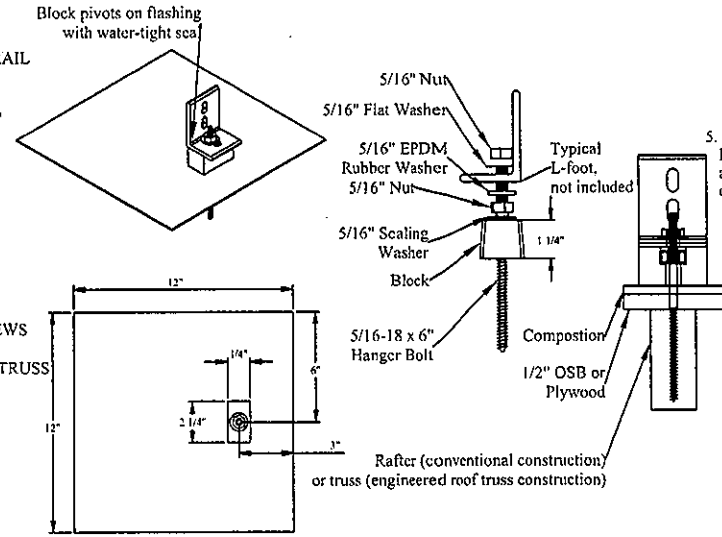
3. Owner shall oversee the work of contractor unless the Architect is engaged by the owner to administer construction and periodically visit the site. Blueprint Drawings are not to scale. All dimensions to be verified and confirmed in the field by installer prior to installation or construction. Architect shall be notified immediately of any discrepancies to the Plan or of the conditions noted or implied upon discovery.

4. Roof System:
25 YEAR asphalt shingles self-sealed U.L. 790, UL 997, ASTM E108 Class 1 Fire, ASTM D3462, ASTM D3018 Type 1, ASTM D3161 Class F Wind, ASTM 228 over 15 lb bldg paper over 1/2" CDX plywood sheathing over roof trusses or rafters. 36" wide moisture resistant granular surface self-sealing rubberized asphalt membrane in all valleys and along eaves.

5. Other Specified Materials on Drawings: Materials Indicated on drawing showing specific Manufacturer are intended to be for size and shape references only.



RACK MOUNTING DETAIL
N.T.S.



QM-PV - COMP - 5/16" DETAIL
N.T.S.

USE GROUP: R5
TYPE 5B CONSTRUCTION
IRC 2015 NJ EDITION
NEC 2014

Project GURTO RESIDENCE 533 NICHOLAS ROAD BRICK, NJ 08724	RPS RELIABLE POWER & SOLAR 1085 ROUTE 9 HOWELL, NJ 07731 732-367-1166	Triangle Architects ARCHITECTURE, INTERIOR DESIGN 114 PLAZA NINE MANALAPAN, N.J. 07726 (732) 303-7822 NJ License No. [illegible] PA License No. RA-[illegible]	Date 09/26/2017 Scale 1/8" : 1'-0" Drawn KC Chkd LSC
			Project No. 1703-105 Sheet No. A-4

PROPOSED INSTALLATION OF SOLAR SYSTEM FOR:

Gurto Residence
533 Nicholas Road
Brick, NJ 08724

BLK- 966 LOT – 17

COPY

SYSTEM INSTALLED BY
RPS INC.

RELIABLE POWER SERVICES, INC.
1085 HIGHWAY 9 SOUTH,
HOWELL, NJ 07731

NJ HOME IMPROVEMENT LICENSE
13VHO5266200

NJ ELECTRICAL LICENSE
NJ #11223B

FEDERAL TAX ID #
16-1732531

CONTACT:

CHRIS DiPASQUALE

OFFICE # 732-367-1166

FAX # 732-942-3979

EMAIL SOLAR@GETRPSNOW.COM

WWW.GETRPSNOW.COM

RELIABLE
Power&Solar
732.367.1166
Rt 9 North, Howell NJ 07731

RELIABLE POWER SERVICES, INC.
1085 RT 9 SOUTH
HOWELL, NJ 07731

ELECTRIC LIC#11223B
HOME IMPROVEMENT LIC#13VH05266200
INSURED & BONDED

Gurto Residence
533 Nicholas Road
Brick, NJ 08724

21.6 kW Grid Tie Solar System

The following is a description of the work to be done at listed address. This system is owned and maintained by the Customer.

The system installed at the above address is a Grid tie system. It uses Trina 290 watt panels and two Solar Edge 10,000 inverter(s). The system is installed on SnapNRak mount fastening systems and uses all stainless steel hardware. Roof flanges are used on all penetrations and no "L" feet will be installed directly on the roof shingle. .All penetrations will be sealed using approved sealants and manufacturer's specs will be adhered to.

The electric company requires the installation of an approved net meter and disconnect from system.. The disconnect will be in sight of utility meter unless otherwise impossible and will be duly noted on drawings. If panel space allows and if it meets the requirements for sizing according to the NEC, system connection of a live bite tap will be installed before the main breaker and will be noted on paperwork. This will allow for not buss bar calculations. If both conditions do not apply then notes to drawings will be amended and listed.

All phases of work to be performed and maintained by RPS Inc. No sub contractors will be used.
All licenses and insurances listed, along with bonding. Structural design by Architect listed and system design by designer listed. All parts of system to be approved or listed components. No homemade parts. IE. Shelf brackets, wood, PVC, rigid or EMT will be used to support system. All DC connections to be approved for outdoor use and no open splicing to be done. All panels and equipment are to be clearly marked for inspections, maintaining of system, and customer safety.

