BLOCK 1170.04 LOT 5 QUALIFICATION CODE _____ ADDRESS (SITE) 136 John Street PERMIT NO. 10-3212

CONSTRUCTION PERMIT APPLICATION

RECD OCT 04 2010

C-10-0036686

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

I. IDENTIFICATION

1. Proposed Work Site at: 136 John Street Brick, NJ 08724
2. Name Linda + Gary Roe
   Tel. [redacted] e-mail Corbin Solar Solutions, LLC
   Address Same (street) (municipality) 699 Tennent Road (zip code) Manalapan, NJ 07726
3. Ownership in Fee: Public _____ Private _____
4. Principal Contractor: Tel. ( ) Phone: (732) 536-3004
   Address _____ e-mail Fax: (732) 536-8547
   License No. OR, if new home, Builder Reg. No. 13VH04924700 Exp. date _____
   Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
   Federal Emp. ID No. 20-8275796 FAX: ( ) _____
5. Architect or Engineer _____ Contact _____
   Address _____ e-mail _____
   Tel. ( ) _____ FAX: ( ) _____
6. Responsible Person in Charge once Work has Begun Rick Sehein
   Tel. (732) 536 3004 FAX: (732) 536 8547

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$ 75 ✓		
2. Electrical	200 ✓		
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee	57		
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$ 332		

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 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

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					10/22/10	[illegible]			
☐ Electrical					10/25/10	✓			
☐ Plumbing									
☐ Fire Protection									
☐ Elevator		Eng Exempt			10/20/2010	Eng			
TOTAL COST									

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
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPGas Tanks

U.C.C. F100-1 (rev. 12/07)

Called 10-28-10

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 Corbin

Address Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726

Telephone ( ) Phone: (732) 536-3004
Fax: (732) 536-8547

Signature _____

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

OFFICE DATE RECEIVED: _____

VIII. PRIOR APPROVALS CHECKLIST (office use only)	LOCAL APPROVAL		COUNTY APPROVAL		REGIONAL APPROVAL		STATE APPROVAL		COMMENTS
	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	
☐ Zoning Officer									
☐ Planning Board									
☐ Zoning Board									
☐ Sewer Authority									
☐ Water Authority									
☐ Police Department									
☐ Health Department									
☐ Soil Conservation									
☐ N.J. Department of Community Affairs									
☐ N.J. Department of Transportation									
☐ N.J. Department of Environmental Protection									
☐ Utility Dig No.									
☐									
☐									

IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)

Name of Code & Edition		Name of Code & Edition			
Building	_____	Energy	_____	Other	_____
Electrical	_____	Barrier Free	_____		_____
Plumbing	_____	Flood Hazard	_____		_____
Fire Protection	_____	As Built Elevation Cert.	_____		_____
Mechanical	_____	Other	_____		_____

X. CERTIFICATES ISSUED (office use only)

		DATE ISSUED	DATE EXPIRED	DATE REISSUED	DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____	_____	_____	_____	_____
☐ Temporary Certificate of Compliance	No. _____	_____	_____	_____	_____
☐ Continued Certificate of Occupancy	No. _____	_____	_____	_____	_____
☐ Certificate of Compliance	No. _____	_____	_____	_____	_____
☐ Certificate of Occupancy	No. _____	_____	_____		
☐ Certificate of Approval	No. _____	_____	_____		
☐ Lead Abatement Clearance Certificate	No. _____	_____	_____	_____	_____

Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 12/08/2010
Control Number C-10-003686
Permit Number 10-3212
Permit Issue Date 11/22/2010
Certificate Number 10-3212

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 136 JOHN ST Brick Township, NJ Block: 1170.04 Lot: 5 Qual:

Owner in Fee: ROE, LINDA & GARY T

Owner Address: 136 JOHN STREET BRICK NJ 08724

Telephone:

Contractor CORBIN SOLAR SOLUTIONS LLC

Address 699 TENNENT RD MANALAPAN NJ 07726

Telephone: (732) 536-3004 Fax: (732) 536-8547

License Number or Builders Registration Number: 13VH04924700 Federal Emp. Number: 20-82757-96

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

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:

Date Printed: 12/08/2010 U.C.C. F260 (rev. 08/05)

CONSTRUCTION PERMIT

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Issued: 11/23/10
Control #: C-10-003686
Permit #: 10-3312

IDENTIFICATION Block: 1170.04 Lot: 5 Qualifier
Work Site Location: 136 JOHN ST Brick Township, NJ
Contractor: CORBIN SOLAR SOLUTIONS LLC
Address: 699 TENNENT RD MANALAPAN NJ 07726
Owner in Fee: ROE, LINDA & GARY T
136 JOHN STREET BRICK NJ 08724
Telephone: (732) 536-3004
Lic. No. or Bldrs. Reg. No. 13VH04924700
Telephone:
Federal Employee. No. 20-82757-96

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

Note: If constuction 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 $33,614

Construction Official — Date: 10-26-10

PAYMENTS (Office Use Only)	
Building	$75
Electrical	$200
Plumbing	$0
Fire Protection	$0
Elevator Devices	$0
Other	$0.00
DCA Training Fee	$57
CO Fee	
Other	$0
Total	$332
Check No.	
Cash	$0
Credit	$0
Collected By	

U.C.C. F170
equiv (rev 8/03)

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.

**02 SERV.002	
	$75.0
ELECTRIC	$200.00
DCA	$57.0
	$50.00
**TOTAL	$382.00
CHECK	$382.00
	$0.00

- [ ] 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.

- [x] Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

contractor must provide ladder on site for inspections

- [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".

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

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

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 5 Qualification Code

Work Site Location 136 John Street
Brick, NJ 08724

Owner in Fee Linda + Gary Roe

Address Same

[redacted]

Contractor Corbin

Address Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726

Tel. ( ) Phone: (732) 536-3004

Lic. No. or Bldrs. Reg. No. 13VH04924700 Fax: (732) 536-8547

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) [X] OTHER Solar

DESCRIPTION OF WORK: Installation of rails + hardware

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 $ 1144.00

Construction Official

Date

PAYMENTS (Office Use Only)

Building
Electrical
Plumbing
Fire Protection
Elevator Devices
Other
DCA State Permit Fee
Cert. of Occupancy
Other
Total
Check No.
Cash
Collected by

(see reverse side)

U.C.C. F170 (rev. 01/04)
1 WHITE–INSPECTOR 2 CANARY–OFFICE 3 PINK–TAX ASSESSOR 4 GOLD–APPLICANT
OCS Printing (609) 398-4375

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 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 given.

☐ 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 the case 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. Utility services, including septic.
4. Radon Inspection
5. 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.

☐ 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.

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 5 Qualification Code

Work Site Location 136 John Street
Brick, NJ 08724

Owner in Fee Linda & Gary Rice

Address Same

Tel. [redacted]

Contractor Corbin
Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726
Phone: (732) 536-3004
Fax: (732) 536-8547

Address

Tel. ( )

Lic. No. or Bldrs. Reg. No. 13VH04924700

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) [X] OTHER Solar

DESCRIPTION OF WORK:
Installation of rails + hardware

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 $ 1144.00

Construction Official

Date

PAYMENTS (Office Use Only)

Building
Electrical
Plumbing
Fire Protection
Elevator Devices
Other
DCA State Permit Fee
Cert. of Occupancy
Other
Total
Check No.
Cash
Collected by

(see reverse side)

U C C. F170 (rev. 01/04)

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

OCS Printing (609) 398-4375

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 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 given.

☐ 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 the case 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. Utility services, including septic.
4. Radon Inspection
5. 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.

☐ 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.

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 5 Qualification Code

Work Site Location [illegible]
Brick, NJ 7724

Owner in Fee [illegible]

Address [illegible]

Te [redacted]

Contractor Corbin

Address Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726

Tel. ( ) Phone: (732) 536-3004

Lic. No. or Bldrs. Reg. No. Fax: (732) 536-8547

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) [x] OTHER [illegible]

DESCRIPTION OF WORK:

[illegible]

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 $ [illegible]

Construction Official

Date

PAYMENTS (Office Use Only)

Building
Electrical
Plumbing
Fire Protection
Elevator Devices
Other
DCA State Permit Fee
Cert. of Occupancy
Other
Total
Check No.
Cash
Collected by

(see reverse side)

U C C. F170 (rev 01/04)
1 WHITE–INSPECTOR 2 CANARY–OFFICE 3 PINK–TAX ASSESSOR 4 GOLD–APPLICANT
OCS Printing (609) 398-4375

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 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 given.

☐ 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 the case 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. Utility services, including septic.
4. Radon Inspection
5. 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.

☐ 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.

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 117(.04 Lot 5 Qualification Code

Work Site Location

Owner in Fee

Address

Tel. ( )

Contractor Corbin Solar Solutions, LLC

Address 699 Tennent Road Manalapan, NJ 07726

Tel. ( ) Phone: (732) 536-3004

Lic. No. or Bldrs. Reg. No. Fax: (732) 536-8547

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:

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 $

Construction Official

Date

PAYMENTS (Office Use Only)

Building

Electrical

Plumbing

Fire Protection

Elevator Devices

Other

DCA State Permit Fee

Cert. of Occupancy

Other

Total

Check No.

Cash

Collected by

(see reverse side)

U C C. F170 (rev. 01/04)

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

OCS Printing (609) 398-4375

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 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 given.

☐ 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 the case 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. Utility services, including septic.
4. Radon Inspection
5. 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.

☐ 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.

BUILDING SUBCODE
TECHNICAL SECTION

Date Received 11/22/10
Control #

Date Issued
Permit # 10-3212

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

Block 1170.04 Lot 5 Qualification Code

Work Site Location 136 John Street
Brick, NJ 08724

Owne [redacted] Corey Call

Tel. ( )

Address Sunit street municipality

Contractor: Corbin Solar Solutions, LLC Tel. ( )

Address 699 Tennent Road e-mail
Manalapan, NJ 07726
Phone: (732) 536-3004
Fax: (732) 536-8547

Contractor License No. or Builder Registration No. 13VH04924700 Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 20-8075796 FAX: ( )

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footings/Foundations		
[ ] Structural/Framework		
[ ] Exterior		
[X] ~~Interior~~	10/22/10	

Joint Plan Review Required:
[ ] Elec. [ ] Plumb. [ ] Fire [ ] Elevator

SUBCODE APPROVAL for PERMIT
Date:
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: 12/8/10
Approved by:

INSPECTIONS Type:	Failure	Failure	Approval	Initial
	Dates (Month/Day)			
Footing				
Footing Bonding				
Foundation				
Slab				
Frame				
Truss Sys./Bracing				
Barrier-Free				
Insulation				
Finishes -Base Layer				
Finishes -Final				
Energy				
Mechanical				
TCO				
Other				
Final			12/2/10	
Barrier-Free				

B. BUILDING CHARACTERISTICS

Use Group Present Proposed
No. of Stories
Height of Structure ft.
Area — Largest Floor sq. ft.
New Bldg. Area/All Floors sq. ft.
Volume of New Structure cu. ft.
Max. Live Load
Max. Occupancy Load

Constr. Class Present Proposed

If Industrialized Building:
State Approved HUD

Est. Cost of Bldg. Work:
1. New Bldg. $
2. Rehabilitation $
3. Total (1+ 2) $ 1144.00

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.

Signature

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
Installation of rails and hardware.

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 solar
[ ] Demolition

FEE (Office Use Only)
$

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

U.C.C. F110 (rev. 12/07)
Internet version

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

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received / Control # 11/22/10

Date Issued / Permit # 10-3212

A. IDENTIFICATION

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

Block 1170.04 Lot 5 Qualification Code

Work Site Location 136 John Street
Brick NJ 08724

Owner in Fee: Thad + Gary Roe

Tel. [redacted] mail

Address same
street municipality

Contractor: CORBIN ELECTRICAL SERVICES, INC. Tel

Address 699 Tennent Road Manalapan, NJ 07726-3127 e-mail
PH (732) 536-0444
FAX (732) 536-8547

Contractor License No. 6419 Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 22-3121404 FAX: ( )

B. ELECTRICAL CHARACTERISTICS

Use Group Present Proposed

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

Building Occupied as Utility Co.

Est. Cost of Elec. Work $ 32,470

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved

Date: Approved by:

[✓] Electric Plans Approved

Date 10/25/10 Approved by: DJ

Joint Plan Review Required:
[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: 10/25/10
Approved by: DJ

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: 12-7-10
Approved by: D. Lane

INSPECTIONS	Dates (Month/Day)			
Type:	Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final			12-2-10	DM
Barrier-Free				

Temp. Cut-in-Card Date Issued

Final Cut-in-Card Date Issued

Annual Pool Inspection

Date of Grounding and Bonding Certification

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's Seal and Signature

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

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
Installation of a 6.37kw solar electric system (roof mount)

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
		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	
		AMP Service	
1	30A	AMP Subpanels disconnects	
1	15A		
3		AMP Motor Control Center inverters	
		KW Elec. Sign/Outline Light	
1	6.37	KW PV system	

Administrative Surcharge $

Minimum Fee $

State Permit Surcharge Fee $

TOTAL FEE $

Community Development and Land Use
401 Chambers Bridge Rd.
Brick NJ 08723
(732) 262-1027

Receipt

Payment Date 11/22/2010
Transaction # PMT-10-06494
Receipt #

Issued To jacket

Description Permit #10-3212

Date Printed 11/22/2010
Check Number 5261

Cash	$0.00
Check	$50.00
Charge	$0.00
Total Paid	$50.00

RECEIVING CLERK _____
DATE REC'D 10-18-10

ZONING PERMIT APPLICATION

PERMIT # ZP-10-00869
DATE ISSUED 11/22/10

BLOCK: 1170.04 LOT: 5 QUALIFIER: — SITE ADDRESS: 136 JOHN STREET

IDENTIFICATION:

1. NAME OF OWNER IN FEE: LINDA & GARY ROE
   COMPLETE ADDRESS: 136 JOHN STREET
   BRICK, NJ 08724
   PHONE # [redacted] EMAIL: _____

2. NAME OF APPLICANT: CORBIN SOLAR SOLUTIONS, LLC
   APPLICANT ADDRESS: 699 TENNENT ROAD
   MANALAPAN, NJ 07726
   PHONE # 732.536.3004 EMAIL: _____

3. RESPONSIBLE PERSON FOR WORK: RICK SEHEIN
   PHONE# 732.536.3004 FAX# _____

4. SIGNATURE OF APPLICANT: _____

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: $ 50.00
OTHER: $ _____
TOTAL: $ _____

REQUIRED BY APPLICANT

RESIDENTIAL: X
COMMERCIAL: _____
EXISTING USE: SINGLE FAMILY
PROPOSED USE: SINGLE FAMILY

BOARD APPROVAL: ___ PB ___ ZB
RESOLUTION#: _____
APPROVAL DATE: _____

PROJECT DESCRIPTION: (PLEASE CHECK APPLICABLE WORK & DESCRIBE)
*NEW BUILDING: _____ *ADDITION _____ *ALTERATION X *PORCH _____ *DECK _____

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

HEIGHT: _____ (*IF APPLICABLE)

OTHER _____

DESCRIPTION: SOLAR PANELS

ZONING REVIEW:
DATE REVIEWED: 10-18-10 DATE DENIED: — DATE APPROVED: 10-18-10 INTLS: MKZ

(SEE BACK PAGE)

TOWNSHIP OF BRICK ZONING CHECKLIST

1) **Two (2) copies of plot plan containing:**

- All existing and proposed structures
- All dimensions of the lot and structures
- All setbacks from the structures to the property lines
- All adjacent streets and waterways
- If applicable, include a copy of the Zoning Board of Adjustment Resolution, the date that the map was signed, and/or the date that the subdivision map was filed with the Ocean County Clerk, along with the file map and number.

