BLOCK 1170.04 LOT 3 QUALIFICATION CODE ______ ADDRESS (SITE) 128 John Street Brick, NJ 08724 PERMIT NO. 11-2206

CONSTRUCTION PERMIT APPLICATION

NEW JERSEY UNIFORM CONSTRUCTION CODE

C11-002628

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

I. IDENTIFICATION

1. Proposed Work Site at: 128 John St. Brick, NJ 08724
2. Name of Owner in Fee: Diana Collis
   Tel. [redacted] e-mail
   Address Same as above (street / municipality / zip code)
3. Ownership in Fee: Public ______ Private ✓
4. Principal Contractor: GeoGenix, LLC Tel. (732) 761-8841
   Address 8998 Route 18, Old Bridge, NJ 08857 e-mail permits@geogenix.com
   License No. OR, if new home, Builder Reg. No. I3VH02387400 Exp. Date 12-31-11
   Home Improvement Contractor Registration No. or Exemption Reason (if applicable):
   Federal Emp. ID No. 22-3801373 FAX: (732) 676-7800
5. Architect or Engineer Ascent Consulting Contact James Maly
   Address 10 High Mountain Rd Ringwood NJ 07456 e-mail
   Tel. (973) 557-6080 FAX: (973) 835-5924
6. Responsible Person in Charge once Work has Begun Christy Lorenz
   Tel. (732) 761-8841 FAX: (732) 676-7800

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$ 200		
2. Electrical	75		
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee	37		
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$ 312		

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)

Subcode	Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Resubmission Dates Rejection	Re-viewer
☑ Building	$1,966	REC'D JUL 15 2011			7/19/11	KA			
☑ Electrical	$19,884				7/21/11	JT			
☐ Plumbing									
☐ Fire Protection									
☐ Elevator	Eng	Exempt			7/18/11	ECC			
TOTAL COST	$21,850								

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

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 **Christy Lorenz For GeoGenix, LLC**

Address **8998 Route 18, Old Bridge, NJ 08857**

Telephone (**732**) **761-8841**

Signature _____

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

OFFICE DATE RECEIVED: 7-15-11 SC,PT

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	SC	7/15/11							ZA-11-00763
☐ 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 9/21/2011
Control Number C-11-002628
Permit Number 11-2206
Permit Issue Date 7/25/2011
Certificate Number 11-2206

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 128 JOHN ST. Brick Township, NJ Block: 1170.04 Lot: 3 Qual:

Owner in Fee: COLLIS, BRIAN M & DIANE E

Owner Address: 128 JOHN ST BRICK NJ 08724

Telephone:

Contractor GEO GENIX, LLC

Address 79 EAST RIVER ROAD RUMSON NJ 07760

Telephone: (732) 895-9550 Fax: (801) 382-0751

License Number or Builders Registration Number: 13VH02387400 033044 Federal Emp. Number: 22-3801373

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: 9/21/2011 U.C.C. F260 (rev. 08/05)

CONSTRUCTION PERMIT

Date Issued
Control # C-11-002628
Permit #

IDENTIFICATION Block: 1170.04 Lot: 3 Qualifier
Work Site Location: 128 JOHN ST. Brick Township, NJ
Owner in Fee COLLIS, BRIAN M & DIANE E
128 JOHN ST BRICK NJ 08724
Telephone:

Contractor GEO GENIX, LLC
Address 79 EAST RIVER ROAD RUMSON NJ 07760
Telephone: (732) 895-9550
Lic. No. or Bldrs. Reg. No. 033044
Federal Employee. No. 22-3801373

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 $21,850

Construction Official Date

PAYMENTS (Office Use Only)

Building	$75
Electrical	$200
Plumbing	$0
Fire Protection	$0
Elevator Devices	$0
Other	$0.00
DCA Training Fee	$37
CO Fee	
Other	$0
Total	$312
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.

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

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

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

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

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

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

BUILDING SUBCODE
TECHNICAL SECTION

Date Received / Control # 7/25/11

Date Issued / Permit # 11-2206

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 3 Qualification Code

Work Site Location 128 John St.
Brick, NJ 08724

Owner in Fee: Dana Collis

Tel. [redacted] e-mail

Address same as above
street municipality zip code

Contractor: GeoGenix, LLC Tel. (732) 761-8841

Address 8998 Route 18, Old Bridge, NJ 08857 e-mail permits@geogenix.com

Contractor License No. or Builder Registration No. 13VH02387400 Exp. Date 12-31-11

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

Federal Emp. ID No. 22-3801373 FAX: (732) 676-7800

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footing		
[ ] Foundation		
[ ] Frame		
[X] Other	7/19/11	

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

SUBCODE APPROVAL
[ ] CO [ ] CCO [X] CA
Date: 9/20/11
Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	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			9/16/11	MW
Barrier-Free				

B. BUILDING CHARACTERISTICS

Use Group Present Proposed

Constr. Class 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.

Total Land Area Disturbed Sq. Ft.

Est. Cost of Bldg. Work:

1. New Bldg. $ 1,9606-
2. Rehabilitation $ —
3. Total (1+ 2) $ 1,9606-

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

Install 20 solar electric panels on roof.

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 $

U.C.C. F110 (rev. 7/06)

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

ELECTRICAL SUBCODE TECHNICAL SECTION

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Received 7/25/11
Date Issued
Control #
Permit # 11-2206

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 3 Qualification Code

Work Site Location 128 John St.
Brick, NJ. 08724

Owner in Fee Diane Collis

Address Same as above

Tel [redacted]

Contractor J. A. WIG CONSTRUCTION & ELECTRIC, LLC

Address 124 BOBBIS TERRACE
NEW EGYPT, NEW JERSEY 08533

Tel (609) 758-1844 FAX (609) 758-4629

Contractor License No. 14815

Federal Emp. No. 16-1644430

B. ELECTRICAL CHARACTERISTICS 4.6 Kw System

Use Group Present Proposed

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

Building Occupied as Residential Utility Co. JCPL

Est. Cost of Elec. Work $ 19,884-

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

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

D. TECHNICAL SITE DATA

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
2 strings		Communications Points Array	
		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	
1	4.0	KW ~~Transformer/Generator~~ Inverter	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

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

JOB SUMMARY (Office Use Only)

PLAN REVIEW

	Date	Initial
[ ] No Plans Required		
Joint Plan Review Required:		
[ ] Building [ ] Plumbing		
[ ] Fire [ ] Elevator		
[✓] Elec. Plans Approved		
Date: 7/27/11		
Approved by: [signature]		

SUBCODE APPROVAL

[ ] CO [ ] CCO [ ] CA

Date: 9/20/11

Approved by: JS

INSPECTIONS

Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service			9-16-11	D
Final				
Barrier-Free				

Temp. Cut-in-Card Date Issued

Final Cut-in-Card Date Issued

Annual Pool Inspection

Date of Grounding and Bonding Certification

1. White-Inspector copy 2. Canary- Applicant copy

3. Pink- Office Copy 4. White Tag- Office copy

UCC/F-120 (REV. 7/03)
Professional Printing
(856) 468-7933

Brick Township
401 Chambers Bridge Rd.

Brick, NJ 08723
(732) 262-1027

Date Issued: 7/25/11
Application Number: ZA-11-00763
Application Date: 07/15/2011
Project Number:
Permit Number: ZP-11-00657
Fee: $50

Zoning Permit

Worksite Location: **128 JOHN ST**
Laurel Acres
BRICK, NJ 08724

Block: **1170.04**
Lot: **3**
Qualifier:
Zone: **R-7.5**

Owner: **COLLIS, BRIAN M & DIANE E**
Address: **128 JOHN ST**
BRICK, NJ 08724

Applicant: **Christy Lorenz; GeoGenix, LLC**
Address: **8998 Route 18**
Old Bridge, NJ 08857

Application Approved Date: 07/15/2011

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 - 20 photovoltaic 230W panels, 4.6KW, mounted on the roof of 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 — 07/15/2011 Date

Michael P. Fowler, Township Planner — 7/15/11 **Date**

07/15/11 12:42PM 001558#7862
**02 SERV.002
#2206
ZPA $50.00
**TOTAL $50.00
CHECK $50.00
CHANGE $0.00

RECEIVING CLERK _____
DATE REC'D 7-15-11

ZONING PERMIT APPLICATION

PERMIT # ZP-11-00659
DATE ISSUED 7/25/11

BLOCK: 1170.04 LOT: 3 QUALIFIER: — SITE ADDRESS: 128 JOHN STREET

IDENTIFICATION:

1. NAME OF OWNER IN FEE: Diane Collis
   COMPLETE ADDRESS: 128 John Street
   Brick, NJ 08724
   PHONE # [redacted] EMAIL:

2. NAME OF APPLICANT: Christy Lorenz for GeoGenix, LLC.
   APPLICANT ADDRESS: 8998 Route 18
   Old Bridge, NJ 08857
   PHONE # 732-761-8841 EMAIL: christy.lorenz@geogenix.com

3. RESPONSIBLE PERSON FOR WORK: Christy Lorenz
   PHONE# 732-761-8841 FAX# 732-676-7800

4. SIGNATURE OF APPLICANT: C Lorenz GeoGenix, LLC.

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 _____ *PORCH _____ *DECK _____

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

HEIGHT: _____ (*APPLICABLE)

OTHER Solar panel installation **

DESCRIPTION: Installation of photovoltaic (solar electric) system on roof of house. No panels to be higher than existing roof ridge.

ZONING REVIEW:
DATE REVIEWED: 7-15-11 DATE DENIED: — DATE APPROVED: 7-15-11 INTLS: MCZ

(SEE BACK PAGE)

RECEIVING CLERK _____
DATE REC'D _____

ZONING PERMIT APPLICATION

PERMIT # _____
DATE ISSUED _____

BLOCK: _____ LOT: _____ QUALIFIER: _____ SITE ADDRESS: _____

IDENTIFICATION:

1. NAME OF OWNER IN FEE: _____
   COMPLETE ADDRESS: _____
   _____
   PHONE # _____ EMAIL: _____

2. NAME OF APPLICANT: _____
   APPLICANT ADDRESS: _____
   _____
   PHONE # _____ EMAIL: _____

3. RESPONSIBLE PERSON FOR WORK: _____
   PHONE# _____ FAX# _____

4. SIGNATURE OF APPLICANT: _____

FOR OFFICE USE ONLY

FEE SUMMARY:

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

REQUIRED BY APPLICANT

RESIDENTIAL: _____
COMMERCIAL: _____
EXISTING USE: _____
PROPOSED USE _____

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

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

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

HEIGHT: _____ (*APPLICABLE)

OTHER _____

DESCRIPTION: _____

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

(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]

Zone	Minimum Lot Size						Minimum Required Yard Depth						Maximum Lot Coverage by Building	Maximum Building Height				Minimum Floor/ Building Area (square feet) 2 stories/1 story	Maximum Allowable Impervious Coverage
	Interior Lots			Corner Lots			Principal Building				Accessory Building								
	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
JUL 15 2011

ZONING REVIEW:

DATE REVIEWED: 7-15-11 DATE DENIED: — DATE APPROVED: 7-15-11 INTLS: NCH

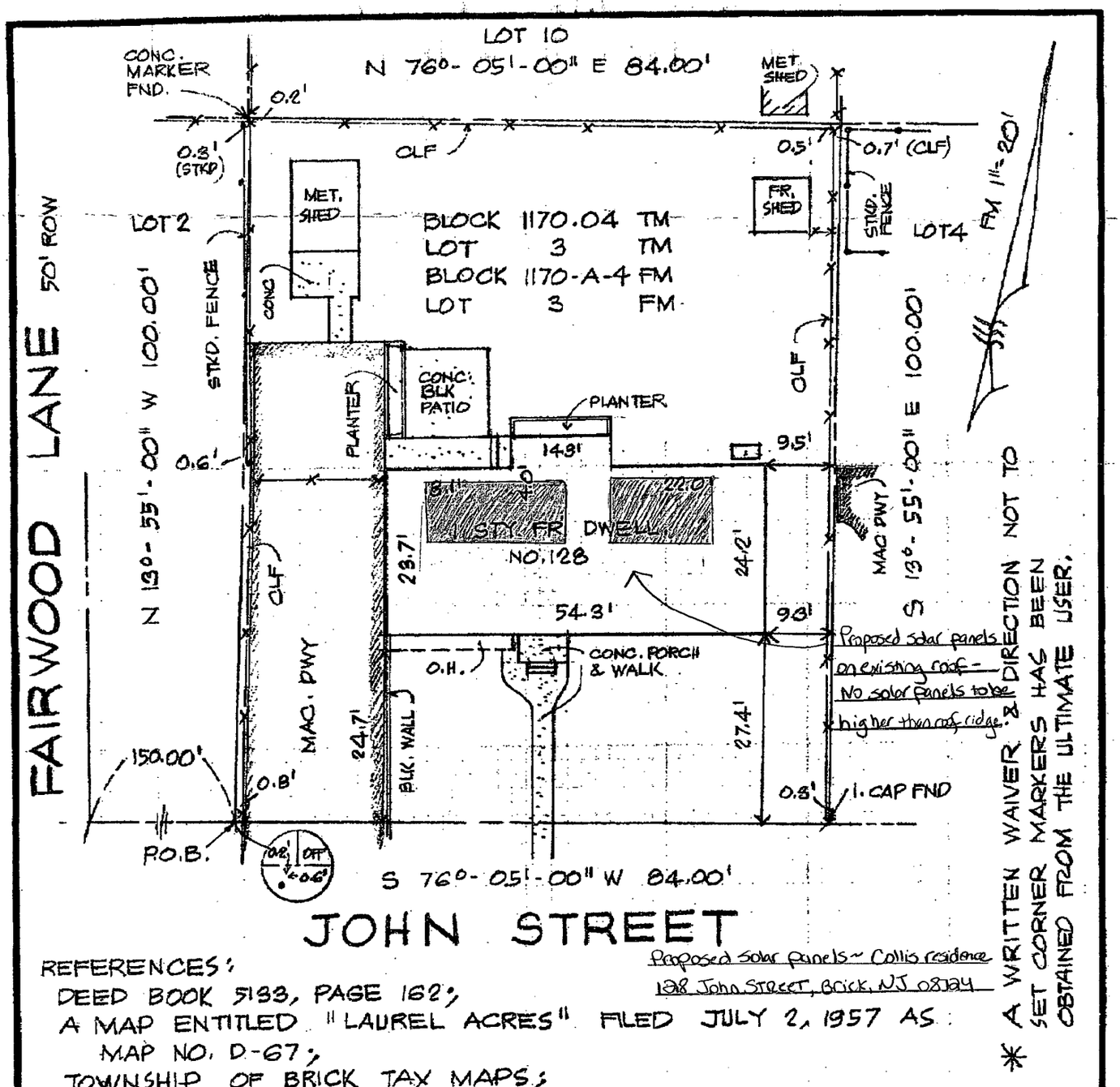
DATE:	COMMENTS:	INITIALS:

GeoGenix, LLC 7713

Brick Township 7/13/2011

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
7/12/2011	Bill	Diane Collis Zoning	50.00	50.00		50.00
					Check Amount	50.00

GeoGenix TD Bank C Diane Collis Zoning Permit Fee (lease) 50.00



REFERENCES:
DEED BOOK 5133, PAGE 162;
A MAP ENTITLED "LAUREL ACRES" FILED JULY 2, 1957 AS MAP NO. D-67;
TOWNSHIP OF BRICK TAX MAPS;

Proposed solar panels - Collis residence
128 John Street, Brick, NJ 08724

Brunswick Surveying Incorporated
Licensed Land Surveyors
61 Stelton Road Piscataway, New Jersey
(732) 752-0100 08854

PLAN OF SURVEY

Brian M. Collis and Diane F. Collis
Township of Brick
Ocean County, New Jersey
Block 1170.04 Lot 3

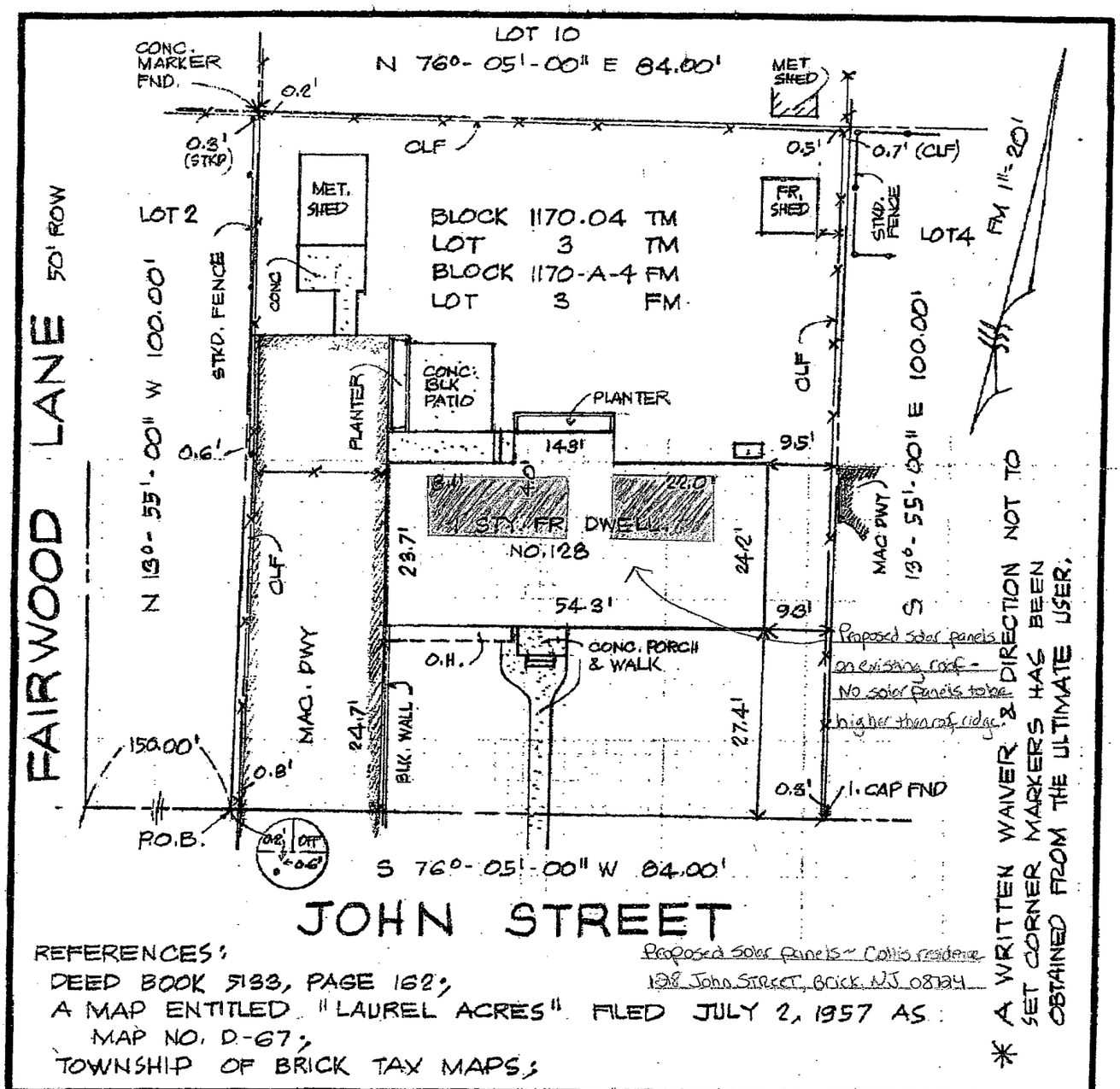
CERTIFICATE # 24GA27940000

Drawn by FH Job No. 3538-04 Date 11-2-04
Checked by RH Drawing No. _____ Scale 1"=20'

I hereby certify this survey to: Brian M. Collis & Diane F. Collis husband and wife; Network Title Services, Inc.; First American Title Insurance Company; Thomas J. Lanza, Esq.; Countrywide Home Loans Inc. and/or its assigns as their interest may appear

ROBERT M. HORVATH N.J.L.S. 27476
☐ JAY A. STUHL, JR. N.J.L.S. 35762

R.S. KNAPP CO.



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■ ROBERT M. HORVATH N.J.L.S. 27476
□ JAY A. STUHL, JR. N.J.L.S. 35762

R.S. KNAPP CO.

NT 34336

732 477-6670 p.2

APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

JUL 15 2011

5529

SOLAR PANELS

Jul 11 11 01:22p Kevin McCord

GeoGenix
The Experts to Trust

8998 Route 18
Old Bridge, NJ 08857

July 14, 2011

Zoning Officer
Brick Twp. Building Dept.
401 Chambers Bridge Road
Brick Twp, NJ 08723

Dear Zoning Officer,

Enclosed please find a completed Zoning application package for the installation of a photovoltaic (solar-electric) system, roof mounted, at the residence indicated below:

Diane Collis
128 John Street
Brick, NJ 08724
Block 1170.04, Lot 3

We are submitting the following material to the Zoning Dept.:

1. Completed Zoning Application form
2. Zoning Permit Fee $50.00
3. Two (2) copies of diagram showing the placement of the solar panels (roof mounted).
4. Two (2) copies of detailed specification sheets for the photovoltaic panels.
5. Two (2) copies of Survey with drawings indicating the proposed installation

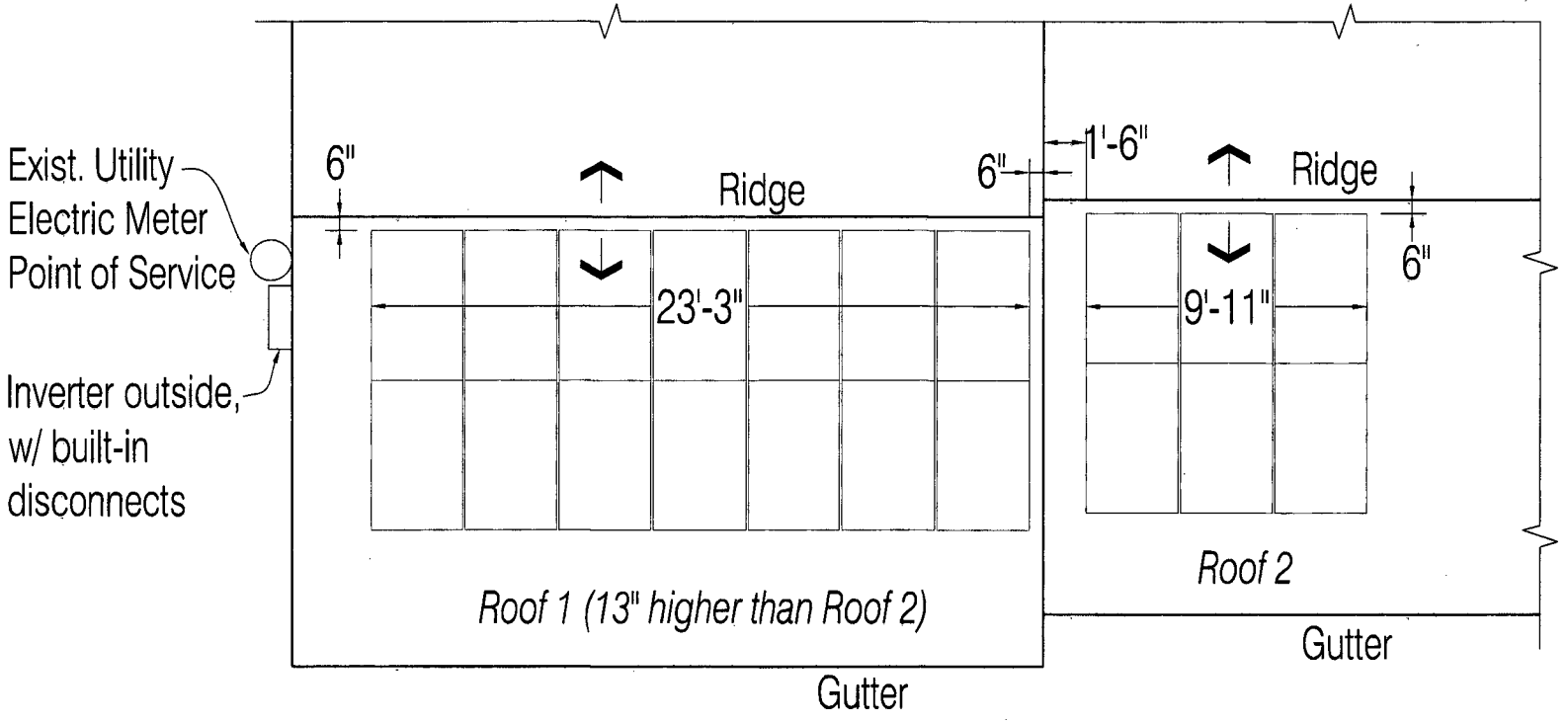
Please call the numbers listed below or send an email if you have any questions.

Thank you for your time and attention.