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

RELIABLE POWER SERVICES INC
CHRISTOPHER J DI PASQUALE
1085 Route 9
Howell NJ 07731

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

03/26/2015 TO 03/31/2018
VALID

Signature of Licensee/Registrant/Certificate Holder

34EB01122300
LICENSE/REGISTRATION/CERTIFICATION #

ACTING DIRECTOR

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

CHRISTOPHER J. DI PASQUALE
1085 Route 9
HOWELL NJ 07731

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

02/11/2015 TO 03/31/2018
VALID

Signature of Licensee/Registrant/Certificate Holder

34EI01122300
LICENSE/REGISTRATION/CERTIFICATION #

ACTING DIRECTOR

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

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

RELIABLE POWER SERVICES, INC
Chris DiPasquale
1085 Route 9
Howell NJ 07731

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

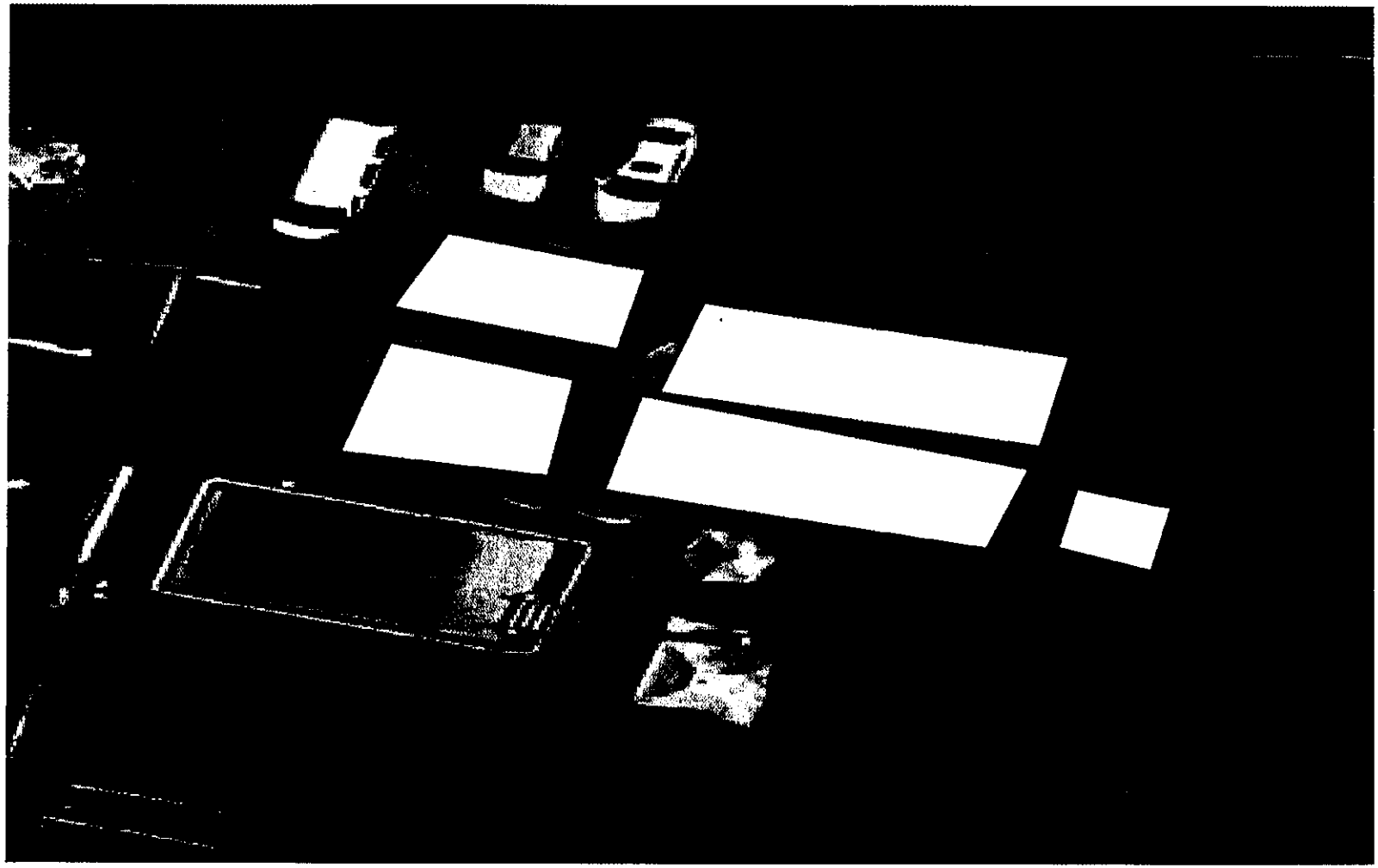
02/02/2017 TO 03/31/2018
VALID

Signature of Licensee/Registrant/Certificate Holder

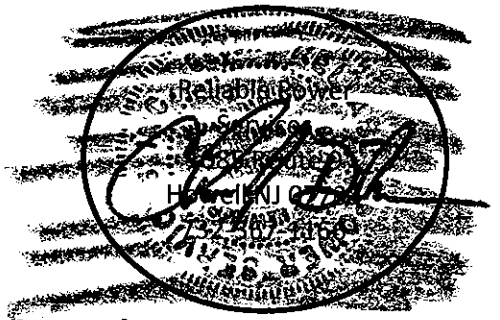
13VH05266200
LICENSE/REGISTRATION/CERTIFICATION #

DIRECTOR

Gurto Residence
533 Nicholas Road
Brick, NJ 08724

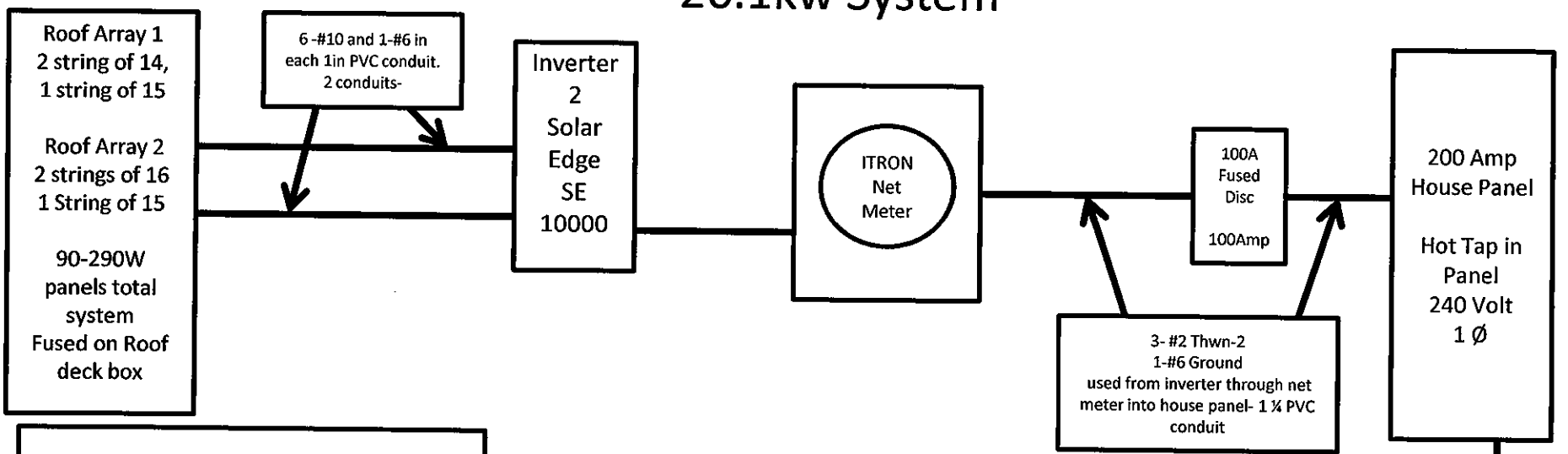


Name: Gurto Residence
Address: 533 Nicholas Road,
Brick, N.J. 08724
Block: 966 L17
Azimuth: 16/196 Slope: 27



26.1kw System

RELIABLE
Power&Solar
Making NJ Greener One Roof at a Time
Insured & Bonded NJ License #11223



Electrical Characteristics
Inverter(s) (2) Solar Edge SE10000A-US Module Trina Solar TSM-290DD05A(II) (290W) Total Number of Modules 90 Area of array 147.3m² (1,586ft²) Total STC power of array 26,100W Total PTC power of array 23,868W Total CEC power output 22,992W First-Year PV Watts Prod. Estimate 35,992kWhr Max AC output current 84A

NEC ART 690.8 A 1-3
1. 8.92 X 156%(1.56) = A (#10 PV CONDUCTOR)
2. 12.88 X 2 = 25.76A (30 AMP) #10 *THWN-2*

Max per string **NEC ART 690.8**

8.92 Isc X 156%(1.56) =13.91A (minimum #12 PV allowed) (RPS uses #10 PV CONDUCTOR) (DC System calc)
8.92 Isc x 125 %=11.15 amps (min #14 –RPS uses #10) (Trina uses #12 leads on panel)

84 A X 125% =105A = 100 AMP OCPD

** HOT TAP CONNECTION BYPASS BUSBAR CALCULATION*

Existing
Utility meter

Behind the meter connection

1. System Summary

1.1. System Data

1.1.1. Summary

Location Info	
Project Site	14 Pine Rd, Howell, NJ 07731
Climate Data Source Location	Howell, NJ 07731 United States
Latitude	40° 10'N
Longitude	74° 13'W
Design Low Temperature	3°F (-16°C)
Design High Temperature	91°F (33°C)

Electrical Characteristics	
Summary	
Total Number of Inverters	2
Inverter(s)	(2) Solar Edge SE10000A-US
Module	Trina Solar TSM-290DD05A(II) (290W)
Total Number of Modules	90
Area of array	147.3m² (1,586ft²)
Total STC power of array	26,100W
Total PTC power of array	23,868W
Total CEC power output	22,992W
First-Year PV Watts Prod. Estimate	35,992kWhr
Max AC output current	84A

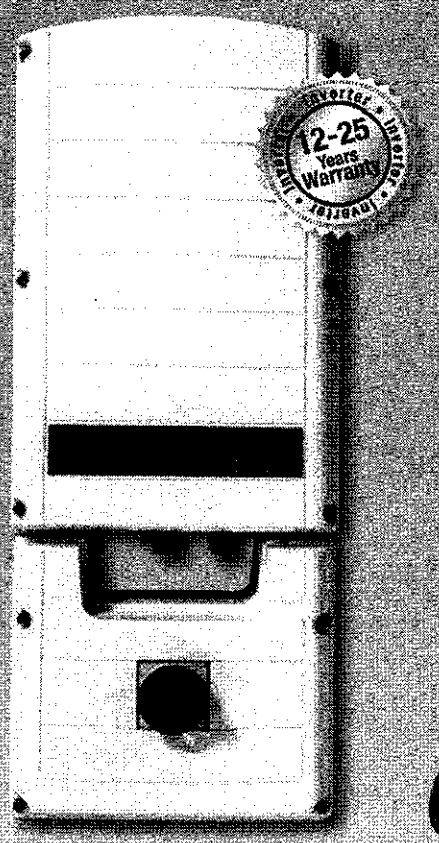
solaredge

INVERTERS

SolarEdge Single Phase Inverters

For North America

SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US / SE7600A-US / SE10000A-US / SE11400A-US



The best choice for SolarEdge enabled systems

- Integrated arc fault protection (Type 1) for NEC 2011 690.11 compliance
- Superior efficiency (98%)
- Small, lightweight and easy to install on provided bracket
- Built-in module-level monitoring
- Internet connection through Ethernet or Wireless
- Outdoor and indoor installation
- Fixed voltage inverter, DC/AC conversion only
- Pre-assembled AC/DC Safety Switch for faster installation
- Optional – revenue grade data, ANSI C12.1

Single Phase Inverters for North America

SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US / SE7600A-US / SE10000A-US / SE11400A-US