2) **Two copies of the plans with dimensions and heights noted:**

- Floor plans and elevations
- Signed site plans
- Property map
- Survey map

Choose which is applicable for submission

3) **Plot plans and building plans must match for complete review**

NOTE: NO PARTIAL, TAPED, FAXED, REDUCED OR ENLARGED COPIES CAN BE ACCEPTED

01/2010

245 Attachment 5

Township of Brick

SCHEDULE OF AREA, YARD AND BUILDING REQUIREMENTS
Township of Brick
Ocean County, New Jersey

[Amended 6-26-1979 by Ord. No. 354-2B-79; 4-22-1980 by Ord. No. 354-2H-80; 10-14-1980 by Ord. No. 354-2N-80; 9-23-1980 by Ord. No. 354-1B-80; 8-25-83 by Ord. No. 354-2SS-83; 11-5-1984 by Ord. No. 354-2-AAA-84; 11-5-1984 by Ord. No. 354-2CCC-84; 6-24-1986 by Ord. No. 354-2WWW-86; 9-13-1988 by Ord. No. 354-2TTTT-88; 9-27-1988 by Ord. No. 354-2XXXX-88; 9-12-2000 by Ord. No. 354-2EE-00; 5-9-2000 by Ord. No. 354-2Z-00; 3-26-2002 by Ord. No. 354-2C-02; 11-26-2002 by Ord. No. 354-2L-02; 3-25-2003 by Ord. No. 354-2D-03; 6-13-2006 by Ord. No. 19-06]

	Minimum Lot Size						Minimum Required Yard Depth												
	Interior Lots			Corner Lots			Principal Building				Accessory Building		Maximum Lot Coverage by Building	Maximum Building Height				Minimum Floor/ Building Area (square feet) 2 stories/1 story	Maximum Allowable Impervious Coverage
Zone	Area (square feet)	Width (feet)	Depth (feet)	Area (square feet)	Width (feet)	Depth (feet)	Front Yard (feet)	Side Yard, Each (feet)	Both Sides Combined (feet)	Rear Yard (feet)	Side Yard (feet)	Rear Yard[3] (feet)		Stories	Eaves (feet)	Feet	Ridge (feet)		
R-R	40,000	150	150	40,000	150	150	50	25		50	25	25	25%	–	25			–	
RR-2	See § 245-90.																		
RR-3	See § 245-103.																		
R-20	20,000	100	125	25,000	100	125	40	15	–	40	10	10	25%	–	25	35	38.5	–	
R-15	15,000	100	115	17,250	100	115	35	12	–	35	10	10	25%	–	25	35	38.5	–	
R-10	10,000	90	100	10,500	100	100	30	6	20	20	5	5	30%	–	25	35	38.5	–	
R-7.5	7,500	75	90	9,000	75	90	25	6	15	15	5	5	30%	–	25	35	38.5	–	
R-5	5,000	50	75	6,000	50	75	20	5	12	15	5	5	35%	–	25	35	38.5	–	
O-P	15,000	100	150	15,000	100	150	50	10	–	50	20	50	35%[2]	2	–	35	38.5	1,500	70%
B-1	10,000	100	90	12,500	100	125	30	10	–	20	10	20	30%[2]	2	–	35	38.5	1,000	60%
B-2	20,000	125	125	20,000	125	125	50	10	–	50	10	50	30%[2]	2	–	35	38.5	2,000	65%
B-3	2 acres	200	200	2 acres	200	200	75	30	–	50	20	50	25%[2]	–	–	35	38.5	2,000	65%
B-4	5 acres	300	300	–	–	–	100	50(150[1])	–	100(150[1])	20	50	25%	3	–	35	38.5	30,000	70%
M-1	5 acres	300	300	5 acres	300	300	100	50	–	150	75	150	30%[2]	–	–	35	38.5	5,000	65%
R-M	25 acres	350	200	–	–	–	50	50	–	30	30	30	20%	–	25	35	38.5	–	65%
O-P-T	40,000	150	150	40,000	150	150	50	20	–	50	20	50	25%[2]	2	–	35	38.5	2,000	50%
H-S	See § 245-261.													–	–	–	–		70%

NOTES:

1 If adjacent to residential zone or use.

2 The maximum lot coverage shall refer only to that percentage of an affected lot which is suitable for building.

3 For rear yard setback requirements for accessory buildings on waterfront property, see § 245-10D.

OFFICE USE ONLY

RECEIVED
OCT 18 2010
SE28

ZONING REVIEW:

DATE REVIEWED: 10-18-10 DATE DENIED: — DATE APPROVED: 10-18-10 INTLS: SE28

DATE:	COMMENTS:	INITIALS:

Brick Township
401 Chambers Bridge Rd.

Brick, NJ 08723
(732) 262-1027

Date Issued: 11/22/10
Application Number: ZA-10-01052
Application Date: 10/18/2010
Project Number:
Permit Number: ZP-10-00869
Fee: $50

Zoning Permit

Worksite Location: **136 JOHN STREET**
Laurel Acres
BRICK, NJ 08724

Block: **1170.04**
Lot: **5**
Qualifier:
Zone: **R-7.5**

Owner: **ROE, LINDA & GARY T**
Address: **136 JOHN STREET**
BRICK, NJ 08724

Applicant: **Rick Sehein; Corbin Solar Solutions, LLC**
Address: **699 Tennent Road**
Manalapan, NJ 07726

Application Approved Date: 10/18/2010

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

Use is: Single-Family Residential
Nonconforming Use is:

Work Description:
Solar Panels - Roof-mounted on the house.

Upon review it was determined that:

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

Sean Kinnevy, Zoning Officer — 10/18/2010 Date

Michael P. Fowler, Township Planner — 10/15/10 **Date**

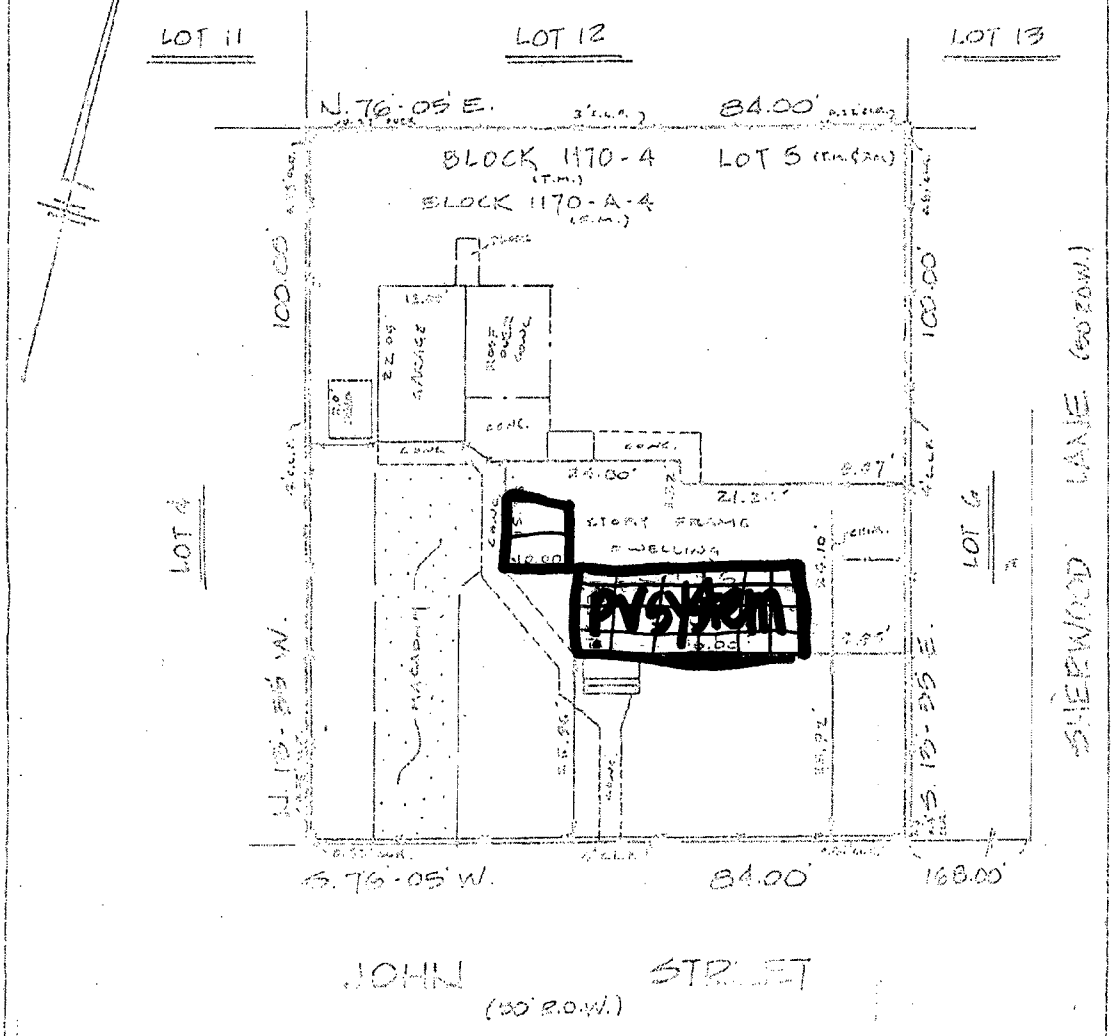
PLAN OF SURVEY

STEPHEN A. & LINDA S. ZIMENOFF

SITUATE IN

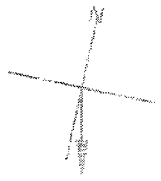
BRICK TOWNSHIP - OCEAN COUNTY, NEW JERSEY

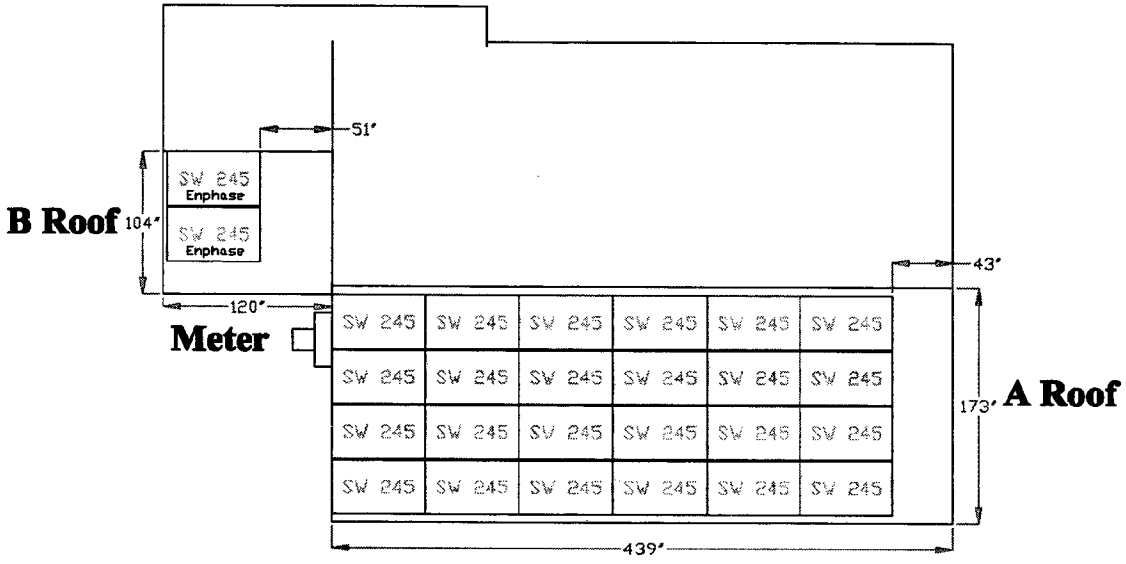
BLOCK 1170.04 LOT 5



APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

OCT 18 2010

A Orientation	
	
168°	
A Roof Tilt	
23°	
B Orientation	
	
168°	
B Roof Tilt	
18°	



I approve the solar array layout as shown on this drawing.

Client's approval

APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER
OCT 18 2010

Location	**Contact**	
Modules: 26 Modules Located on Front roofs	Name: Roe, Grant	Phone # 908 208 5711
Inverter: Located next to service panel	Address: 136 John Street, Brick, NJ	
Batteries: N/A	Utility: JCPL	Acct. # 10 00 17 3146 1 6
Lockable Disconnect: On inverter	Installer: Corbin Solar Solutions, LLC	
Point of Connection: Circuit breakers in service panel	Phone # 732 536 3004	Email: Rick@corbinsolar.com

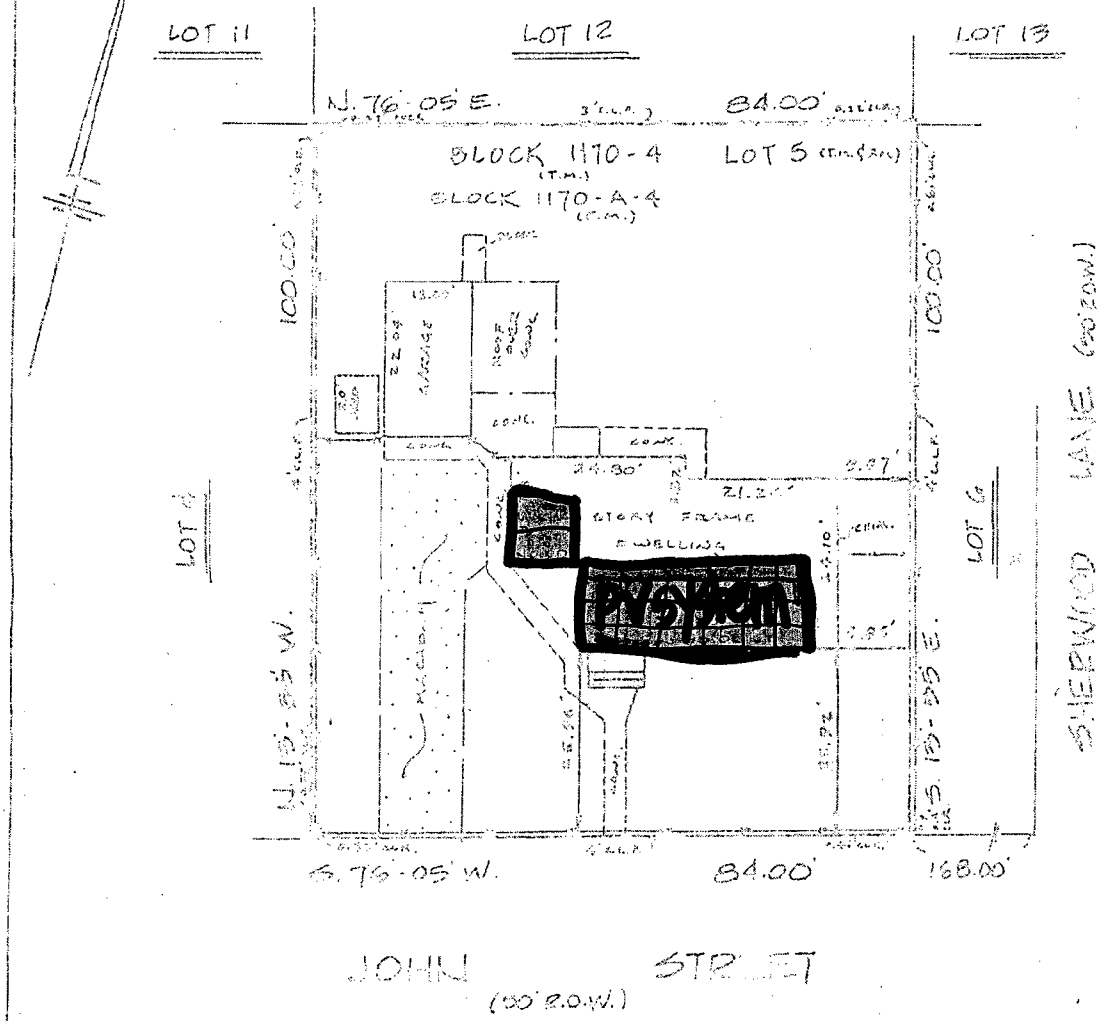
PLAN OF SURVEY

STEPHEN A. & LINDA G. ZIMENOFF

SITUATE IN

BRICK TOWNSHIP & OCEAN COUNTY, NEW JERSEY

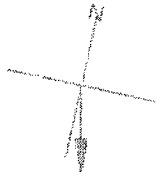
BLOCK 1170.04 LOT 5

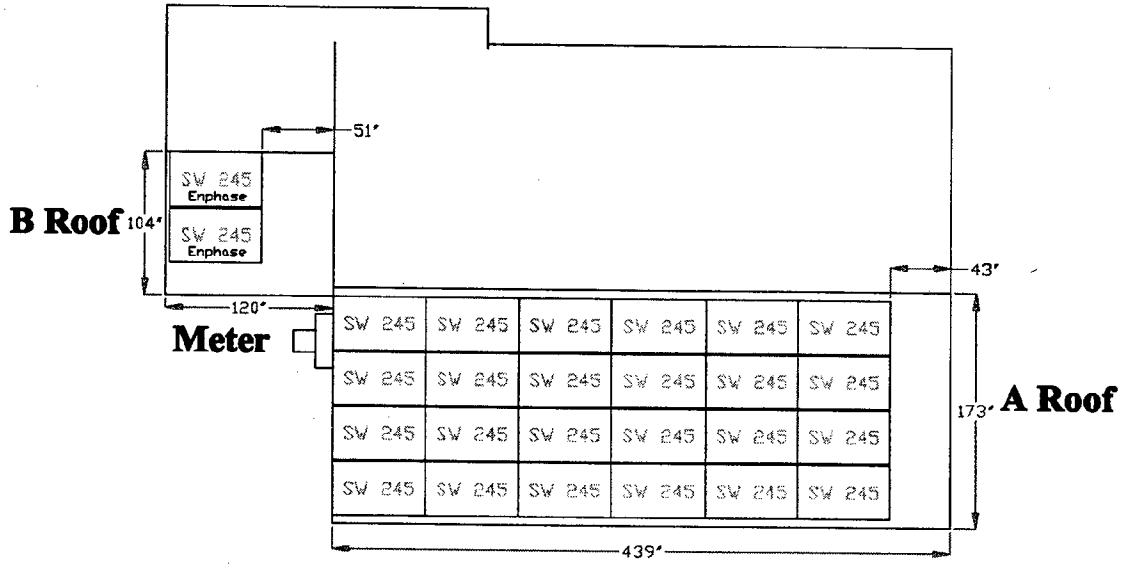


THIS CERTIFICATION IS MADE ONLY TO ABOVE NAMED PARTIES FOR PURCHASE AND/OR MORTGAGE OF HEREIN DELINEATED PROPERTY BY ABOVE NAMED PURCHASER. NO RESPONSIBILITY OR LIABILITY IS ASSUMED BY SURVEYOR FOR USE OF SURVEY FOR ANY OTHER PURPOSE INCLUDING, BUT NOT LIMITED TO, USE OF SURVEY FOR

APPROVED FOR ZONING ONLY
SEAN KINNEY, ZONING OFFICER

OCT 18 2010

A Orientation	
168°	
A Roof Tilt	
23°	
B Orientation	
168°	
B Roof Tilt	
18°	



John Street

I approve the solar array layout as shown on this drawing.