Sincerely,
Christy Lorenz

Christy Lorenz, *Administrative Assistant*, **732-761-8841,** Christy.lorenz@geogenix.com

Enc.



SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

(1) SB-4000us W/ (2) Strings of (10) Panels

RACKING:

DPW Power Rail System

APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

JUL 15 2011

SOLAR ARRAY
158°

SEE SOLAR PANELS

NOTES:

1. See specifications for additional information.
2. See electrical One-line drawing (PV-2) for wiring connections.
3. North arrow and Array orientation based on "True" direction (magnetic compass reading minus Magnetic Declination of 11 degrees equals true Array orientation (Azimuth) of 158 degrees.)

1 / PV-1 PLAN N.T.S.

Solar (Photovoltaic) Panel

Direction of Roof Slope

LEGEND:

GeoGenix, LLC
Leaders in Energy-Saving Design and Construction
GeoGenix, LLC
79 East River Road
Rumson, NJ 07760
(T) 732.895.9550
(F) 801.382.0751

STRUCTURAL ENGINEER:
Ascent Consulting
James A. Marx, P.E.
10 High Mountain Road
Ringwood, NJ 07456
(T) 973.557.6080

CUSTOMER:
Diane Collis Residence
128 John Street
Brick, NJ, 08724

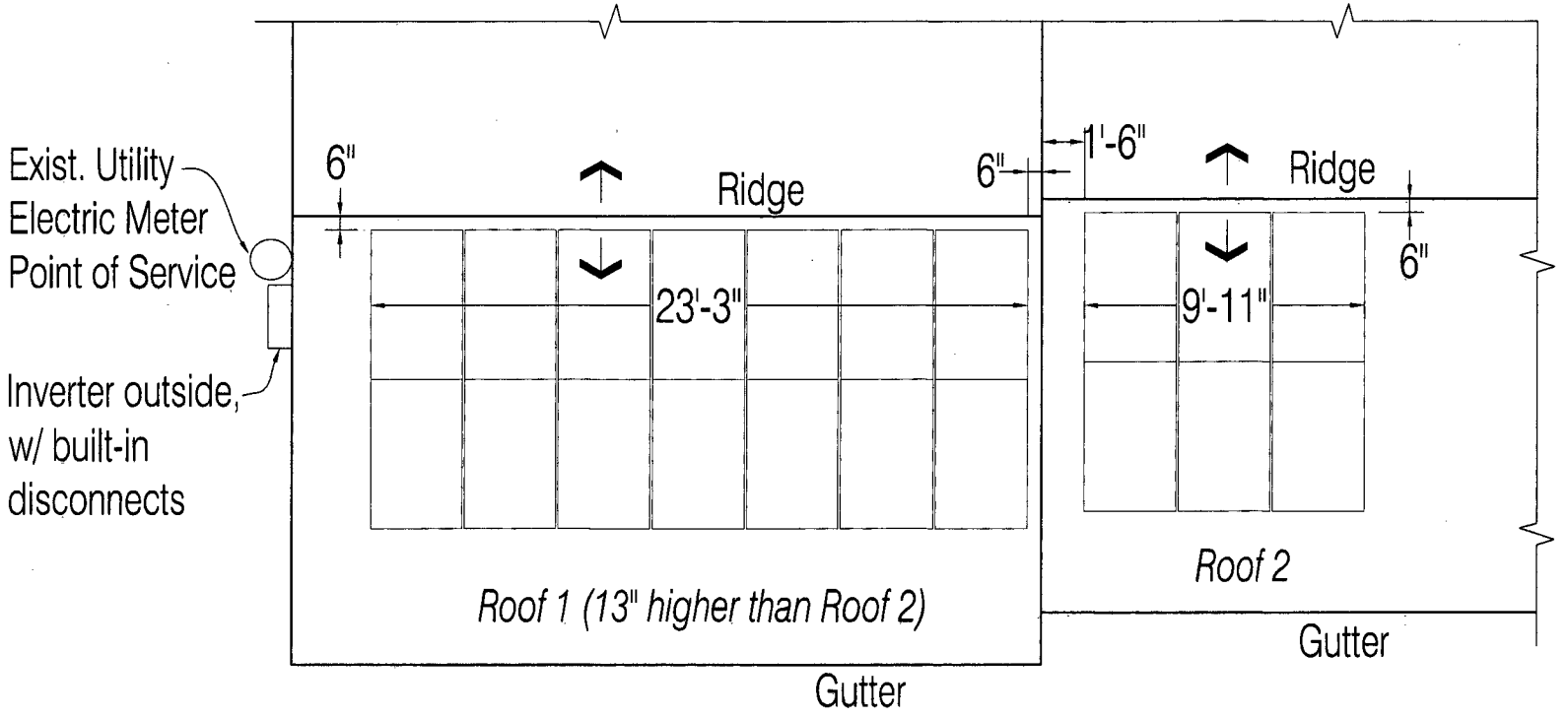
UTILITY COMPANY:
JCPL

UTILITY ACCOUNT #:
10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1



SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

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RACKING:

DPW Power Rail System

APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER
JUL 15 2011

SOLAR ARRAY
158°

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Array Layout

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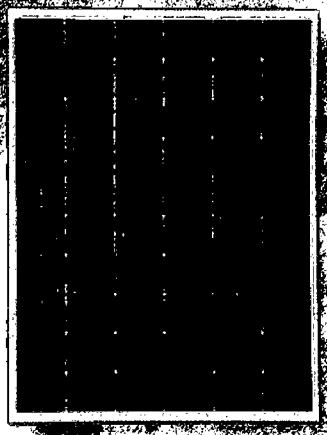
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1

http://www.wholesalesolar.com/solar-panels.html

Trinasolar

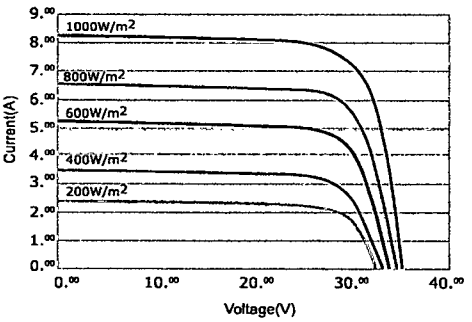
TRINA TSM-PA05, 220W to 240W



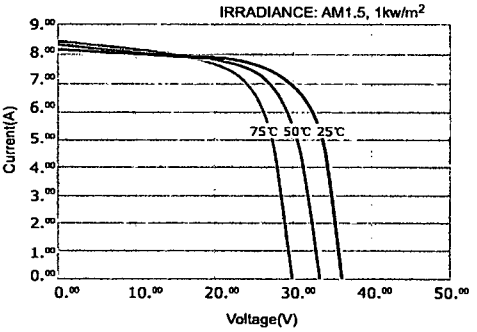
High Efficiency
Multicrystalline Solar Modules

I-V CURVES

I-V Curves of PV module TSM-230PA05



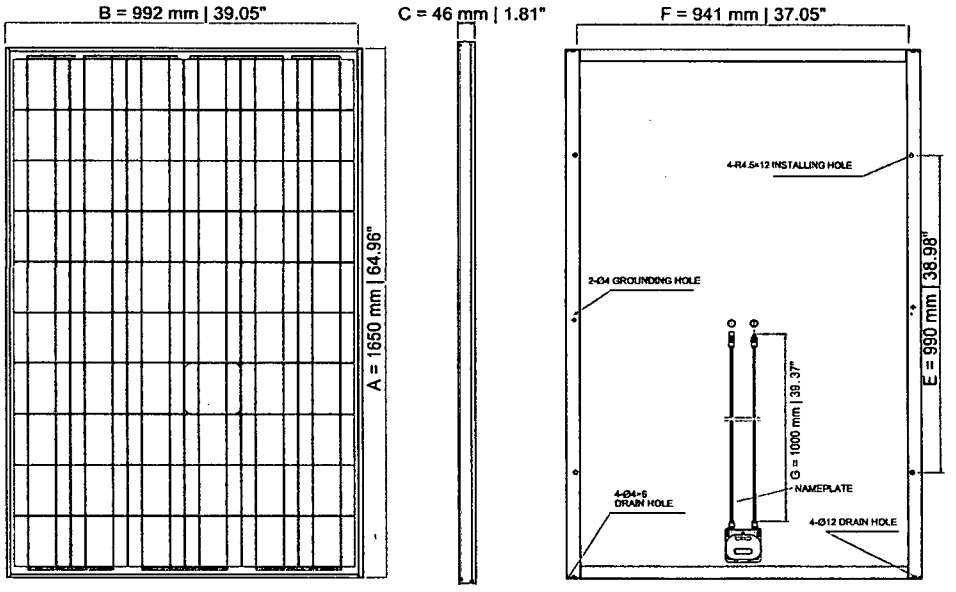
I-V Curves of module TSM-230PA05 at various cell temperatures



APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

JUL 15 2011

DIMENSIONS



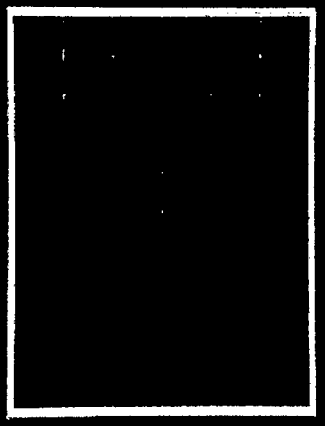
Dimensions A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Installation Hole E*F	941*990 (mm) | 37.05*38.98 (in.)
Cable Length G	1000 (mm) | 39.37 (in.)

*The company is not responsible for potential typing errors.

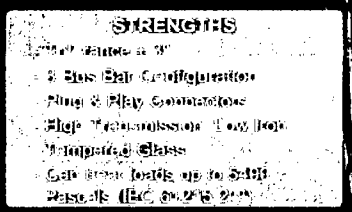
www.trinasolar.com

Trinasolar

TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules



TYPICAL ELECTRICAL CHARACTERISTICS

Type	TSM-PA05	220	230	240
Max-Power	Pm(W)	220	230	240
Power Tolerance	(%)	±3	±3	±3
Max-Power Voltage	Vm(V)	29.8	30.0	30.6
Max-Power Current	Im(A)	7.39	7.66	7.84
Open-Circuit Voltage	Voc(V)	36.8	37.0	37.5
Short-Circuit Current	Isc(A)	8.00	8.18	8.38
Max-System Voltage	(VDC)		600	
Cell Efficiency	ηc (%)	15.1	15.8	16.4
Module Efficiency	ηm (%)	13.4	14.1	14.7
Number, type and arrangement of cells		60 pcs. Multi-Crystalline Silicon (6x10)		
Cell Size		6" x 6" | 156mm X 156mm		
No. of Bypass Diodes	(pcs.)	3		
Max. Series Fuse	(A)	14		
Pm Temperature Coefficient	(%/℃)	- 0.45		
Isc Temperature Coefficient	(%/℃)	0.05		
Voc Temperature Coefficient	(%/℃)	- 0.35		
NOCT- Nominal Operating Cell Temperature	(℃)	47±2		

MECHANICAL CHARACTERISTICS

Cable type, Diameter and Length	3.31mm² (12AWG), UL Certified
Type of Connector	Tyco
Dimension A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Weight	19.5 Kg | 43 lb
No. of Draining Holes In Frame	8
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2 mm | 0.12"

PACKAGING CONFIGURATION

Packing Configuration	20 pcs./box
Quantity/Pallet	1 box / pallet
Loading Capacity	520 pcs/40ft or 120 pcs/20ft

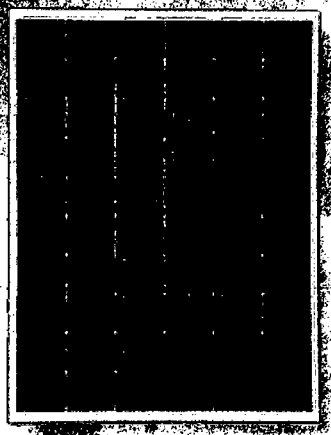
ABSOLUTE RATINGS

Dielectric Insulation Voltage	(VDC)	3000 max.
Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

***STC Conditions**(1000W/m², 1.5 AM and 25℃ Cell temperature)*

Trinasolar

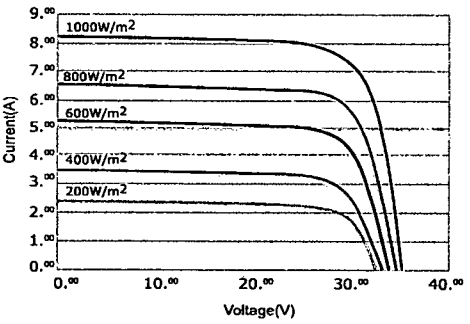
TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules

I-V CURVES

I-V Curves of PV module TSM-230PA05



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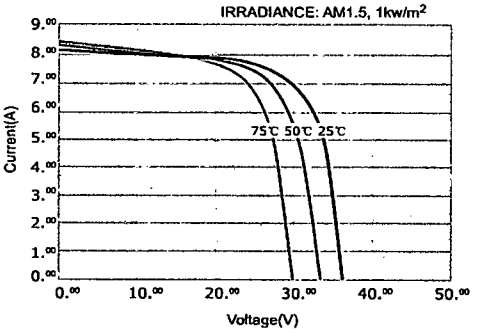
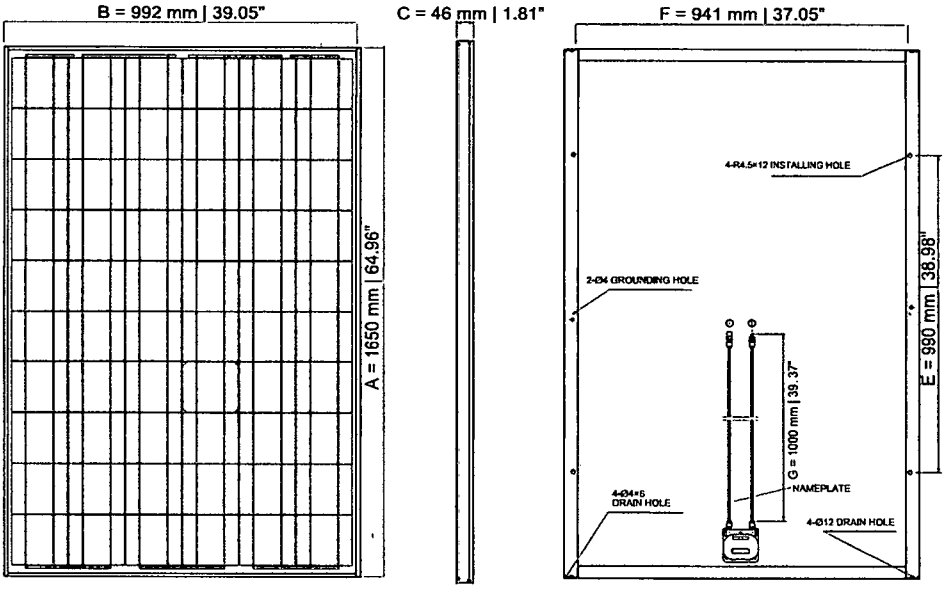


APPROVED FOR ZONING ONLY
SEAN KINNEVY, ZONING OFFICER

JUL 15 2011

DIMENSIONS



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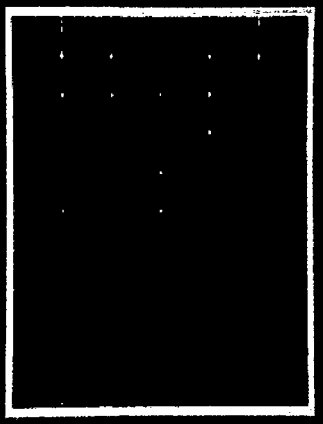
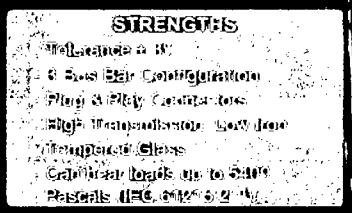
Trinasolar

TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules



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Quantity/Pallet	1 box / pallet
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ABSOLUTE RATINGS

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Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

***STC Conditions**(1000W/m²; 1.5 AM and 25℃ Cell temperature)*

ELECTRICAL SUBCODE TECHNICAL SECTION

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Received 7/25/11
Date Issued
Control #
Permit # 11-3846

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 3 Qualification Code

Work Site Location 128 John St.
Brick, NJ. 08724

Owner in Fee Diane Collis

Address Same as above

[redacted]

Co[redacted]N & ELECTRIC, LLC

Address 124 BOBBIS TERRACE
NEW EGYPT, NEW JERSEY 08533

Tel (609) 758-1844 FAX (609) 758-4629

Contractor License No. 14815

Federal Emp. No. 16-1644430

B. ELECTRICAL CHARACTERISTICS 4.6 KW System

Use Group Present Proposed

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

Building Occupied as Residential Utility Co. JCP&L

Est. Cost of Elec. Work $ 19,284—

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

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

D. TECHNICAL SITE DATA

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
2	STR W	Communications Points Array	
		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	
1	4.0	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 $

JOB SUMMARY (Office Use Only)

PLAN REVIEW

	Date	Initial
[ ] No Plans Required		
Joint Plan Review Required:		
[ ] Building [ ] Plumbing		
[ ] Fire [ ] Elevator		
[✓] Elec. Plans Approved	7/26/11	

Approved by

SUBCODE APPROVAL

[ ] 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

1. White-Inspector copy 2. Canary- Applicant copy

3. Pink- Office Copy 4. White Tag- Office copy

UCC/F-120 (REV. 7/03)
Professional Printing
(856) 468-7933

ELECTRICAL SUBCODE TECHNICAL SECTION

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Received 7/25/11
Date Issued
Control #
Permit # 11-

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 3 Qualification Code

Work Site Location 123 Iona St.
Brick, NJ. 08724

Owner in Fee Diane Collis

Address Same as above

Tel [redacted]

Co N & ELECTRIC, LLC

Address 124 BOBBIS TERRACE
NEW EGYPT, NEW JERSEY 08533

Tel (609) 758-1844 FAX (609) 758-4629

Contractor License No. 14815

Federal Emp. No. 16-1644430

B. ELECTRICAL CHARACTERISTICS 4.6 kw System

Use Group Present Proposed

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

Building Occupied as Residential Utility Co. JCP&L

Est. Cost of Elec. Work $ 19,884.-

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

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
2	Str 35	Communications Points Array	
		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	
1	4.0	KW ~~Transformer/Generator~~ Inverter	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

Administrative Surcharge $

Minimum Fee $

State Permit Surcharge Fee $

TOTAL FEE $

JOB SUMMARY (Office Use Only)

PLAN REVIEW — Date — Initial

[ ] No Plans Required

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

Date: 7/25/11
Approved by:

SUBCODE APPROVAL
[ ] CO [ ] CCO [ ] CA

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

1. White-Inspector copy 2. Canary- Applicant copy

3. Pink- Office Copy 4. White Tag- Office copy

UCC/F-120 (REV. 7/03)
Professional Printing
(856) 468-7933

DATE	JOB CONDITION / COMMENTS

NEW JERSEY UNIFORM CONSTRUCTION CODE

BUILDING SUBCODE
TECHNICAL SECTION

Date Received 7/25/11
Control #

Date Issued
Permit # 11-2266

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

Block 1170.01 Lot 3 Qualification Code ______

Work Site Location [illegible]

Owner in Fee: [illegible]

Tel. ([illegible]) [illegible] e-mail ______

Address [illegible]
street municipality zip code

Contractor: GeoGenix, LLC Tel. (732) 761-8841

Address 8998 Route 18, Old Bridge, NJ 08857 e-mail permits@geogenix.com

Contractor License No. or Builder Registration No. 13VH02387400 Exp. Date [illegible]

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

Federal Emp. ID No. 22-3801373 FAX: (732) 676-7800

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footing		
[ ] Foundation		
[ ] Frame		
[✓] Other	[illegible]	

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

SUBCODE APPROVAL
[ ] CO [ ] CCO [ ] CA
Date: ______
Approved by: ______

INSPECTIONS Type:	Failure	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				

Dates (Month/Day)

B. BUILDING CHARACTERISTICS

Use Group Present ______ Proposed ______
Constr. Class 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.
Total Land Area Disturbed ______ Sq. Ft.

Est. Cost of Bldg. Work:
1. New Bldg. $ [illegible]
2. Rehabilitation $ —
3. Total (1+ 2) $ [illegible]

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 [signature]

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

[illegible]

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 $

U.C.C. F110 (rev. 7/06)

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

Contractor: GeoGenix, LLC Tel. (732) 761-8841

Address 8998 Route 18, Old Bridge, NJ 08857 e-mail permits@geogenix.com

Contractor License No. or Builder Registration No. 13VH02387400 Exp. Date _____

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

Federal Emp. ID No. 22-3801373 FAX: (732) 676-7800

JOB SUMMARY (Office Use Only)

PLAN REVIEW

	Date	Initial
[ ] No Plans Required		
[ ] All		
[ ] Footing		
[ ] Foundation		
[ ] Frame		
[ ] Other		

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

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

INSPECTIONS

Type:	Dates (Month/Day) Failure	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 _____
Constr. Class 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.
Total Land Area Disturbed _____ Sq. Ft.

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.

GeoGenix
The Experts to Trust

8998 Route 18
Old Bridge, NJ 08857

July 14, 2011

Adalberto Souto, *Electrical Subcode Official*
Brick Township Bldg. Dept.
401 Chambers Bridge Road
Brick, NJ 08723

Dear Mr. Souto:

We have been contracted to install a photovoltaic (solar-electric) system on the roof of the residence indicated below:

Diane Collis
128 John Street
Brick, NJ 08724
Block 1170.04, Lot 3

Although we have installed many of these systems throughout the state, we realize these systems are still relatively new in New Jersey. Therefore, we are submitting the following material in hopes it will satisfy the needs of your department:

1. The construction permit, building sub-code and electrical sub-code applications.
2. Two (2) copies of detailed specification sheets for the photovoltaic panels (generate DC electricity) and inverters (change the DC electricity to AC), including references to their individual UL listings.
3. Two (2) copies of a diagram showing the placement of the solar panels on the roof of the home plus positioning of the inverter and all necessary disconnect switches.
4. Two (2) copies of a 1-line diagram showing all electrical wiring and equipment.

Please call the numbers listed below or send an email if you have any questions, comments or suggestions on how to expedite getting the permits for this installation.

Thank you for your time and attention.

Sincerely,

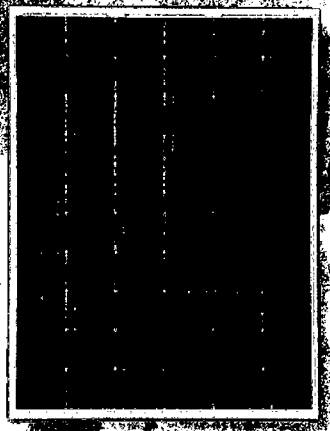
Christy Lorenz

Christy Lorenz, *Administrative Assistant*, **732-761-8841,** Christy.lorenz@geogenix.com

Enc.

Trinasolar

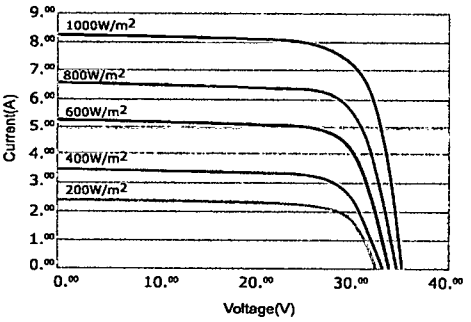
TRINA TSM-PA05, 220W to 240W



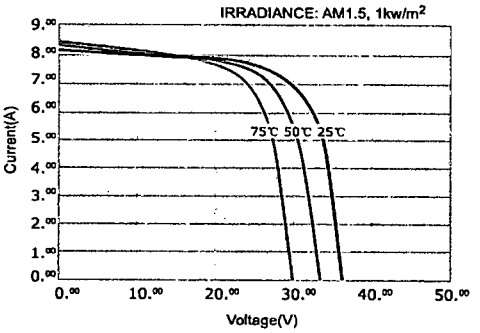
High Efficiency
Multicrystalline Solar Modules

I-V CURVES

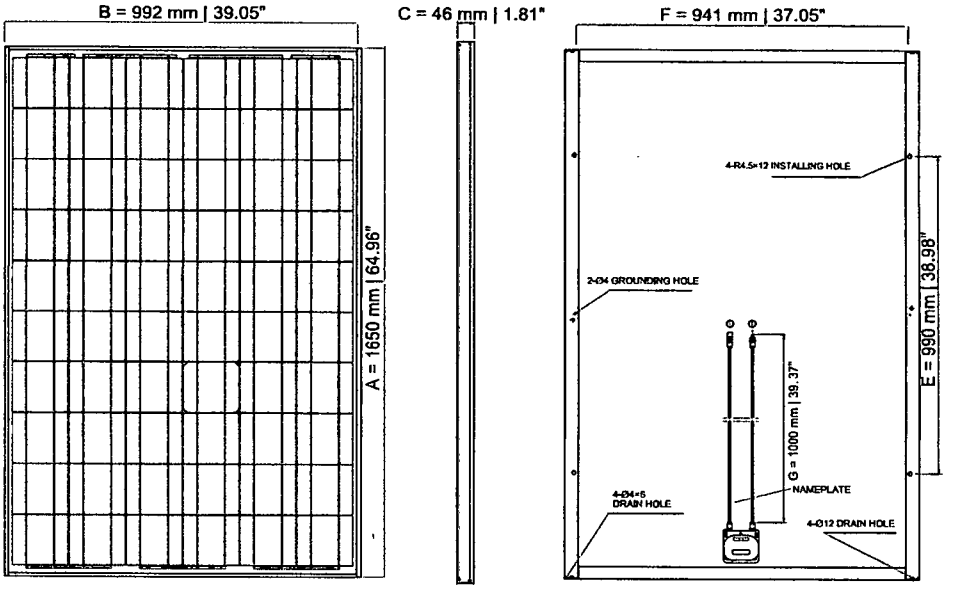
I-V Curves of PV module TSM-230PA05



I-V Curves of module TSM-230PA05 at various cell temperatures



DIMENSIONS

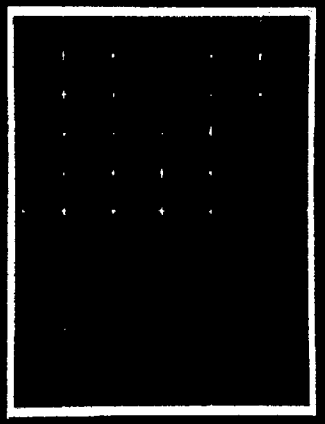


Dimensions A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Installation Hole E*F	941*990 (mm) | 37.05*38.98 (in.)
Cable Length G	1000 (mm) | 39.37 (in.)