	SE3000A-US	SE3800A-US	SE5000A-US	SE6000A-US	SE7600A-US	SE10000A- US	SE11400A-US	
OUTPUT								
Nominal AC Power Output	3000	3800	5000	6000	7600	9980 @ 208V 10000 @240V	11400	VA
Max. AC Power Output	3300	4150	5400 @ 208V 5450 @240V	6000	8350	10800 @ 208V 10950 @240V	12000	VA
AC Output Voltage Min.-Nom.-Max.* 183 - 208 - 229 Vac	-	-	✓	-	-	✓	-	
AC Output Voltage Min.-Nom.-Max.* 211 - 240 - 264 Vac	✓	✓	✓	✓	✓	✓	✓	
AC Frequency Min.-Nom.-Max.*	59.3 - 60 - 60.5 (with HI country setting 57 - 60 - 60.5)							Hz
Max. Continuous Output Current	12.5	16	24 @ 208V 21 @ 240V	25	32	48 @ 208V 42 @ 240V	47.5	A
GFDI	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Recommended Max. DC Power** (STC)	3750	4750	6250	7500	9500	12400	14250	W
Transformer-less, Ungrounded	Yes							
Max. Input Voltage	500							Vdc
Nom. DC Input Voltage	325 @ 208V / 350 @ 240V							Vdc
Max. Input Current***	9.5	13	16.5 @ 208V 15.5 @ 240V	18	23	33 @ 208V 30.5 @ 240V	34.5	Adc
Max. Input Short Circuit Current	30				45			Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	97.7	98.2	98.3	98.3	98	98	98	%
CEC Weighted Efficiency	97.5	98	97.5 @ 208V 98 @ 240V	97.5	97.5	97 @ 208V 97.5 @ 240V	97.5	%
Nighttime Power Consumption	< 2.5				< 4			W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, RS232, Ethernet, ZigBee (optional)							
Revenue Grade Data, ANSI C12.1	Optional							
STANDARD COMPLIANCE								
Safety	UL1741, UL1699B, UL1998 , CSA 22.2							
Grid Connection Standards	IEEE1547							
Emissions	FCC part15 class B							
INSTALLATION SPECIFICATIONS								
AC output conduit size / AWG range	3/4" minimum / 24-6 AWG				3/4" minimum / 8-3 AWG			
DC input conduit size / # of strings / AWG range	3/4" minimum / 1-2 strings / 24-6 AWG				3/4" minimum / 1-2 strings / 14-6 AWG			
Dimensions with AC/DC Safety Switch (HxWxD)	30.5 x 12.5 x 7 / 775 x 315 x 172		30.5 x 12.5 x 7.5 / 775 x 315 x 191		30.5 x 12.5 x 10.5 / 775 x 315 x 260			in / mm
Weight with AC/DC Safety Switch	51.2 / 23.2		54.7 / 24.7		88.4 / 40.1			lb / kg
Cooling	Natural Convection				Fans (user replaceable)			
Noise	< 25				< 50			dBA
Min.-Max. Operating Temperature Range	-13 to +140 / -25 to +60 (CAN version**** -40 to +60)							°F / °C
Protection Rating	NEMA 3R							

* For other regional settings please contact SolarEdge support.

** Limited to 125% for locations where the yearly average high temperature is above 77°F/25°C and to 135% for locations where it is below 77°F/25°C.
For detailed information, refer to http://www.solaredge.us/files/pdfs/inverter_dc_oversizing_guide.pdf

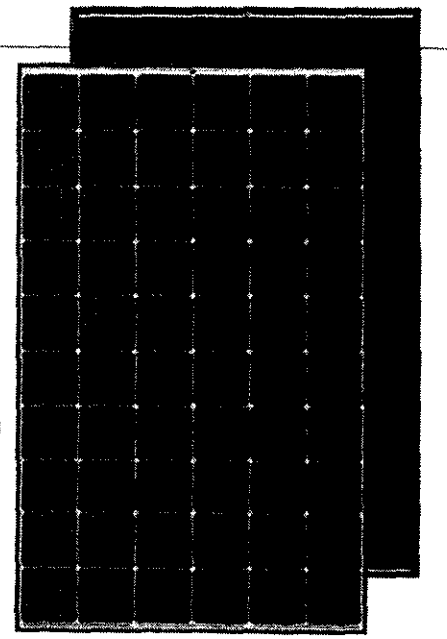
*** A higher current source may be used; the inverter will limit its input current to the values stated.

**** CAN P/Ns are eligible for the Ontario FIT and microFIT (microFIT exc. SE11400A-US-CAN).

RoHS

Mono Multi Solutions

THE ALLMAX™ PLUS+ MODULE



60 CELL
MONOCRYSTALLINE MODULE

270-295W
POWER OUTPUT RANGE

18.0%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

Maximize limited space with top-end efficiency
- Up to 180 W/m² power density
- Low thermal coefficients for greater energy production at high operating temperatures

Highly reliable due to stringent quality control
- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- 100% EL double inspection

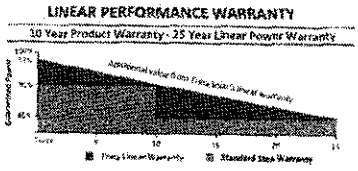
Certified to withstand challenging environmental conditions
- 2400 Pa wind load
- 5400 Pa snow load
- 35 mm hail stones at 97 km/h

As a leading global manufacturer of next generation photovoltaic products, we believe close cooperation with our partners is critical to success. With local presence around the globe, Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners as the backbone of our shared success in driving Smart Energy Together.

Trina Solar Limited
www.trinasolar.com

LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty - 25 Year Linear Power Warranty



Comprehensive products and system certificates

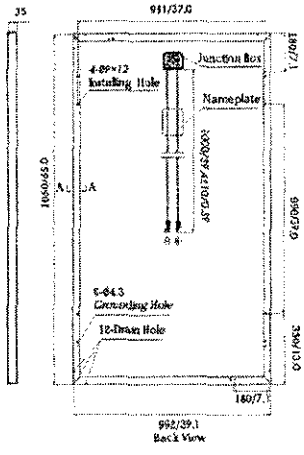
- IEC 61215/ IEC 61730/ UL 1703/ IEC 61701/IEC 62716
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO 14064: Greenhouse Gases Emissions Verification
- OHSAS 18001: Occupation Health and Safety Management System

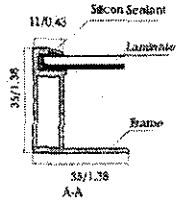
Trinasolar
Smart Energy Together

THE ALLMAX® PLUS MODULE

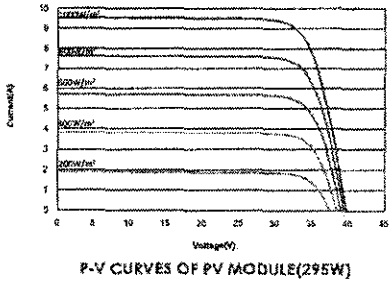
PRODUCTS	POWER RANGE
TSM-DD05A.08(II)	275-295W
TSM-DD05A.05(II)	270-290W

DIMENSIONS OF PV MODULE
unit:mm/inches

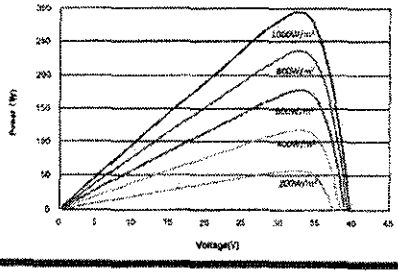




I-V CURVES OF PV MODULE(295W)



P-V CURVES OF PV MODULE(295W)



ELECTRICAL DATA (STC)

Peak Power Watts-P_{MAX} (Wp)*	270	275	280	285	290	295
Power Output Tolerance-P_{MAX} (W)	0~+5					
Maximum Power Voltage-V_{MPP} (V)	31.2	31.4	31.7	31.8	32.2	32.5
Maximum Power Current-I_{MPP} (A)	8.66	8.76	8.84	8.97	9.01	9.08
Open Circuit Voltage-V_{OC} (V)	38.4	38.7	39.0	39.3	39.5	39.7
Short Circuit Current-I_{SC} (A)	9.18	9.26	9.35	9.45	9.50	9.55
Module Efficiency η_m (%)	16.5	16.8	17.1	17.4	17.7	18.0

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Test tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power-P_{MAX} (Wp)	201	205	209	212	216	220
Maximum Power Voltage-V_{MPP} (V)	28.9	29.2	29.4	29.6	29.9	30.2
Maximum Power Current-I_{MPP} (A)	6.96	7.02	7.10	7.17	7.23	7.28
Open Circuit Voltage-V_{OC} (V)	35.7	36.0	36.3	36.6	36.7	36.9
Short Circuit Current-I_{SC} (A)	7.41	7.48	7.55	7.63	7.67	7.71

NOCT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline 156 × 156 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 x 39.1 x 1.38 inches)
Weight	18.6 kg (41.0 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White (DD05A.08(II)); Black (DD05A.05(II))
Frame	Black (DD05A.08(II), DD05A.05(II))
J-Box	IP 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), 1000 mm (39.4 inches)
Connector	MC4 Compatible or Amphenol H4/UTX
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	44°C(± 2°C)
Temperature Coefficient of P_{MAX}	-0.39%/°C
Temperature Coefficient of Voc	-0.29%/°C
Temperature Coefficient of Isc	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC (IEC) 1000V DC (UL)
Max Series Fuse Rating	15A

WARRANTY

10 year Product Workmanship Warranty

25 year Linear Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 30 pieces

Modules per 40' container: 840 pieces

TSM_EN_2016_D

Trinasolar
Smart Energy Together

Meeting the Requirements of NEC 690.35 Ungrounded Photovoltaic Power Systems

Enphase Microinverters meet the requirements of NEC Article 690.35 for Ungrounded Photovoltaic Power systems. The article states.