Client's approval

APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

OCT 18 2010

Location	**Contact**	
Modules: 26 Modules Located on Front roofs	Name: Roe, Grant	Phone # 908 208 5711
Inverter: Located next to service panel	Address: 136 John Street, Brick, NJ	
Batteries: N/A	Utility: JCPL	Acct. # 10 00 17 3146 1 6
Lockable Disconnect: On inverter	Installer: Corbin Solar Solutions, LLC	
Point of Connection: Circuit breakers in service panel	Phone # 732 536 3004	Email: Rick@corbinsolar.com

RECEIVING CLERK
DATE REC'D 10-18-10

ZONING PERMIT APPLICATION

PERMIT #
DATE ISSUED

BLOCK: 1170.04 LOT: 5 QUALIFIER: SITE ADDRESS: 136 John Street

IDENTIFICATION:

1. NAME OF OWNER IN FEE: Linda + Gary Roe
COMPLETE ADDRESS: 136 John Street
Brick, NJ 08724
PHONE # [redacted] EMAIL: [redacted]

2. NAME OF APPLICANT: Corbin Solar Solutions, LLC
APPLICANT ADDRESS: 699 Tennent Road
Manalapan, NJ 07726
PHONE # 732 536 3004 EMAIL: rick@corbinsolar.com

3. RESPONSIBLE PERSON FOR WORK: Rick Sehein
PHONE# 732 536 3004 FAX# 732 536 0547

4. SIGNATURE OF APPLICANT:

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: $
OTHER: $
TOTAL: $

REQUIRED BY APPLICANT

RESIDENTIAL: X
COMMERCIAL:
EXISTING USE: X
PROPOSED USE

BOARD APPROVAL: ___ PB ___ ZB
RESOLUTION#:
APPROVAL DATE:

PROJECT DESCRIPTION: (PLEASE CHECK APPLICABLE WORK & DESCRIBE)
*NEW BUILDING: *ADDITION *ALTERATION solar *PORCH *DECK

POOL: ABOVE GROUND IN GROUND FENCE: HEIGHT TYPE

HEIGHT: (*APPLICABLE)

OTHER

DESCRIPTION: installation of a 6.37 kw solar electric system

ZONING REVIEW:
DATE REVIEWED: DATE DENIED: DATE APPROVED: INTLS:

(SEE BACK PAGE)

BUILDING SUBCODE
TECHNICAL SECTION

Date Received 11/22/10
Control #

Date Issued 10-22-10
Permit #

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

Block 1702.04 Lot 5 Qualification Code _____

Work Site Location [illegible] St John Street
Brick NJ 08724

Owner in Fee: [illegible]

Tel. ( ) [illegible] e-mail _____

Address [illegible] Street
street municipality

Corbin
Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726
Phone: (732) 536-3004
Fax: (732) 536-8547

Contractor: _____ Tel. ( )

Address _____ e-mail _____

Contractor License No. or Builder Registration No. [illegible] Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. [illegible] FAX: ( ) _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footings/Foundations		
[ ] Structural/Framework		
[ ] Exterior		
[X] Interior	10/22/10	[illegible]

Joint Plan Review Required:
[ ] Elec. [ ] Plumb. [ ] Fire [ ] Elevator

SUBCODE APPROVAL for PERMIT
Date: _____
Approved by: _____

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: _____
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				
Barrier-Free				

B. BUILDING CHARACTERISTICS

Use Group Present _____ Proposed _____
No. of Stories _____
Height of Structure _____ ft.
Area — Largest Floor _____ sq. ft.
New Bldg. Area/All Floors _____ sq. ft.
Volume of New Structure _____ cu. ft.
Max. Live Load _____
Max. Occupancy Load _____

Constr. Class Present _____ Proposed _____
If Industrialized Building:
State Approved _____ HUD _____

Est. Cost of Bldg. Work:
1. New Bldg. $ _____
2. Rehabilitation $ _____
3. Total (1+ 2) $ 11,444.00

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.

Signature [illegible]

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
Installation of roof and equipment.

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 [illegible]
[ ] Demolition

FEE (Office Use Only)
$ _____

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

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

BUILDING SUBCODE
TECHNICAL SECTION

Date Received
Control #

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 _____ Lot _____ Qualification Code _____

Work Site Location _____

Owner in Fee: _____

Tel. (____) _____ e-mail _____

Address _____
street municipality zip code

Corbin
Solar Solutions, LLC
699 Tennent Road
Manalapan, NJ 07726
Phone: (732) 536-3004
Fax: (732) 536-8547

Contractor: _____ Tel. (____) _____

Address _____ e-mail _____

Contractor License No. or Builder Registration No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. _____ FAX: (____) _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW

	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footings/Foundations		
[ ] Structural/Framework		
[ ] Exterior		
[ ] Interior		

Joint Plan Review Required:
[ ] Elec. [ ] Plumb. [ ] Fire [ ] Elevator

SUBCODE APPROVAL for PERMIT
Date: _____
Approved by: _____

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: _____
Approved by: _____

INSPECTIONS

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

B. BUILDING CHARACTERISTICS

Use Group Present _____ Proposed _____
No. of Stories _____
Height of Structure _____ ft.
Area — Largest Floor _____ sq. ft.
New Bldg. Area/All Floors _____ sq. ft.
Volume of New Structure _____ cu. ft.
Max. Live Load _____
Max. Occupancy Load _____

Constr. Class Present _____ Proposed _____

If Industrialized Building:
State Approved _____ HUD _____

Est. Cost of Bldg. Work:
1. New Bldg. $ _____
2. Rehabilitation $ _____
3. Total (1+ 2) $ _____

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.

Signature _____

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

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 _____
[ ] Demolition

FEE (Office Use Only)
$ _____

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

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

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received
Control #

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 _____ Lot _____ Qualification Code _____

Work Site Location _____

Owner in Fee: _____

Tel. ( ) _____ e-mail _____

Address _____ (street) (municipality)

Contractor: CORBIN ELECTRICAL SERVICES, INC Tel.

Address 699 Tennent Road (zip code) e-mail
Manalapan, NJ 07726-312
PH (732) 536-0444
FAX (732) 536-854

Contractor License No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. _____ FAX: ( ) _____

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

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

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work $ _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved

Date: _____ Approved by: _____

[✓] Electric Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required:
[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT

Date: _____

Approved by: _____

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA

Date: _____

Approved by: _____

INSPECTIONS

Type:	Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final				
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 _____

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's Seal and Signature

[ ] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
		_____	
		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	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	
		_____	
		_____	

Administrative Surcharge $ _____

Minimum Fee $ _____

State Permit Surcharge Fee $ _____

TOTAL FEE $ _____

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received
Control #

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 _____ Lot _____ Qualification Code _____

Work Site Location _____

Owner in Fee: _____

Tel. ( ) _____ e-mail _____

Address _____ (street) (municipality) (zip code)

Contractor: CORBIN ELECTRICAL SERVICES, INC. Tel. ( )

Address 699 Tennent Road e-mail
Manalapan, NJ 07726-3127
PH (732) 536-0444
FAX (732) 536-8547

Contractor License No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. _____ FAX: ( ) _____

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

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

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work $ _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved
Date: _____ Approved by: _____

[ ] Electric Plans Approved
Date: _____ Approved by: _____

Joint Plan Review Required:
[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: _____
Approved by: _____

INSPECTIONS — Dates (Month/Day)

Type:	Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final				
Barrier-Free				

Temp. Cut-in-Card Date Issued _____

Final Cut-in-Card Date Issued _____

Annual Pool Inspection _____ _____ _____ _____

Date of Grounding and Bonding Certification _____

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: _____
Approved by: _____

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's Seal and Signature

[ ] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
		_____	
		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	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	
		_____	
		_____	

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

Corbin Solar Solutions, LLC

CHECK 5261

DATE	DESCRIPTION	AMOUNT	DEDUCTION	NET AMOUNT
11/16/10	ROE	$382.00	$0.00	$382.00

CHECK DATE	CONTROL NUMBER	TOTALS	AMOUNT	DEDUCTION	NET AMOUNT
11/16/10	5261	Brick Township	$382.00	$0.00	$382.00

CIRANGLE ARCHITECTS

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

September 24 ,2010

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

Attn: Mr. Michael Vecchio
Subcode Official

TOWNSHIP OF BRICK
RELEASED FOR PERMIT INITIAL KA DATE 10/22/10
Building Subcode
Fire Subcode
Electrical Subcode
Plan Reviewer
Plans Released
Construction Official

Re: Solar Panel/Support Rack Installation
Roe Residence
136 John Street
Brick, NJ 08724
CA Project No. 1001-86

Dear Mr. Vecchio,

I am writing to address and certify the following items regarding the proposed installation of 26 roof mounted solar panels as manufactured by Solarworld: Photovoltaic Module, Sunmodule No. SW 245 mono (48.5 lbs/panel x 26 = 1,261 lbs total), and support racks (280 lbs total) as manufactured by Unirac: Solarmount. The system shall be located over 2 roof areas of approximately 440 sq ft (24 panels) and 37 sq ft (2 panels) for a total roof area of 477 sq ft. The contractor shall install the panels and support racks as per the code compliant planning and assembly Installation Manual No.227 as provided by Unirac.

1. The existing building is a 1 story wood framed structure with 4:12 and 5:12 pitch roofs. The roof rafter assembly is 2"x 6" Douglas Fir wood @ 16" o.c., plywood sheathed with asphalt shingles. This 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 IBC 2006 for materials, loads, and stresses: live load conditions.

2. Support rack anchorage will comply with wind loads of 115mph(3 second gust) as required by the 2006 IBC, New Jersey edition, Chapter16 and Appendix H105.2 and H105.3.

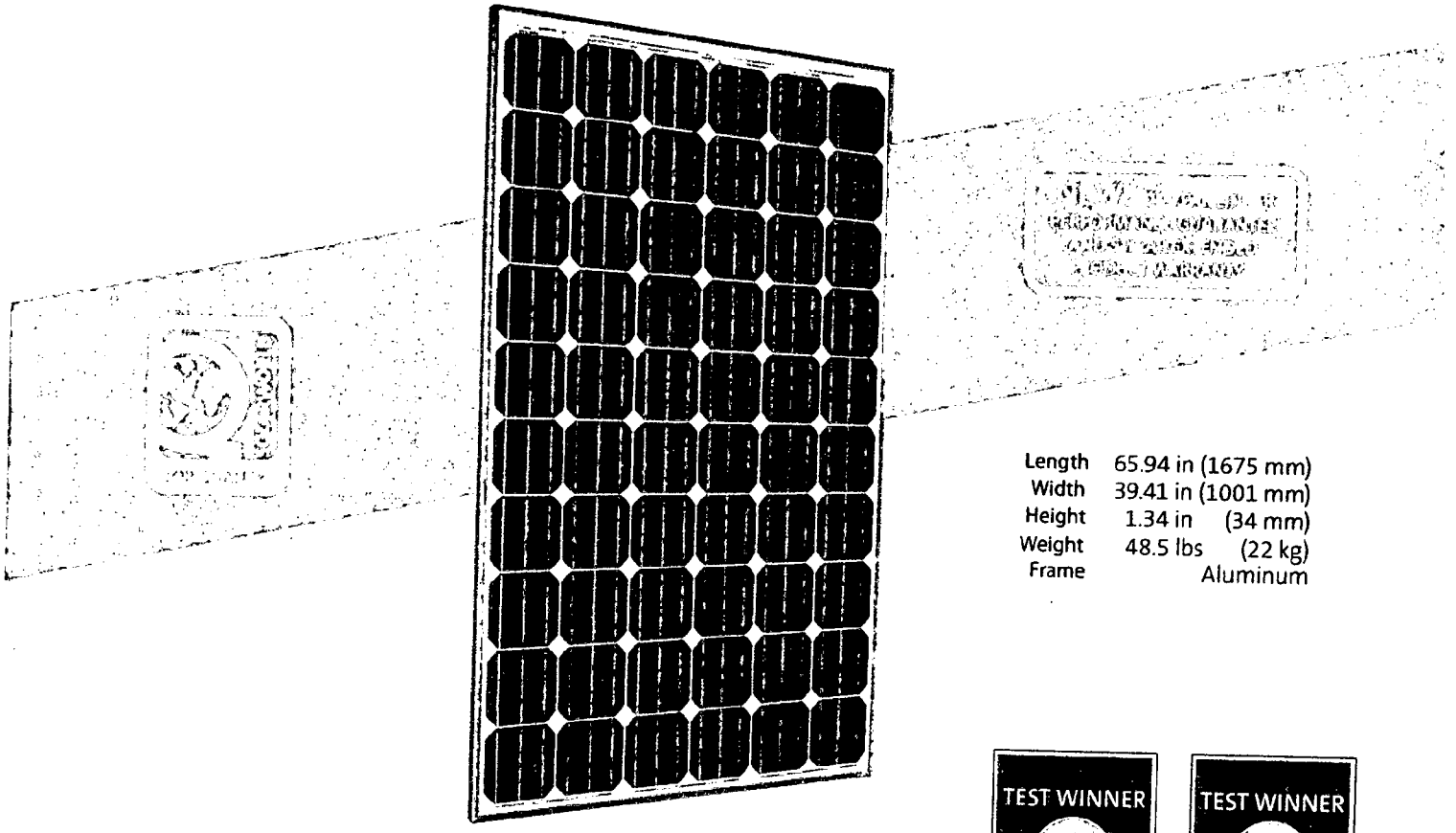
3. Photovoltaic Modules shall resist wind pressure of 24 lbs per square foot based on 115 mph wind speed and exposure 'C'.

Please feel free to contact me if you have any questions regarding these items. For your reference, attached please find Solarworld Photovoltaic Module Specifications and an Engineering Certification for Unirac's Solarmount Universal PV Module Mounting System.

Thank you,

Lawrence S. Cirangle
Registered Architect
NJ License No. 10677

cc: A.Corbin (Corbin Electric)



Length	65.94 in (1675 mm)
Width	39.41 in (1001 mm)
Height	1.34 in (34 mm)
Weight	48.5 lbs (22 kg)
Frame	Aluminum

Sunmodule®
SW 245 MONO

World-class quality
SolarWorld products are manufactured in state-of-the-art factories according to strict German and US quality, labor and environmental standards.

Award-winning products
SolarWorld modules were ranked number one in two consecutive tests carried out by the Photon trade magazine in 2008 and 2009 with up to 12% more yield.

SolarWorld Plus-Sorting
Plus-Sorting guarantees the highest efficiency of the installation. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25-year Linear Performance Guarantee*
SolarWorld guarantees, over 25 years, that the modules' performance will not decrease by more than 0.7% per year – a distinct added value compared to the two-tiered guarantees usual in the industry.

*according to the SolarWorld service certificate valid at the time of purchase
www.solarworld-global.com/service-certificate

SOLARWORLD

We turn sunlight into power.

www.solarworld-usa.com

Sunmodule®
SW 245 MONO

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC*)

		SW 245
Maximum power	P_{max}	245 Wp
Open circuit voltage	V_{oc}	37.7 V
Maximum power point voltage	V_{mpp}	30.8 V
Short-circuit current	I_{sc}	8.25 A
Maximum power point current	I_{mpp}	7.96 A

*STC: 1000W/m², 25°C, AM 1.5

PERFORMANCE AT 800 W/ M², NOCT, AM 1.5

		SW 245
Maximum power	P_{max}	179 Wp
Open circuit voltage	V_{oc}	34.4 V
Maximum power point voltage	V_{mpp}	28.1 V
Short-circuit current	I_{sc}	6.65 A
Maximum power point current	I_{mpp}	6.37 A

Minor reduction in efficiency under partial load conditions at 25°C: at 220 W/m², 95% (+/-3%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Monocrystalline Silicon
Cell dimensions	156 mm x 156 mm
Front	tempered glass (EN12150)

SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II	1000 V
Maximum system voltage USA NEC	600 V
Maximum reverse current	16 A
Increased snowload acc. to IEC 61215	5.4 kN/m²

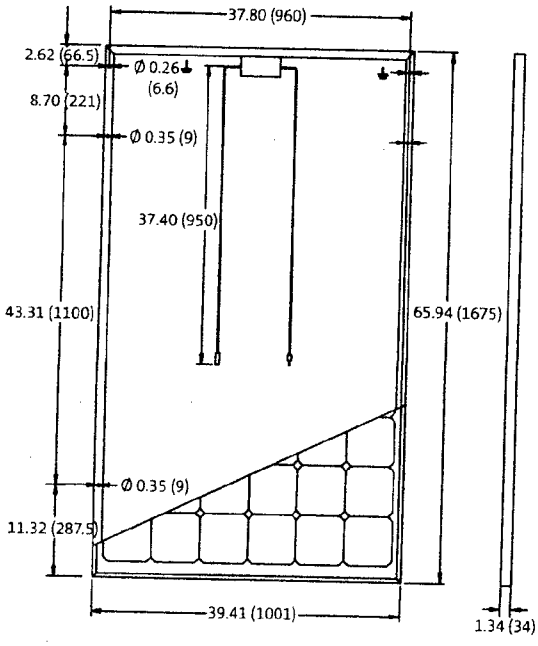
THERMAL CHARACTERISTICS

NOCT	47 °C
TC I_{sc}	0.042 %/°C
TC V_{oc}	-0.33 %/°C
TC P_{mpp}	-0.45 %/°C

ADDITIONAL DATA

PTC rating	219.6 W
Junction box	IP65
Connector	MC4
Module efficiency	14.6 %
SolarWorld Plus-Sorting*	$P_{Flash} \geq P_{max}$
Power tolerance*	+/- 3 %

*Only modules with flash-tested power ≥ P_{max} are delivered.
Linear warranty guarantees Year 1 module output to ≥ 97% of P_{max}



Qualified IEC 61215
Safety tested
IEC 61730
Periodic inspection

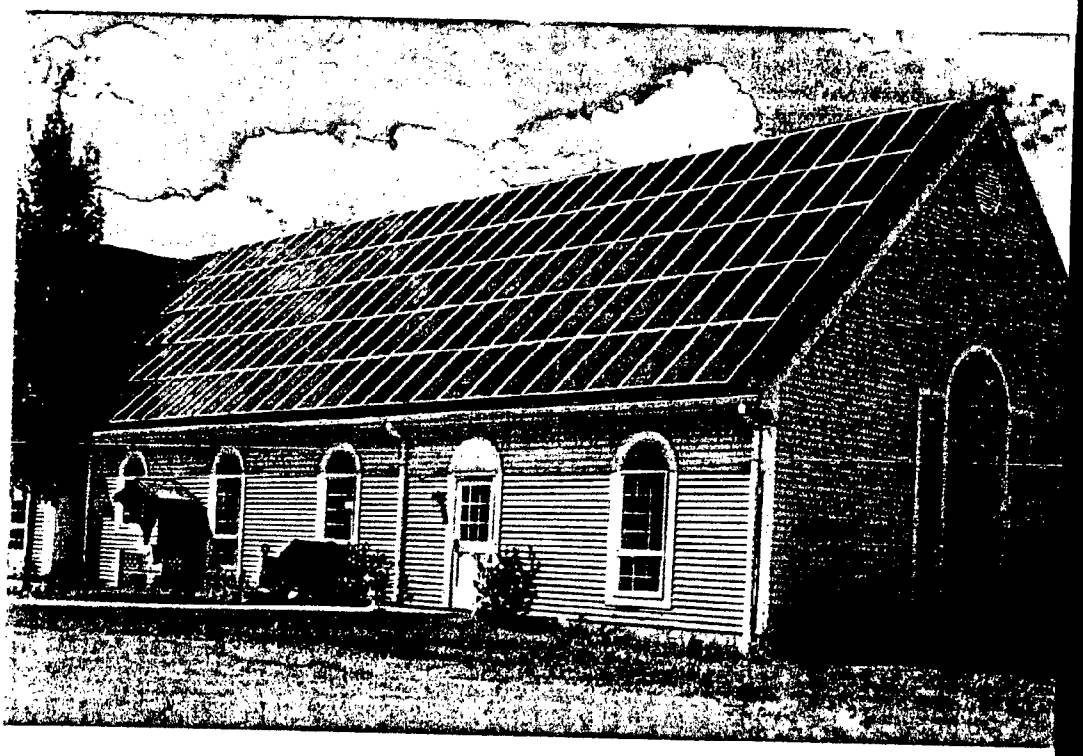
Made in USA

SolarWorld AG reserves the right to make specification changes without notice.
This data sheet complies with the requirements of EN 50380.
Sunmodule panels are manufactured in ISO 9001:2000 certified facilities

SOLARMOUNT™

Code-Compliant Installation Manual 227.2

U.S. Des. Patent No. D496,248S, D496,249S. Other patents pending.