*The company is not responsible for potential typing errors.

Trinasolar

TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules

STRENGTHS

- Tolerance ± 3
- 9 Bus Bar Configuration
- Plug & Play Connectors
- High Transmission Low Iron Tempered Glass
- Can bear loads up to 5400 Pascals (IEC 61215 2nd)

WARRANTY

Manufacturing: 5 years
Power production: 90%: 10 years
80%: 25 years

CERTIFICATIONS

TYPICAL ELECTRICAL CHARACTERISTICS

Type	TSM-PA05	220	230	240
Max-Power	Pm(W)	220	230	240
Power Tolerance	(%)	±3	±3	±3
Max-Power Voltage	Vm(V)	29.8	30.0	30.6
Max-Power Current	Im(A)	7.39	7.66	7.84
Open-Circuit Voltage	Voc(V)	36.8	37.0	37.5
Short-Circuit Current	Isc(A)	8.00	8.18	8.38
Max-System Voltage	(VDC)		600	
Cell Efficiency	ηc (%)	15.1	15.8	16.4
Module Efficiency	ηm (%)	13.4	14.1	14.7
Number, type and arrangement of cells			60 pcs. Multi-Crystalline Silicon (6x10)	
Cell Size			6" x 6" | 156mm X 156mm	
No. of Bypass Diodes	(pcs.)		3	
Max. Series Fuse	(A)		14	
Pm Temperature Coefficient	(%/℃)		- 0.45	
Isc Temperature Coefficient	(%/℃)		0.05	
Voc Temperature Coefficient	(%/℃)		- 0.35	
NOCT- Nominal Operating Cell Temperature	(℃)		47±2	

MECHANICAL CHARACTERISTICS

Cable type, Diameter and Length	3.31mm² (12AWG), UL Certified
Type of Connector	Tyco
Dimension A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Weight	19.5 Kg | 43 lb
No. of Draining Holes In Frame	8
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2 mm | 0.12"

PACKAGING CONFIGURATION

Packing Configuration	20 pcs./box
Quantity/Pallet	1 box / pallet
Loading Capacity	520 pcs/40ft or 120 pcs/20ft

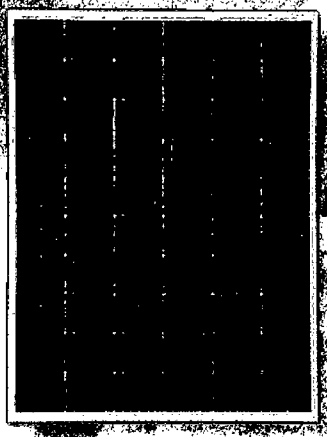
ABSOLUTE RATINGS

Dielectric Insulation Voltage	(VDC)	3000 max.
Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

***STC Conditions**(1000W/m²; 1.5 AM and 25℃ Cell temperature)*

Trinasolar

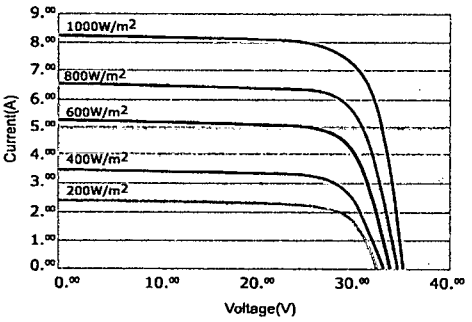
TRINA TSM-PA05, 220W to 240W



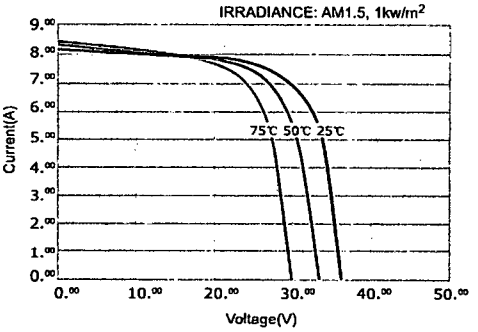
High Efficiency
Multicrystalline Solar Modules

I-V CURVES

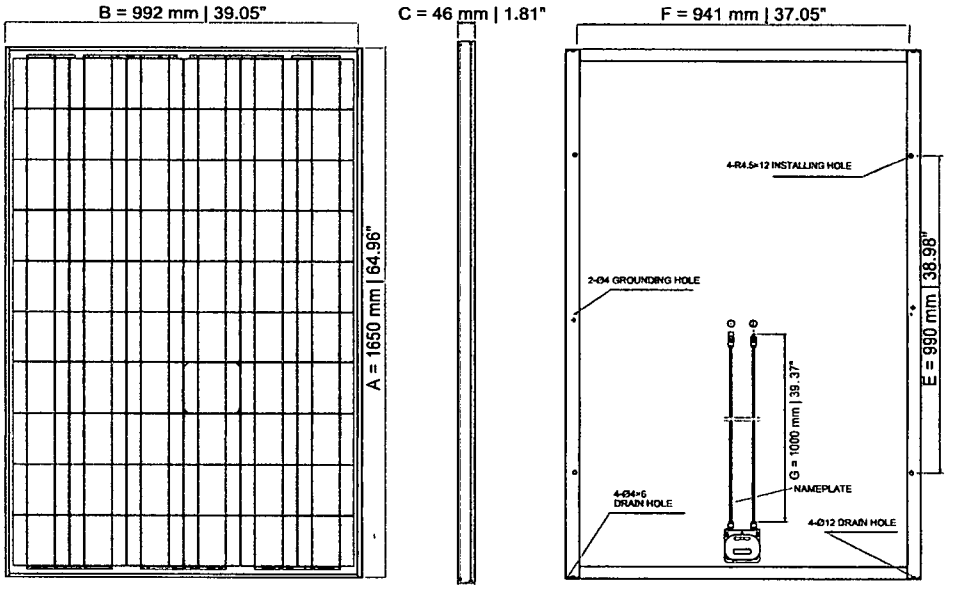
I-V Curves of PV module TSM-230PA05



I-V Curves of module TSM-230PA05 at various cell temperatures



DIMENSIONS



Dimensions A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Installation Hole E*F	941*990 (mm) | 37.05*38.98 (in.)
Cable Length G	1000 (mm) | 39.37 (in.)

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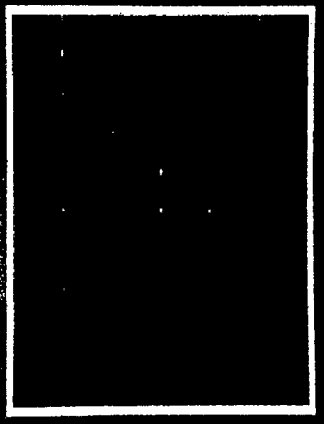
Trinasolar

TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules

STRENGTHS

- [illegible]
- 5 Bus Bar Configuration
- Plug & Play Connectors
- High Transmission, Low Iron Tempered Glass
- Can bear loads up to 5400 Pascals (IEC 61215 4 ***)

WARRANTY

Manufacturing: 5 years
Power production: 90%: 10 years
80%: 25 years

CERTIFICATIONS

TYPICAL ELECTRICAL CHARACTERISTICS

Type	TSM-PA05	220	230	240
Max-Power	Pm(W)	220	230	240
Power Tolerance	(%)	±3	±3	±3
Max-Power Voltage	Vm(V)	29.8	30.0	30.6
Max-Power Current	Im(A)	7.39	7.66	7.84
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Short-Circuit Current	Isc(A)	8.00	8.18	8.38
Max-System Voltage	(VDC)		600	
Cell Efficiency	ηc (%)	15.1	15.8	16.4
Module Efficiency	ηm (%)	13.4	14.1	14.7
Number, type and arrangement of cells		60 pcs. Multi-Crystalline Silicon (6x10)		
Cell Size		6" x 6" | 156mm X 156mm		
No. of Bypass Diodes	(pcs.)	3		
Max. Series Fuse	(A)	14		
Pm Temperature Coefficient	(%/℃)	- 0.45		
Isc Temperature Coefficient	(%/℃)	0.05		
Voc Temperature Coefficient	(%/℃)	- 0.35		
NOCT- Nominal Operating Cell Temperature	(℃)	47±2		

MECHANICAL CHARACTERISTICS

Cable type, Diameter and Length	3.31mm² (12AWG), UL Certified
Type of Connector	Tyco
Dimension A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
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PACKAGING CONFIGURATION

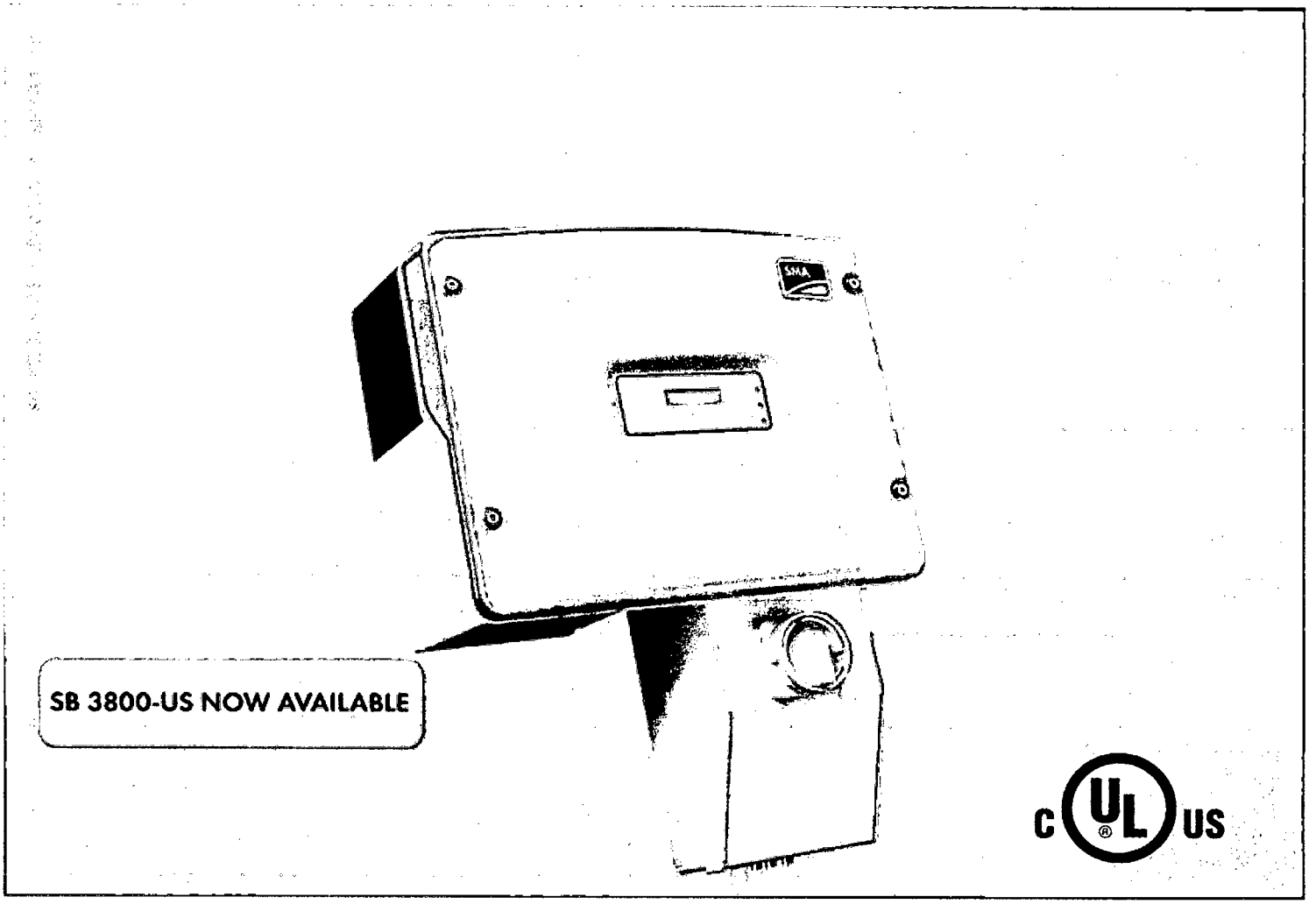
Packing Configuration	20 pcs./box
Quantity/Pallet	1 box / pallet
Loading Capacity	520 pcs/40ft or 120 pcs/20ft

ABSOLUTE RATINGS

Dielectric Insulation Voltage	(VDC)	3000 max.
Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

***STC Conditions**(1000W/m²; 1.5 AM and 25℃ Cell temperature)*

SUNNY BOY 3000-US / 3800-US / 4000-US



UL Certified

- For countries that require UL certification (UL 1741/IEEE 1547)

Efficient

- 96.8% peak efficiency
- OptiCool™ active temperature management system

Safe

- Galvanic isolation

Simple

- Patented automatic grid voltage detection*
- Integrated DC disconnect switch

SUNNY BOY 3000-US / 3800-US / 4000-US

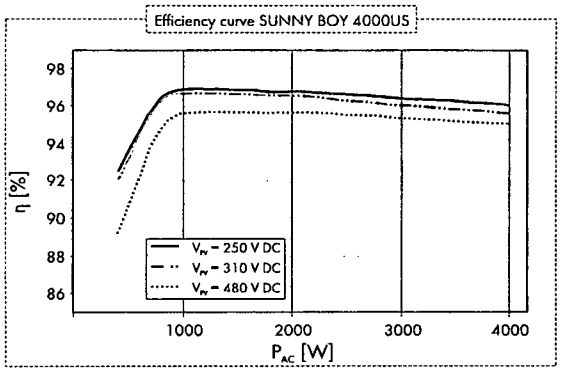
UL certified, reliable system managers

The Sunny Boy 3000-US, 3800-US and 4000-US inverters are specially designed for countries that require UL certification. Automatic grid voltage detection* and an integrated DC disconnect switch simplifies installation, ensuring safety as well as saving time. These models feature galvanic isolation and can be used with all types of modules—crystalline as well as thin-film. The die-cast aluminum enclosure, with the OptiCool active temperature management system, guarantees the highest yields possible and a long service life, even under extreme conditions. The Sunny Boy 3800-US is designed for projects with a current limit of 16A.

* US Patent US7352549B1

Technical data	Sunny Boy 3000-US		Sunny Boy 3800-US	Sunny Boy 4000-US	
	208 V AC	240 V AC	240 V AC	208 V AC	240 V AC
Input (DC)					
Max. recommended PV power (@ module STC)	3750 W		4750 W	4375 W	5000 W
Max. DC power (@ cos φ = 1)	3200 W		4200 W	4200 W	
Max. DC voltage	500 V		600 V	600 V	
DC nominal voltage	250 V		310 V	310 V	
MPP voltage range	175 - 400 V	200 - 400 V	250 - 480 V	220 - 480 V	250 - 480 V
Min. DC voltage / start voltage	175 / 228 V	200 / 228 V	250 / 285 V	220 / 285 V	250 / 285 V
Max. input current / per string (at DC disconnect)	17 A / 17 A		18 A / 18 A	18 A / 18 A	
	36 A @ combined terminal		36 A @ combined terminal	36 A @ combined terminal	
Number of MPP trackers / fused strings per MPP tracker			1 / 4 (DC disconnect)		
Output (AC)					
AC nominal power	3000 W		3800 W	3500 W	4000 W
Max. AC apparent power	3000 VA		3800 VA	3500 VA	4000 VA
Nominal AC voltage / adjustable	208 V / ●	240 V / ●	240 V / –	208 V / ●	240 V / ●
AC voltage range	183 - 229 V	211 - 264 V	211 - 264 V	183 - 229 V	211 - 264 V
AC grid frequency; range	60 Hz; 59.3 - 60.5 Hz		60 Hz; 59.3 - 60.5 Hz	60 Hz; 59.3 - 60.5 Hz	
Max. output current	15 A	13 A	16 A	17 A	
Power factor (cos φ)	1		1	1	
Phase conductors / connection phases	1 / 2		1 / 2	1 / 2	
Harmonics	< 4%		< 4%	< 4%	
Efficiency					
Max. efficiency	96.0%	96.5%	96.8%	96.5%	96.8%
CEC efficiency	95.0%	95.5%	96.0%	95.5%	96.0%
Protection devices					
DC reverse-polarity protection	●		●	●	
AC short circuit protection	●		●	●	
Galvanically isolated / all-pole sensitive monitoring unit	●/–		●/–	●/–	
Protection class / overvoltage category	I / III		I / III	I / III	
General data					
Dimensions (W / H / D) in mm (in)	450 / 350 / 235 (18 / 14 / 9)				
DC Disconnect dimensions (W / H / D) in mm (in)	187 / 297 / 190 (7 / 12 / 7.5)				
Packing dimensions (W / H / D) in mm (in)	390 / 580 / 470 (15 / 23 / 18.5)				
DC Disconnect packing dimensions (W / H / D) in mm (in)	370 / 240 / 280 (15 / 9 / 11)				
Weight / DC Disconnect weight	38 kg (84 lb) / 3.5 kg (8 lb)				
Packing weight / DC Disconnect packing weight	44 kg (97 lb) / 4 kg (9 lb)				
Operating temperature range (full power)	-25 °C ... +45 °C (-13 °F ... +113 °F)				
Noise emission (typical)	40 dB(A)		www.SMA-Solar.com	37 dB(A)	
Internal consumption at night	0.1 W		0.1 W	0.1 W	
Topology	LF transformer		LF transformer	LF transformer	
Cooling concept	OptiCool		OptiCool	OptiCool	
Electronics protection rating / connection area	NEMA 3R / NEMA 3R		NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	
Features					
Display: text line / graphic	●/–		●/–	●/–	
Interfaces: RS485 / *Bluetooth*	o/o		o/o	o/o	
Warranty: 10 / 15 / 20 years	●/o/o		●/o/o	●/o/o	
Certificates and permits (more available on request)	UL1741, UL1998, IEEE 1547, FCC Part 15 (Class A & B), CSA C22.2 No. 107.1-2001				
Type designation	SB 3000US		SB 3800US-10	SB 4000US	

NOTE: US inverters ship with gray lids.
Data at nominal conditions
● Standard features o Optional features – Not available



Accessories


RS485 interface
485USPB-NR


Bluetooth® Piggy Back
BTPBINV-NR

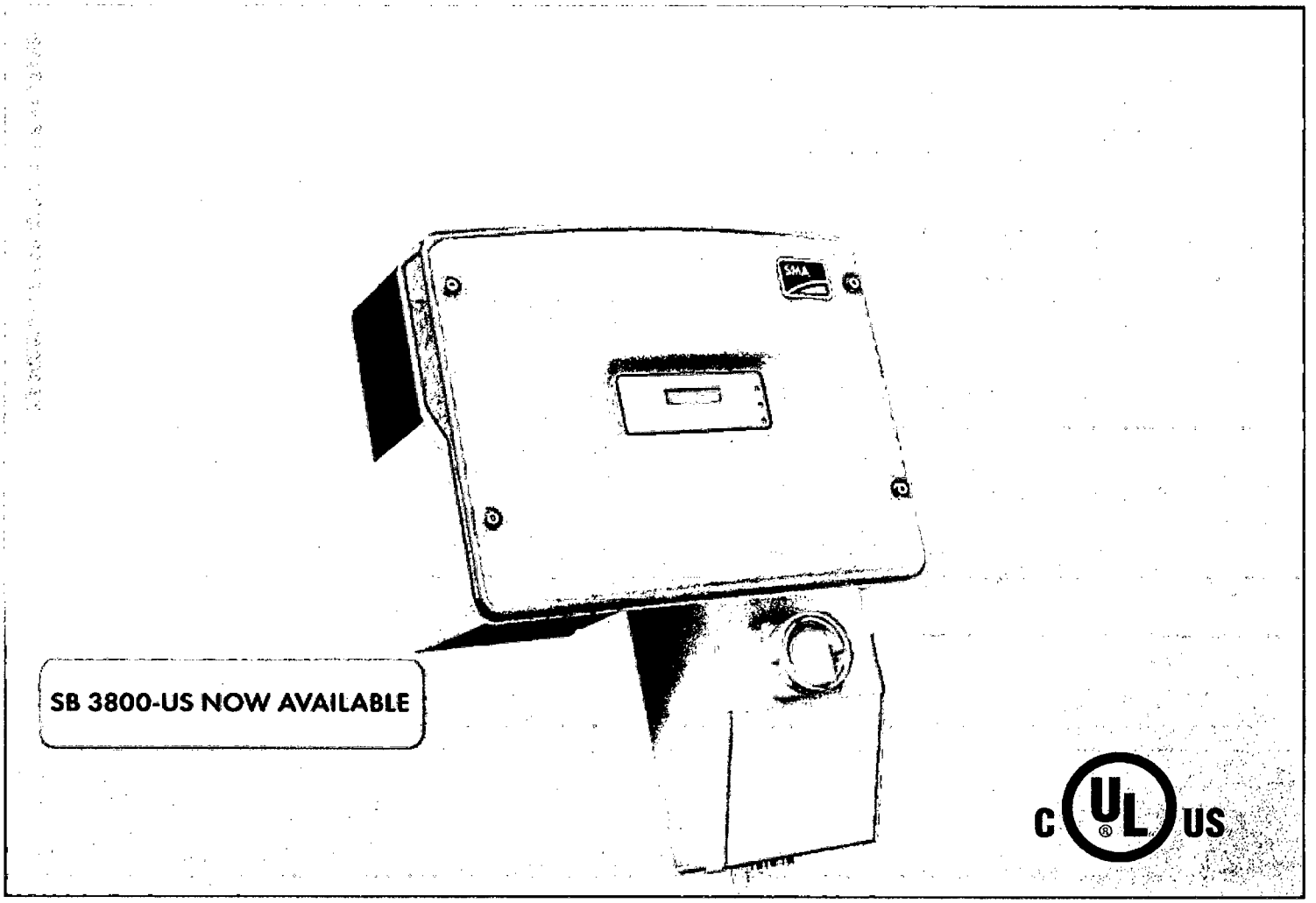

Combi-Switch
DC disconnect and PV array combiner box
COMBO-SWITCH


Combiner Box
Simplify wiring for added convenience and safety
SBCB-6-3R or SBCB-6-4

Toll Free +1 888 4 SMA USA
www.SMA-America.com

SMA America, LLC

SUNNY BOY 3000-US / 3800-US / 4000-US



UL Certified

- For countries that require UL certification (UL 1741/IEEE 1547)

Efficient

- 96.8% peak efficiency
- OptiCool™ active temperature management system

Safe

- Galvanic isolation

Simple

- Patented automatic grid voltage detection*
- Integrated DC disconnect switch

SUNNY BOY 3000-US / 3800-US / 4000-US

UL certified, reliable system managers

The Sunny Boy 3000-US, 3800-US and 4000-US inverters are specially designed for countries that require UL certification. Automatic grid voltage detection* and an integrated DC disconnect switch simplifies installation, ensuring safety as well as saving time. These models feature galvanic isolation and can be used with all types of modules—crystalline as well as thin-film. The die-cast aluminum enclosure, with the OptiCool active temperature management system, guarantees the highest yields possible and a long service life, even under extreme conditions. The Sunny Boy 3800-US is designed for projects with a current limit of 16A.