690.35 Ungrounded Photovoltaic Power Systems. Photovoltaic Power Systems shall be permitted to operate with ungrounded photovoltaic source and output circuits where the system complies with 690.35(A) through (G).

(A) **Disconnects.** In an Enphase system the AC and DC connectors are the disconnecting means.

(B) **Overcurrent Protection.** In an Enphase system, the AC circuit breaker or fused disconnecting feeding the branch circuit provides overcurrent protection for the inverter output circuit. As per 690.9(A) Exception (b), overcurrent protection is not required on the DC conductors.

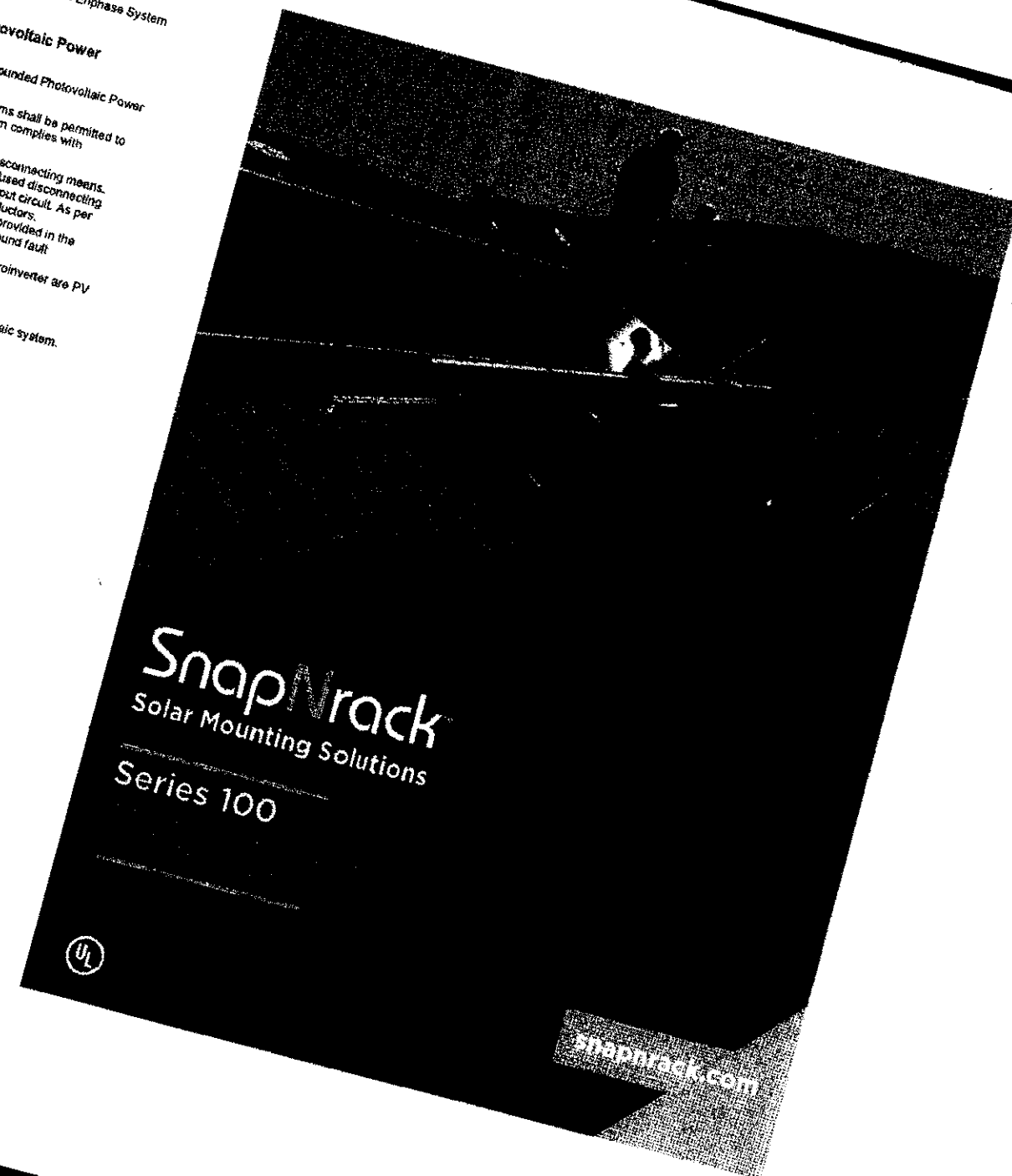
(C) **Ground Fault Protection.** In an Enphase system, ground fault protection is provided in the microinverter. In the Enphase Microinverters with integrated grounding, the ground fault protection is provided by a ground fault sensing circuit.

(D) **The DC conductors must be PV Wire.** The DC conductors in an Enphase Microinverter are PV Wire.

(E) Allowed for use in ungrounded battery systems

(F) **Labelling.** The Enphase Microinverters are labeled as specified.

(G) **Listing.** The Enphase Microinverters are listed for use in an ungrounded photovoltaic system.



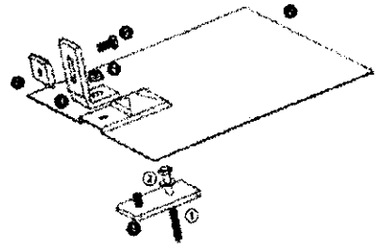
L Foot Mounts

Required Tools

- Hammer or Stud Finder
- Torque Wrench
- Roof Marking Crayon
- Socket Wrench
- Drill with 3/16" Pilot Drill Bit
- 1/2" Socket
- Roof Sealant

Materials Included - L Foot Flashing Kit

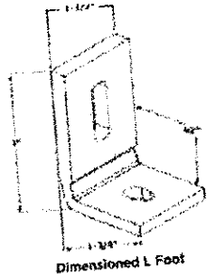
- (1) SnapNrack L Foot Base
- (1) SnapNrack L Foot Flashing
- (1) SnapNrack Composition L Foot
- (1) 5/16"-18 SS Flange Hex Nut
- (1) 5/16"-18 X 1-1/4" SS Flange Bolt
- (1) SnapNrack Channel Nut



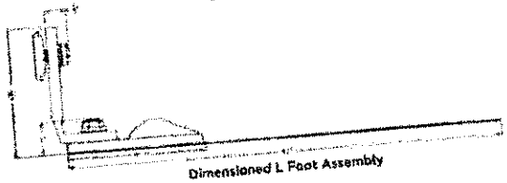
Other Materials Required

① (1) 5/16" Lag Screw

② (1) 5/16" Washer



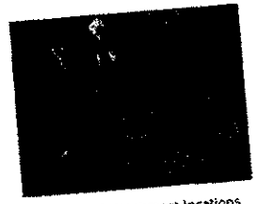
Dimensioned L Foot



Dimensioned L Foot Assembly

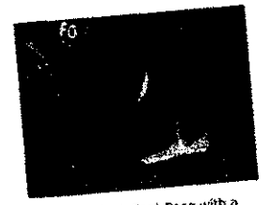
L Foot Mounts

INSTALLATION INSTRUCTIONS

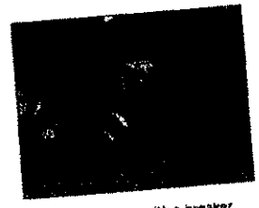


1) Using roof attachment locations drawn during system layout, drill a pilot hole through the roofing material into the roof framing member.

2) Apply roofing sealant to the bottom of the base and directly onto the lag screw to ensure a water tight seal.



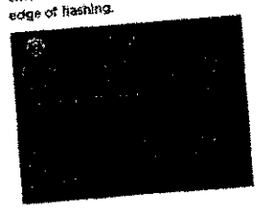
3) Attach the L Foot Base with a 5/16" lag screw, drive lag screw for minimum 2.5" embedment into the roof framing member.



4) Pry up shingles with a breaker bar and install flashing underneath shingle course above installed base, position flashing so base stud extends through hole in bottom edge of flashing.

5) Place the L Foot on the base stud over the flashing and tighten the flange nut over the L Foot, torque to 10 - 18 ft-lbs.

6) If necessary, adjust the vertical face of the L Foot with the "live hinge" feature and adjust angle of L Foot so that the vertical face is perpendicular to the roof surface.