Unirac Code-Compliant Installation Manual

Table of Contents

UNIRAC®

Bright Thinking in Solar

Pub 090515-1cc
May 2009

Unirac welcomes input concerning the accuracy and user-friendliness of this publication. Please write to **publications@unirac.com**.

Ascent Consulting Engineering
24GA28112100
High Mountain Road
Ringwood, NJ 07456
Tel. No. 973-557-6080
Fax No. 973-835-5924
E-mail: jamlight@bellatlantic.net

July 5, 2008

Unirac, Inc.
1411 Broadway Blvd. NE
Albuquerque, NM 87102

To: Building Department or Others:

RE: Engineer's Notice of Evaluation for UniRac SolarMount™
Universal PV Module Mounting System

Dear Sir:

I have reviewed Unirac SolarMount™ "Code-Compliant Installation Manual 227", copyright February 2008 and certify that the information and results are accurate. To determine the design level forces, the appropriate wind speed shall be determined as prescribed by local jurisdiction requirements and applied in accordance to the NJ Uniform Construction Code. The UCC requires that wind loading be determined based upon ASCE 7-05 and Unirac's Manual 227 utilizes ASCE 7-05 for which Unirac Table 2 is based upon, and that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels. The SolarMount™ railing and anchorage requirements for the installation are properly represented in the Installation Manual 227.

For other conditions, the determination of wind pressures should be determined by the aforementioned International Building Code – 2006 and ASCE 7 procedures.
The International Building Code requires that wind loading be determined based upon ASCE 7-05 Simplified Method 1 or ASCE 7-05 using Method 2, that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels.

The design verification is based on:

I. ASCE7-05 – ASCE Standard
II. "Steel Construction Manual," 13th Ed., American Institute of Steel Construction, Chicago, IL, 2005.
III. "Aluminum Design Manual", The Aluminum Association, Washington D.C., 2005.
IV. Mechanical Properties and Static Load Testing of Unirac extruded rails and related components obtained from Dr. Walter Gerstle, PE, Department of Civil Engineering, University of New Mexico, Albuquerque, NM

Use:
Unirac SolarMount™ is evaluated for use in locations where wind pressure requirements do not exceed 50 psf or snow load conditions do not exceed 45 psf ground snow loads. For loading in excess of either of the above stated conditions, Unirac, Inc. should be contacted for suitability of installation.

By this letter, I certify that the Unirac SolarMount™ assembly, when installed in accordance with the Installation Manual 227 will meet the requirements of the building codes adopted by New Jersey. Others should evaluate the structure to which the Unirac SolarMount™ system is to be connected on a case-by-case basis, per Part I – Installer's Responsibilities of the Installation Manual, to ensure its adequacy to accept attachments and to support all applied loadings per the building code.

Please call me if you have any questions or concerns.

Sincerely,

7/1/08

James A. Marx, Jr.
Professional Engineer
NJ License Number GE 25179

CIRANGLE ARCHITECTS

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

September 24 ,2010

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

Attn: Mr. Michael Vecchio
Subcode Official

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

Re: Solar Panel/Support Rack Installation
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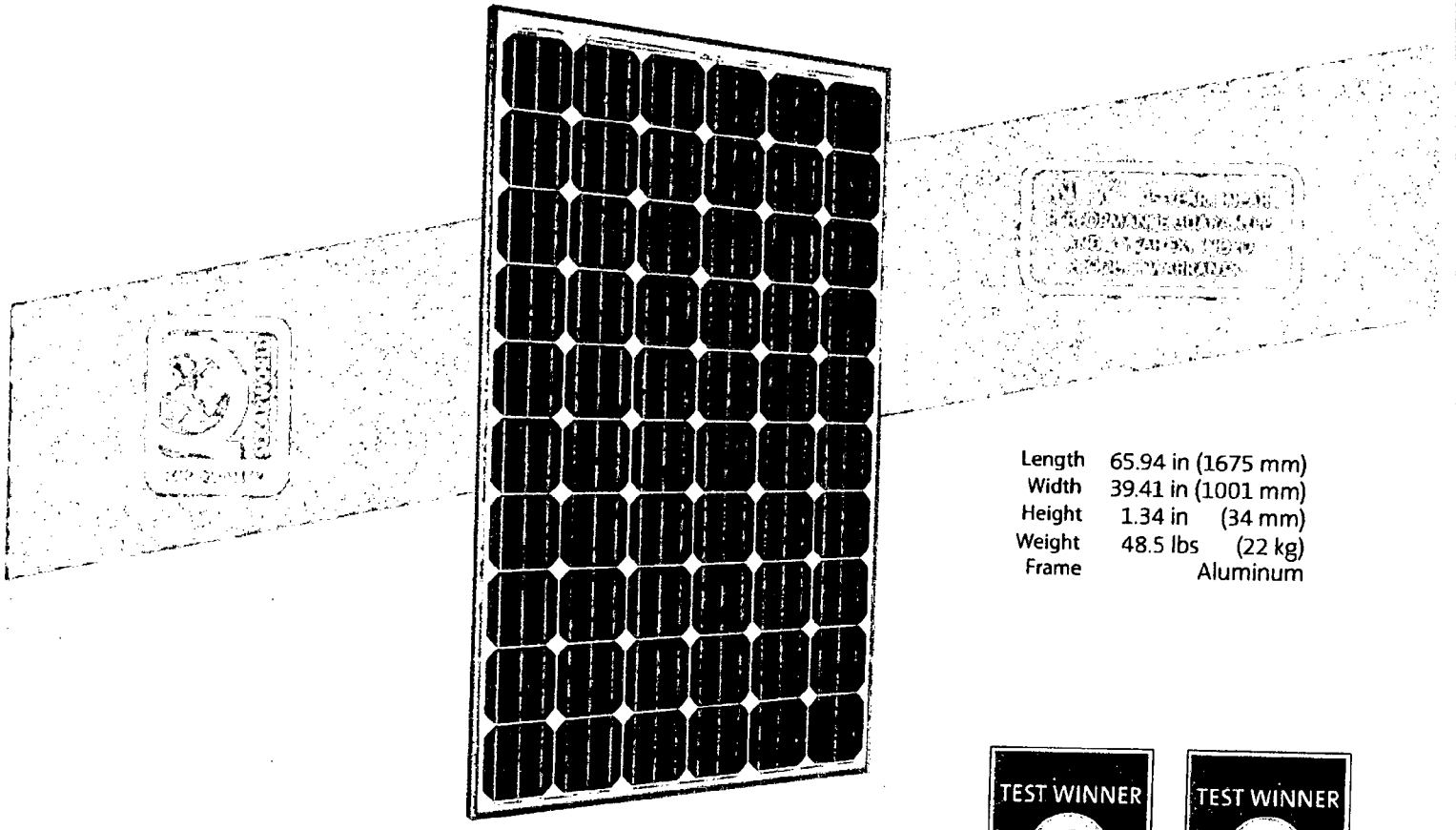
Lawrence S. Cirangle
Registered Architect
NJ License No. 10677

cc: A.Corbin (Corbin Electric)



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SOLARWORLD

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SW 245 MONO

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*STC: 1000W/m², 25°C, AM 1.5

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Cell type	Monocrystalline Silicon
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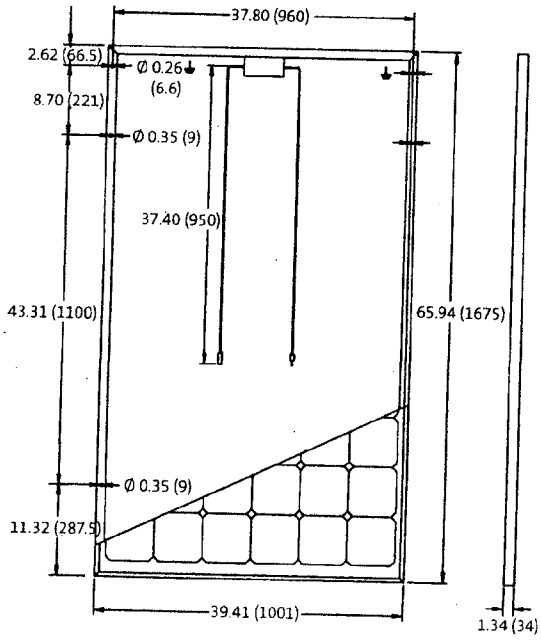


- Qualified: IEC 61215
- Safety tested: IEC 61730
- Periodic Inspection

Made in USA

SolarWorld AG reserves the right to make specification changes without notice.
This data sheet complies with the requirements of EN 50380.
Sunmodule panels are manufactured in ISO 9001:2000 certified facilities

SOLARMOUNT™

Code-Compliant Installation Manual 227.2

U.S. Des. Patent No. D496,248S, D496,249S. Other patents pending.

Unirac Code-Compliant Installation Manual

Table of Contents

UNIRAC®
Bright Thinking in Solar

Pub 090515-1cc
May 2009

Unirac welcomes input concerning the accuracy and user-friendliness of this publication. Please write to **publications@unirac.com**.

Ascent Consulting Engineering
24GA28112100
High Mountain Road
Ringwood, NJ 07456
Tel. No. 973-557-6080
Fax No. 973-835-5924
E-mail: jamlight@bellatlantic.net

July 5, 2008

Unirac, Inc.
1411 Broadway Blvd. NE
Albuquerque, NM 87102

To: Building Department or Others:

RE: Engineer's Notice of Evaluation for UniRac SolarMount™
Universal PV Module Mounting System

Dear Sir:

I have reviewed Unirac SolarMount™ "Code-Compliant Installation Manual 227", copyright February 2008 and certify that the information and results are accurate. To determine the design level forces, the appropriate wind speed shall be determined as prescribed by local jurisdiction requirements and applied in accordance to the NJ Uniform Construction Code. The UCC requires that wind loading be determined based upon ASCE 7-05 and Unirac's Manual 227 utilizes ASCE 7-05 for which Unirac Table 2 is based upon, and that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels. The SolarMount™ railing and anchorage requirements for the installation are properly represented in the Installation Manual 227.

For other conditions, the determination of wind pressures should be determined by the aforementioned International Building Code – 2006 and ASCE 7 procedures.
The International Building Code requires that wind loading be determined based upon ASCE 7-05 Simplified Method 1 or ASCE 7-05 using Method 2, that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels.

The design verification is based on:

I. ASCE7-05 – ASCE Standard
II. "Steel Construction Manual," 13th Ed., American Institute of Steel Construction, Chicago, IL, 2005.
III. "Aluminum Design Manual", The Aluminum Association, Washington D.C., 2005.
IV. Mechanical Properties and Static Load Testing of Unirac extruded rails and related components obtained from Dr. Walter Gerstle, PE, Department of Civil Engineering, University of New Mexico, Albuquerque, NM

Use:
Unirac SolarMount™ is evaluated for use in locations where wind pressure requirements do not exceed 50 psf or snow load conditions do not exceed 45 psf ground snow loads. For loading in excess of either of the above stated conditions, Unirac, Inc. should be contacted for suitability of installation.

By this letter, I certify that the Unirac SolarMount™ assembly, when installed in accordance with the Installation Manual 227 will meet the requirements of the building codes adopted by New Jersey. Others should evaluate the structure to which the Unirac SolarMount™ system is to be connected on a case-by-case basis, per Part I – Installer's Responsibilities of the Installation Manual, to ensure its adequacy to accept attachments and to support all applied loadings per the building code.

Please call me if you have any questions or concerns.

Sincerely,

7/7/05

James A. Marx, Jr.
Professional Engineer
NJ License Number GE 25179

CRES (6-1-09)

APPLICATION FOR CERTIFICATION OF RENEWABLE ENERGY SYSTEM(S)

Pursuant to P.L. 2008, c.90

County: OCEAN Municipality BRICK

Section 1

Owners Name: CINDY GAILEY ROE Email Address GROWEYGTPL@AOL.COM

Property Address: 136 JOHN ST Phone # 908-208-5711 Fax #

Block 1170.04 Lot 5

Section 2

Installer's Name: Corbin Solar Solutions, LLC Email Address Rick@CorbinSolar.com

Property Address: 699 Tennent Rd.,Manalapan, NJ 07726 Phone # 732-536-3004 Fax # 732-536-8547

Section 3

We, the owner and installer, respectively, of a renewable energy system installed, or to be installed, at the above property, hereby certify as follows:

1. A renewable energy system meeting the requirements set forth in P.L. 2008, c.90 and complying with all applicable subcodes of the State Uniform Construction Code, all applicable testing standards, and all manufacturers' instructions, has been installed, or shall be installed, in accordance with all such subcodes, standards and instructions, at a structure located at the above property.
2. The said renewable energy system produces, or when installed shall produce, renewable energy onsite sufficient to provide all or a portion of the electrical, heating, cooling, or general energy needs of that structure.
3. The source of the renewable energy is designed to be as follows (at least one line must be checked):
   (a) If electrical, the renewable energy system at the above location is designed to produce energy from the following source:
   - ____ Solar technologies (other than photo-voltaic)
   - [X] Photo-voltaic technologies
   - ____ Wind energy
   - ____ Fuel cells
   - ____ Geothermal technologies
   - ____ Wave or tidal action
   - ____ Methane gas from landfills
   - ____ Resource recovery facility (DEP determination attached)
   - ____ Hydropower facility (DEP determination attached)
   - ____ Biomass facility involving biomass cultivated and harvested in a sustainable manner (DEP determination attached)

   (b) If non-electrical, the renewable energy system at the above location is designed to produce energy from the following source:
   - ____ Solar thermal technologies
   - ____ Geothermal technologies
4. If the renewable energy system produces energy from a resource recovery, hydropower or biomass facility, we have attached to this application proof of a determination by the Commissioner of Environmental Protection that the facility meets the highest environmental standards and minimizes any impacts to the environment and local communities.
5. We have attached to this application a list identifying all applicable testing standards and manufacturer's instructions governing the design or installation of the renewable energy system and shall provide copies of any such standards and/or instructions to the enforcing agency if so required. We understand that any such documentation, if required, shall be deemed to be supplemental to this application, and that the application shall not be deemed to be complete unless and until they are submitted to the enforcing agency.
6. The (____ actual)/(____ estimated) cost of the renewable energy system is $_____.

Section 4

Date: 8/23/10 Property owner

Date: Installer, or authorized representative

To the Tax Assessor:
I hereby certify this application has been:
☐ Approved
☐ Disapproved

Date: Construction Official

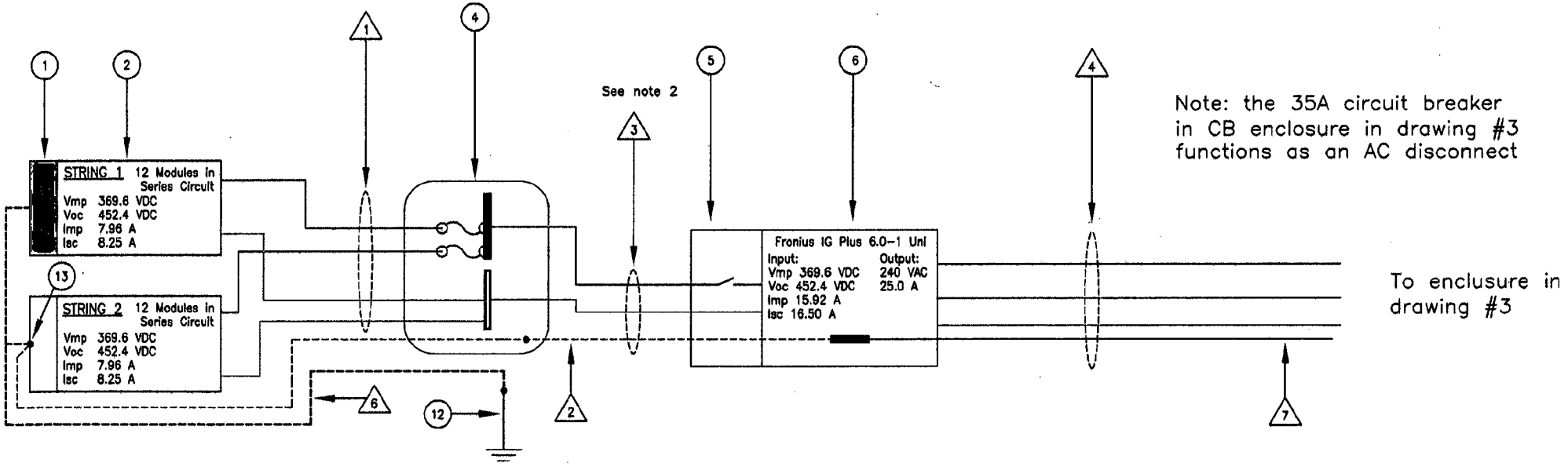
I have reviewed the application/certification and ☐ accept / ☐ reject this claim for exemption.