* US Patent US7352549B1

Technical data	Sunny Boy 3000-US		Sunny Boy 3800-US	Sunny Boy 4000-US	
	208 V AC	240 V AC	240 V AC	208 V AC	240 V AC
Input (DC)					
Max. recommended PV power (@ module STC)	3750 W		4750 W	4375 W	5000 W
Max. DC power (@ cos φ = 1)	3200 W		4200 W	4200 W	
Max. DC voltage	500 V		600 V	600 V	
DC nominal voltage	250 V		310 V	310 V	
MPP voltage range	175 - 400 V	200 - 400 V	250 - 480 V	220 - 480 V	250 - 480 V
Min. DC voltage / start voltage	175 / 228 V	200 / 228 V	250 / 285 V	220 / 285 V	250 / 285 V
Max. input current / per string (at DC disconnect)	17 A / 17 A		18 A / 18 A	18 A / 18 A	
	36 A @ combined terminal		36 A @ combined terminal	36 A @ combined terminal	
Number of MPP trackers / fused strings per MPP tracker			1 / 4 (DC disconnect)		
Output (AC)					
AC nominal power	3000 W		3800 W	3500 W	4000 W
Max. AC apparent power	3000 VA		3800 VA	3500 VA	4000 VA
Nominal AC voltage / adjustable	208 V / ●	240 V / ●	240 V / –	208 V / ●	240 V / ●
AC voltage range	183 - 229 V	211 - 264 V	211 - 264 V	183 - 229 V	211 - 264 V
AC grid frequency; range	60 Hz; 59.3 - 60.5 Hz		60 Hz; 59.3 - 60.5 Hz	60 Hz; 59.3 - 60.5 Hz	
Max. output current	15 A	13 A	16 A	17 A	
Power factor (cos φ)	1		1	1	
Phase conductors / connection phases	1 / 2		1 / 2	1 / 2	
Harmonics	< 4%		< 4%	< 4%	
Efficiency					
Max. efficiency	96.0%	96.5%	96.8%	96.5%	96.8%
CEC efficiency	95.0%	95.5%	96.0%	95.5%	96.0%
Protection devices					
DC reverse-polarity protection	●		●	●	
AC short circuit protection	●		●	●	
Galvanically isolated / all-pole sensitive monitoring unit	●/–		●/–	●/–	
Protection class / overvoltage category	I / III		I / III	I / III	
General data					
Dimensions (W / H / D) in mm (in)	450 / 350 / 235 (18 / 14 / 9)				
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Internal consumption at night	0.1 W		0.1 W	0.1 W	
Topology	LF transformer		LF transformer	LF transformer	
Cooling concept	OptiCool		OptiCool	OptiCool	
Electronics protection rating / connection area	NEMA 3R / NEMA 3R		NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	
Features					
Display: text line / graphic	●/–		●/–	●/–	
Interfaces: RS485 / *Bluetooth*	o/o		o/o	o/o	
Warranty: 10 / 15 / 20 years	●/o/o		●/o/o	●/o/o	
Certificates and permits (more available on request)	UL1741, UL1998, IEEE 1547, FCC Part 15 (Class A & B), CSA C22.2 No. 107.1-2001				
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NOTE: US inverters ship with gray lids.
Data at nominal conditions
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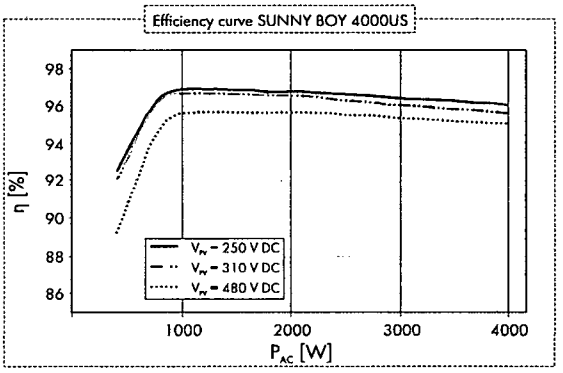

Accessories


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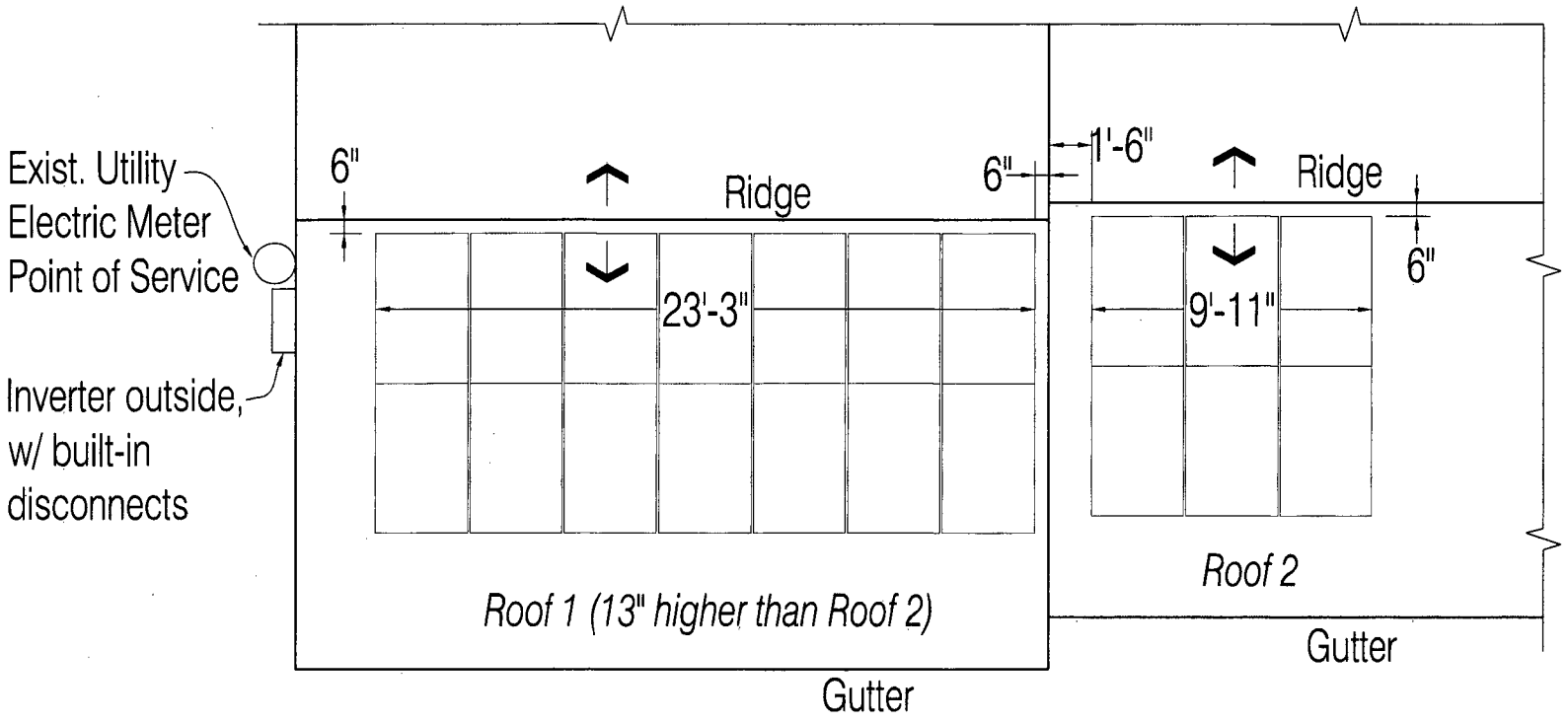


SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

(1) SB-4000us W/ (2) Strings of (10) Panels

RACKING:

DPW Power Rail System

SOLAR ARRAY
158°

NOTES:

1. See specifications for additional information.
2. See electrical One-line drawing (PV-2) for wiring connections.
3. North arrow and Array orientation based on "True" direction (magnetic compass reading minus Magnetic Declination of 11 degrees equals true Array orientation (Azimuth) of 158 degrees.)

1 / PV-1 PLAN N.T.S.

Solar (Photovoltaic) Panel

Direction of Roof Slope

LEGEND:

GeoGenix, LLC
Leaders in Energy-Saving Design and Construction
GeoGenix, LLC
79 East River Road
Rumson, NJ 07760
(T) 732.895.9550
(F) 801.382.0751

STRUCTURAL ENGINEER:
Ascent Consulting
James A. Marx, P.E.
10 High Mountain Road
Ringwood, NJ 07456
(T) 973.557.6080

CUSTOMER:
Diane Collis Residence
128 John Street
Brick, NJ, 08724

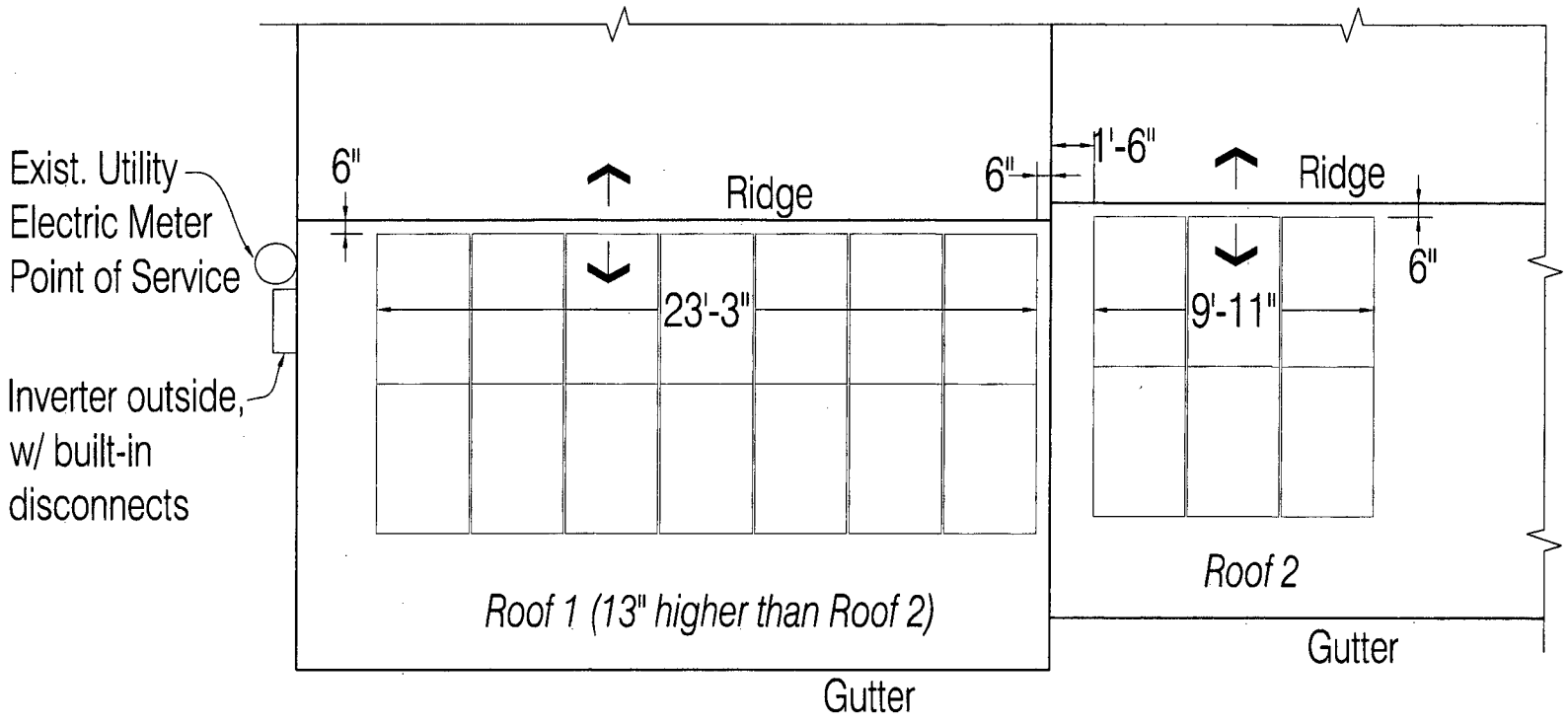
UTILITY COMPANY:
JCPL

UTILITY ACCOUNT #:
10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1



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Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
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SCALE: As Noted	

PV-1

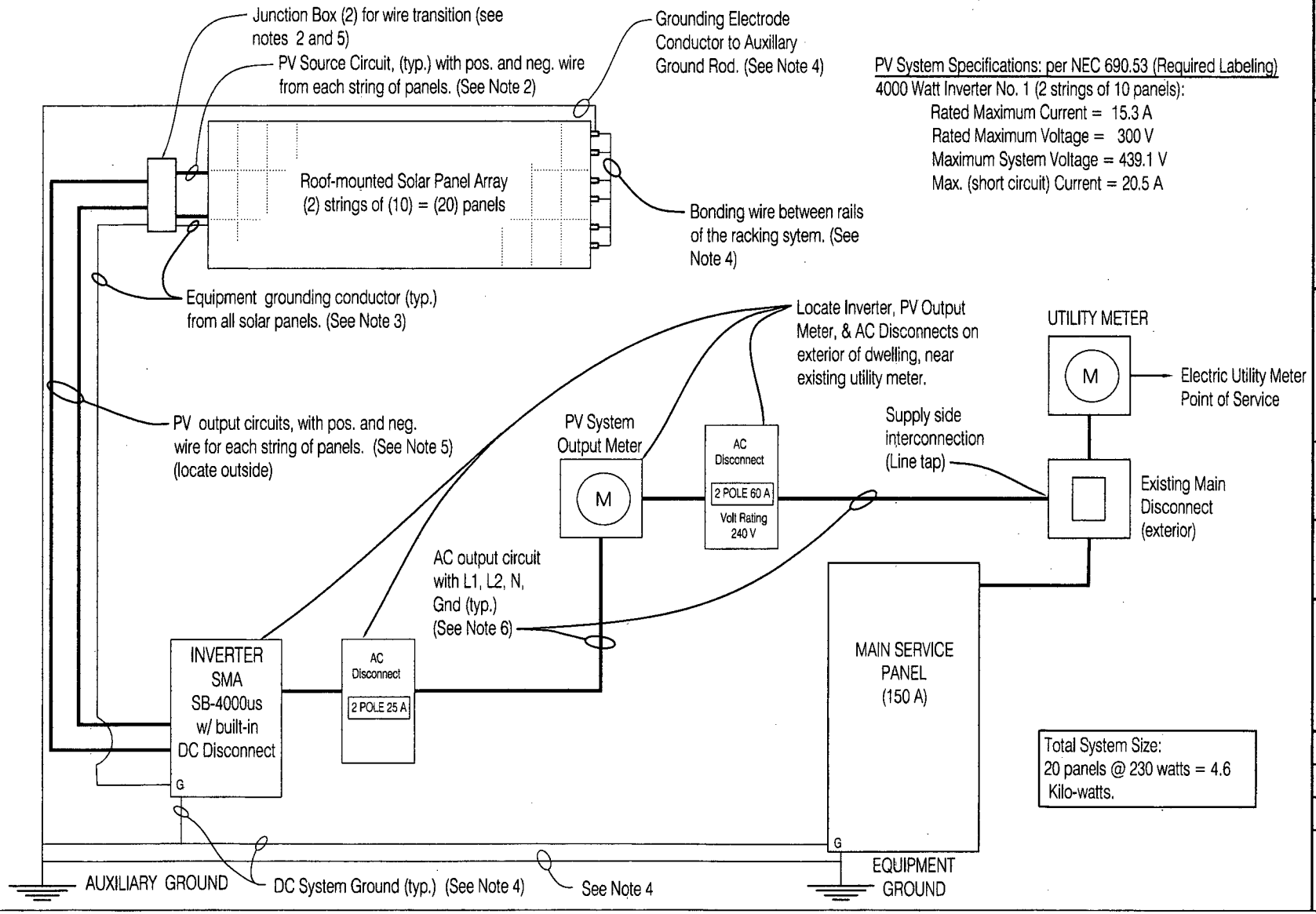
NOTES:

1. Trina solar panels utilize a negative ground system with the positive opened in the dc disconnect.
2. Use #10 *USE-2* wire between solar panels, and to Junction Box.
3. Use #10 AWG copper wire to continuously ground solar panels.
4. Use #6 THWN-2 wire for grounding electrode conductors and #8 solid AWG wire for the bonding of the (racking) rails.
5. Use #10 THWN-2 wire from solar panels (Junction Box) to Inverter in either 1" PVC conduit on outside of building or 1" metallic conduit inside building.
6. Use #6 THWN-2 wire from Inverter to the interconnection point at Main Disconnect, in 1" conduit.
7. Reverse current flow calculation: (2-1) x 8.18A x 1.25 x = 10.22 A < 14 A module fuse rating therefore, no additional module fusing is necessary.

Solar Panel Ratings at Standard Test Conditions (STC)

Manufacturer:	Trina Solar
Model:	TSM-PA05 230w
Open Circuit Voltage (Voc)	37.0 V
Operating Voltage (Vmpp)	30.0 V
Short Circuit Current (Isc)	8.18 A
Operating Current (Impp)	7.66 A
Max Series Fuse	14 A
Peak Power:	230 Watts
Dimensions:	39" x 65"
Weight:	43 lbs.

PV System Specifications: per NEC 690.53 (Required Labeling)
4000 Watt Inverter No. 1 (2 strings of 10 panels):
Rated Maximum Current = 15.3 A
Rated Maximum Voltage = 300 V
Maximum System Voltage = 439.1 V
Max. (short circuit) Current = 20.5 A



Total System Size:
20 panels @ 230 watts = 4.6 Kilo-watts.

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J. A. Wig Construction & Electrical, LLC
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121 Bobbis Terrace
New Egypt, NJ 08533
(T) 732-761-8841

CUSTOMER:
Diane Collis Residence
128 John Street
Brick, NJ, 08724

UTILITY COMPANY:
JCPL

UTILITY ACCOUNT #:
10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
One-Line
Wiring Diagram

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: AS NOTED	

PV-2

NOTES:

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2. Use #10 *USE-2* wire between solar panels, and to Junction Box.
3. Use #10 AWG copper wire to continuously ground solar panels.
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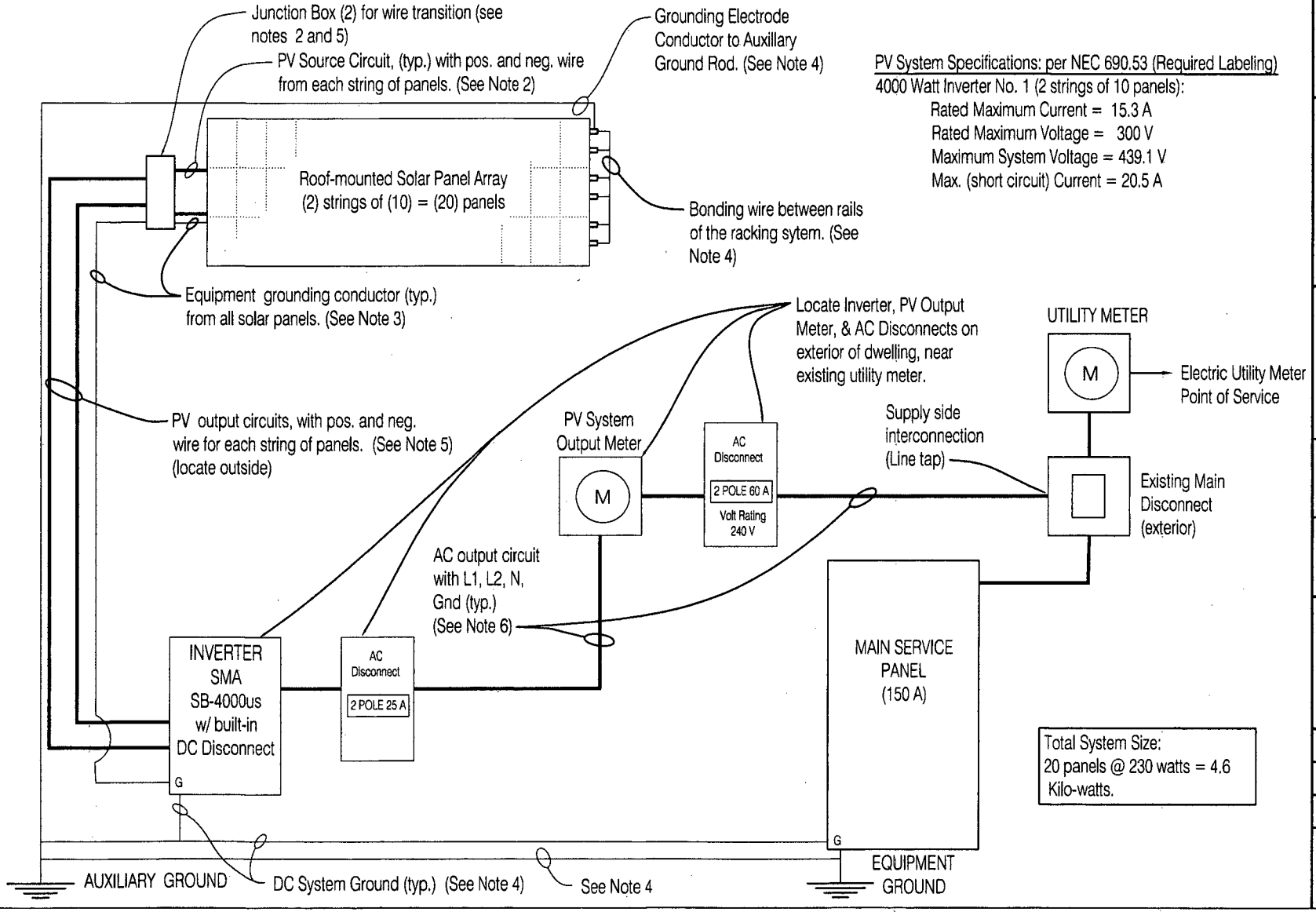

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PHOTOVOLTAIC SYSTEM
One-Line
Wiring Diagram

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: AS NOTED	

PV-2

July 8, 2011

To: Building Department

From: James A. Marx, Jr. P.E.

Re: Engineer Statement for Collis Residence, 128 John St., Brick, NJ
for Solar Roof Installation

I have verified the adequacy and structural integrity of the existing roof rafters for mounting of solar panels and their installation will satisfy the structural roof framing design-loading requirements of the New Jersey State building code – International Residential Code (IRC) – 2009 NJ.

For the installation of the solar mounting, the mounting rails will be anchored to the rafters with Quick Mounts on the center of the rafters and will be securely fastened to the rafters with lag screws. **The design is based on the added weight of the collectors, wind speed of 115 mph, exposure B and ground snow load of 20 psf.**

The Photovoltaic system and the mounting assemblies will comply with the applicable sections of the International Residential Code– "Solar Systems" and loading requirements of roof-mounted collectors.

Thereby, I endorse the solar panel installation and certify this design to be structurally adequate.