Module Installation

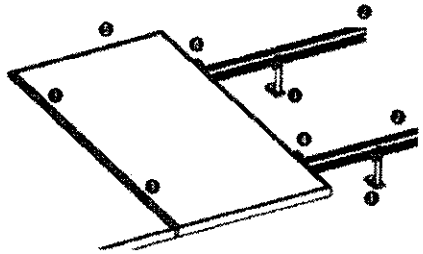
snapnrack.com

Required Tools

- Torque Wrench
- Socket Wrench
- 1/2" Socket

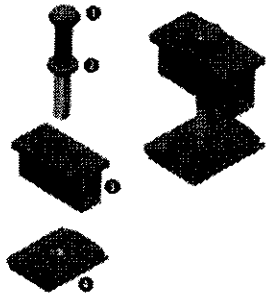
Materials Included - Install Module Clamps

1. Pre-Installed SnapNrack Roof Attachments
2. Pre-Installed SnapNrack Rails
3. SnapNrack Mid Clamp Assemblies
4. SnapNrack End Clamp Assemblies
5. PV Modules



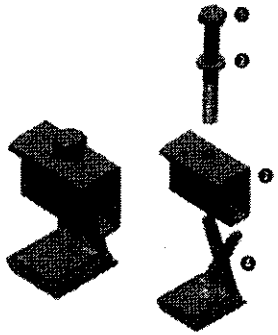
Mid Clamp Assembly

1. (1) 5/16"-18 SS HCS Bolt
2. (1) 5/16" SS Split Lock Washer
3. (1) SnapNrack Bonding Mid Clamp
4. (1) 5/16"-18 SnapNrack Channel Nut



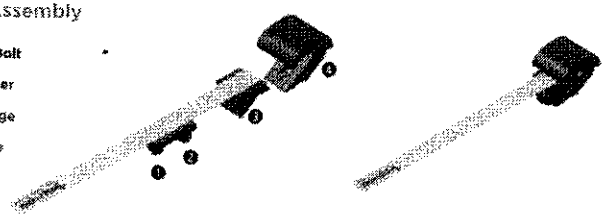
Adjustable End Clamp Assembly

1. (1) 5/16"-18 SS HCS Bolt
2. (1) 5/16" SS Split Lock Washer
3. (1) SnapNrack Self Adjusting Top
4. (1) SnapNrack Self Adjusting Bottom



Universal End Clamp Assembly

1. (1) 5/16"-18 X 1-1/2" SS HCS Bolt
2. (1) 5/16" X 3/4" SS Flat Washer
3. (1) SnapNrack Universal Wedge
4. (1) SnapNrack Universal Wave



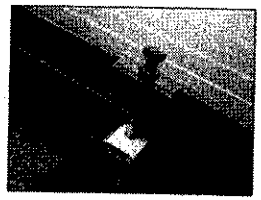
Module Installation

snapnrack.com

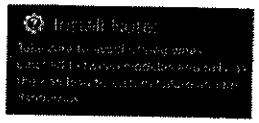
INSTALLATION INSTRUCTIONS

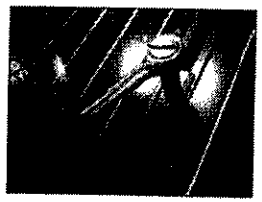
SnapNrack Mid Clamp

1) Snap the channel nut into the top channel of the rail.

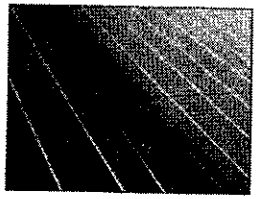


2) Slide the clamp flush to the module with the top lip of the mid clamp over the top edge of the module frame.





4) Tighten hardware, torque silver hardware to 10-16 ft-lbs and black hardware to 8-10 ft-lbs.

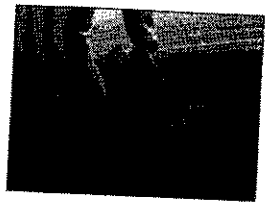


3) Place the next module flush to the other side of the mid clamp.

Module Installation

INSTALLATION INSTRUCTIONS

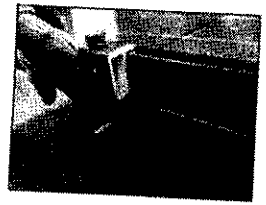
SnapNrack Adjustable End Clamp



1) Snap the channel nut into the top channel of the rail.

Install Note

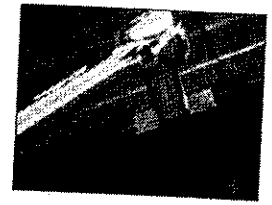
A backside flat clamp is also available for installation after the end of the module frame.



2) Slide the clamp flush to the module with the top lip of the end clamp over the top edge of the module frame.

Install Note

[illegible]



3) Tighten hardware, torque silver hardware to 10-16 ft-lbs and black hardware to 8-10 ft-lbs.

4) Install rubber end cap to finish.

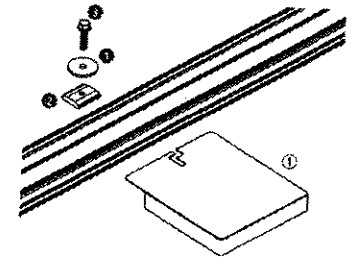
MLPE Installation

Required Tools

- Torque Wrench
- Socket Wrench
- 1/2" Socket

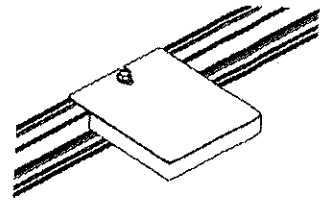
Materials Included - MLPE Rail Attachment Kit

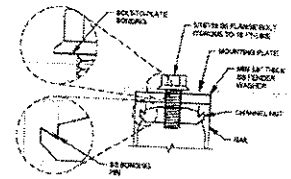
1. (1) 5/16" X 1-1/2" X 0.125" SS Fender Washer
2. (1) SnapNrack Channel Nut
3. (1) 5/16"-18 X 1-1/4" SS Flange Bolt



Other Materials Required

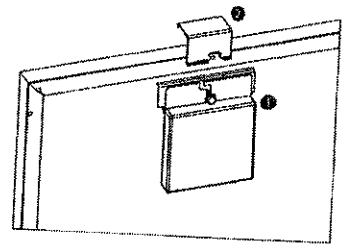
① (1) MLPE Unit





Materials Needed - Enphase Frame Mount

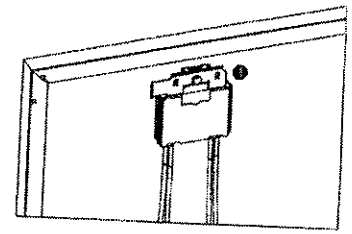
1. (1) Enphase Microinverter
2. (1) Enphase Frame Mount



Materials Needed - SolarEdge Frame Mount

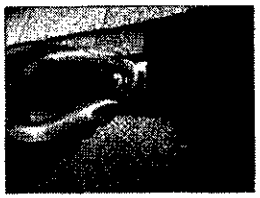
1. (1) SolarEdge Optimizer

w/ Frame-Mounted Module Add-On

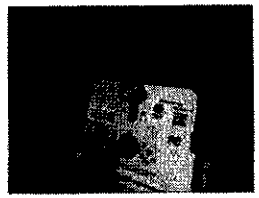


MLPE Installation

INSTALLATION INSTRUCTIONS - MLPE RAIL ATTACHMENT



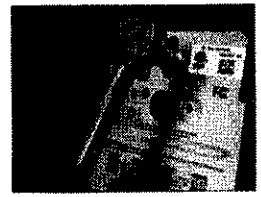
1) Snap the SnapNrack MLPE Rail Attachment Kit channel nut into the desired location on the rail where the microinverter will be installed.



2) Install the microinverter mounting plate onto the bolt of the MLPE Rail Attachment Kit, ensuring that the large fender washer is between the rail and mounting plate.

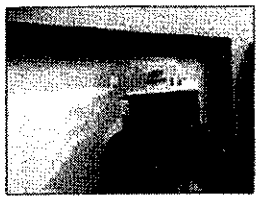
Install Note:

[illegible]

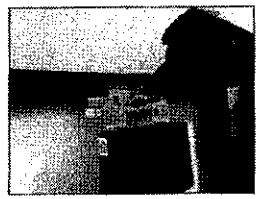


3) Tighten hardware, torque silver hardware to 10 ft-lbs.

INSTALLATION INSTRUCTIONS - SOLAREDGE FRAME MOUNT



1) Locate the SolarEdge optimizer with Frame-Mounted Module Add-On at a location on the module frame that will not interfere with the SnapNrack rail.



2) Install the optimizer mounting plate onto the module frame and tighten the hardware to 7 ft-lbs.

3) Connect the module leads to the input connectors on the optimizer.