Date: Assessor

EQUIPMENT SCHEDULE			
Tag	Description	Part Number	Notes
1	Solar PV Modules	SW245 mono	SolarWorld Sunmodule solar panels
2	PV Array		
3	N/A		
4	Combiner Box		Fuses: 15A, 600VDC
5	DC Disc. (in inverter)		40 Amp
6	Inverter		Fronius IG Plus 6.0-1 Uni
7			
12	PV Array Gnd Rod		2008 NEC 690.47
13	EGC/GEC conn. pt.		EGC and GEC bonded to array rails
14	N/A		

CONDUCTOR AND CONDUIT SCHEDULE						
Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
1	USE-2 wire w/MC conn.	12		N/A	N/A	690.8(A)(1) 10.31A (B)(1) 12.89A
2	Equip. Grounding Cond. (DC)	10		Tag 3 conduit		690.45(A); 250.122(A)
3	THHN/THWN-2	10	5 (2)	EMT	3/4"	690.8(A)(2) 20.63A (B)(1) 25.78A; 310.15
4	THHN/THWN-2	8	3	EMT	3/4"	690.8(A)(3) 25.0A (B)(1) 31.25A; 310.15
5						
6	PV Array Gnd. Elec. Cond. (1)	8		N/A	N/A	250.166; 690.46 (EGC req app to GEC)
7	Equip. Grounding Cond. (AC)	8		Tag 4 conduit		690.47(C)(2); 250.122

Notes:
1. G.E.C. is continuous wire per 250.64(C).
2. The combiner box output (2 DC conductors) will run through ½" PVC conduit for a short distance to a junction box, where it will be combined with the output of the microinverters (3 AC conductors) (see site layout drawing). Leaving the junction box all 5 conductors will be carried in the same ¾" EMT conduit so the wire and conduit are sized for 5 conductors.



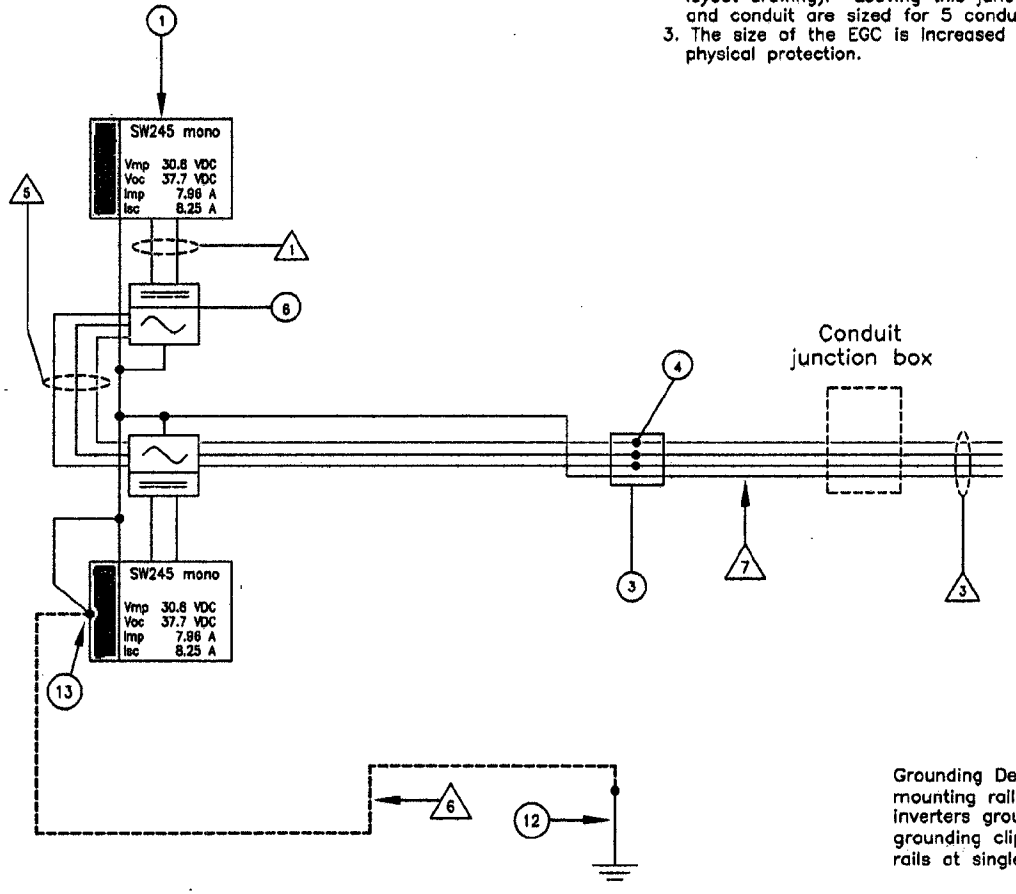
Standard Electrical Diagram for Multi-Inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 1 of 3			

DC Ground
AC Ground
Grounding Electrode Conductors (AC or DC)

○ EQUIPMENT SCHEDULE			
Tag	Description	Part Number	Notes
1	Solar PV Modules	SW245 mono	SolarWorld Sunmodule solar panels
2			
3	Junction box		NEMA 3R; attached to end of Enphase branch circuit
4	Switch		2-pole disconnect
5			
6	Inverter		Enphase M190-72-240-S12/3
12	PV Array Gnd Rod		2008 NEC 690.47
13	EGC/GEC conn. pt.		EGC and GEC bonded to array rails

△ CONDUCTOR AND CONDUIT SCHEDULE						
Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
1	USE-2 wire w/MC conn.	12		N/A	N/A	690.8(A)(1) 10.31A (B)(1) 12.89A
3	THHN/THWN-2	14	3 (2)	EMT	1/2"	690.8(A)(2,3) 1.6A (B)(1) 2.0A; 310.15
5	Enphase Branch Wire			N/A	N/A	
6	PV Array Gnd. Elec. Cond. (1)	8		N/A	N/A	250.166; 690.46 (EGC req app to GEC)
7	Equip. Grounding Cond. (AC)	10 (3)		Tag 3 conduit		690.47(C)(2); 250.122

Notes:
1. G.E.C. is continuous wire per 250.64(C).
2. The Enphase junction box output (3 AC conductors) will run through ½" PVC conduit for a short distance to an additional junction box, where it will be combined with the output of the combiner box (2 DC conductors) (see site layout drawing). Leaving this junction box all 5 conductors will be carried in the same ¾" EMT conduit, so the wire and conduit are sized for 5 conductors.
3. The size of the EGC is increased beyond the required current carrying capability to provide additional sturdiness and physical protection.



Grounding Details: 1) Solar panels bonded to mounting rails using WEEB clips; 2) Enphase inverters grounded using EGC and Enphase grounding clips; 3) EGC bonded to GEC and rails at single location (13)

Standard Electrical Diagram for Multi-inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 2 of 3			

----- DC Ground
——— AC Ground
═══ Grounding Electrode Conductors (AC or DC)

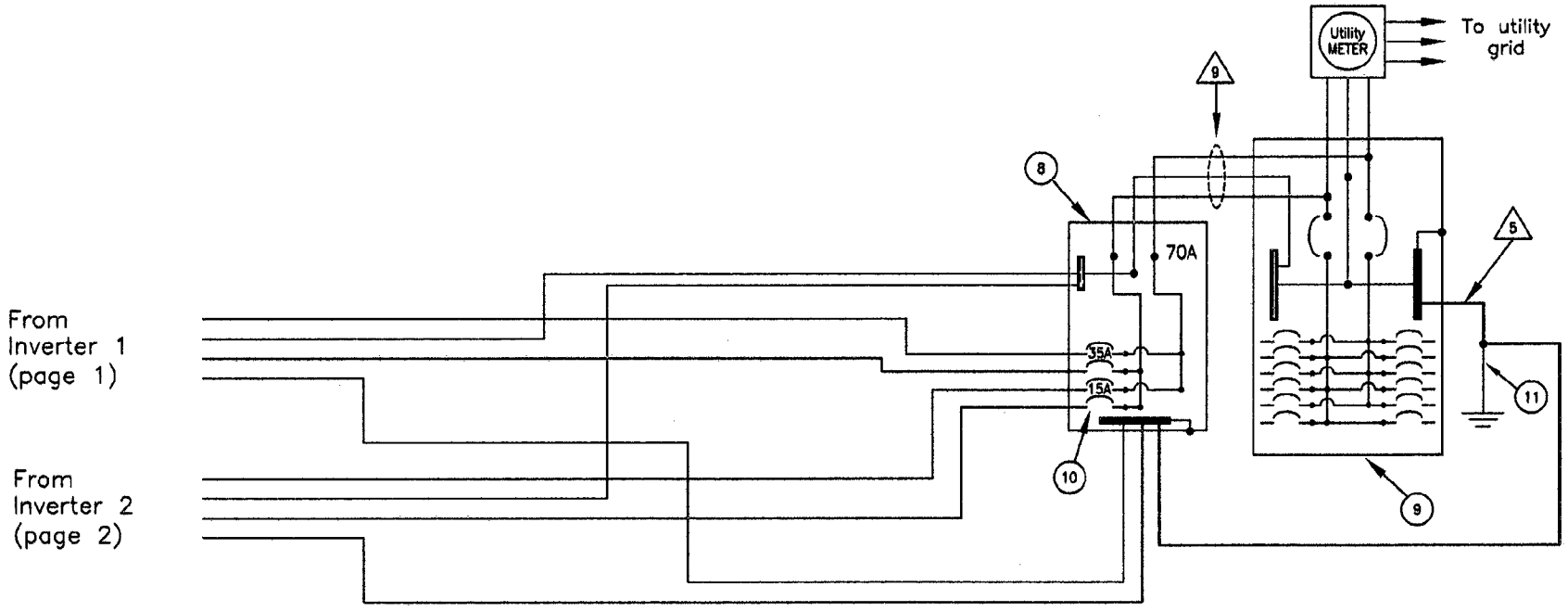
EQUIPMENT SCHEDULE

Tag	Description	Part Number	Notes
1			
2			
3			
4			
5			
6			
8	Line-side connected enclosure w/ 2 CBs		Square D 240VAC, 70-Amp, NEMA 1
9	Service Panel		240VAC, 100 Amp Main Bus
10	Inverter Utility Conn.		15, 35A double CBs in enclosure
11	Service Ground Rod		

CONDUCTOR AND CONDUIT SCHEDULE

Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
5	Service Gnd. Elect. Cond.	6		N/A	N/A	250.66
6						
7						
8						
9	Service Conductors	6	3	EMT	3/4"	230.42(A); 310.15

Notes:
1. G.E.C. is continuous wire per 250.64(C).

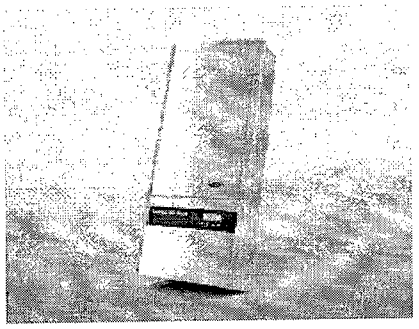


Standard Electrical Diagram for Multi-Inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 3 of 3			

----- DC Ground
——— AC Ground
═══ Grounding Electrode Conductors (AC or DC)

Products Grid-connected PV inverters Fronius IG Plus Fronius IG Plus 5.0-1 uni - 7.5-1 uni

Fronius IG Plus 5.0-1 uni - 7.5-1 uni



+ Maximum Earnings Security
+ Highest Reliability
+ First Universal Inverter

This two power stage inverter is available in 5.0, 6.0 and 7.5 kW and is fieldl programmable to 208, 240 or 277 volts. Best suited for residential and smaller commercial applications.

Available Fronius IG Plus Two Stage Inverters:

5.0-1 UNI
6.0-1 UNI
7.5-1 UNI

Operating Manual

Technical Data

Fronius IG Plus	5.0-1 UNI	6.0-1 UNI< DIV>	7.5-1 UNI
Input data			
Recommended PV-Power (Wp)	4250-5750	5100-6900	6350-8600
MPPT-Voltage range	230 - 500 V		
Max. Input voltage range (at 1000 W/m² 14°F (-10°C) in open circuit operation)	600 V		
Nominal Input Current	13.8 A	16.6 A	20.7 A
Max. usable Input Current	23.4 A	28.1 A	35.1 A
Admissible conductor size (DC)	No. 14-6 AWG		
Output data			
Nominal output power (PAC nom)	5000 W	6000 W	7500 W
Max. continupous output power 104°F (40°C) 208 V / 240 V / 277 V	5000 W	6000 W	7500 W

Nominal AC output voltage	208 V / 240 V / 277 V		
Operating AC voltage range (default) 208 V 240 V 277 V	 183 - 229 V (-12 / +10 %) 211 - 264 V (-12 / +10 %) 244 - 305 V (-12 / +10 %)		
Maximum continuous output current 208 V 240 V 277 V	 24.0 A 20.8 A 18.1 A	 28.8 A 25.0 A 21.7 A	 36.1 A 31.3 A 27.1 A
Admissible conductor size (AC)	No. 14 - 4 AWG		
Max. continuous utility back feed current	0 a		
Nominal frequency	60 Hz		
Operating frequency range	59.3 - 60.5 Hz		
Total harmonic distortion	< 3 %		
Power factor	1		

General data

Max. Efficiency	96.2 %		
CEC Efficiency 208 V 240 V 277 V	 95.5 % 95.5 % 96.0 %	 95.5 % 96.0 % 96.0 %	 95.0 % 95.5 % 96.0 %
Consumption in standby (night)	< 1 W		
Consumption during operation	15 W		
Cooling	Controlled forced ventilation, variable fan speed		
Enclosure Type	NEMA 3R		
Unit Dimensions (W x H x D)	17.1 x 36.4 x 9.6. in.		
Power Stage Weight	57 lbs. (26 kg)		
Wiring Compartment Weight	26 lbs. (12 kg)		
Admissing ambient operating temperature	-4 ... 122°F (-20 ... + 50°C)		
Compliance	UL 1741-2005, IEEE1547-2003, IEEE 1547.1, ANSI/IEEE C62.41, FCC Part 15 A&B, NEC Article 690, C22. 2 No. 107.1-01 (Sept. 2001)		

Safety equipment

Ground fault protextion	Internal GFDI (Ground Fault Detector/Interrupter); in accordance with UL 1741-2005 and NEC Art. 690
DC reverse polarity protevtion	Internal diode
Islanding protection	Internal; in accordance with UL 1741-2005, IEEE 1547-2003 and NEC

language: ^ENG^, section: ^se^, breadcrumb: ^Products || Grid-connected PV inverters || Fronius IG Plus || Fronius IG Plus 5.0-1 uni - 7.5-1 uni || ^, latestModification: ^2008-10-23 07:58:29^

Over temperature	Output power derating / active cooling

The right to make technical modifications is reserved.

Equipment features

Grounding selectable on site.
Decide on site what type of grounding is required as the Fronius IG Plus is field programmable for either positive or negative module grounding.

Designed for indoor and outdoor installations.
All Fronius IG Plus inverters have a robust, well designed aluminum housing. UV resistance and corrosion protection enable them to be used either indoors or outdoors. Fronius is proud to be one of the only inverters tested and approved to operate at 122° F.

Integrated DC disconnect.
No external DC disconnect installation or cabling is necessary. The Fronius IG Plus comes complete with an approved, built-in, lockable and load breakable DC Disconnect.

The new power plug system.
The connection area and power stages are installed separately from each other. Very easy and extremely safe: The connection area is attached to the wall as normal. Then the power module is simply plugged in. The power plug connects both parts into one secure unit. If service is required, the connector remains on the wall maintaining all settings and configurations.

Field Programmable AC output voltage.
The Fronius IG Plus inverter line from 3.0 to 11.4 kW is field programmable to 208, 240 or 277 volts (Fronius IG Plus 12.0 kW only availabale in 277 volts), eliminating the need to install different inverter models to accommodate three-phase installations.

Technology

Three efficiency peaks.
Greater power harvest for every system size: The unique automatic transformer switching function of the Fronius IG Plus makes enables not one, but three equal efficiency peaks. The result: Consistantly high efficiency over a wide input voltage range.
In comparison: The efficiency of inverters without transformer switching declines steadily with an increasing input voltage. Devices without a transformer only have one efficiency peak.

With a 96.2 % maximum efficiency, the Fronius IG Plus series scores the highest grade among HF devices.