Sincerely,

7/8/11

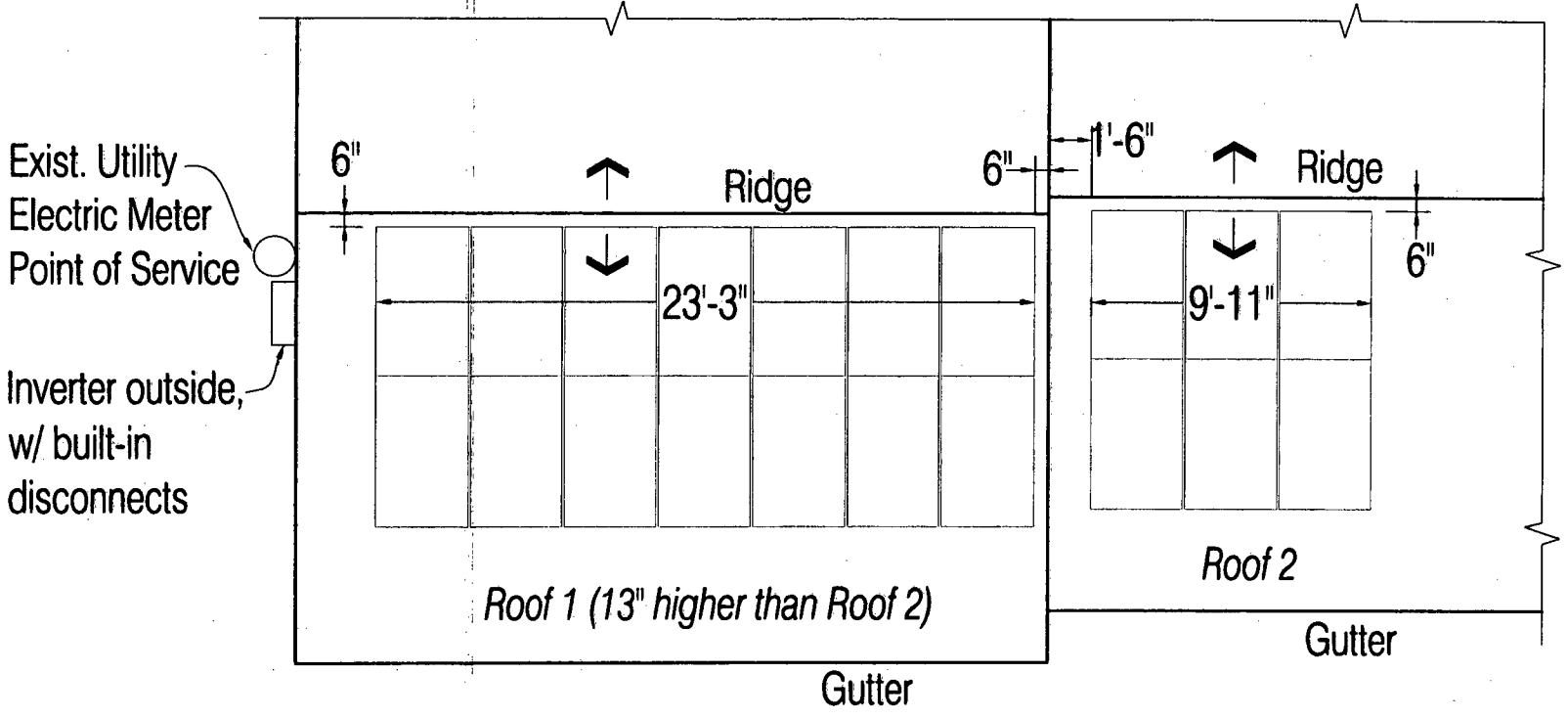
James A. Marx, Jr. P.E.
Professional Engineer
NJ GE25179

10 High Mountain Road
Ringwood, NJ 07456

TOWNSHIP OF BRICK
RELEASED FOR PERMIT INITIAL KA DATE 7/19/11
Building Subcode
Fire Subcode
Electrical Subcode
Plan Reviewer
Plans Released
Construction Official

Attach: PV-1 & Sheet S-2

cc: GeoGenix, Mitchell Berman



SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

(1) SB-4000us W/ (2) Strings of (10) Panels

RACKING:

DPW Power Rail System

SOLAR ARRAY
158°

NOTES:

1. See specifications for additional information.
2. See electrical One-line drawing (PV-2) for wiring connections.
3. North arrow and Array orientation based on "True" direction (magnetic compass reading minus Magnetic Declination of 11 degrees equals true Array orientation (Azimuth) of 158 degrees.)

1 / PV-1 PLAN N.T.S.

ASCENT CONSULTING ENGINEERING
10 HIGH MOUNTAIN ROAD, RINGWOOD, NJ 07456
24GA28112100
7/8/11
JAMES A. MARX JR.
Professional Engineer
NJ Professional Engineer License GE25179

GeoGenix, LLC
Leaders in Energy-Saving Design and Construction
GeoGenix, LLC
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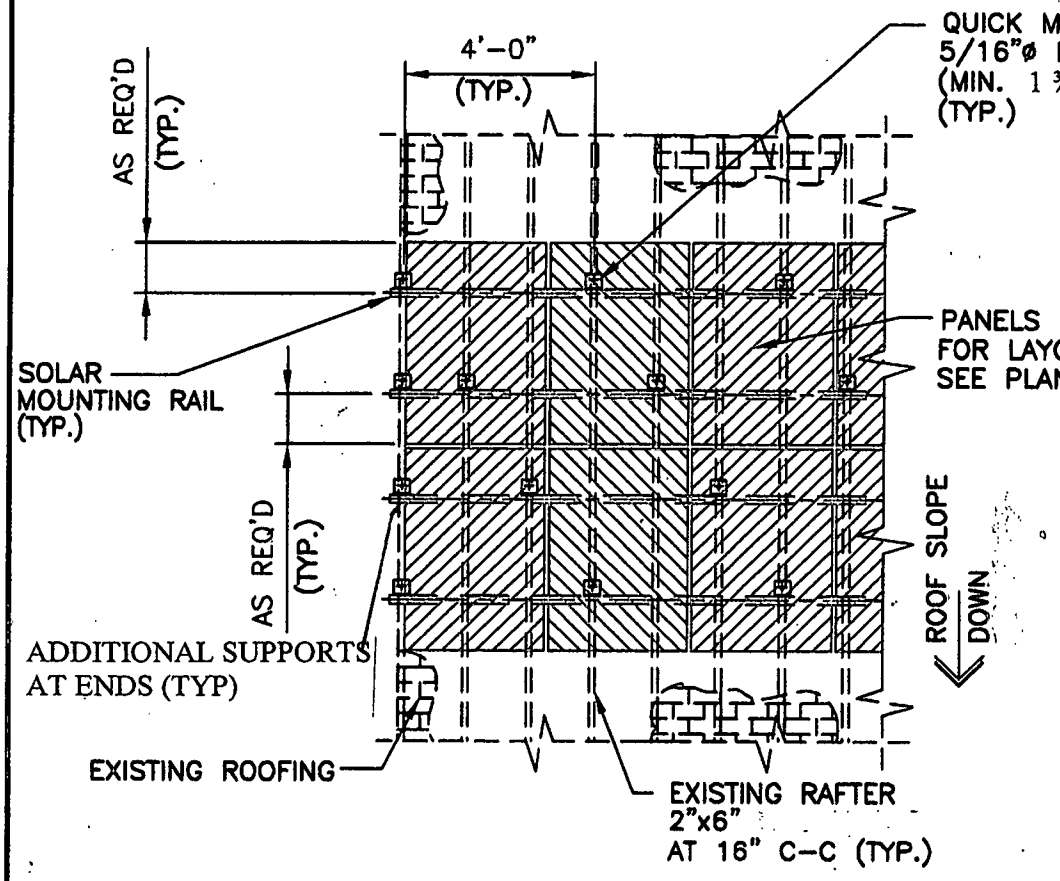
UTILITY COMPANY:
JCPL

UTILITY ACCOUNT #:
10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1



PARTIAL PLAN

TYPICAL QUICK MOUNT ARRANGEMENT

NTS

INSTALLATION INSTRUCTION:

1. MOUNTING RAIL PERPENDICULAR TO RAFTER INSTALLED PER MANUFACTURER INSTRUCTIONS.
2. QUICK MOUNT PV WITH FLASHING AND MOUNT ANCHOR TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
3. THE SOLAR ROOF CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE WATERPROOF INTEGRITY OF THE ROOF INCLUDING THE SELECTION OF THE APPROPRIATE SEALANT.

ASCENT CONSULTING ENGINEERING
10 HIGH MOUNTAIN ROAD, RINGWOOD, NJ 07456
24GA28112100
7/8/11
JAMES A. MARX JR.
Professional Engineer
NJ Professional Engineer License GE25179

GeoGenix

CUSTOMER:		TITLE:			
COLLIS RESIDENCE BRICK, NJ		MOUNTING RAIL DETAIL			
APPROVED:	DRAWN BY:	DATE: 7/8/2011	DWG. NO. S-2	REV.:	

SOLAR ELECTRIC SYSTEM

COLLIS RESIDENCE
BRICK, NJ

STRUCTURAL DESIGN CALCULATIONS
FOR SOLAR ROOF SYSTEM

ASCENT CONSULTING ENGINEERING
24GA28112100
10 High Mountain Road
Ringwood, NJ 07456

James A. Marx, Jr.
Professional Engineer

7/8/11
Pages 1 to 10

NJ Professional Engineer License GE 25179

PHOTOVOLTAIC SYSTEM STRUCTURAL ANALYSIS WORKSHEET
Photovoltaic_System_Site_Survey_Worksheet15_NO_TRUSSES.xls
Roof

OFFICE USE ONLY (COMPLETED PRIOR TO SITE SURVEY)

Job Name:	Collis, Diane
Street	128 John St
City, State Zip	Brick, NJ 08724

SITE SURVEY

Assigned by:	
Assigned to:	Mike Krokovic Custom Builder
Date Assigned:	
Date Needed:	
Additional Instructions/Notes:	Assigned by Brandon Iselin

PV MODULES

Manufacturer	
Model	
Unit Weight (lbs)	
No.	
Total Weight (lbs)	
Manufacturer	
Model	
Unit Weight (lbs)	
No.	
Total Weight (lbs)	
Manufacturer	
Model	
Unit Weight (lbs)	
Total Weight (lbs)	
Grand Total Weight (lbs)	0

RACKING SYSTEM

Rack type	
Panel Mounting Orientation	
Rack L-Foot Spacing Across Rafters (in)	
Rack L-Foot Spacing On Rafters (in)	

OFFICE USE ONLY (COMPLETED PRIOR TO SUBMISSION TO ENGINEERING

Submitted by:	
Assigned to:	
Date Submitted:	
Total Pages:	
Additional Notes:	

Exposure Category:	Category B
Roof ID	Front Roof
Roof Type	Gabled

ROOF USED FOR MOUNTING MODULES

Roof Faces...(Orientation)	158

ROOF ANGLE

Angle (deg):	25
Slope (in):	5.596

DIMENSIONS	Feet	Inches
Length of House:	54	4
Length of House (ft):	54.33	
Width of House	26	1
Width of House (ft):	26.00	
Height to Eave	9	2
Height to Eave (ft):	9.17	
Gutter-to-Ridge Length	16	3
Gutter-to-Ridge Length (ft)	16.25	
Overhang Length	19	
Overhang Length (ft)	19.00	
Distance from Exterior Wall to Supporting Wall	11	6
Dist to Supporting Wall (ft)	11.50	
Length of Roof w/ Modules:	54	8
Length of Roof w/ Modules (ft):	54.67	
Width of Roof w/ Modules:	16	3
Width of Roof w/ Modules (ft):	16.25	

FRAMING MEMBERS CONDITION

Wide splits?	No
Twisted rafters?	No

ROOF SUPPORT (RAFTERS)

Size (in):	2x6
Spacing (in):	16
Lumber Size:	Nominal
Material	Conventional Wood
Hurricane Ties?	No

RIDGE

Size (in):	2x8
Lumber Size:	Nominal
Material	Conventional Wood

COLLAR TIES

Size (in):	
Spacing (in):	
Lumber Size:	
Distance to bottom of ridge board (in):	

CEILING SUPPORT (JOISTS)

Size (in):	2x6
Spacing (in):	16
Lumber Size:	Nominal

FLOOR SHEATHING

Type:	Tongue-and-Groove
Thickness (in):	3/4"
Extent	50%

POSTS SUPPORTING RIDGE BEAMS

Size (in):	
Lumber Size:	
Spacing (ft. or see "Notes"):	
Number:	
Method of supporting base:	

OTHER INTERIOR SUPPORT (e.g., KNEEWALLS)

Type:	Knee wall
Size (in):	2x4
Lumber Size:	Nominal
Spacing between studs (in):	16

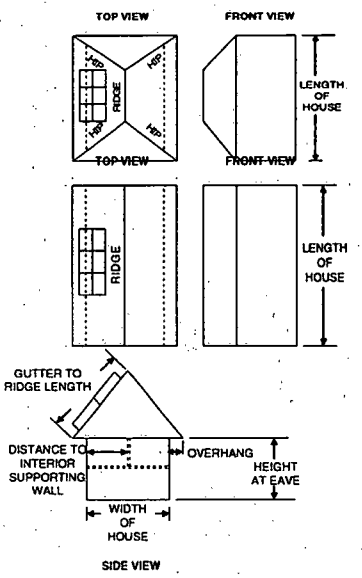
Take photos... especially of any defective conditions

Provide locations of any defective conditions on a plan of the roof, showing distance from end of roof and ridge

Exposure Categories

Category B – Urban and suburban areas, wooded areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.

Category C – Open terrain with scattered obstructions having heights generally less than 30 ft. This includes flat open country, grasslands and water surfaces



ROOF SHEATHING

Type:	Plywood
Thickness (in):	1/2"
Decay Damage?	No
Large Holes?	No
Steel Clips?	No
Gaps between Sheathing and Rafters?	No

SHINGLES

Type	Dimensional
Layers	1
Age (years)	3
Condition	Good
Replacement Timeframe	No Need

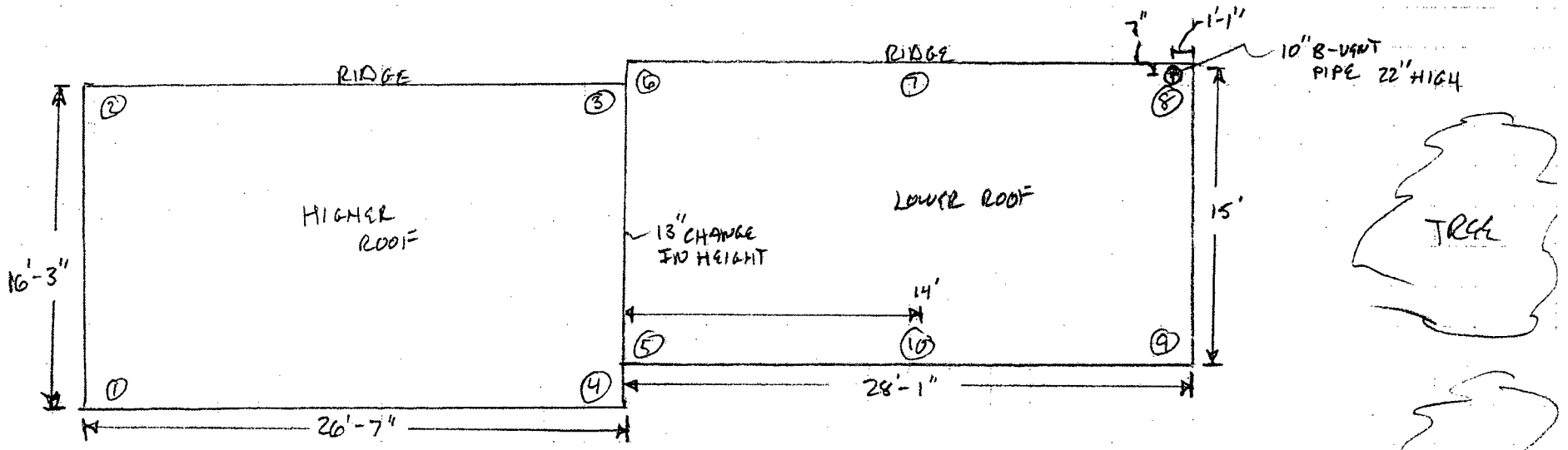
OBSTRUCTIONS

Able to Access from Attic?	Yes
Plastic Plumbing Vents?	
Metallic Plumbing Vents?	
Non-Powered Ventilators?	
Powered Ventilators?	
Furnace/Boiler "B"-vent?	Yes
Weather Station?	
Satellite Dish(s)?	
Skylights?	

ADDITIONAL NOTES

Knee wall runs for 18' from the west gable wall.

COLL, DIANE


RIDGE
RIDGE
7"
1'-1"
10" B-VENT PIPE 22" HIGH
HIGHER ROOF
LOWER ROOF
13" CHANGE IN HEIGHT
16'-3"
15'
14'
26'-7"
28'-1"
TREE
TREE
TREE
ORIENTATION
109° MAGNETIC
158° TRUE
TILT 25°
SURVEY LOCATIONS
1 2 3 4
5 6 7 8 9 10

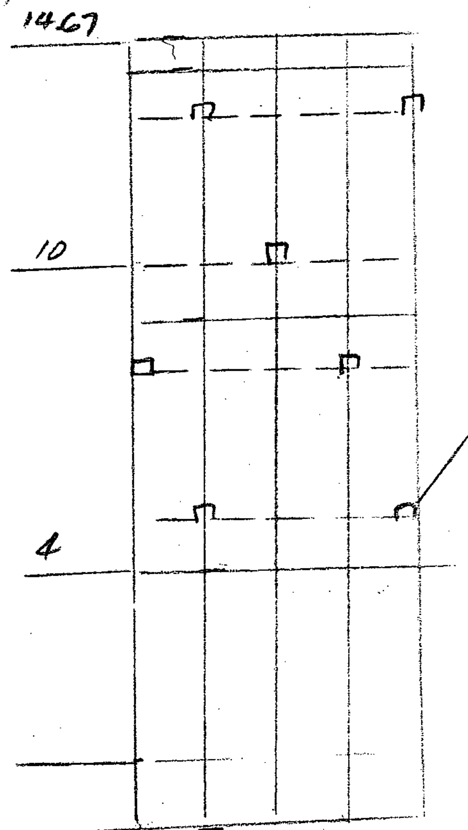
Collis , Brick — IRC-2009 NJ — 3

[signature] 7/2/11

WIND SPEED 115 MPH EXP. B

G. SNOW 20 psf

Rafters 2x6 @ 16" Pitch 25



$A = \frac{5.17}{2} \times 4 = 10.34$ sf

Dead

$P_{DL} = 2.9(10.34) = 30\#$

Snow

$P_f = 0.7(0.9)(1)(20) = 12.6$ psf

$P_{SN} = 12.6 \cos 20 = 11.8 \times 10.34 = 122$ $W_S = 11.8(1.33) = 16\#/'$

P_{unbal} $h_d = 1.35$ $\gamma = 16.6$ $S = 2.75$

$\frac{h_d \gamma}{\sqrt{S}} = \frac{1.35(16.6)}{\sqrt{2.75}} = 13.51 \times 10.34 = \frac{140}{\Sigma = 262}$

$\frac{8}{3} h_d \sqrt{S} = \frac{8}{3}(1.35)\sqrt{2.75} = 5.96/.94 = 6.34'$

Wind

$q_z = 0.00256(0.7)(0.85)(115)^2 = 20.14$ psf

$P_W = -1.7(20.14)(10.34) = -354\#$

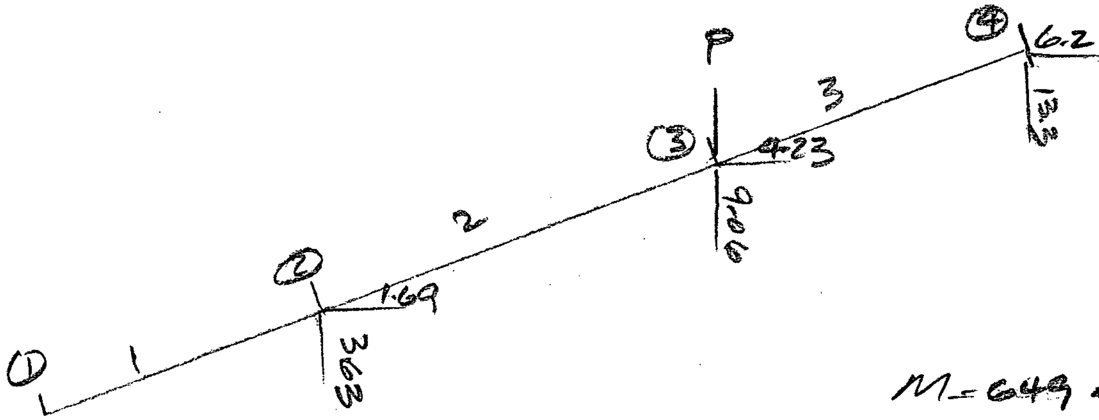
$0.6 P_D - P_W = -336$ embed $= \frac{336}{205} = 1.64''$

Use Quick Mount MIN $1\frac{3}{4}''$ embed

Collis

7/7/11

2x6 @ 16" DF #2



M = 649 #-'

$f_b = \frac{649 \times 12}{7.563} = 1030 \text{ psi} < F_b$ OK

$F_b = 900 \times 1.15^2 \times 1.3 = 1547 \text{ psi}$

```
**************************************************
*                                                *
*          STAAD.Pro                             *
*          Version  2006    Bld 1004.US          *
*          Proprietary Program of                *
*          Research Engineers,  Intl.            *
*          Date=    JUL  8, 2011                 *
*          Time=    15:14:49                     *
*                                                *
*      USER ID: HPSA                             *
**************************************************
```

```
    1. STAAD PLANE AKERROOF RAFTERS WITH SOLAR PANELS
INPUT FILE: RafterFrameCollis1.STD
    2. START JOB INFORMATION
    3. ENGINEER DATE 29-JUN-11
    4. END JOB INFORMATION
    5. *
    6. * ANALYSIS FILE RAFTERFRAMEAKER.STD
    7. * HOUSE ROOF
    8. *
    9. * DESIGN BY J. MARX, P.E.
   10. * ASCENT CONSULTING
   11. *
   12. * STAAD LOAD ANALYSIS - ROOF RAFTERS WITH SOLAR PANELS
   13. *
   14. * PROJECT: HOUSE RESIDENCE
   15. *
   16. * DESIGN CODE: IRC
   17. *
   18. *
   19. INPUT WIDTH 79
   20. *
   21. UNIT FEET POUND
   22. JOINT COORDINATES
   23. 1 0 0 0; 2 3.63 1.69 0; 3 9.06 4.23 0; 4 13.3 6.2 0
   24. MEMBER INCIDENCES
   25. 1 1 2; 2 2 3; 3 3 4
   26. DEFINE MATERIAL START
   27. ISOTROPIC DFLR_SS_2X6
   28. E 2.736E+008
   29. POISSON 0.15
   30. DENSITY 25
   31. ALPHA 5.5E-006
   32. END DEFINE MATERIAL
   33. *
   34. UNIT INCHES KIP
   35. MEMBER PROPERTY AITC
   36. 1 TO 3 TABLE ST DFLR_SS_2X6
   37. *
   38. CONSTANTS
   39. *
   40. MATERIAL DFLR_SS_2X6 ALL
```

```
41. *
42. SUPPORTS
43. 1 PINNED
44. 4 FIXED BUT FX MZ
45. *
46. ************************************************************
47. *
48. UNIT FEET POUND
49. LOAD 1 DEAD
50. MEMBER LOAD
51. 1 TO 3 UNI GY -10
52. JOINT LOAD
53. 2 TO 4 FY -30
54. *
55. ************************************************************
56. *
57. LOAD 2 SNOW LOAD
58. MEMBER LOAD
59. 1 UNI GY -16
60. JOINT LOAD
61. 2 3 FY -58
62. 4 FY -217
63. *
64. ************************************************************
65. *
66. LOAD COMB 3 DL + SOLAR
67. 1 1.0 2 1.0
68. PERFORM ANALYSIS
```

P R O B L E M S T A T I S T I C S

```
NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS =     4/     3/     2
ORIGINAL/FINAL BAND-WIDTH=     1/     1/      6 DOF
TOTAL PRIMARY LOAD CASES =    2, TOTAL DEGREES OF FREEDOM =      9
SIZE OF STIFFNESS MATRIX =        1 DOUBLE  KILO-WORDS
REQRD/AVAIL. DISK SPACE  =     12.0/  11768.8 MB
```

```
69. PRINT SUPPORT REACTION
```

SUPPORT REACTIONS -UNIT POUN FEET STRUCTURE TYPE = PLANE

JOINT	LOAD	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM Z
1	1	0.00	104.75	0.00	0.00	0.00	0.00
	2	0.00	115.98	0.00	0.00	0.00	0.00
	3	0.00	220.74	0.00	0.00	0.00	0.00
4	1	0.00	131.99	0.00	0.00	0.00	0.00
	2	0.00	281.08	0.00	0.00	0.00	0.00
	3	0.00	413.07	0.00	0.00	0.00	0.00

********** END OF LATEST ANALYSIS RESULT **********

```
70. LOAD LIST 3
71. *
72. PARAMETER 1
73. CODE AITC
74. BEAM 1 ALL
75. CSF 1.3 ALL
76. CDT 1.15 ALL
77. CHECK CODE MEMB 2
```

STAAD.Pro CODE CHECKING - (AITC)
****

ALL UNITS ARE - POUN FEET (UNLESS OTHERWISE NOTED)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
2	ST DFLR_SS_2X6				
		PASS	CL.5.9.2	0.486	3
		1.55 C	0.00	-648.84	2.4978

LEZ = 71.936 LEY = 71.936 LUZ = 71.936 LUY = 71.936 INCHES

CD = 1.150 CMB = 1.000 CMT = 1.000 CMC = 1.000 CMP = 1.000
CMV = 1.000 CME = 1.000 CFB = 1.000 CFT = 1.000 CFC = 1.000
CFU = 1.000 CR = 1.000 CTT = 1.000 CC = 1.000 CF = 1.300
CT = 1.000 CH = 1.000 CB = 1.000 CI = 1.000 CV = 0.000
CLY = 1.000 CLZ = 0.977 CP = 0.170 c = 0.800 E' = 1900000.122 PSI

ACTUAL STRESSES : (POUND INCH)
fc = 0.188 ft = 0.000
f_cby = 0.000 f_cbz = 1029.494
fv = 0.000

ALLOWABLE STRESSES: (POUND INCH)
FC = 331.753 FT = 1150.000
FCBY = 2117.513 FCBZ = 2117.513
FCEY = 0.000 FCEZ = 4642.555
FBE = 345.314
FTB = 2167.750 F**TB = 2117.513
FV = 0.000 SLENDERNESS = 50.000

78. PRINT MEMBER FORCES ALL

MEMBER END FORCES STRUCTURE TYPE = PLANE

ALL UNITS ARE -- POUN FEET (LOCAL)

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
1	3	1	93.17	200.11	0.00	0.00	0.00	0.00
		2	-49.23	-105.73	0.00	0.00	0.00	612.32
2	3	2	12.13	25.93	0.00	0.00	0.00	-612.32
		3	13.27	28.37	0.00	0.00	0.00	605.02
3	3	3	-50.28	-108.21	0.00	0.00	0.00	-605.02
		4	69.98	150.61	0.00	0.00	0.00	0.00

********** END OF LATEST ANALYSIS RESULT **********

79. FINISH

********** END OF THE STAAD.Pro RUN **********

**** DATE= JUL 8,2011 TIME= 15:14:49 ****

10

Quick Mount PV®

Your *Solution* in Mounting Products

Solar • H_2O • Conduit • HVAC • Custom

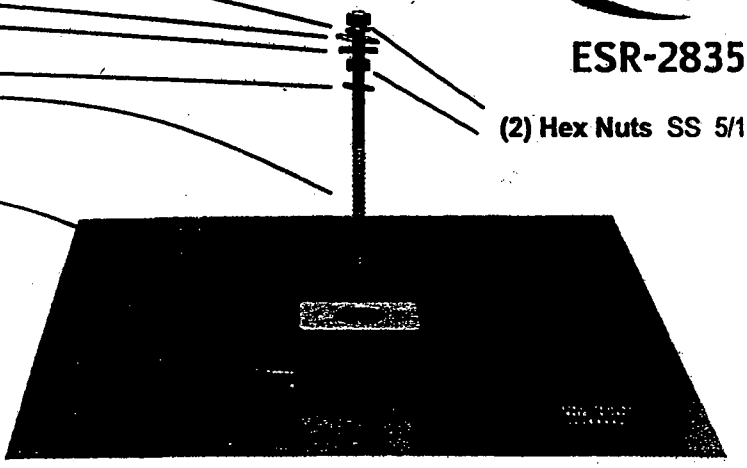
Composition Mount Specifications - 5/16" - PV -

Quick Mount PV® is an all-in-one waterproof flashing and mount to anchor photovoltaic racking systems, solar thermal panels, air conditioning units, satellite dishes, or anything you may need to secure to a new or existing roof. It is made in the USA of all aluminum and includes stainless steel hardware. It works with all standard racks, installs seamlessly and saves labor by not needing to cut away any roofing, will out live galvanized 2 to 1, and is a better low-profile mount.