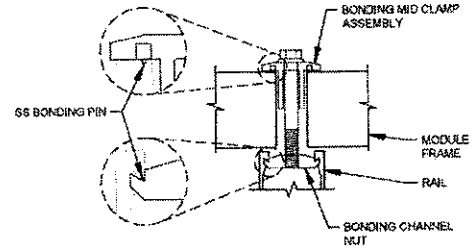
Install Note:

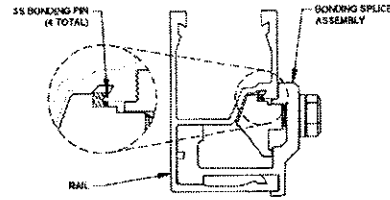
[illegible]

Grounding Specifications

System Bonding Methods

1. **SnapNrack Mid Clamp**
2. **SnapNrack Adjustable End Clamp**
3. **SnapNrack Standard Rail Splice**





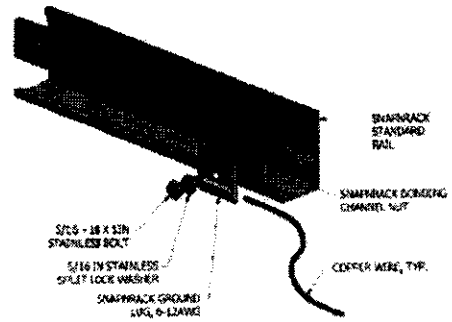
Note:

[illegible]

Note:

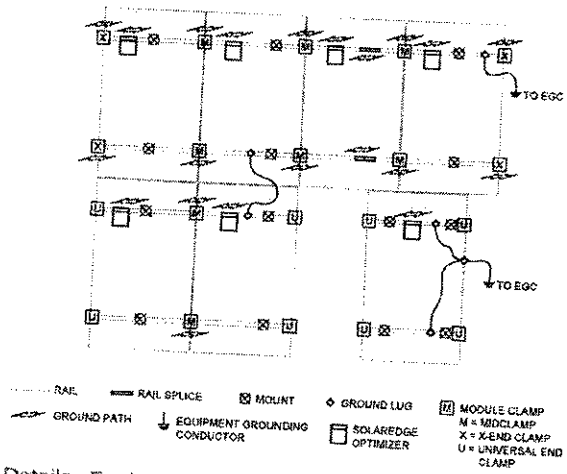
[illegible]

SnapNrack Ground Lug Assembly

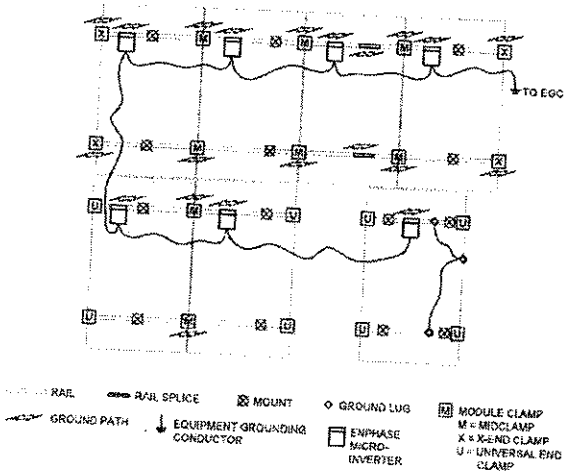


Grounding Specifications

Ground Path Details - SolarEdge



Ground Path Details - Enphase



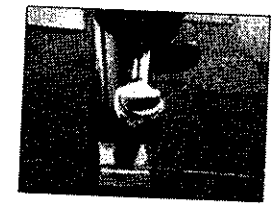
Grounding Specifications

INSTALLATION INSTRUCTIONS

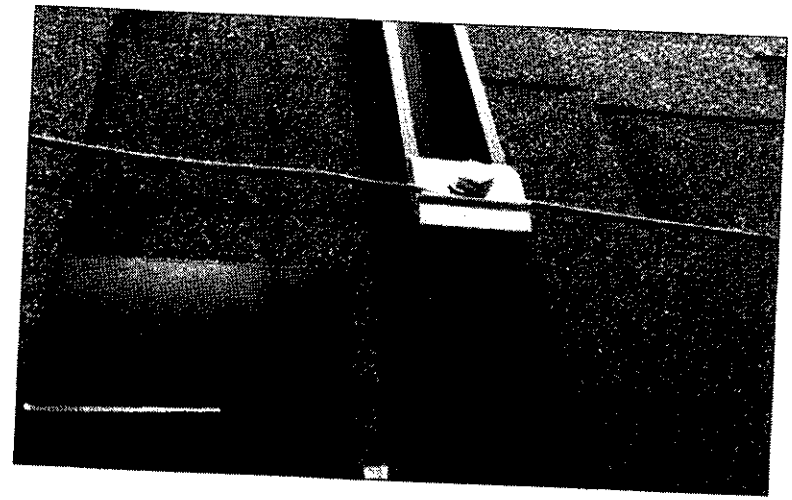
SnapNrack Ground Lug

1) Snap the SnapNrack Ground Lug into the rail channel on **one rail per module row.**

2) Place grounding conductor into slot underneath split ring washer.



3) Tighten all hardware to a minimum of 16 ft-lbs.



Grounding Specifications

Series 100 has been tested with the following UL Listed modules:

The Series 100 System employs top-down clamps which have been evaluated for frame-to-system bonding, at specific mounting torques and with the specific modules listed below. The system has been assessed to a maximum Over-Current Device (OCD) protection level of 20 amps.

Hyundai Heavy Industries Co Ltd: HiS-MxxxRG Series - HiS-M250RG, HiS-M255RG, HiS-M260RG; HiS-SxxxRG Series - HiS-S260RG, HiS-S265RG, HiS-S270RG; HiS-MxxxMG Series - HiS-M210MG, HiS-M213MG, HiS-M215MG, HiS-M218MG, HiS-M220MG, HiS-M223MG, HiS-M225MG, HiS-M228MG, HiSM230MG, HiS-M233MG, HiS-M235MG, HiS-M238MG, HiS-M240MG, HiS-M243MG, HiS-M245MG, HiS-M248MG, HiS-M250MG, HiS-M253MG, HiS-M255MG, HiS-M258MG, HiS-M260MG, HiS-M263MG, HiS-M265MG, HiS-M268MG, HiS-M270MG; HiS-SxxxMG Series - HiS-S220MG, HiS-S223MG, HiS-S225MG, HiSS228MG, HiS-S230MG, HiS-S233MG, HiS-S235MG, HiS-S238MG, HiS-S240MG, HiS-S243MG, HiS-S245MG, HiS-S248MG, HiS-S250MG, HiS-S253MG, HiS-S255MG, HiS-S258MG, HiS-S260MG, HiS-S263MG, HiS-S265MG, HiS-S268MG, HiS-S270MG, HiS-S273MG, HiS-S275MG; all may be followed by the suffix BK or blank; HiS-SxxxRW Series - HiS-S255RW, HiS-S260RW, HiS-S265RW

JA Solar: JAP6-60-xxx/3BB - JAP6-60-245/3BB, JAP6-60-250/3BB, JAP6-60-255/3BB, JAP6-60-260/3BB, JAP6-60-265/3BB; JAM6-60-xxx/SI - JAM6-60-250/SI, JAM6-60-255/SI, JAM6-60-260/SI, JAM6-60-265/SI, JAM6-60-270/SI

Jinko Solar: JKMxxxP-60 - JKM250P-60, JKM255P-60, JKM260P-60, JKM265P-60; JKMxxxP-72 - JKM305P-72, JKM310P-72, JKM315P-72, JKM320P-72; JKMxxxM-60 - JKM255M-60, JKM260M-60, JKM265M-60, JKM270M-60, JKM275M-60; JKMxxxM-72 - JKM300M-72, JKM305M-72, JKM310M-72, JKM315M-72, JKM320M-72; JKMxxxPP-60 - JKM255PP-60, JKM260PP-60, JKM265PP-60, JKM270PP-60; JKMxxxPP-72 - JKM305PP-72, JKM310PP-72, JKM315PP-72, JKM320PP-72; JKMxxxP-60-V - JKM255P-60-V, JKM260P-60-V, JKM265P-60-V, JKM270P-60-V; JKMxxxP-72-V - JKM300P-72-V, JKM305P-72-V, JKM310P-72-V, JKM315P-72-V, JKM320P-72-V; JKMxxxPP-60-V - JKM255PP-60-V, JKM260PP-60-V, JKM265PP-60-V, JKM270PP-60-V; JKMxxxPP-72-V - JKM305PP-72-V, JKM310PP-72-V, JKM315PP-72-V, JKM320PP-72-V; JKMxxxP/PP-60-V - JKM270P/PP-60-V; JKMxxxP/PP-72-V - JKM320P/PP-72-V; JKMS255P, JKMS260P, JKMS265P, JKMS270P

REC Solar AS: REC214, REC215, REC220, REC225, REC230, REC235, REC240, REC245, REC250, REC255, REC260, REC265, REC270; all followed by PE, PE(BLK), PE-US, PE-US(BLK), PE Q2 or PE Q3

Renesola Jiangsu Ltd: JCxxxM-24/BB Series - JC200M-24/Bb, JC205M-24/Bb, JC210M-24/Bb, JC215M-24/Bb, JC220M-24/Bb, JC225M-24/Bb, JC230M-24/Bb, JC235M-24/Bb, JC240M-24/Bb, JC245M-24/Bb, JC250M-24/Bb, JC255M-24/Bb, JC260M-24/Bb, JC265M-24/Bb, JC270M-24/Bb