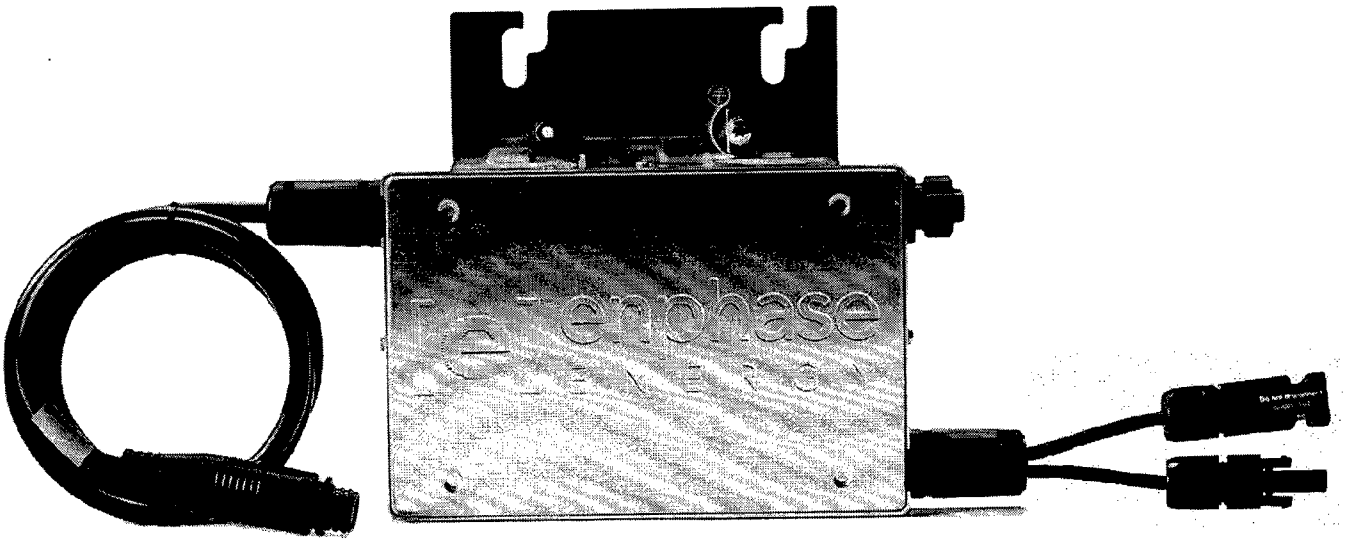
MIX™ Concept.
Get the maximum power harvest out of partial load ranges, e.g. on cloudy days, through a clever combination of multiple power stages in each inverter. The power stages in Fronius inverters divide up the work depending on operating hours and only operate as many power stages as required to efficiently process available power from the PV array.

Module Manager™.
The Module Manager™ keeps all Fronius IG inverters at the maximum power point (MPP) with fast and exact MPP tracking, ensuring that you get the most power out or each ray of sunlight. This is especially important for amorphous modules whose MPP can be more challenging to track.

Smart Ventilation Design.
Disruptive ambient factors such as dust or moisture remain on the outside: The reason: Cooling air is drawn in on the wall side and routed through a closed channel over the heat sink. This prevents contact with the circuit board. At the same time, the components are kept cool - the device operates with a stable consistency.

Documents and downloads

ENPHASE MICROINVERTER M190



The Enphase Energy Microinverter System improves energy harvest, increases reliability, and dramatically simplifies design, installation and management of solar power systems. The Enphase System includes the microinverter, the Envoy Communications Gateway, and the web-based Enlighten monitoring and analysis website.

PRODUCTIVE
- Maximum energy production
- Resilient to dust, debris and shading
- Performance monitoring per module

RELIABLE
- MTBF of 331 years
- System availability greater than 99.8%
- No single point of system failure

SMART
- Quick & simple design, installation and management
- 24/7 monitoring and analysis

SAFE
- Low voltage DC
- Reduced fire risk

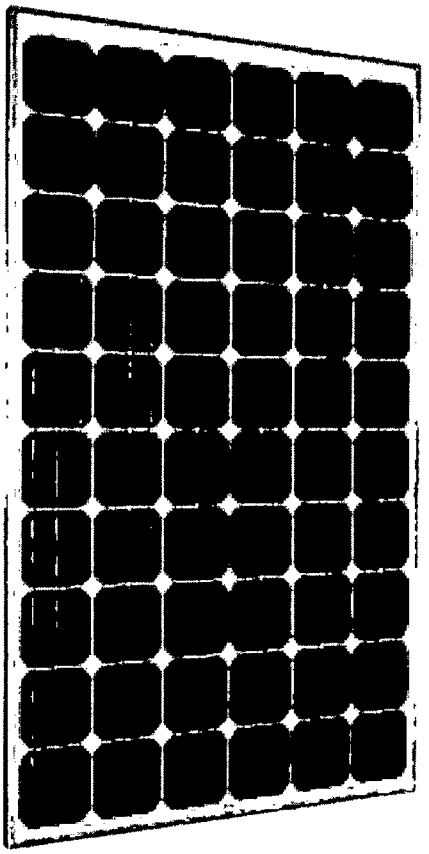
C US

MICROINVERTER TECHNICAL DATA

60 and 72 Cell Modules		
Input Data (DC)	M190-72-208-S12/3 M190-72-208-S12/3-NA (Ontario)	M190-72-240-S12/3 M190-72-240-S12/3-NA (Ontario)
Recommended input power (STC)	230W	230W
Maximum input DC voltage	56V	56V
Peak power tracking voltage	22V – 40V	22V – 40V
Min./Max. start voltage	28V/54V	28V/54V
Max. DC short circuit current	12A	12A
Max. input current	10A	10A
Output Data (AC)		
Maximum output power	190W	190W
Nominal output current	920mA	800mA
Nominal voltage/range	208V/183V-229V	240V/211V-264V
Extended voltage/range	208V/179V-232V	240V/206V-269V
Nominal frequency/range	60.0/59.3-60.5	60.0/59.3-60.5
Extended frequency/range	60.0/59.2-60.6	60.0/59.2-60.6
Power factor	>0.95	>0.95
Maximum units per branch	21	15
Efficiency		
Peak inverter efficiency	95.5%	95.5%
CEC weighted efficiency	95.0%	95.0%
Nominal MPP tracking	99.6%	99.6%
Mechanical Data		
Operating temperature range	-40°C to +65°C	-40°C to +65°C
Night time power consumption	30mW	30mW
Dimensions (WxHxD)	8" x 5.25" x 1.25"	
Weight	4.4 lbs	
Cooling	Natural Convection – No Fans	
Enclosure environmental rating	Outdoor – NEMA 6	
Features		
Communication	Powerline	
Warranty	15 Years	
Compliance	UL1741/IEEE1547 FCC Part 15 Class B	

Enphase Energy, Inc.
201 1st Street, Suite 300, Petaluma, CA 94952
877 797 4743 enphaseenergy.com

142-00005 REV 05



Length	65.94 in (1675 mm)
Width	39.41 in (1001 mm)
Height	1.34 in (34 mm)
Weight	48.5 lbs (22 kg)
Frame	Aluminum

Sunmodule®
SW 245 MONO

World-class quality
SolarWorld products are manufactured in state-of-the-art factories according to strict German and US quality, labor and environmental standards.

Award-winning products
SolarWorld modules were ranked number one in two consecutive tests carried out by the Photon trade magazine in 2008 and 2009 with up to 12% more yield.

SolarWorld Plus-Sorting
Plus-Sorting guarantees the highest efficiency of the installation. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25-year Linear Performance Guarantee*
SolarWorld guarantees, over 25 years, that the modules' performance will not decrease by more than 0.7% per year – a distinct added value compared to the two-tiered guarantees usual in the industry.

*according to the SolarWorld service certificate valid at the time of purchase
www.solarworld-global.com/service-certificate

SOLARWORLD

We turn sunlight into power.

Sunmodule
SW 245 MONO

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC*)

		SW 245		
Maximum power	P_{max}	245 Wp		
Open circuit voltage	V_{oc}	37.7 V		
Maximum power point voltage	V_{mpp}	30.8 V		
Short-circuit current	I_{sc}	8.25 A		
Maximum power point current	I_{mpp}	7.96 A		

*STC: 1000W/m², 25°C, AM 1.5

PERFORMANCE AT 800 W/ M², NOCT, AM 1.5

		SW 245		
Maximum power	P_{max}	179 Wp		
Open circuit voltage	V_{oc}	34.4 V		
Maximum power point voltage	V_{mpp}	28.1 V		
Short-circuit current	I_{sc}	6.65 A		
Maximum power point current	I_{mpp}	6.37 A		

Minor reduction in efficiency under partial load conditions at 25°C: at 220 W/m², 95% (+/-3%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Monocrystalline Silicon
Cell dimensions	156 mm x 156 mm
Front	tempered glass (EN12150)

SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II	1000 V
Maximum system voltage USA NEC	600 V
Maximum reverse current	16 A
Increased snowload acc. to IEC 61215	5.4 kN/m²

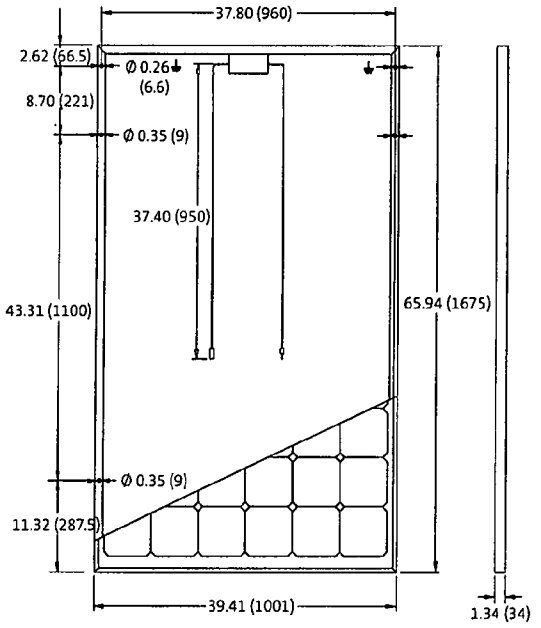
THERMAL CHARACTERISTICS

NOCT	47 °C
TC I_{sc}	0.042 %/°C
TC V_{oc}	-0.33 %/°C
TC P_{mpp}	-0.45 %/°C

ADDITIONAL DATA

PTC rating	219.6 W
Junction box	IP65
Connector	MC4
Module efficiency	14.6 %
SolarWorld Plus-Sorting*	$P_{Flash} \geq P_{max}$
Power tolerance*	+/- 3 %

*Only modules with flash-tested power ≥ P_{max} are delivered.
Linear warranty guarantees Year 1 module output to ≥ 97% of P_{max}



Qualified, IEC 61215
Safety tested, IEC 61730
Periodic Inspection

CORROSIVE GAS (NH_3) RESISTANT

Made in USA

SolarWorld AG reserves the right to make specification changes without notice.
This data sheet complies with the requirements of EN 50380.
Sunmodule panels are manufactured in ISO 9001:2000 certified facilities

James A. Marx, Jr. P.E.
10 High Mountain Road
Ringwood, NJ 07456
Tel. No. 973-557-6080
E-mail: jamlight@bellatlantic.net

April 29, 2009

Unirac, Inc.
1411 Broadway Blvd. NE
Albuquerque, NM 87102

To: Building Department or Others:

RE: Engineer's Notice of Evaluation for UniRac SolarMount™
Universal PV Module Mounting System

Dear Sir:

I have reviewed Unirac SolarMount™ "Code-Compliant Installation Manual 227", copyright February 2008 and certify that the information and results are accurate. To determine the design level forces, the appropriate wind speed shall be determined as prescribed by local jurisdiction requirements and applied in accordance to the New Jersey Uniform Construction Code – UCC. The UCC requires that wind loading be determined based upon International Building Code-2006 NJ Ed. or International Residential Code-2006-NJ Ed. and ASCE 7-05. Unirac's Manual 227 utilizes ASCE 7-05 for which Unirac Table 2 is based upon, and that is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels. The SolarMount™ railing and anchorage requirements for the installation are properly represented in the Installation Manual 227.

For other conditions, the determination of wind pressures should be determined by the aforementioned International Building Code – 2006 and ASCE 7-05 procedures.
The International Building Code requires that wind loading be determined based upon ASCE 7-05 Simplified Method 1 or ASCE 7-05 using Method 2, that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels.

The design verification is based on:

I. ASCE7-05 – ASCE Standard
II. "Steel Construction Manual," 13th Ed., American Institute of Steel Construction, Chicago, IL, 2005.
III. "Aluminum Design Manual", The Aluminum Association, Washington D.C., 2005.
IV. Mechanical Properties and Static Load Testing of Unirac extruded rails and related components obtained from Dr. Walter Gerstle, PE, Department of Civil Engineering, University of New Mexico, Albuquerque, NM

Use:
Unirac SolarMount™ is evaluated for use in locations where wind pressure requirements do not exceed 50 psf or snow load conditions do not exceed 45 psf ground snow loads. For loading in excess of either of the above stated conditions, Unirac, Inc. should be contacted for suitability of installation.

By this letter, I certify that the Unirac SolarMount™ assembly, when installed in accordance with the Installation Manual 227 will meet the requirements of the building codes adopted by New Jersey. Others should evaluate the structure to which the Unirac SolarMount™ system is to be connected on a case-by-case basis, per Part I – Installer's Responsibilities of the Installation Manual, to ensure its adequacy to accept attachments and to support all applied loadings per the building code.

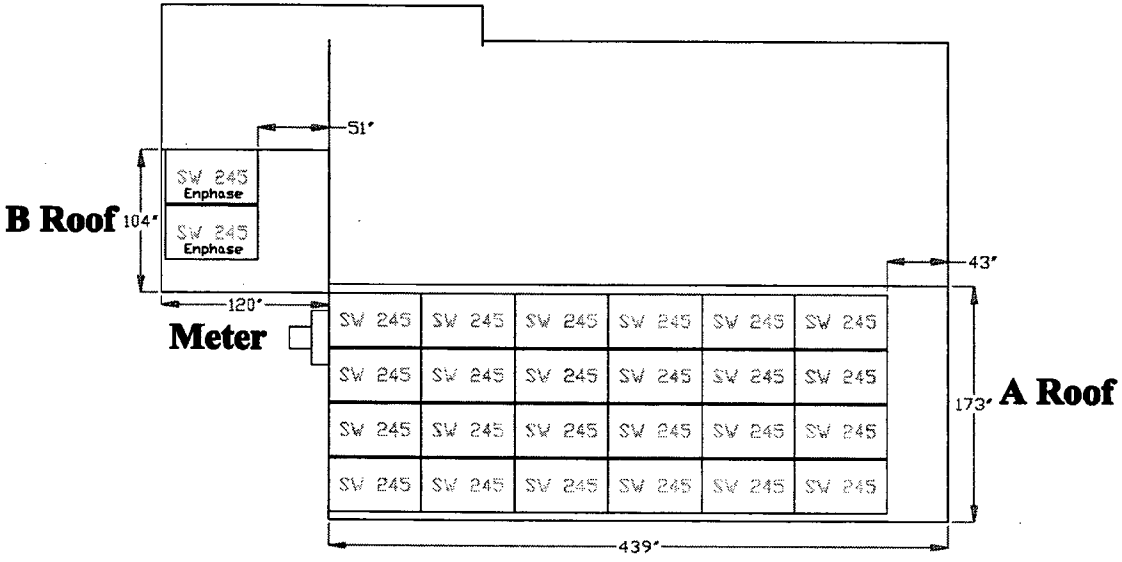
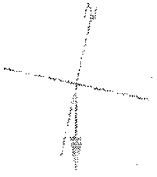
Please call me if you have any questions or concerns.

Sincerely,

4/29/09

James A. Marx, Jr.
Professional Engineer
NJ License Number GE 25179

cc: James Madrid, Unirac

A Orientation  **168°**	 **John Street**
A Roof Tilt 23°	**I approve the solar array layout as shown on this drawing.**
B Orientation  **168°**	_____ **Client's approval**
B Roof Tilt 18°	

Location	**Contact**	
Modules: 26 Modules Located on Front roofs	Name: Roe, Grant	Phone # 908 208 5711
Inverter: Located next to service panel	Address: 136 John Street, Brick, NJ	
Batteries: N/A	Utility: JCPL	Acct. # 10 00 17 3146 1 6
Lockable Disconnect: On inverter	Installer: Corbin Solar Solutions, LLC	
Point of Connection: Circuit breakers in service panel	Phone # 732 536 3004	Email: Rick@corbinsolar.com

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

Corbin Solar Solutions, LLC
Adam Corbin
699 Tennent Road
Manalapan NJ 07726

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

12/04/2009 TO 12/31/2010
VALID

13VH04924700
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs
HAS REGISTERED
Corbin Solar Solutions, LLC
Home Improvement Contractor

NOT A/N ELECTRICIAN'S OR PLUMBER'S LICENSE

12/04/2009 TO 12/31/2010
VALID

SIGNATURE

13VH04924700
License/Registration/Certificate #

DIRECTOR

PLEASE DETACH HERE

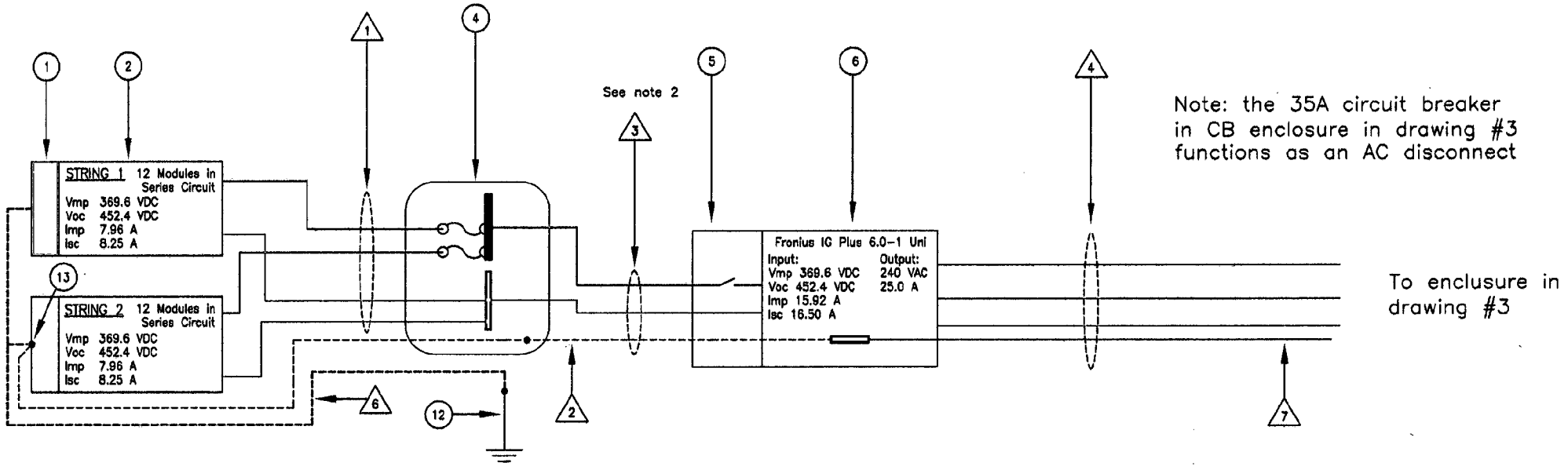
IF YOUR LICENSE/REGISTRATION/ CERTIFICATE ID CARD IS LOST PLEASE NOTIFY:
Division of Consumer Affairs
P.O. Box 46016
Newark, NJ 07101