Split Lock Washer SS 5/16" (Not a theft-prevention feature)
Fender Washer SS 5/16" x 1"
EPDM Rubber Washer 60 Durometer 5/16"
Sealing Washer SS 5/16"
Hanger Bolt SS 5/16" x 6"
1 1/4" Machine, 1 3/4" Spacer, 3" Lag
Mount & Flashing Aluminum
Mount 1 1/4" x 1 1/4" x 2 1/4" Beveled Block
Flashing .05" thick
For standard composition roofs:
flashing is 12" x 12"
mount is attached 3" off center

ICC ES
ESR-2835

(2) Hex Nuts SS 5/16"



Lag pull-out (withdrawal) capacities (lbs) in typical lumber:

	Specific gravity	Lag Bolt Specifications: 5/16" shaft per 3" thread depth	Lag Bolt Specifications: 5/16" shaft per 1" thread depth
Douglas Fir, Larch	.50	798	266
Douglas Fir, South	.46	705	235
Engelmann Spruce, Lodgepole Pine (MSR 1650 f & higher)	.46	705	235
Hem, Fir	.43	636	212
Hem, Fir. (North)	.46	705	235
Southern Pine	.55	921	307
Spruce, Pine, Fir	.42	615	205
Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL)	..50	798	266

Sources: Uniform Building Code; American Wood Council
Notes: 1) Thread must be embedded in a rafter or other structural roof member.
2) Pull-out values incorporate a 1.6 safety factor recommended by the American Wood Council.
3) See IBC for required edge distances.

936 Detroit Ave Suite D, Concord, CA. 94518
Phone: (925) 687-6686 Fax: (925) 687-6689
Email: info@quickmountpv.com www.quickmountpv.com

GeoGenix
The Experts to Trust

8998 Route 18
Old Bridge, NJ 08857

July 14, 2011

Daniel Newman Jr., *Construction Official*
Brick Township Bldg. Dept.
401 Chambers Bridge Road
Brick, NJ 08723

Dear Mr. Newman:

We have been contracted to install a photovoltaic (solar-electric) system on the roof of the residence indicated below:

Diane Collis
128 John Street
Brick, NJ 08724
Block 1170.04, Lot 3

Although we have installed many of these systems throughout the state, we realize these systems are still relatively new in New Jersey. Therefore, we are submitting the following material in hopes it will satisfy the needs of your department:

1. The construction permit, building sub-code and electrical sub-code applications.
2. Two (2) copies of NJ Home Improvement Contractors License (No. 13VH02387400).
3. Two (2) copies of detailed specification sheets for the photovoltaic panels (generate DC electricity) and racking system (attach the panels to the roof).
4. Two (2) copies of a diagram showing the placement of the solar panels on the roof of the home plus positioning of the inverter and all necessary disconnect switches.
5. Two (2) signed and sealed copies of the engineer's structural analysis of the roof, including recommendations for its reinforcement, if required

Please call the numbers listed below or send an email if you have any questions, comments or suggestions on how to expedite getting the permits for this installation.

Thank you for your time and attention.

Sincerely

Christy Lorenz

Christy Lorenz, *Administrative Assistant*, **732-761-8841,** Christy.lorenz@geogenix.com

Enc.

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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

GeoGenix LLC
Thomas Matulewcz
79 E River Rd
Rumson NJ 07760

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

10/25/2010 TO 12/31/2011
VALID

13VH02387400
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

ACTING DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
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GeoGenix LLC
Home Improvement Contractor

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VALID

SIGNATURE

13VH02387400
License/Registration/Certificate #

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Newark, NJ 07101

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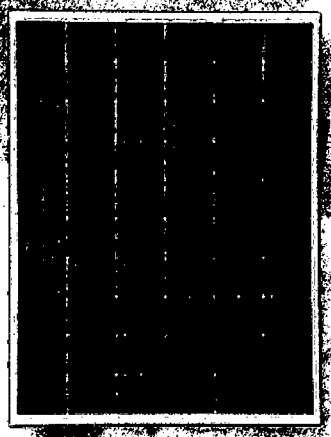
Trinasolar

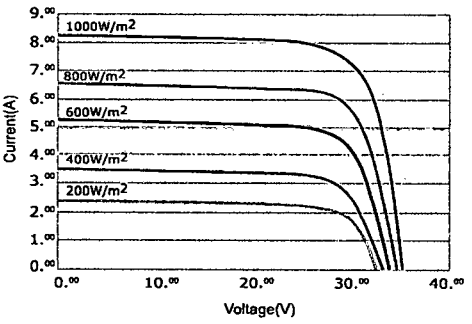
TRINA TSM-PA05, 220W to 240W



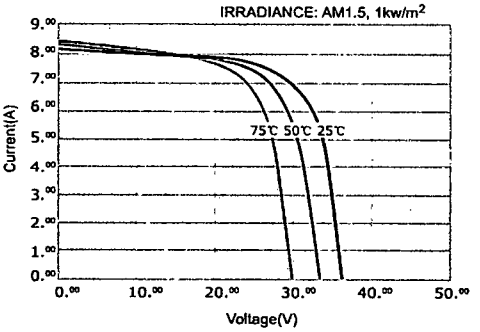
High Efficiency
Multicrystalline Solar Modules

I-V CURVES

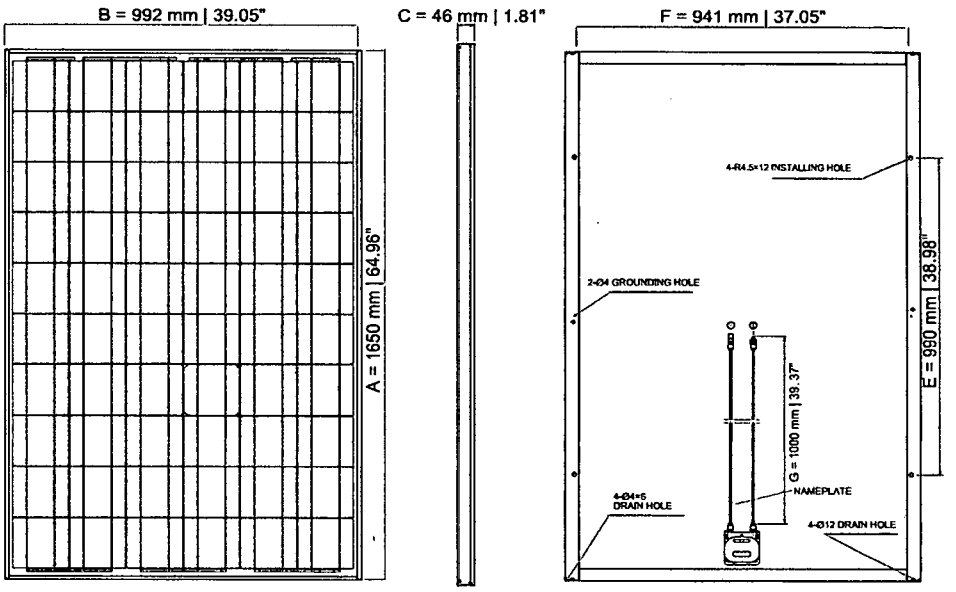
I-V Curves of PV module TSM-230PA05



I-V Curves of module TSM-230PA05 at various cell temperatures



DIMENSIONS

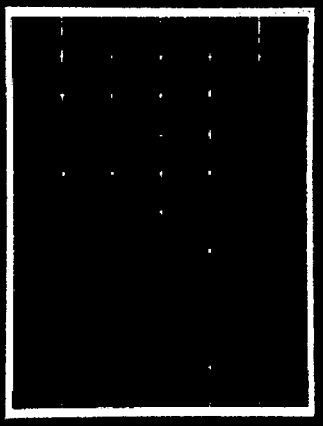


Dimensions A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Installation Hole E*F	941*990 (mm) | 37.05*38.98 (in.)
Cable Length G	1000 (mm) | 39.37 (in.)

*The company is not responsible for potential typing errors.

Trinasolar

TRINA TSM-PA05, 220W to 240W



High Efficiency
Multicrystalline Solar Modules

STRENGTHS

- Tolerance ± 3%
- 5 Bus Bar Configuration
- Plug & Play Connectors
- High Transmission Low Iron Tempered Glass
- Can bear loads up to 5400 Pascals (IEC 61215 2nd)

WARRANTY

Manufacturing 5 years
Power production 90% 10 years
80% 25 years

CERTIFICATIONS

TYPICAL ELECTRICAL CHARACTERISTICS

Type	TSM-PA05	220	230	240
Max-Power	Pm(W)	220	230	240
Power Tolerance	(%)	±3	±3	±3
Max-Power Voltage	Vm(V)	29.8	30.0	30.6
Max-Power Current	Im(A)	7.39	7.66	7.84
Open-Circuit Voltage	Voc(V)	36.8	37.0	37.5
Short-Circuit Current	Isc(A)	8.00	8.18	8.38
Max-System Voltage	(VDC)		600	
Cell Efficiency	ηc (%)	15.1	15.8	16.4
Module Efficiency	ηm (%)	13.4	14.1	14.7
Number, type and arrangement of cells		60 pcs. Multi-Crystalline Silicon (6x10)		
Cell Size		6" x 6" | 156mm X 156mm		
No. of Bypass Diodes	(pcs.)	3		
Max. Series Fuse	(A)	14		
Pm Temperature Coefficient	(%/℃)	- 0.45		
Isc Temperature Coefficient	(%/℃)	0.05		
Voc Temperature Coefficient	(%/℃)	- 0.35		
NOCT- Nominal Operating Cell Temperature	(℃)	47±2		

MECHANICAL CHARACTERISTICS

Cable type, Diameter and Length	3.31mm² (12AWG), UL Certified
Type of Connector	Tyco
Dimension A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Weight	19.5 Kg | 43 lb
No. of Draining Holes In Frame	8
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2 mm | 0.12"

PACKAGING CONFIGURATION

Packing Configuration	20 pcs./box
Quantity/Pallet	1 box / pallet
Loading Capacity	520 pcs/40ft or 120 pcs/20ft

ABSOLUTE RATINGS

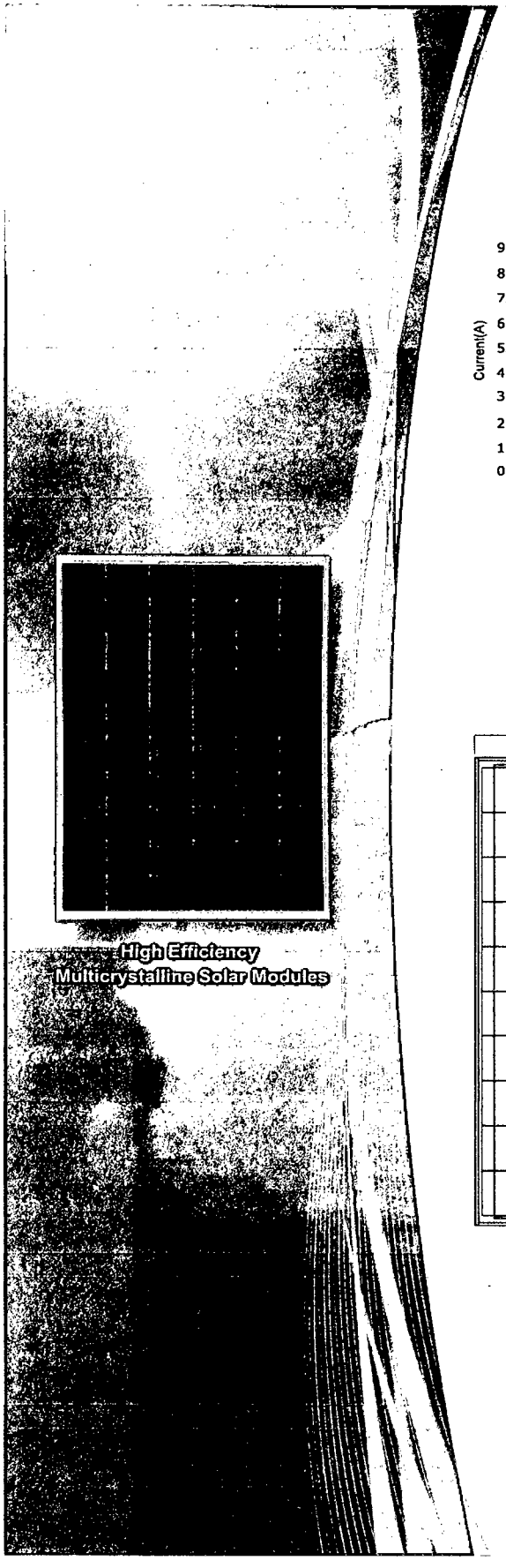
Dielectric Insulation Voltage	(VDC)	3000 max.
Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

***STC Conditions**(1000W/m²; 1.5 AM and 25℃ Cell temperature)*

http://www.wholesalesolar.com/solar-panels.html

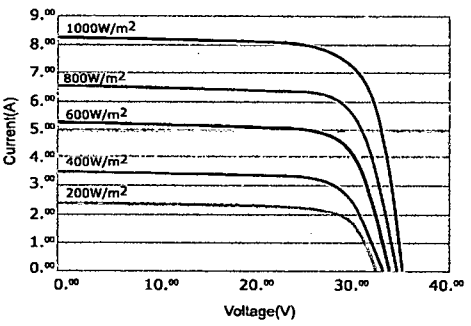
Trinasolar

TRINA TSM-PA05, 220W to 240W



I-V CURVES

I-V Curves of PV module TSM-230PA05



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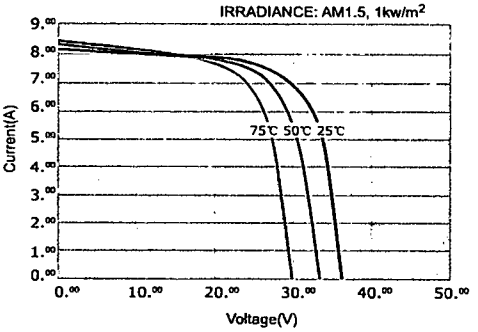
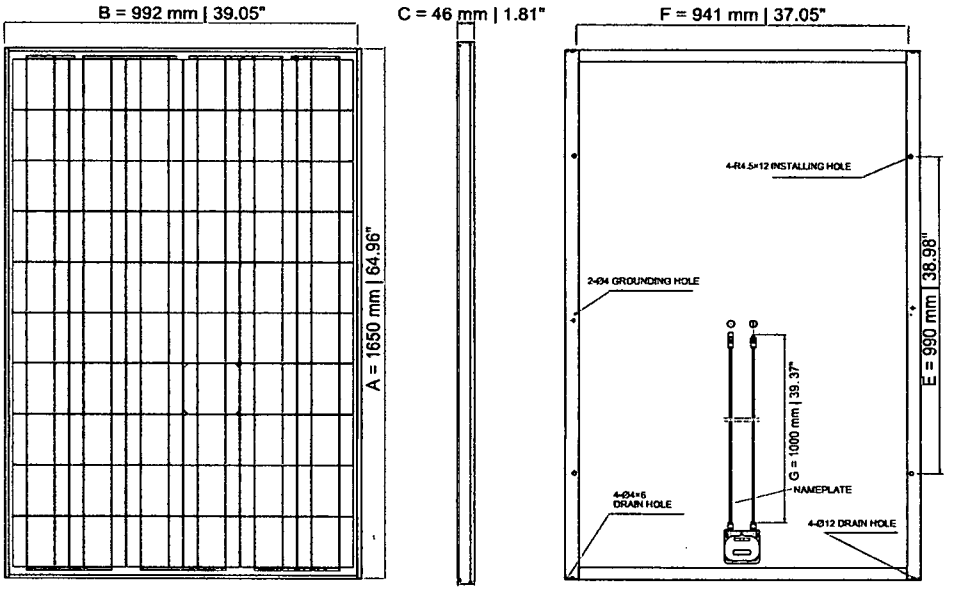


DIMENSIONS



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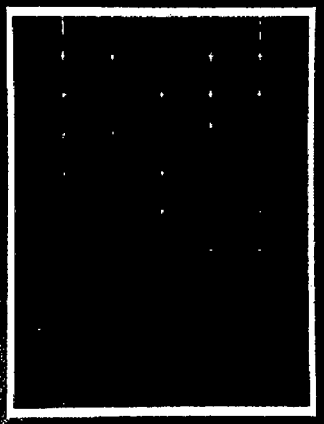

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CERTIFICATIONS

TYPICAL ELECTRICAL CHARACTERISTICS

Type	TSM-PA05	220	230	240
Max-Power	Pm(W)	220	230	240
Power Tolerance	(%)	±3	±3	±3
Max-Power Voltage	Vm(V)	29.8	30.0	30.6
Max-Power Current	Im(A)	7.39	7.66	7.84
Open-Circuit Voltage	Voc(V)	36.8	37.0	37.5
Short-Circuit Current	Isc(A)	8.00	8.18	8.38
Max-System Voltage	(VDC)		600	
Cell Efficiency	ηc (%)	15.1	15.8	16.4
Module Efficiency	ηm (%)	13.4	14.1	14.7
Number, type and arrangement of cells		60 pcs. Multi-Crystalline Silicon (6x10)		
Cell Size		6" x 6" | 156mm X 156mm		
No. of Bypass Diodes	(pcs.)	3		
Max. Series Fuse	(A)	14		
Pm Temperature Coefficient	(%/℃)	- 0.45		
Isc Temperature Coefficient	(%/℃)	0.05		
Voc Temperature Coefficient	(%/℃)	- 0.35		
NOCT- Nominal Operating Cell Temperature	(℃)	47±2		

MECHANICAL CHARACTERISTICS

Cable type, Diameter and Length		3.31mm² (12AWG), UL Certified
Type of Connector		Tyco
Dimension	A*B*C	1650*992*46 (mm) | 64.96*39.05*1.81 (in.)
Weight		19.5 Kg | 43 lb
No. of Draining Holes In Frame		8
Glass, Type and Thickness		High Transmission, Low Iron, Tempered Glass 3.2 mm | 0.12"

PACKAGING CONFIGURATION

Packing Configuration	20 pcs./box
Quantity/Pallet	1 box / pallet
Loading Capacity	520 pcs/40ft or 120 pcs/20ft

ABSOLUTE RATINGS

Dielectric Insulation Voltage	(VDC)	3000 max.
Operating Temperature	(℃)	-40~+85
Storage Temperature	(℃)	-40~+85

**STC Conditions(1000W/m²; 1.5 AM and 25℃ Cell temperature)*

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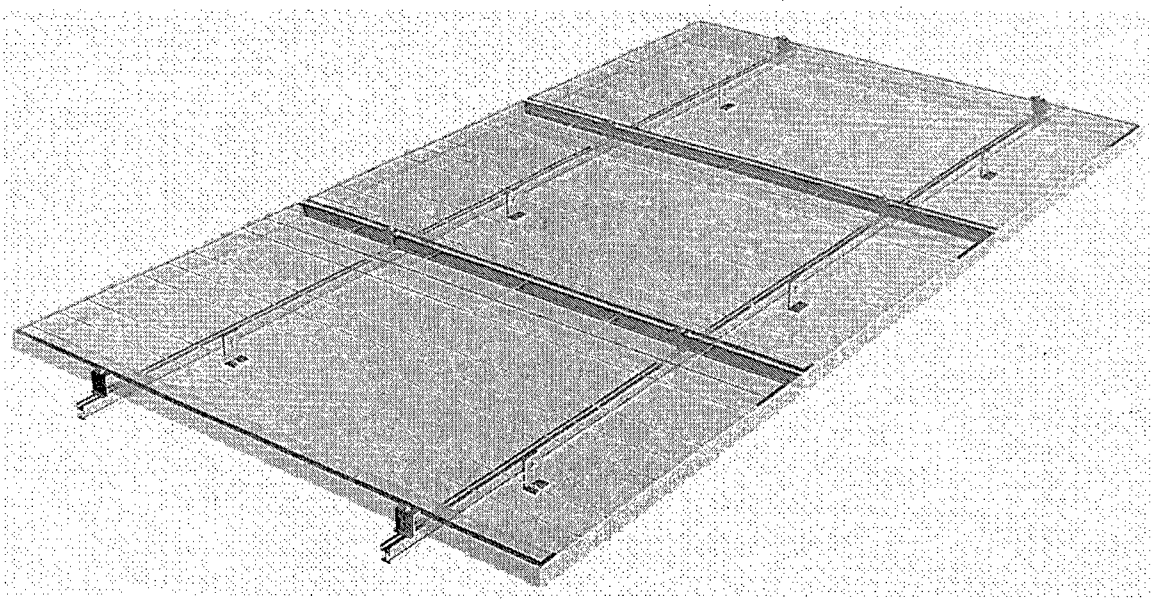


POWER RAIL™ P6

ASSEMBLY INSTRUCTIONS

step-by-step
assembly and installation

Version 1, Rev C
PCN 090310-1

Power Rail™ P6

A Few words about these Assembly Instructions

These instructions:

- Do not include any information on the selection or installation of attaching hardware to be mounted to the roof substrate. For information on compatible attaching hardware see our publication titled "Power Rail Design Guidelines".
- Begin after all roof mounted attaching hardware has been installed and secured to the roof substrate.
- Show the Power Rail Mounting System being installed on our "Power Rail PV Flash" roof attachment system.
- Are intended to be used by individuals with sufficient technical skills for the task. Knowledge and use of hand tools, measuring devices and torque values is also required.
- Within these instructions are various precautions in the forms of Notes, Cautions, and Warnings. These are to assist in the assembly process and/or to draw attention to the fact that certain assembly steps may be dangerous and could cause serious personal injury and/or damage to components. Following the step-by-step procedures and these precautions should minimize the risk of any personal injury or damage to components while making the installation not only safe but an efficient process.

WARNING: Follow the procedures and precautions in these instructions carefully.