Suniva Inc: MVX-235-60-5-701, MVX-240-60-5-701, MVX-245-60-5-701, MVX-250-60-5-701, MVX-255-60-5-701, MVX-260-60-5-701, MVX-265-60-5-701; MVX-235-60-5-7B1, MVX-240-60-5-7B1, MVX-245-60-5-7B1, MVX-250-60-5-7B1, MVX-255-60-5-7B1, MVX-260-60-5-7B1, MVX-265-60-5-7B1; OPT-250-60-4-800, OPT-255-60-4-800, OPT-260-60-4-800, OPT-265-60-4-800, OPT-270-60-4-800, OPT-275-60-4-800; OPT-250-60-4-8B0, OPT-255-60-4-8B0, OPT-260-60-4-8B0, OPT-265-60-4-8B0, OPT-270-60-4-8B0, OPT-275-60-4-8B0

Talesun: TP660P-xxx - TP660P-240, TP660P-245, TP660P-250, TP660P-255, TP660P-260, TP660P-265

Grounding Specifications

Trina Solar Ltd: TSM-xxxPD05 - TSM-215PD05, TSM-220PD05, TSM-225PD05, TSM-230PD05, TSM-235PD05, TSM-240PD05, TSM-245PD05, TSM-250PD05, TSM-255PD05, TSM-260PD05, TSM-265PD05; TSM-xxxPD05.05 - TSM-245PD05.05, TSM-250PD05.05, TSM-255PD05.05, TSM-260PD05.05, TSM-265PD05.05; TSM-xxxPD05.08 - TSM-215PD05.08, TSM-220PD05.08, TSM-225PD05.08, TSM-230PD05.08, TSM-235PD05.08, TSM-240PD05.08, TSM-245PD05.08, TSM-250PD05.08, TSM-255PD05.08, TSM-260PD05.08, TSM-265PD05.08; TSM-xxxPA05 - TSM-215PA05, TSM-220PA05, TSM-225PA05, TSM-230PA05, TSM-235PA05, TSM-240PA05, TSM-245PA05, TSM-250PA05, TSM-255PA05, TSM-260PA05; TSM-xxxPA05.05 - TSM-215PA05.05, TSM-220PA05.05, TSM-225PA05.05, TSM-230PA05.05, TSM-235PA05.05, TSM-240PA05.05, TSM-245PA05.05, TSM-250PA05.05, TSM-255PA05.05, TSM-260PA05.05; TSM-xxxPA05.08 - TSM-215PA05.08, TSM-220PA05.08, TSM-225PA05.08, TSM-230PA05.08, TSM-235PA05.08, TSM-240PA05.08, TSM-245PA05.08, TSM-250PA05.08, TSM-255PA05.08, TSM-260PA05.08

Yingli Energy (China) Co Ltd: YLxxxP-29b Series - YL215P-29b, YL220P-29b, YL225P-29b, YL230P-29b, YL235P-29b, YL240P-29b, YL245P-29b, YL250P-29b, YL255P-29b, YL260P-29b; YLxxxA-29b Series - YL220A-29b, YL225A-29b, YL230A-29b, YL235A-29b, YL240A-29b, YL245A-29b, YL250A-29b, YL255A-29b

NRTL Listed PV Modules:

Canadian Solar: CS6P-xxx-P - CS6P-255-P, CS6P-260-P, CS6P-265-P; CS6P-xxx-P-SD - CS6P-260-P-SD, CS6P-265-P-SD; CS6P-xxx-M - CS6P-265-M, CS6P-270-M; CS6K-xxx-M - CS6K-270-M, CS6K-275-M, CS6K-280-M; CS6K-xxx-P - CS6K-255-P, CS6K-260-P; CS6K-xxx-P-SD - CS6K-260-P-SD, CS6K-265-P-SD; CS6V-xxx-M - CS6V-215-M, CS6V-220-M, CS6V-225-M; CS6V-xxx-P - CS6V-250-P, CS6V-255-P; CS6X-xxx-P - CS6X-310-P, CS6X-315-P, CS6X-320-P

ET Solar: P660xxxBB - P660200BB, P660205BB, P660210BB, P660215BB, P660220BB, P660225BB, P660230BB, P660235BB, P660240BB, P660245BB, P660250BB, P660255BB, P660260BB; P660xxxWB/WW - P660200, P660205, P660210, P660215, P660220, P660225, P660230, P660235, P660240, P660245, P660250, P660255, P660260, P660265; all followed by WB or WW; P660xxxWWG - P660240WWG, P660245WWG, P660250WWG; M660xxxBB - M660250BB, M660255BB, M660260BB, M660265BB; M660xxxWW - M660200WW, M660205WW, M660210WW, M660215WW, M660220WW, M660225WW, M660230WW, M660235WW, M660240WW, M660245WW, M660250WW, M660255WW, M660260WW, M660265WW, M660270WW

Hanwha Q-Cells: Q.PRO-G4 xxx - Q.PRO-G4 255, Q.PRO-G4 260, Q.PRO-G4 265; Q.PLUS-G4 xxx -Q.PLUS-G4 270, Q.PLUS-G4 275, Q.PLUS-G4 280; Q.PRO BRF-G4 xxx - Q.PRO BRF-G4 255, Q.PRO BRF-G4 260, Q.PRO BRF-G4 265; Q.PLUS BRF-G4 xxx - Q.PLUS BRF-G4 270, Q.PLUS BRF-G4 275, Q.PLUS BRF-G4 280; Q.PRO BRF-G4.1 xxx - Q.PRO BRF-G4.1 255, Q.PRO BRF-G4.1 260, Q.PRO BRF-G4.1 265; Q.PLUS BRF-G4.1 xxx - Q.PLUS BRF-G4.1 270, Q.PLUS BRF-G4.1 275, Q.PLUS BRF-G4.1 280; Q.PRO-G3 xxx - Q.PRO-G3 250, Q.PRO-G3 255, Q.PRO-G3 260, Q.PRO-G3 265; Q.PRO-G2 xxx - Q.PRO-G2 215, Q.PRO-G2 220, Q.PRO-G2 225, Q.PRO-G2 230, Q.PRO-G2 235, Q.PRO-G2 240, Q.PRO-G2 245, Q.PRO-G2 250

Hanwha SolarOne: HSL60P6-PC-3-245, HSL60P6-PC-3-250, HSL60P6-PC-3-255, HSL60P6-PC-3-260, HSL60P6-PC-3-265, HSL60P6-PC-3-270; all followed by W or B; HSL60P6-PB-2-230Q, HSL60P6-PB-2-235Q, HSL60P6-PB-2-240Q, HSL60P6-PB-2-245Q, HSL60P6-PB-2-250Q, HSL60P6-PB-2-255Q, HSL60P6-PB-2-260Q, HSL60P6-PB-2-265Q, HSL60P6-PB-2-270Q; HSL60P6-PB-4-230Q, HSL60P6-PB-4-235Q, HSL60P6-PB-4-240Q, HSL60P6-PB-4-245Q, HSL60P6-PB-4-250Q, HSL60P6-PB-4-255Q, HSL60P6-PB-4-260Q, HSL60P6-PB-4-265Q, HSL60P6-PB-4-270Q; may be followed by additional suffixes.

JA Solar: JAP6-60-xxx/3BB - JAP6-60-245/3BB, JAP6-60-250/3BB, JAP6-60-255/3BB, JAP6-60-260/3BB, JAP6-60-265/3BB; JAM6-60-xxx/SI - JAM6-60-250/SI, JAM6-60-255/SI, JAM6-60-260/SI, JAM6-60-265/SI, JAM6-60-270/SI

LG Solar: LGxxxS1C-G4 - LG275S1C-G4, LG280S1C-G4, LG285S1C-G4; LGxxxN1K-G4 - LG300N1K-G4; LGxxxN1C-G4 - LG300N1C-G4, LG305N1C-G4, LG310N1C-G4, LG315N1C-G4, LG320N1C-G4

Grounding Specifications

Solar World: SWxxx-Mono (33mm frame, 5 busbar) – SW285-Mono, SW290-Mono, SW295-Mono, SW300-Mono; SWxxx-Mono (33mm frame) – SW260-Mono, SW285-Mono, SW290-Mono, SW295-Mono; SWxxx-Mono Black (33mm frame) – SW275-Mono Black, SW280-Mono Black, SW285-Mono Black, SW290-Mono Black; SWxxx-Poly (33mm black frame) – SW250-Mono Black, SW255-Mono Black, SW260-Mono Black; SW xxx XL Mono (33mm frame); SW 320 XL Mono, SW 325 XL Mono; SW xxx XL Mono (33mm frame) – SW 340 XL Mono, SW 345 XL Mono, SW 350 XL Mono

Suniva Inc: OPTXXX-60-4-YYY; where XXX may be numbers 240 to 270 in increments of 5; where YYY may be 100; OPTXXX-60-4-YYY; where XXX may be numbers 235 to 265 in increments of 5; where YYY may be 180

REC Solar AS: RECxxxPE Series – REC214PE, REC215PE, REC220PE, REC225PE, REC230PE, REC235PE, REC240PE, REC245PE, REC250PE, REC255PE, REC260PE, REC265PE, REC270PE; may be followed by BLK; RECxxxTP Series – REC260TP, REC265TP, REC270TP, REC275TP, REC280TP; may be followed by BLK