PLEASE DETACH HERE

EQUIPMENT SCHEDULE			
Tag	Description	Part Number	Notes
1	Solar PV Modules	SW245 mono	SolarWorld Sunmodule solar panels
2	PV Array		
3	N/A		
4	Combiner Box		Fuses: 15A, 600VDC
5	DC Disc. (in inverter)		40 Amp
6	Inverter		Fronius IG Plus 6.0-1 Uni
7			
12	PV Array Gnd Rod		2008 NEC 690.47
13	EGC/GEC conn. pt.		EGC and GEC bonded to array rails
14	N/A		

CONDUCTOR AND CONDUIT SCHEDULE						
Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
1	USE-2 wire w/MC conn.	12		N/A	N/A	690.8(A)(1) 10.31A (B)(1) 12.89A
2	Equip. Grounding Cond. (DC)	10		Tag 3 conduit		690.45(A); 250.122(A)
3	THHN/THWN-2	10	5 (2)	EMT	3/4"	690.8(A)(2) 20.63A (B)(1) 25.78A; 310.15
4	THHN/THWN-2	8	3	EMT	3/4"	690.8(A)(3) 25.0A (B)(1) 31.25A; 310.15
5						
6	PV Array Gnd. Elec. Cond. (1)	8		N/A	N/A	250.166; 690.46 (EGC req app to GEC)
7	Equip. Grounding Cond. (AC)	8		Tag 4 conduit		690.47(C)(2); 250.122

Notes:
1. G.E.C. is continuous wire per 250.64(C).
2. The combiner box output (2 DC conductors) will run through ½" PVC conduit for a short distance to a junction box, where it will be combined with the output of the microinverters (3 AC conductors) (see site layout drawing). Leaving the junction box all 5 conductors will be carried in the same ¾" EMT conduit so the wire and conduit are sized for 5 conductors.



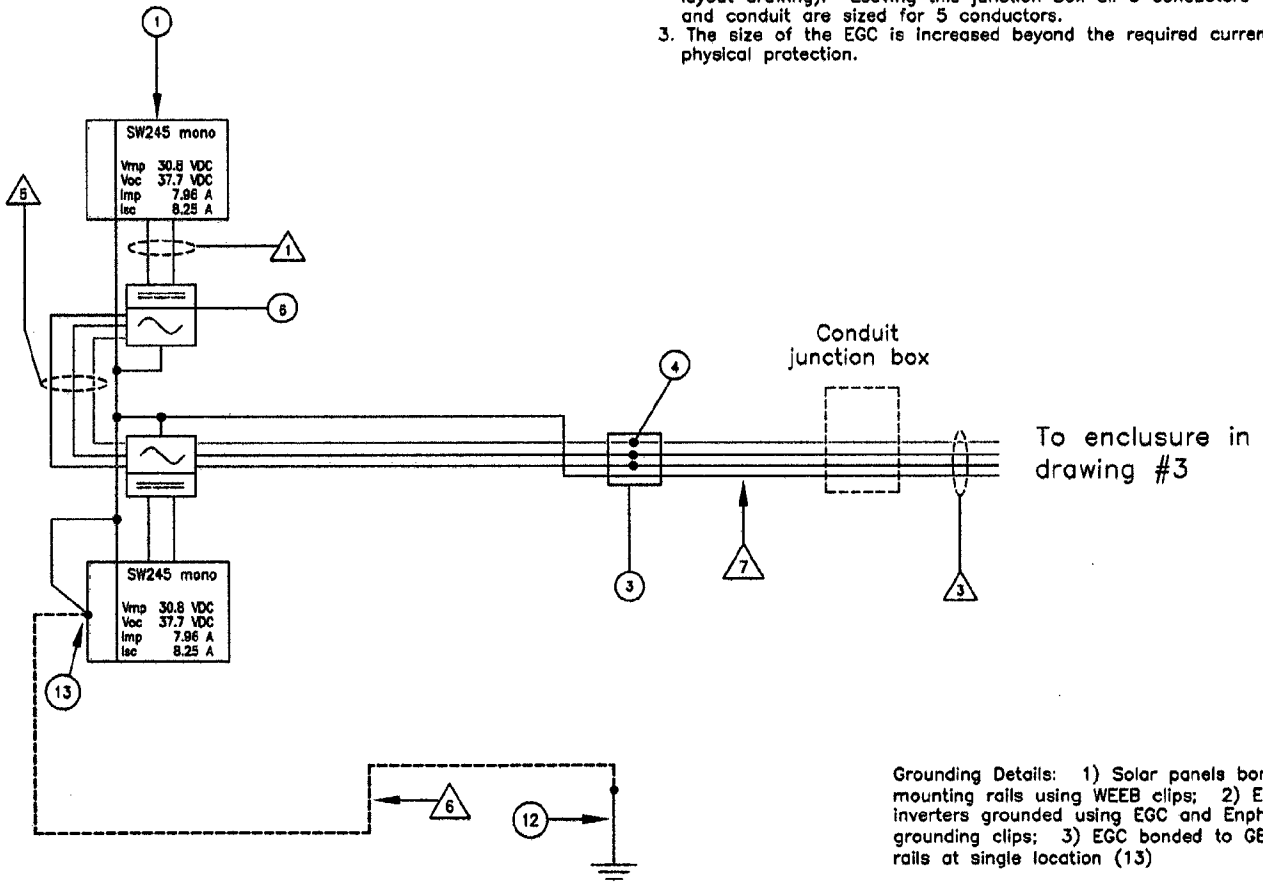
Standard Electrical Diagram for Multi-Inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 1 of 3			

DC Ground
AC Ground
Grounding Electrode Conductors (AC or DC)

◯ EQUIPMENT SCHEDULE			
Tag	Description	Part Number	Notes
1	Solar PV Modules	SW245 mono	SolarWorld Sunmodule solar panels
2			
3	Junction box		NEMA 3R; attached to end of Enphase branch circuit
4	Switch		2-pole disconnect
5			
6	Inverter		Enphase M190-72-240-S12/3
12	PV Array Gnd Rod		2008 NEC 690.47
13	EGC/GEC conn. pt.		EGC and GEC bonded to array rails

△ CONDUCTOR AND CONDUIT SCHEDULE						
Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
1	USE-2 wire w/MC conn.	12		N/A	N/A	690.8(A)(1) 10.31A (B)(1) 12.89A
3	THHN/THWN-2	14	3 (2)	EMT	1/2"	690.8(A)(2,3) 1.6A (B)(1) 2.0A; 310.15
5	Enphase Branch Wire			N/A	N/A	
6	PV Array Gnd. Elec. Cond. (1)	8		N/A	N/A	250.166; 690.46 (EGC req app to GEC)
7	Equip. Grounding Cond. (AC)	10 (3)		Tag 3 conduit		690.47(C)(2); 250.122

Notes:
1. G.E.C. is continuous wire per 250.64(C).
2. The Enphase junction box output (3 AC conductors) will run through ½" PVC conduit for a short distance to an additional junction box, where it will be combined with the output of the combiner box (2 DC conductors) (see site layout drawing). Leaving this junction box all 5 conductors will be carried in the same ¾" EMT conduit, so the wire and conduit are sized for 5 conductors.
3. The size of the EGC is increased beyond the required current carrying capability to provide additional sturdiness and physical protection.



Grounding Details: 1) Solar panels bonded to mounting rails using WEEB clips; 2) Enphase inverters grounded using EGC and Enphase grounding clips; 3) EGC bonded to GEC and rails at single location (13)

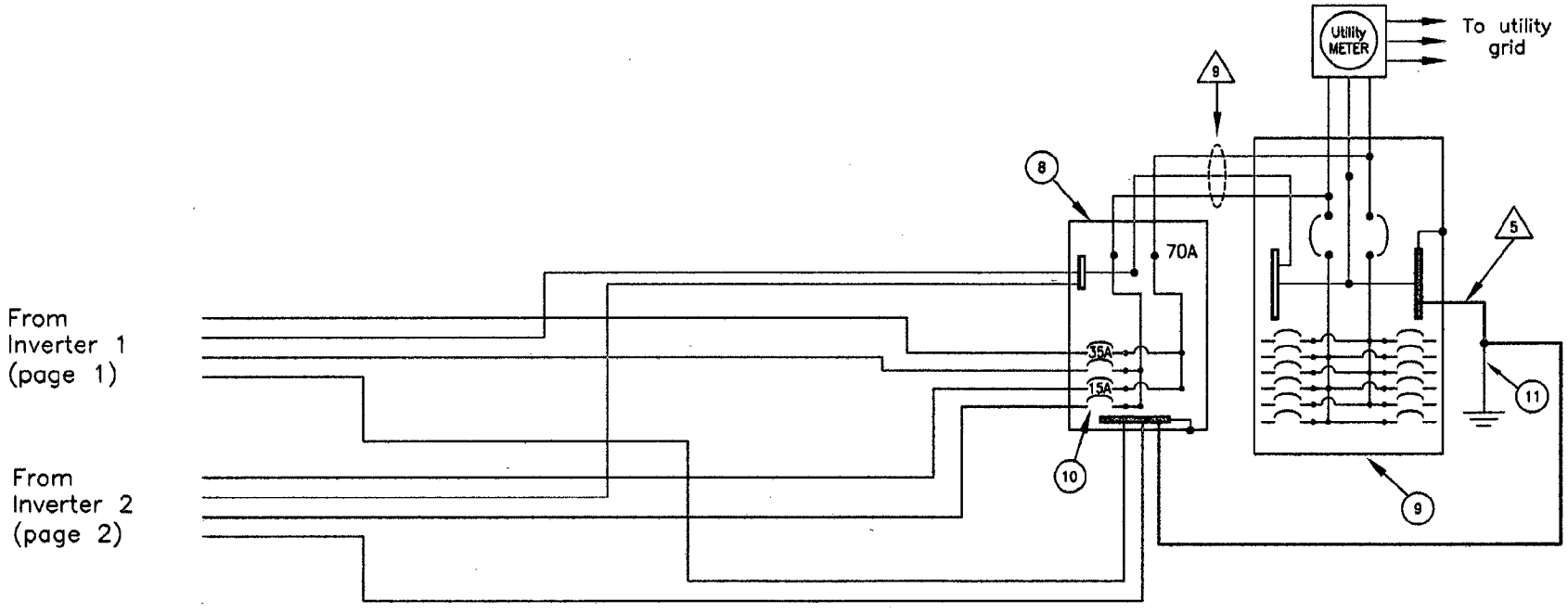
Standard Electrical Diagram for Multi-Inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 2 of 3			

----- DC Ground
——— AC Ground
═══ Grounding Electrode Conductors (AC or DC)

○ EQUIPMENT SCHEDULE			
Tag	Description	Part Number	Notes
1			
2			
3			
4			
5			
6			
8	Line-side connected enclosure w/ 2 CBs		Square D 240VAC, 70-Amp, NEMA 1
9	Service Panel		240VAC, 100 Amp Main Bus
10	Inverter Utility Conn.		15, 35A double CBs in enclosure
11	Service Ground Rod		

△ CONDUCTOR AND CONDUIT SCHEDULE						
Tag	Description	AWG	Conduit			2008 NEC References/Calculations
			# Conduct.	Type	Size	
5	Service Gnd. Elect. Cond.	6		N/A	N/A	250.66
6						
7						
8						
9	Service Conductors	6	3	EMT	3/4"	230.42(A); 310.15

Notes:
1. G.E.C. is continuous wire per 250.64(C).

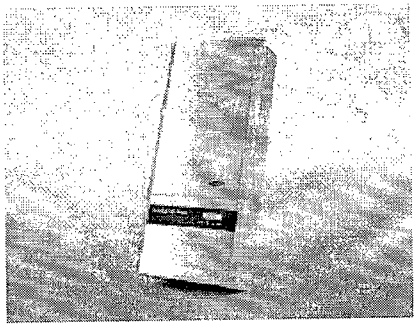


Standard Electrical Diagram for Multi-Inverter, Single-Phase PV Systems	Site Name: Grant Roe	Contractor	Installing Electrician
System Size: 6.37Kw # of Modules: 26	Site Address: 136 John St. Brick, NJ 08742	Corbin Solar Solutions, LLC 699 Tennent Rd. Manalapan, NJ 07726 HIC # 13VH04924700	Corbin Electrical Services, Inc 699 Tennent Rd. Manalapan, NJ 07726 License #6419
Designer: Ray Kimber Date: Sept. 22, 2010			
Checked by: Rick Sehein Drawing 3 of 3			

----- DC Ground
——— AC Ground
═══ Grounding Electrode Conductors (AC or DC)

Products Grid-connected PV inverters Fronius IG Plus Fronius IG Plus 5.0-1 uni - 7.5-1 uni

Fronius IG Plus 5.0-1 uni - 7.5-1 uni



+ Maximum Earnings Security
+ Highest Reliability
+ First Universal Inverter

This two power stage inverter is available in 5.0, 6.0 and 7.5 kW and is fieldl programmable to 208, 240 or 277 volts. Best suited for residential and smaller commercial applications.

Available Fronius IG Plus Two Stage Inverters:

5.0-1 UNI
6.0-1 UNI
7.5-1 UNI

Operating Manual

Technical Data

Fronius IG Plus	5.0-1 UNI	6.0-1 UNI< DIV>	7.5-1 UNI
Input data			
Recommended PV-Power (Wp)	4250-5750	5100-6900	6350-8600
MPPT-Voltage range	230 - 500 V		
Max. Input voltage range (at 1000 W/m² 14°F (-10°C) in open circuit operation)	600 V		
Nominal Input Current	13.8 A	16.6 A	20.7 A
Max. usable Input Current	23.4 A	28.1 A	35.1 A
Admissible conductor size (DC)	No. 14-6 AWG		
Output data			
Nominal output power (PAC nom)	5000 W	6000 W	7500 W
Max. continupous output power 104°F (40°C) 208 V / 240 V / 277 V	5000 W	6000 W	7500 W

Nominal AC output voltage	208 V / 240 V / 277 V		
Operating AC voltage range (default) 208 V 240 V 277 V	183 - 229 V (-12 / +10 %) 211 - 264 V (-12 / +10 %) 244 - 305 V (-12 / +10 %)		
Maximum continuous output current 208 V 240 V 277 V	24.0 A 20.8 A 18.1 A	28.8 A* 25.0 A 21.7 A	36.1 A 31.3 A 27.1 A
Admissible conductor size (AC)	No. 14 - 4 AWG		
Max. continuous utility back feed current	0 a		
Nominal frequency	60 Hz		
Operating frequency range	59.3 - 60.5 Hz		
Total harmonic distortion	< 3 %		
Power factor	1		

General data

Max. Efficiency	96.2 %		
CEC Efficiency 208 V 240 V 277 V	95.5 % 95.5 % 96.0 %	95.5 % 96.0 % 96.0 %	95.0 % 95.5 % 96.0 %
Consumption in standby (night)	< 1 W		
Consumption during operation	15 W		
Cooling	Controlled forced ventilation, variable fan speed		
Enclosure Type	NEMA 3R		
Unit Dimensions (W x H x D)	17.1 x 36.4 x 9.6. in.		
Power Stage Weight	57 lbs. (26 kg)		
Wiring Compartment Weight	26 lbs. (12 kg)		
Admissing ambient operating temperature	-4 ... 122°F (-20 ... + 50°C)		
Compliance	UL 1741-2005, IEEE1547-2003, IEEE 1547.1, ANSI/IEEE C62.41, FCC Part 15 A&B, NEC Article 690, C22. 2 No. 107.1-01 (Sept. 2001)		

Safety equipment

Ground fault protextion	Internal GFDI (Ground Fault Detector/Interrupter); in accordance with UL 1741-2005 and NEC Art. 690
DC reverse polarity protevtion	Internal diode
Islanding protection	Internal; in accordance with UL 1741-2005, IEEE 1547-2003 and NEC

language: ^ENG^, section: ^se^, breadcrumb: ^Products || Grid-connected PV inverters || Fronius IG Plus || Fronius IG Plus 5.0-1 uni - 7.5-1 uni || ^, latestModification: ^2008-10-23 07:58:29^

Over temperature	Output power derating / active cooling

The right to make technical modifications is reserved.

Equipment features

Grounding selectable on site.
Decide on site what type of grounding is required as the Fronius IG Plus is field programmable for either positive or negative module grounding.

Designed for indoor and outdoor installations.
All Fronius IG Plus inverters have a robust, well designed aluminum housing. UV resistance and corrosion protection enable them to be used either indoors or outdoors. Fronius is proud to be one of the only inverters tested and approved to operate at 122° F.

Integrated DC disconnect.
No external DC disconnect installation or cabling is necessary. The Fronius IG Plus comes complete with an approved, built-in, lockable and load breakable DC Disconnect.