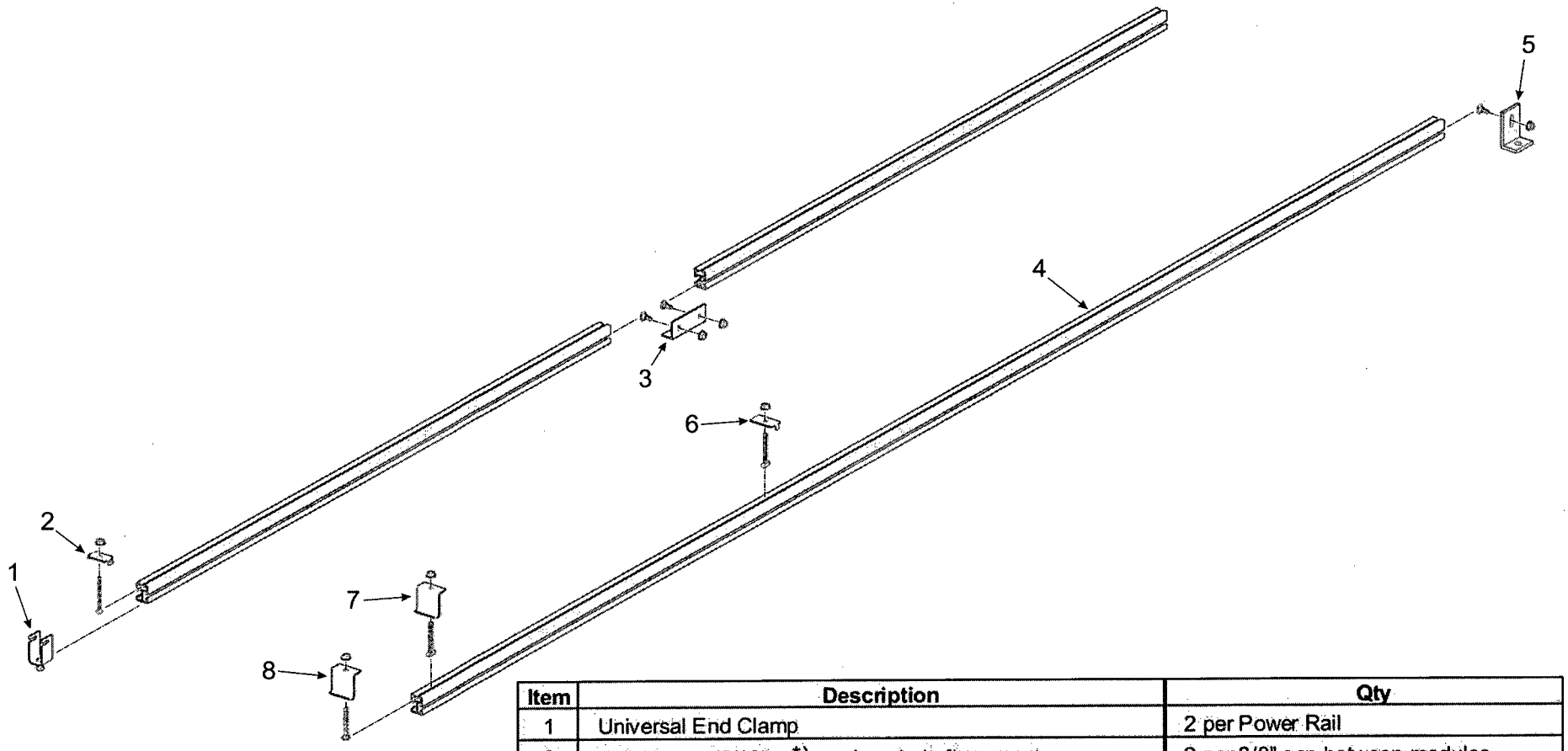
For questions on a specific installation please call us or e-mail us at:

Phone: 800-260-3792

Email: info@power-fab.com

Required Tools ☑

- ☐ 1/2 inch wrench or socket for 5/16 inch module clamp hardware
- ☐ Torque wrench
- ☐ Ratchet wrench
- ☐ Ratchet extension bar
- ☐ Framing square
- ☐ Tape Measure



Item	Description	Qty
1	Universal End Clamp	2 per Power Rail
2	Mid Clamp, (5/16" x *) carriage bolt, flange nut	2 per 3/8" gap between modules
3	Splice Plate, set of (5/16" x 3/4") carriage bolt, flange nut	1 per rail joint
4	Power Rail P6	2 per Rail Set
5	L Foot, (5/16" x 3/4") carriage bolt, flange nut	Refer to Power Rail Design Guidelines
6	RAD Mid-Clamp, (5/16" x *) bolt, flange nut	2 per 3/8" gap between modules
7	RAD End-Clamp, (5/16" x *) bolt, flange nut	4 per Rail Set
8	End-Clamp, (5/16" x *) carriage bolt, flange nut	4 per Rail Set
* 2", 2 1/4" or 2 1/2" bolt. Length is dependent on depth of PV Module frame		
Notes: 1. Option to install Mid Clamp with carriage bolt or RAD Mid Clamp. 2. Option to install Universal End Clamp, End Clamp with Carriage Bolt or RAD End Clamp.		

Power Rail P6 Parts Identification

Step 1: Securing Attaching Hardware

NOTE:
L-feet can be attached directly to the roof substrate with the proper hardware. See Power Rail Design Guidelines for more information.

The selection of attaching hardware is dependent on the roof substrate and site design conditions. Please consult the design manual for specifics. Instructions for attaching anchoring hardware to the roof or structure are available on an individual product basis.

A. Place the L-foot onto the PV Flash hanger bolt aligning it to the slot of the compression block.

B. Secure L-foot with 5/16" flat washer and hex nut. **Torque to 22-25 ft.-lbs.**

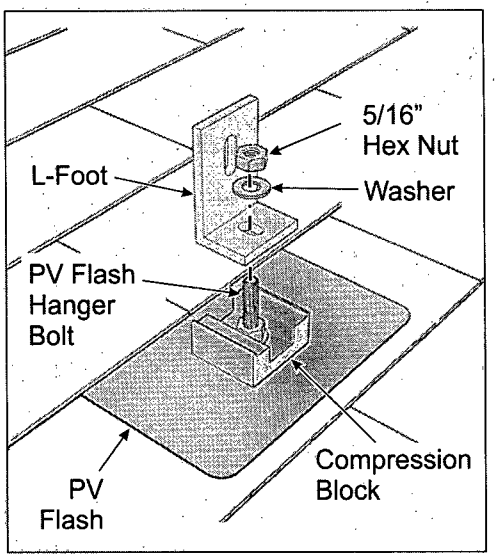


Figure 1-1: Attaching L-foot to the PV Flash

Step 2: Attach Power Rail to Roof Anchors

CAUTION:
Cantilever and span dimensions are a design specification. Consult the design manual to match these dimensions to site conditions. It's important to use the unique cantilever and span dimension specific to the install. Failure to do so could lead to excessive deflection and/or premature system failure.

The Power Rail is secured to the L-feet using a 5/16" x 3/4" *carriage bolt.* Hardware will vary depending on design-specific requirements.

The Power Rail overhangs beyond the outermost L-foot. This overhang is referred to as "cantilever, or abbreviated as "C'ver"". The length of cantilever is dependent on several factors and unique to each installation and is determined by the system design. The distance between adjacent L-feet is referred to as "Span". The length of span is dependent on several factors and unique to each installation and is determined by the system design.

A. Measure and mark the cantilever dimension supplied by design manual onto the Power Rail.

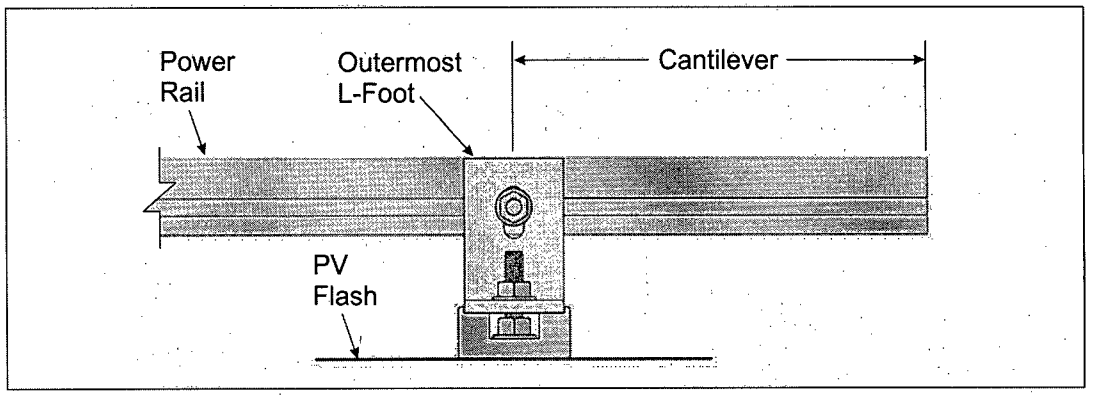


Figure 2-1: Cantilever Measurement and Marking

NOTE:
If using carriage bolts, be certain to slide the appropriate quantity of bolts into the Power Rail before both ends of the Power Rail have been secured.

NOTE:
Before tightening any flange nuts first install all bolts and flange nuts into L-feet along entire length of Power Rail. If tightened, the adjacent bolts cannot be passed into downstream L-feet.

B. Line up the mark with the center of the outermost L-foot.

C. Starting at the outermost L-foot mounting position, insert one 5/16" x ¾" bolt into the Power Rail.

D. Holding the Power Rail, line-up and insert the 5/16" x ¾" bolt into the L-foot and loosely secure with 5/16" flange nut. Do not tighten until all bolts have been positioned in the entire length of Power Rail and the bolts have been aligned and passed thru the L-feet and the flange nuts loosely started.

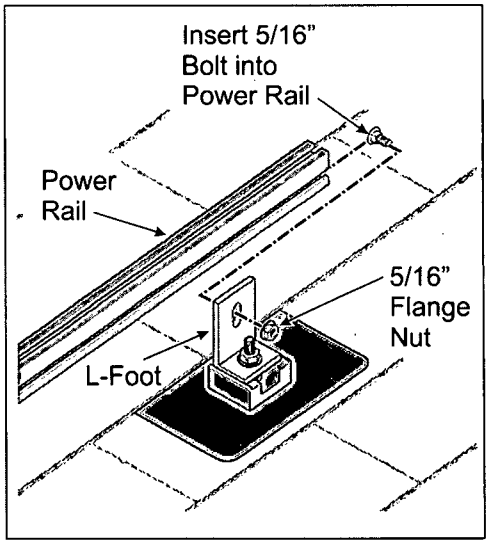


Figure 2-2: Attaching Power Rail to L-foot

E. Double-check that the cantilever mark is lined up with the center of the outermost L-foot. If needed , adjust its position to bring into alignment.

F. Double-check the cantilever alignment before tightening Power Rail to L-feet. Tighten all flange nuts and **Torque to 22-25 ft.-lbs.**

Step 3: Splicing Power Rail with Splice Plates

Splice Plates are used to butt-joint Power Rail sections and extend their length as needed. They are attached to the Power Rail using two 5/16" x 3/4" carriage bolts and flange nuts.

A. Insert one 5/16" x 3/4" carriage bolt into the end of each Power Rail section to be spliced.

B. Hold the two ends of Power Rail together.

C. Position the Splice Plate onto the Power Rail and the two carriage bolts.

D. Align the Splice Plate so that it's equally divided along the Power Rail butt-joint.

E. Secure the Splice Plate to Power Rails with two 5/16" flange nuts. **Torque to 22-25 ft.-lbs.**

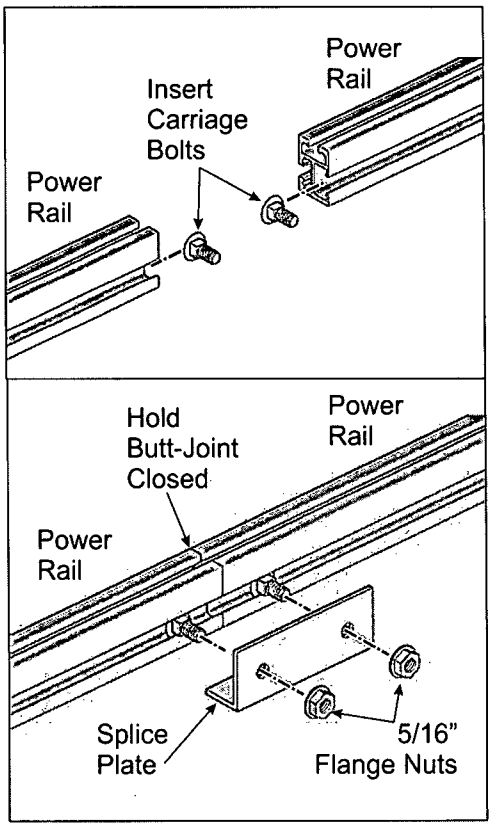


Figure 3-1: Splice Plate Installation

Step 3: Installing PV Modules to Power Rails with Module Clamps

WARNING:
This is a two person activity. In addition to working on a sloped rooftop PV Modules are heavy. One person should hold and align the modules while a second person secures modules with clamping hardware. Failure to do so could lead to serious personal injury and/or damaged components.

NOTE:
Hardware is dependent on particular features and system design therefore it may appear different from these instructions.

PV Modules are secured to the Power Rail using Mid Clamps and End Clamps, both use 5/16" bolts and flange nuts.

Start with an exterior PV Module. These instructions include three options of clamping hardware, they are "Universal End Clamp" (step B1), "Standard End Clamp" (step B2), or "RAD Clamps" (step B3).

A. Place exterior PV Module on two Power Rails, centering it lengthwise. Use a square to square-up Module to Power Rails.

B1. For use with "**Universal End Clamps**": Position Universal Clamp underneath module with notches facing the outside edge of the module, and rail centered between 'forks' of the clamp. Slide clamp notches towards module flange until the flange bottoms out in the notches. Tighten 5/16" bolt on bottom of universal end clamp. **Torque to 75-80 in.-lbs.** Repeat for both end clamps.

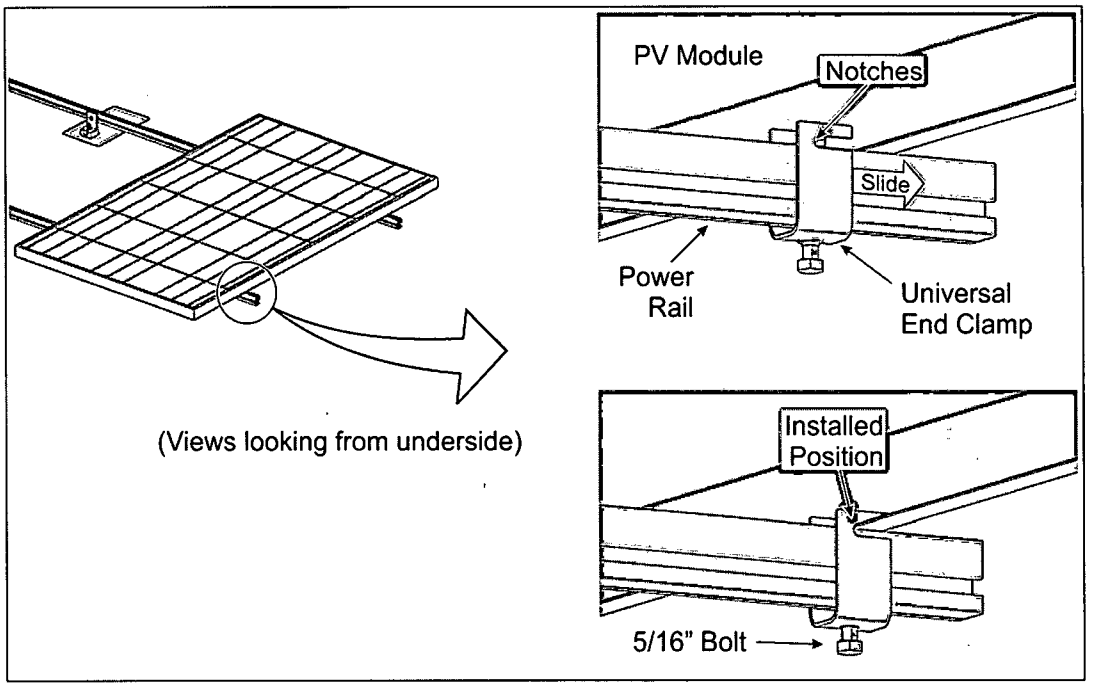


Figure 3-1: Installing PV Modules using Universal End Clamp

B2. For use with "**Standard End Clamps**". Insert one 5/16" x 2, 2 1/4 or 2 1/2" bolt into the top slot of the Power Rail. Push the bolt until flush with edge of module frame. Position end clamp with hole facing upwards and center hole over bolt. Seat end clamp over bolt flush with module frame. Thread 5/16" flange nut onto clamp and tighten. When desired alignment is obtained, tighten the nut and end clamp. **Torque End Clamps to 75-80 in.-lbs.** (figure 3-2)

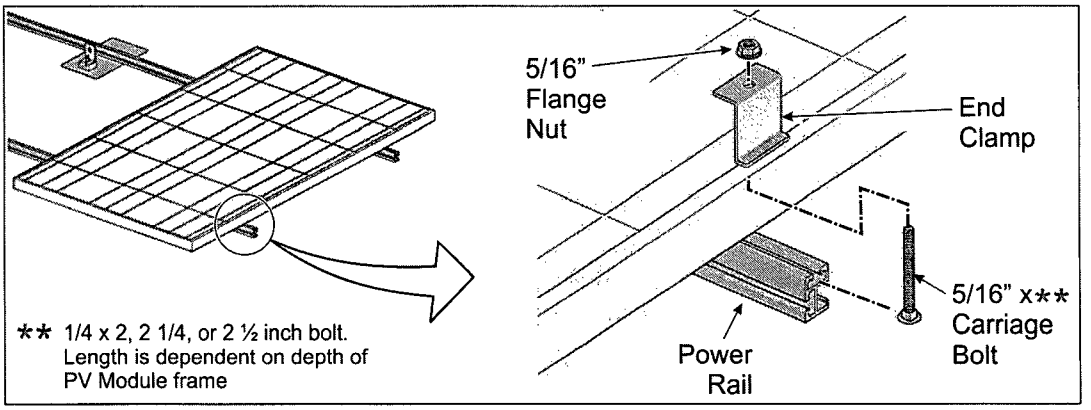


Figure 3-2: Installing PV Modules using Standard End-Clamp

B3. For use with "**RAD Hardware**" the process is much the same as in step B2 above, the difference is RAD bolts can be inserted anywhere along the run of Power Rail, not just the ends of the rail as shown in Figure 3-2 above.

Although this step demonstrates installing a *Mid-Clamp* the procedure for an *End-Clamp* is much the same when using RAD hardware.

Insert RAD bolt into Power Rail and rotate 90-degrees to lock into rail. Install module clamp (End or Mid-Clamp) onto bolt by aligning the flat portion of the clamp with that of the bolt. Thread 5/16" flange nut onto clamp and tighten. When desired alignment is obtained, tighten the nut and end clamp. **Torque End Clamps to 75-80 in.-lbs.**

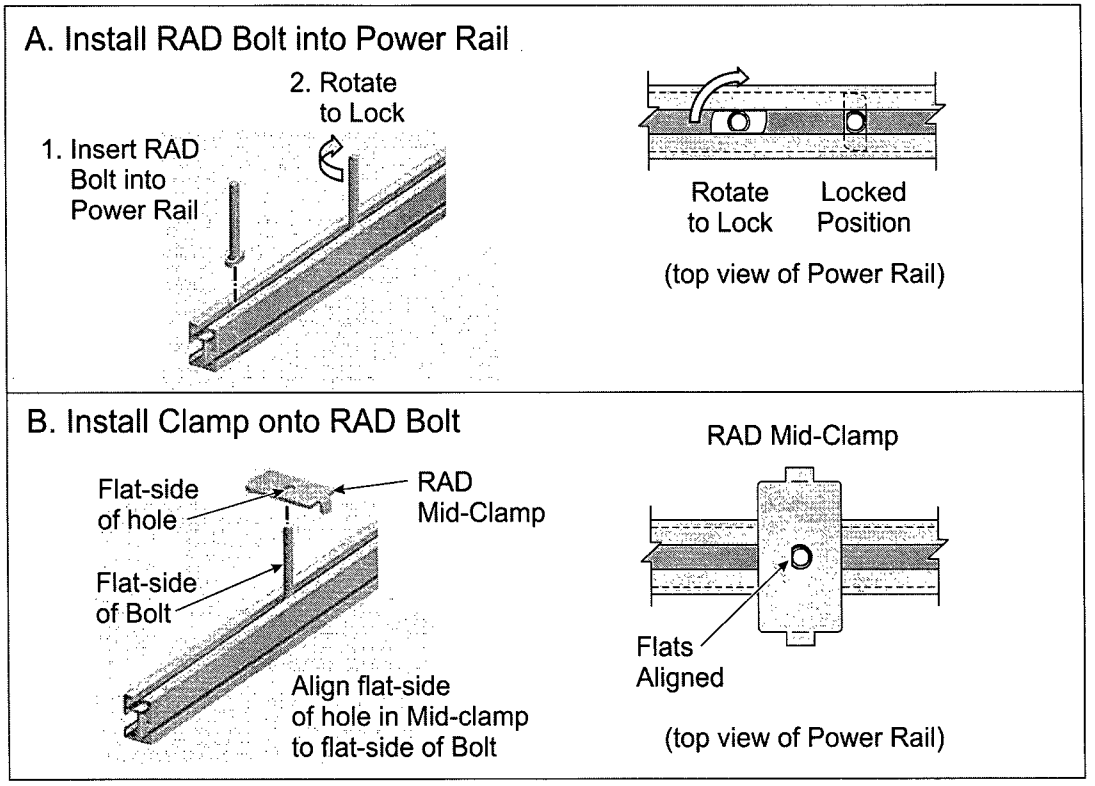


Figure 3-3: Installing PV Modules using RAD Hardware

NOTE:
If using standard 5/16" carraige bolts for Mid Clamps they must be inserted into Power Rail before installing interior PV Modules.

If using RAD hardware they can be inserted anytime at any position along the Power Rail.

Installing interior PV Modules.

A. Before placing an interior PV Module onto the Power Rails, first insert 5/16" x 2, 2 1/4, or 2 1/2 inch carriage bolts (bolt length is dependent on depth of PV Module frame) into the Module Rail, sliding the bolts inward adjacent to the previously installed exterior PV Module.

B. Slide the mid clamp fasteners to be flush with the edge of the installed module frame, opposite the end clamps.

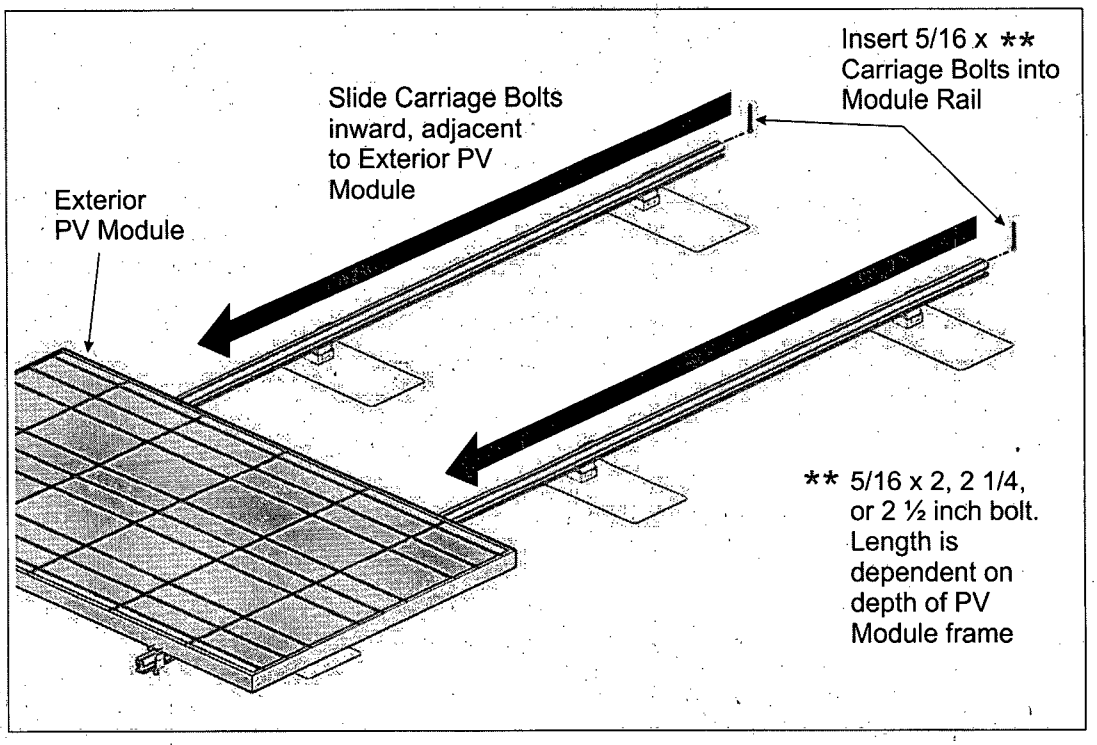


Figure 3-4: Inserting Mid Clamp Hardware into Power Rail

(continued on next page)

WARNING:
This is a two person activity. In addition to working on a sloped rooftop PV Modules are heavy. One person should hold and align the modules while a second person secures modules with clamping hardware. Failure to do so could lead to serious personal injury and/or damaged components.