Talesun: TP660P-xxx – TP660P-240, TP660P-245, TP660P-250, TP660P-255, TP660P-260, TP660P-265; TP660P-xxx-B – TP660P-250-B, TP660P-255-B; TP660M-xxx – TP660M-240, TP660M-245, TP660M-250, TP660M-255, TP660M-260, TP660M-265; TP660M-xxx-B – TP660M-240-B, TP660M-245-B, TP660M-250-B, TP660M-255-B, TP660M-260-B

Trina Solar Ltd: TSM-xxxPA05 – TSM-215PA05, TSM-220PA05, TSM-225PA05, TSM-230PA05, TSM-235PA05, TSM-240PA05, TSM-245PA05, TSM-250PA05, TSM-255PA05, TSM-260PA05; TSM-xxxPA05.05 – TSM-215PA05.05, TSM-220PA05.05, TSM-225PA05.05, TSM-230PA05.05, TSM-235PA05.05, TSM-240PA05.05, TSM-245PA05.05, TSM-250PA05.05, TSM-255PA05.05, TSM-260PA05.05; TSM-xxxPA05.08 – TSM-215PA05.08, TSM-220PA05.08, TSM-225PA05.08, TSM-230PA05.08, TSM-235PA05.08, TSM-240PA05.08, TSM-245PA05.08, TSM-250PA05.08, TSM-255PA05.08, TSM-260PA05.08, TSM-265PA05.08; TSM-xxxPD05.002 – TSM-245PD05.002, TSM-250PD05.002, TSM-255PD05.002, TSM-260PD05.002, TSM-265PD05.002, TSM-270PD05.002, TSM-275PD05.002, TSM-280PD05.002, TSM-285PD05.002, TSM-290PD05.002, TSM-295PD05.002, TSM-300PD05.002, TSM-305PD05.002, TSM-310PD05.002; TSM-xxxPD05.082 – TSM-245PD05.082, TSM-250PD05.082, TSM-255PD05.082, TSM-260PD05.082, TSM-265PD05.082, TSM-270PD05.082, TSM-275PD05.082, TSM-280PD05.082, TSM-285PD05.082, TSM-290PD05.082, TSM-295PD05.082, TSM-300PD05.082, TSM-305PD05.082, TSM-310PD05.082

Mechanical Loading Specifications

The UL Listing covers mechanical load ratings for the following span lengths, module orientations and positive, negative, and side load ratings:

The worst mechanical load rating is to be used based on the combination of module and system components.

Module Manufacturer	Max Span	Orientation	Polarity	Mechanical Loading (+ lbf/ft², - lbf/ft²)
Canadian Solar Modules	72 inches	Landscape	Positive	27.5
			Negative	25
	96 inches	Portrait	Positive	16.5
			Negative	16.5
Hanwha Q Cells	72 inches	Landscape	Positive	30
			Negative	30
	96 inches	Portrait	Positive	12.7
			Negative	16.6
Hyundai	72 inches	Landscape	Positive	30
			Negative	30
	96 inches	Portrait	Positive	15.3
			Negative	15.3
REC Solar PTE, LTD	72 inches	Landscape	Positive	30
			Negative	30
	96 inches	Portrait	Positive	15.6
			Negative	15.6

Mechanical Loading Specifications

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LG Electronics	72 inches	Landscape	Positive	30
			Negative	30
	96 inches	Portrait	Positive	16.6
			Negative	16.6
Trina	72 inches	Landscape	Positive	30
			Negative	30
	96 inches	Portrait	Positive	16.6
			Negative	16.6

Mechanical Loading Specifications

Mechanical Load Rating if system is using the following components:

[illegible]	[illegible]	[illegible]	[illegible]
Comp L Foot (93 deg) with L Foot Base	72 inches	Positive	27
		Negative	16.6
All Purpose L Foot (90 deg) with L Foot Base	96 inches	Positive	16.6
		Negative	14.5
		Side Load	20.3
Universal Tile Hook	72 inches	Positive	11
Flat Tile Hook		Negative	11
		Side Load	18.5
10in Standoff with 1-Hole Base	72 inches	Positive	27.4
		Negative	25
10in Standoff with 4-Hole Base	96 inches	Positive	16.6
		Negative	16.6
		Side Load	13

Itron

Electric / Gas / Water
Information collection, analysis and application

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ANSI Compliance Statement

GE I-210+c and I-210+ce with Itron Cellular Module

October 5, 2012

Itron supplies NJR with GE I-210+c and I-210+ce meters integrated with Itron GPRS, 1xRTT and 3G Cellular Modules. These integrated I-210+c and I-210+ce meters are utility-grade products designed, manufactured, tested, and certified to meet all applicable ANSI standards. The cellular-enabled I-210+c and I-210+ce feature all original meter hardware and soft keys enabling them to quantify the following metrics:

- Energy and Demand (I-210+c)
- Energy only (I-210+ce)

As the meter or the communication hardware or firmware changes, the integrated product must comply with the ANSI standards. The most recent ANSI certification was completed on June 11, 2012 [Ref: MET Report: EMC & TEL32232A-ANSI REV. 1]. ANSI certification can be verified by locating the meter's unique identifier printed on the label above the meter display as shown below:

Each ANSI-certified 1xRTT meter will feature one of the following labels:

ITRON MODEL: SSI I210 1x FCC ID: QHC-SSI2101X

SMARTSYNCH MODEL: SSI I210 1x FCC ID: QHC-SSI2101X

Itron

Each ANSI-certified GPRS meter will feature one of the following labels:

ITRON MODEL: GEI210GPRSV1.0 FCC ID: QHC-I210GPRS

SMARTSYNCH MODEL: GEI210GPRSV1.0 FCC ID: QHC-I210GPRS

Each ANSI-certified 3G meter will feature one of the following labels:

ITRON MODEL: SSI I210 3G FCC ID: QHC-I2103G

SMARTSYNCH MODEL: SSI I210 3G FCC ID: QHC-I2103G

For more information, please contact Itron Technical Support Services at 1-888-362-1780 or support@itron.com.

Itron, Inc, Cellular Solutions
Jan Forslow, Product Management

MET Laboratories, Inc.
914 W. Patapsco Ave. Baltimore, MD 21230
410-354-3300, Fax: 410-354-3313, 800-638-6057 www.metlabs.com

September 27, 2012

SmartSynch Inc.
4400 Old Canton Road
Suite 300
Jackson, MI 39211

Dear Mike Mathis,

It is our pleasure to inform SmartSynch Inc. that the GE Meters, have completed testing at MET Laboratories, Inc., under job #32232. The GE I-210+c Meter with the Smart Synch/Itron Communication Module meets or exceeds the requirements of the following ANSI 12.1 and ANSI 12.20 Tests.

ANSI C12.20 – 2010
- 5.5.4.1 – No Load – Test #1
- 5.5.4.2 – Starting Load – Test #2
- 5.5.4.3 – Load Performance – Test #3
- 5.5.4.4 – Variation of Power Factor – Test #4
- 5.5.4.5 – Variation of Voltage – Test #5
- 5.5.4.6 – Variation of Frequency – Test #6
- 5.5.4.8 – Internal Meter Losses – Test #8
- 5.5.4.9 – Temperature Rise – Test #9
- 5.5.4.11 – Effect of Internal Heating – Test #11
- 5.5.5.2 – Insulation – Test #15
- 5.5.5.3 – Voltage Interruptions – Test #16
- 5.5.5.4 – Effect of High Voltage Line Surges – Test #17
- 5.5.5.5 – Effect of External Magnetic Field – Test #18
- 5.5.5.1 – Performance Verification
- 5.5.5.6 – Variation of Ambient Temperature – Test #19
- 5.5.5.12 – Electrical Fast Transient/Burst – Test #25
- (ANSI C12.1-2008) – Effect of electrical oscillatory SWC – Test #25a
- 5.5.5.13 – Effect of Radio Frequency Interference – Test #26
- 5.5.5.14 – Radio Frequency Conducted and Radiated Emissions – Test #27
- 5.5.5.15 – Effect of Electrostatic Discharge – Test #28
- 5.5.5.17 – Effect of Operating Temperature – Test #30
- 5.5.5.18 – Effect of Relative Humidity – Test #31
- 5.5.5.19 – Mechanical Shock – Test #32
- 5.5.5.20 – Transportation Drop – Test #33
- 5.5.5.21 – Mechanical Vibration – Test #34
- 5.5.5.22 – Transportation Vibration – Test #35

For specific details regarding the extent of the testing and the configuration of the product tested, please consult the MET Laboratories' Detailed Test Report, EMC and TEL32232-ANSI Rev. 1. Please contact me with any questions or comments.

Sincerely,

Jim Reed
Manager, Meter Accuracy Laboratory

Manasi Bhandiwad
Manager, EMC Laboratory

Township of Brick

PHOTOVOLTAIC SOLAR PANEL INSTALL CHECKLIST

REVISED 05/04/16

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

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.