The new power plug system.
The connection area and power stages are installed separately from each other. Very easy and extremely safe: The connection area is attached to the wall as normal. Then the power module is simply plugged in. The power plug connects both parts into one secure unit. If service is required, the connector remains on the wall maintaining all settings and configurations.

Field Programmable AC output voltage.
The Fronius IG Plus inverter line from 3.0 to 11.4 kW is field programmable to 208, 240 or 277 volts (Fronius IG Plus 12.0 kW only availabale in 277 volts), eliminating the need to install different inverter models to accommodate three-phase installations.

Technology

Three efficiency peaks.
Greater power harvest for every system size: The unique automatic transformer switching function of the Fronius IG Plus makes enables not one, but three equal efficiency peaks. The result: Consistantly high efficiency over a wide input voltage range.
In comparison: The efficiency of inverters without transformer switching declines steadily with an increasing input voltage. Devices without a transformer only have one efficiency peak.

With a 96.2 % maximum efficiency, the Fronius IG Plus series scores the highest grade among HF devices.

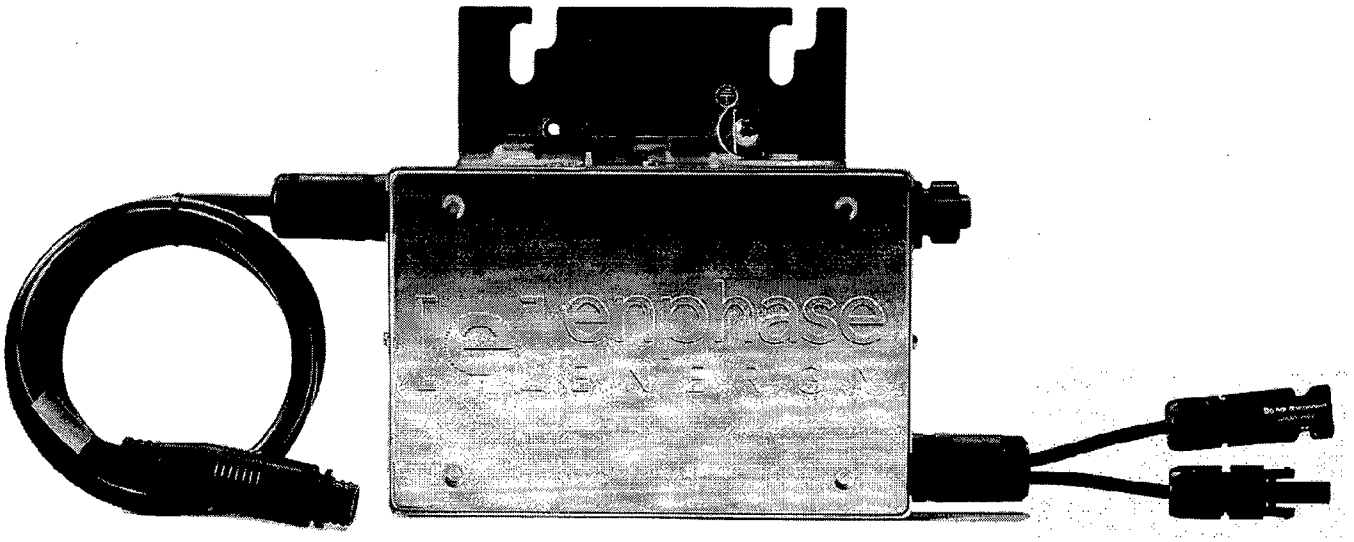
MIX™ Concept.
Get the maximum power harvest out of partial load ranges, e.g. on cloudy days, through a clever combination of multiple power stages in each inverter. The power stages in Fronius inverters divide up the work depending on operating hours and only operate as many power stages as required to efficiently process available power from the PV array.

Module Manager™.
The Module Manager™ keeps all Fronius IG inverters at the maximum power point (MPP) with fast and exact MPP tracking, ensuring that you get the most power out or each ray of sunlight. This is especially important for amorphous modules whose MPP can be more challenging to track.

Smart Ventilation Design.
Disruptive ambient factors such as dust or moisture remain on the outside: The reason: Cooling air is drawn in on the wall side and routed through a closed channel over the heat sink. This prevents contact with the circuit board. At the same time, the components are kept cool - the device operates with a stable consistency.

Documents and downloads

ENPHASE MICROINVERTER M190



The Enphase Energy Microinverter System improves energy harvest, increases reliability, and dramatically simplifies design, installation and management of solar power systems. The Enphase System includes the microinverter, the Envoy Communications Gateway, and the web-based Enlighten monitoring and analysis website.

PRODUCTIVE
- Maximum energy production
- Resilient to dust, debris and shading
- Performance monitoring per module

RELIABLE
- MTBF of 331 years
- System availability greater than 99.8%
- No single point of system failure

SMART
- Quick & simple design, installation and management
- 24/7 monitoring and analysis

SAFE
- Low voltage DC
- Reduced fire risk

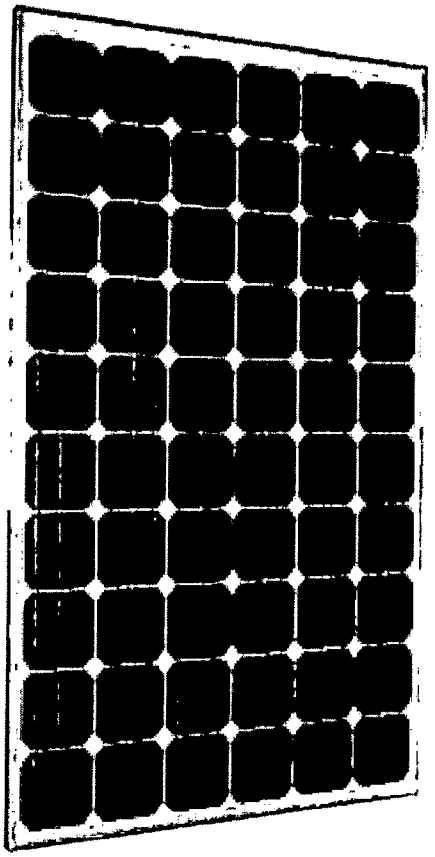
C US

MICROINVERTER TECHNICAL DATA

60 and 72 Cell Modules		
Input Data (DC)	M190-72-208-S12/3 M190-72-208-S12/3-NA (Ontario)	M190-72-240-S12/3 M190-72-240-S12/3-NA (Ontario)
Recommended input power (STC)	230W	230W
Maximum input DC voltage	56V	56V
Peak power tracking voltage	22V – 40V	22V – 40V
Min./Max. start voltage	28V/54V	28V/54V
Max. DC short circuit current	12A	12A
Max. input current	10A	10A
Output Data (AC)		
Maximum output power	190W	190W
Nominal output current	920mA	800mA
Nominal voltage/range	208V/183V-229V	240V/211V-264V
Extended voltage/range	208V/179V-232V	240V/206V-269V
Nominal frequency/range	60.0/59.3-60.5	60.0/59.3-60.5
Extended frequency/range	60.0/59.2-60.6	60.0/59.2-60.6
Power factor	>0.95	>0.95
Maximum units per branch	21	15
Efficiency		
Peak inverter efficiency	95.5%	95.5%
CEC weighted efficiency	95.0%	95.0%
Nominal MPP tracking	99.6%	99.6%
Mechanical Data		
Operating temperature range	-40°C to +65°C	-40°C to +65°C
Night time power consumption	30mW	30mW
Dimensions (WxHxD)	8" x 5.25" x 1.25"	
Weight	4.4 lbs	
Cooling	Natural Convection – No Fans	
Enclosure environmental rating	Outdoor – NEMA 6	
Features		
Communication	Powerline	
Warranty	15 Years	
Compliance	UL1741/IEEE1547 FCC Part 15 Class B	

Enphase Energy, Inc.
201 1st Street, Suite 300, Petaluma, CA 94952
877 797 4743 enphaseenergy.com

142-00005 REV 05



Length	65.94 in (1675 mm)
Width	39.41 in (1001 mm)
Height	1.34 in (34 mm)
Weight	48.5 lbs (22 kg)
Frame	Aluminum

Sunmodule®
SW 245 MONO

World-class quality
SolarWorld products are manufactured in state-of-the-art factories according to strict German and US quality, labor and environmental standards.

Award-winning products
SolarWorld modules were ranked number one in two consecutive tests carried out by the Photon trade magazine in 2008 and 2009 with up to 12% more yield.

SolarWorld Plus-Sorting
Plus-Sorting guarantees the highest efficiency of the installation. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25-year Linear Performance Guarantee*
SolarWorld guarantees, over 25 years, that the modules' performance will not decrease by more than 0.7% per year – a distinct added value compared to the two-tiered guarantees usual in the industry.

*according to the SolarWorld service certificate valid at the time of purchase
www.solarworld-global.com/service-certificate

SOLARWORLD

We turn sunlight into power.

www.solarworld-usa.com

Sunmodule®

SW 245 MONO

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC*)

		SW 245
Maximum power	P_{max}	245 Wp
Open circuit voltage	V_{oc}	37.7 V
Maximum power point voltage	V_{mpp}	30.8 V
Short-circuit current	I_{sc}	8.25 A
Maximum power point current	I_{mpp}	7.96 A

*STC: 1000W/m², 25°C, AM 1.5

PERFORMANCE AT 800 W/ M², NOCT, AM 1.5

		SW 245
Maximum power	P_{max}	179 Wp
Open circuit voltage	V_{oc}	34.4 V
Maximum power point voltage	V_{mpp}	28.1 V
Short-circuit current	I_{sc}	6.65 A
Maximum power point current	I_{mpp}	6.37 A

Minor reduction in efficiency under partial load conditions at 25°C: at 220 W/m², 95% (+/-3%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Monocrystalline Silicon
Cell dimensions	156 mm x 156 mm
Front	tempered glass (EN12150)

SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II	1000 V
Maximum system voltage USA NEC	600 V
Maximum reverse current	16 A
Increased snowload acc. to IEC 61215	5.4 kN/m²

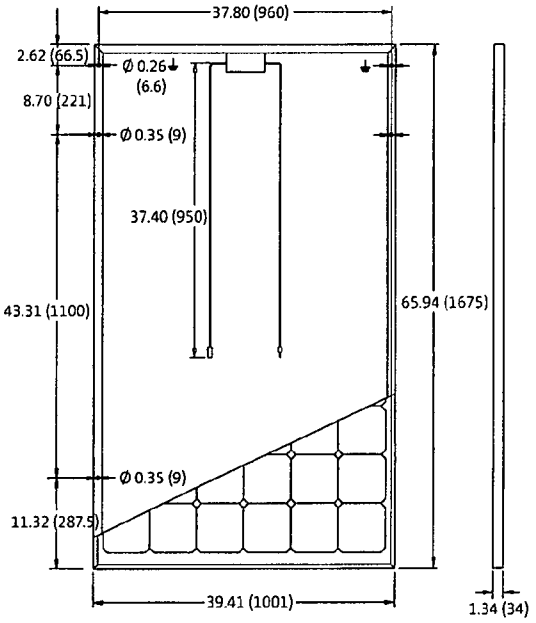
THERMAL CHARACTERISTICS

NOCT	47 °C
TC I_{sc}	0.042 %/°C
TC V_{oc}	-0.33 %/°C
TC P_{mpp}	-0.45 %/°C

ADDITIONAL DATA

PTC rating	219.6 W
Junction box	IP65
Connector	MC4
Module efficiency	14.6 %
SolarWorld Plus-Sorting*	$P_{Flash} \geq P_{max}$
Power tolerance*	+/- 3 %

*Only modules with flash-tested power ≥ P_{max} are delivered.
Linear warranty guarantees Year 1 module output to ≥ 97% of P_{max}



Qualified, IEC 61215
Safety tested,
IEC 61730
Periodic Inspection

CORROSIVE GAS (NH_3) RESISTANT

Made in USA

SolarWorld AG reserves the right to make specification changes without notice.
This data sheet complies with the requirements of EN 50380.
Sunmodule panels are manufactured in ISO 9001:2000 certified facilities

James A. Marx, Jr. P.E.
10 High Mountain Road
Ringwood, NJ 07456
Tel. No. 973-557-6080
E-mail: jamlight@bellatlantic.net

April 29, 2009

Unirac, Inc.
1411 Broadway Blvd. NE
Albuquerque, NM 87102

To: Building Department or Others:

RE: Engineer's Notice of Evaluation for UniRac SolarMount™
Universal PV Module Mounting System

Dear Sir:

I have reviewed Unirac SolarMount™ "Code-Compliant Installation Manual 227", copyright February 2008 and certify that the information and results are accurate. To determine the design level forces, the appropriate wind speed shall be determined as prescribed by local jurisdiction requirements and applied in accordance to the New Jersey Uniform Construction Code – UCC. The UCC requires that wind loading be determined based upon International Building Code-2006 NJ Ed. or International Residential Code-2006-NJ Ed. and ASCE 7-05. Unirac's Manual 227 utilizes ASCE 7-05 for which Unirac Table 2 is based upon, and that is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels. The SolarMount™ railing and anchorage requirements for the installation are properly represented in the Installation Manual 227.

For other conditions, the determination of wind pressures should be determined by the aforementioned International Building Code – 2006 and ASCE 7-05 procedures.
The International Building Code requires that wind loading be determined based upon ASCE 7-05 Simplified Method 1 or ASCE 7-05 using Method 2, that which is dependent upon conditions of spatial form, height and other structure parameters that are specified in the code provisions for determining the applied wind loading pressures imposed onto the Unirac SolarMount™ rails supporting solar panels.

The design verification is based on:

I. ASCE7-05 – ASCE Standard
II. "Steel Construction Manual," 13th Ed., American Institute of Steel Construction, Chicago, IL, 2005.
III. "Aluminum Design Manual", The Aluminum Association, Washington D.C., 2005.
IV. Mechanical Properties and Static Load Testing of Unirac extruded rails and related components obtained from Dr. Walter Gerstle, PE, Department of Civil Engineering, University of New Mexico, Albuquerque, NM

Use:
Unirac SolarMount™ is evaluated for use in locations where wind pressure requirements do not exceed 50 psf or snow load conditions do not exceed 45 psf ground snow loads. For loading in excess of either of the above stated conditions, Unirac, Inc. should be contacted for suitability of installation.

By this letter, I certify that the Unirac SolarMount™ assembly, when installed in accordance with the Installation Manual 227 will meet the requirements of the building codes adopted by New Jersey. Others should evaluate the structure to which the Unirac SolarMount™ system is to be connected on a case-by-case basis, per Part I – Installer's Responsibilities of the Installation Manual, to ensure its adequacy to accept attachments and to support all applied loadings per the building code.

Please call me if you have any questions or concerns.

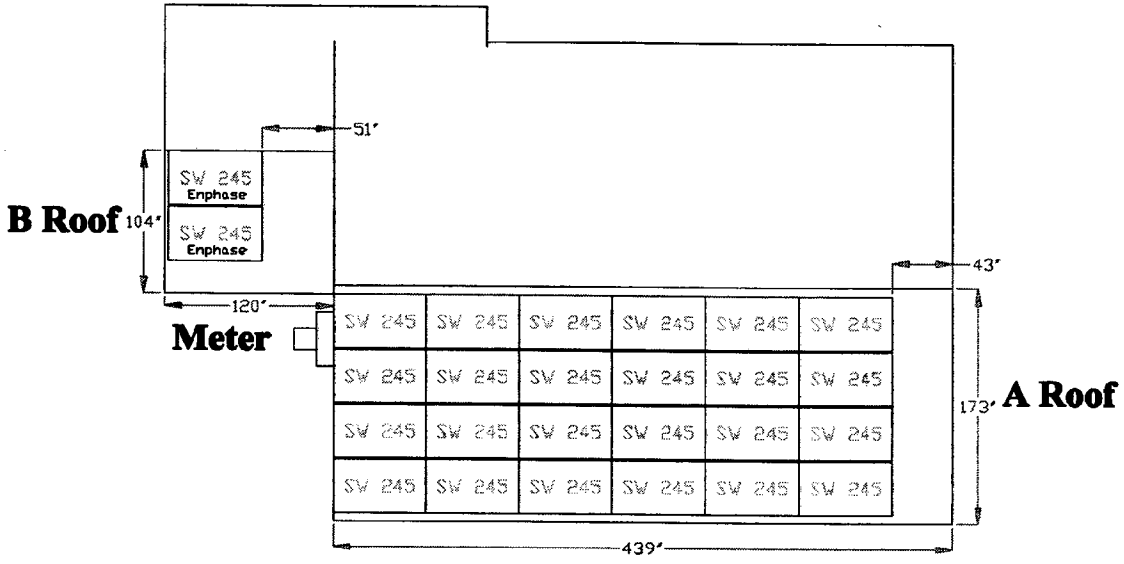
Sincerely,

4/29/09

James A. Marx, Jr.
Professional Engineer
NJ License Number GE 25179

cc: James Madrid, Unirac

A Orientation  **168°**	
A Roof Tilt 23°	
B Orientation  **168°**	
B Roof Tilt 18°	



John Street

I approve the solar array layout as shown on this drawing.

Client's approval

Location	Contact	
Modules: 26 Modules Located on Front roofs	Name: Roe, Grant	Phone # 908 208 5711
Inverter: Located next to service panel	Address: 136 John Street, Brick, NJ	
Batteries: N/A	Utility: JCPL	Acct. # 10 00 17 3146 1 6
Lockable Disconnect: On inverter	Installer: Corbin Solar Solutions, LLC	
Point of Connection: Circuit breakers in service panel	Phone # 732 536 3004	Email: Rick@corbinsolar.com

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New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs

HAS REGISTERED

Corbin Solar Solutions, LLC
Adam Corbin
699 Tennent Road
Manalapan NJ 07726

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

12/04/2009 TO 12/31/2010
VALID

13VH04924700
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
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HAS REGISTERED
Corbin Solar Solutions, LLC
Home Improvement Contractor

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Newark, NJ 07101

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