WARNING:
Be certain that all Flange Nuts on End and Mid Clamps are tightened and torque to the stated values. Failure to do so could lead to serious personal injury and/or damaged components and property.

C. Place the interior PV Module onto the Power Rails, aligning it with the previously installed exterior PV Module. Positioning it adjacent to 5/16" bolts and the previously installed exterior PV Module.

D. Use a square to square-up Module to Power Rails.

E. Install one Mid Clamp on each of the 5/16" bolts that are between each of the interior PV Modules. Be sure that the tabs of the Mid Clamp rests between the two Modules. Secure each of the Mid Clamps with a 5/16" flange nut. **Torque Mid Clamps to 80-85 in.-lbs.**

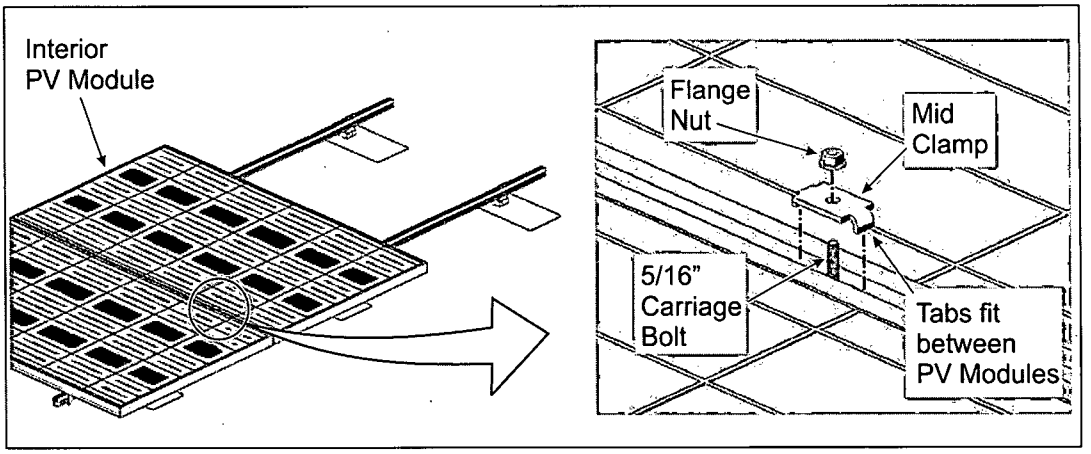


Figure 3-5: Inserting Mid Clamps

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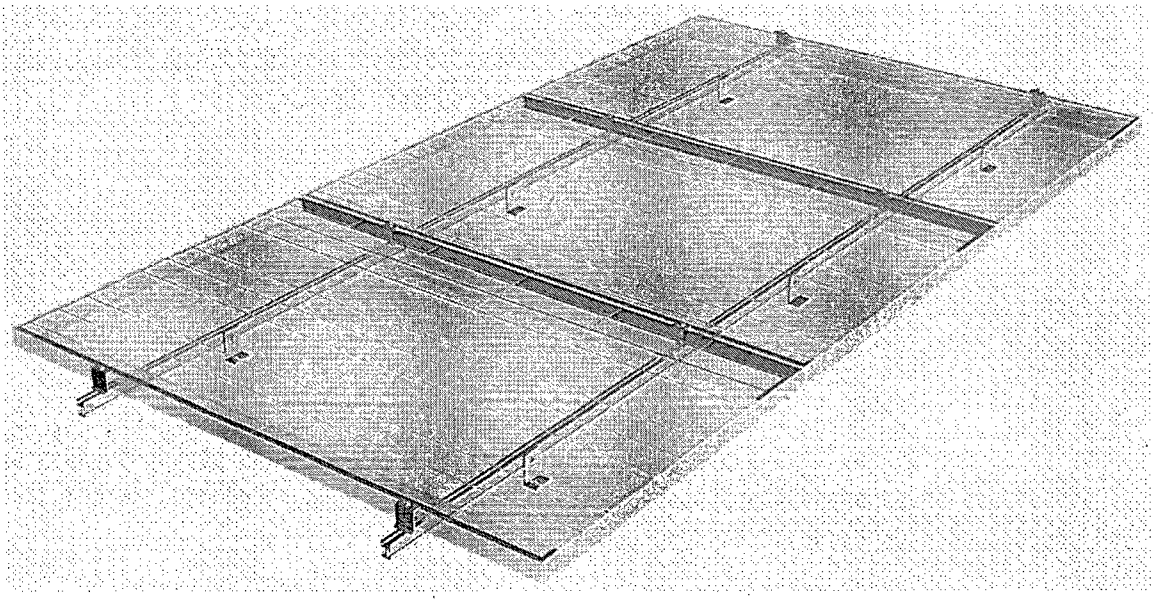

POWER RAIL™ P6

ASSEMBLY INSTRUCTIONS

step-by-step
assembly and installation

Version 1, Rev C
PCN 090310-1

Power Rail™ P6

A Few words about these Assembly Instructions

These instructions:

- Do not include any information on the selection or installation of attaching hardware to be mounted to the roof substrate. For information on compatible attaching hardware see our publication titled "Power Rail Design Guidelines".
- Begin after all roof mounted attaching hardware has been installed and secured to the roof substrate.
- Show the Power Rail Mounting System being installed on our "Power Rail PV Flash" roof attachment system.
- Are intended to be used by individuals with sufficient technical skills for the task. Knowledge and use of hand tools, measuring devices and torque values is also required.
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WARNING: Follow the procedures and precautions in these instructions carefully.

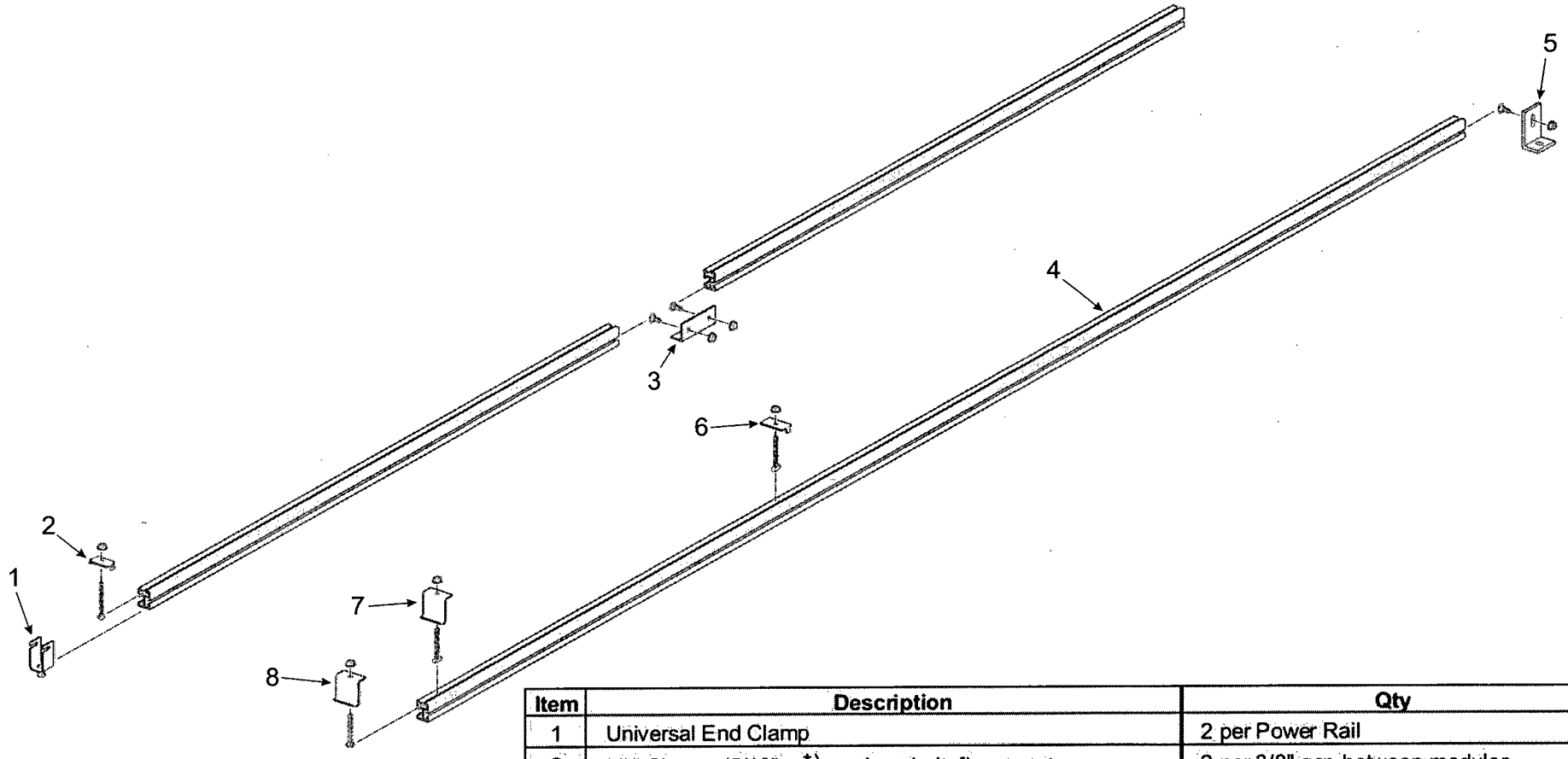
For questions on a specific installation please call us or e-mail us at:

Phone: 800-260-3792

Email: info@power-fab.com

Required Tools ☑

- ☐ 1/2 inch wrench or socket for 5/16 inch module clamp hardware
- ☐ Torque wrench
- ☐ Ratchet wrench
- ☐ Ratchet extension bar
- ☐ Framing square
- ☐ Tape Measure



Item	Description	Qty
1	Universal End Clamp	2 per Power Rail
2	Mid Clamp, (5/16" x *) carriage bolt, flange nut	2 per 3/8" gap between modules
3	Splice Plate, set of (5/16" x 3/4") carriage bolt, flange nut	1 per rail joint
4	Power Rail P6	2 per Rail Set
5	L Foot, (5/16" x 3/4") carriage bolt, flange nut	Refer to Power Rail Design Guidelines
6	RAD Mid-Clamp, (5/16" x *) bolt, flange nut	2 per 3/8" gap between modules
7	RAD End-Clamp, (5/16" x *) bolt, flange nut	4 per Rail Set
8	End-Clamp, (5/16" x *) carriage bolt, flange nut	4 per Rail Set
* 2", 2 1/4" or 2 1/2" bolt. Length is dependent on depth of PV Module frame		
Notes: 1. Option to install Mid Clamp with carriage bolt or RAD Mid Clamp. 2. Option to install Universal End Clamp, End Clamp with Carriage Bolt or RAD End Clamp.		

Power Rail P6 Parts Identification

Step 1: Securing Attaching Hardware

NOTE:
L-feet can be attached directly to the roof substrate with the proper hardware. See Power Rail Design Guidelines for more information.

The selection of attaching hardware is dependent on the roof substrate and site design conditions. Please consult the design manual for specifics. Instructions for attaching anchoring hardware to the roof or structure are available on an individual product basis.

A. Place the L-foot onto the PV Flash hanger bolt aligning it to the slot of the compression block.

B. Secure L-foot with 5/16" flat washer and hex nut. **Torque to 22-25 ft.-lbs.**

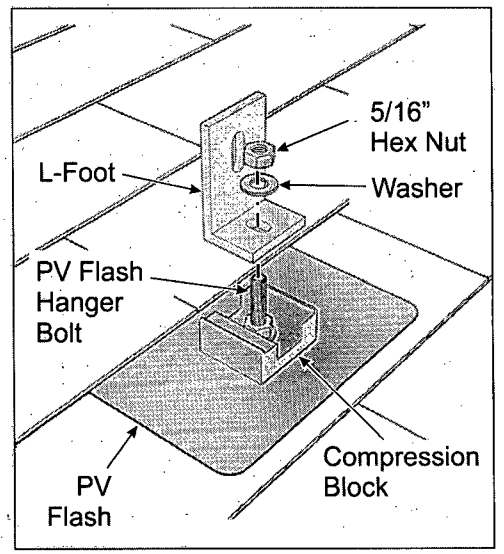


Figure 1-1: Attaching L-foot to the PV Flash

Step 2: Attach Power Rail to Roof Anchors

CAUTION:
Cantilever and span dimensions are a design specification. Consult the design manual to match these dimensions to site conditions. It's important to use the unique cantilever and span dimension specific to the install. Failure to do so could lead to excessive deflection and/or premature system failure.

The Power Rail is secured to the L-feet using a 5/16" x 3/4" *carriage bolt.* Hardware will vary depending on design-specific requirements.

The Power Rail overhangs beyond the outermost L-foot. This overhang is referred to as "cantilever, or abbreviated as "C'ver"". The length of cantilever is dependent on several factors and unique to each installation and is determined by the system design. The distance between adjacent L-feet is referred to as "Span". The length of span is dependent on several factors and unique to each installation and is determined by the system design.

A. Measure and mark the cantilever dimension supplied by design manual onto the Power Rail.

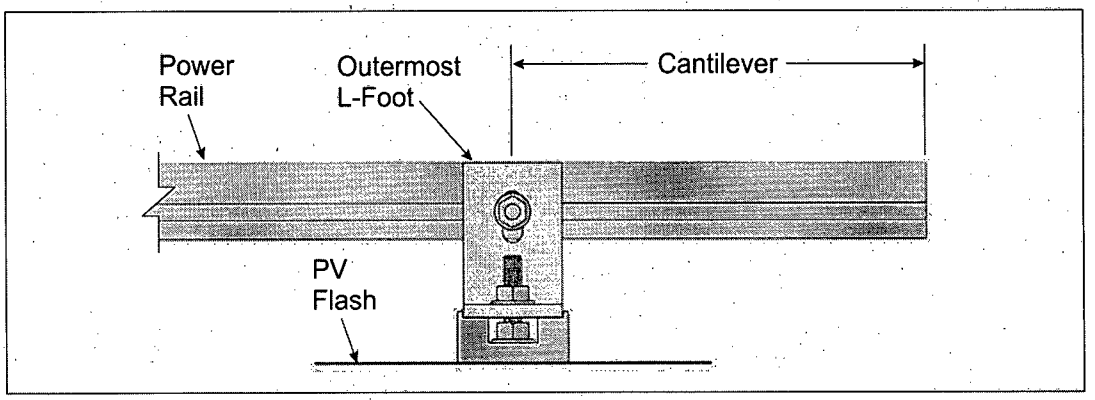


Figure 2-1: Cantilever Measurement and Marking

NOTE:
If using carriage bolts, be certain to slide the appropriate quantity of bolts into the Power Rail before both ends of the Power Rail have been secured.

NOTE:
Before tightening any flange nuts first install all bolts and flange nuts into L-feet along entire length of Power Rail. If tightened, the adjacent bolts cannot be passed into downstream L-feet.

B. Line up the mark with the center of the outermost L-foot.

C. Starting at the outermost L-foot mounting position, insert one 5/16" x ¾" bolt into the Power Rail.

D. Holding the Power Rail, line-up and insert the 5/16" x ¾" bolt into the L-foot and loosely secure with 5/16" flange nut. Do not tighten until all bolts have been positioned in the entire length of Power Rail and the bolts have been aligned and passed thru the L-feet and the flange nuts loosely started.

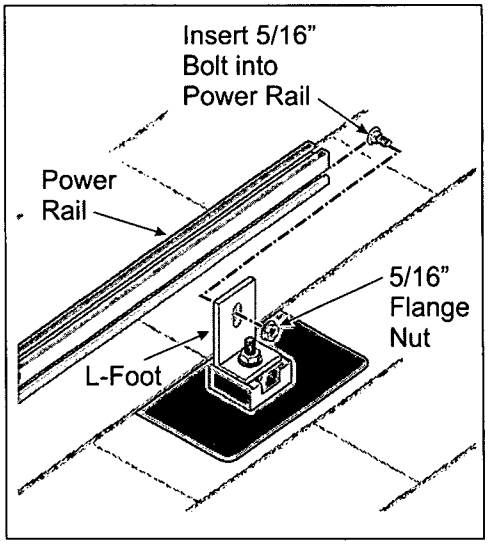


Figure 2-2: Attaching Power Rail to L-foot

E. Double-check that the cantilever mark is lined up with the center of the outermost L-foot. If needed , adjust its position to bring into alignment.

F. Double-check the cantilever alignment before tightening Power Rail to L-feet. Tighten all flange nuts and **Torque to 22-25 ft.-lbs.**

Step 3: Splicing Power Rail with Splice Plates

Splice Plates are used to butt-joint Power Rail sections and extend their length as needed. They are attached to the Power Rail using two 5/16" x 3/4" carriage bolts and flange nuts.

A. Insert one 5/16" x 3/4" carriage bolt into the end of each Power Rail section to be spliced.

B. Hold the two ends of Power Rail together.

C. Position the Splice Plate onto the Power Rail and the two carriage bolts.

D. Align the Splice Plate so that it's equally divided along the Power Rail butt-joint.

E. Secure the Splice Plate to Power Rails with two 5/16" flange nuts. **Torque to 22-25 ft.-lbs.**

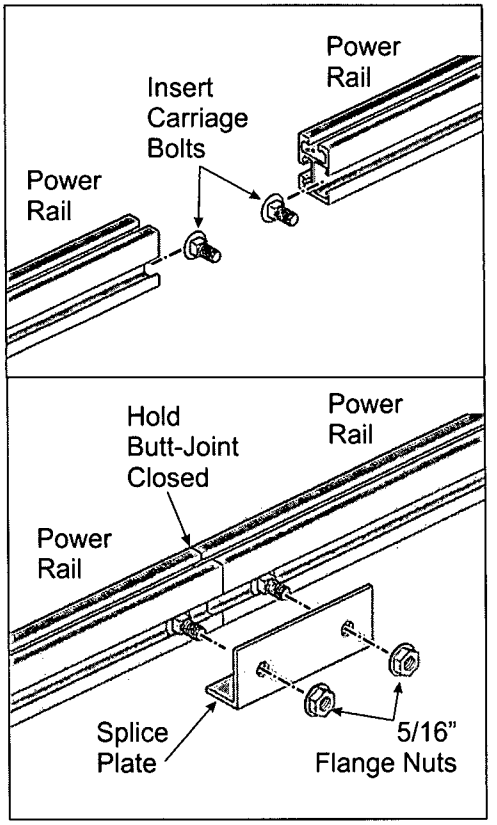


Figure 3-1: Splice Plate Installation

Step 3: Installing PV Modules to Power Rails with Module Clamps

WARNING:
This is a two person activity. In addition to working on a sloped rooftop PV Modules are heavy. One person should hold and align the modules while a second person secures modules with clamping hardware. Failure to do so could lead to serious personal injury and/or damaged components.

NOTE:
Hardware is dependent on particular features and system design therefore it may appear different from these instructions.

PV Modules are secured to the Power Rail using Mid Clamps and End Clamps, both use 5/16" bolts and flange nuts.

Start with an exterior PV Module. These instructions include three options of clamping hardware, they are "Universal End Clamp" (step B1), "Standard End Clamp" (step B2), or "RAD Clamps" (step B3).

A. Place exterior PV Module on two Power Rails, centering it lengthwise. Use a square to square-up Module to Power Rails.

B1. For use with "**Universal End Clamps**": Position Universal Clamp underneath module with notches facing the outside edge of the module, and rail centered between 'forks' of the clamp. Slide clamp notches towards module flange until the flange bottoms out in the notches. Tighten 5/16" bolt on bottom of universal end clamp. **Torque to 75-80 in.-lbs.** Repeat for both end clamps.

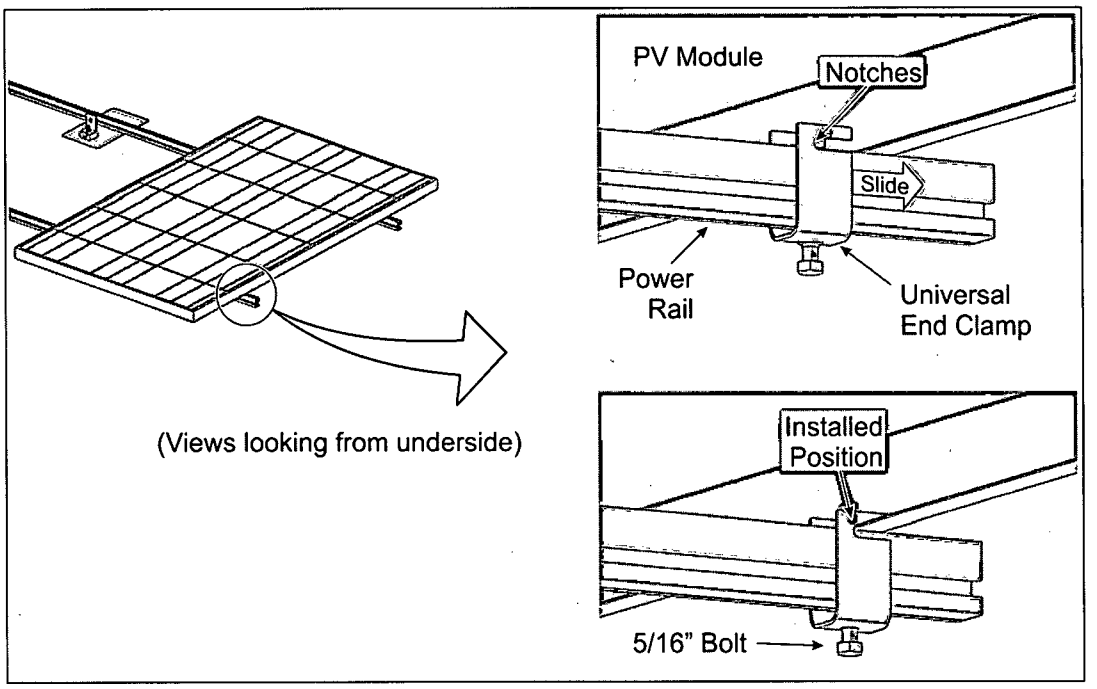


Figure 3-1: Installing PV Modules using Universal End Clamp

B2. For use with "**Standard End Clamps**". Insert one 5/16" x 2, 2 1/4 or 2 1/2" bolt into the top slot of the Power Rail. Push the bolt until flush with edge of module frame. Position end clamp with hole facing upwards and center hole over bolt. Seat end clamp over bolt flush with module frame. Thread 5/16" flange nut onto clamp and tighten. When desired alignment is obtained, tighten the nut and end clamp. **Torque End Clamps to 75-80 in.-lbs.** (figure 3-2)

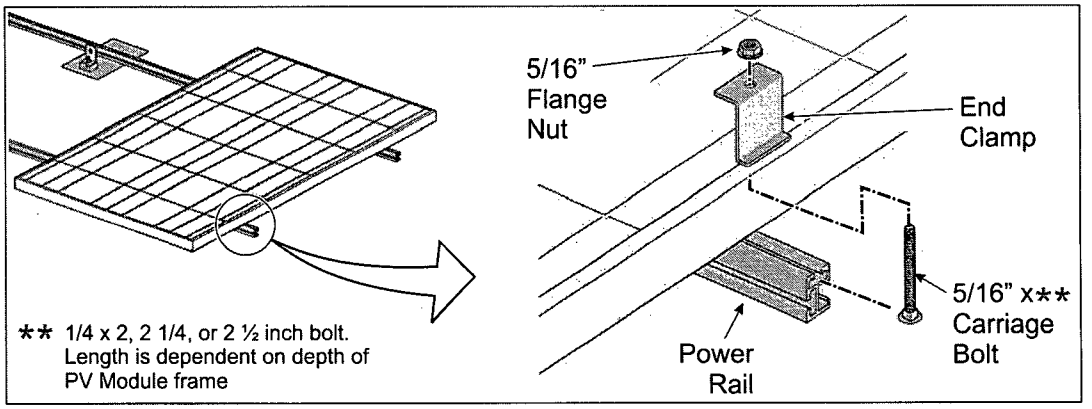


Figure 3-2: Installing PV Modules using Standard End-Clamp

B3. For use with "**RAD Hardware**" the process is much the same as in step B2 above, the difference is RAD bolts can be inserted anywhere along the run of Power Rail, not just the ends of the rail as shown in Figure 3-2 above.

Although this step demonstrates installing a *Mid-Clamp* the procedure for an *End-Clamp* is much the same when using RAD hardware.

Insert RAD bolt into Power Rail and rotate 90-degrees to lock into rail. Install module clamp (End or Mid-Clamp) onto bolt by aligning the flat portion of the clamp with that of the bolt. Thread 5/16" flange nut onto clamp and tighten. When desired alignment is obtained, tighten the nut and end clamp. **Torque End Clamps to 75-80 in.-lbs.**

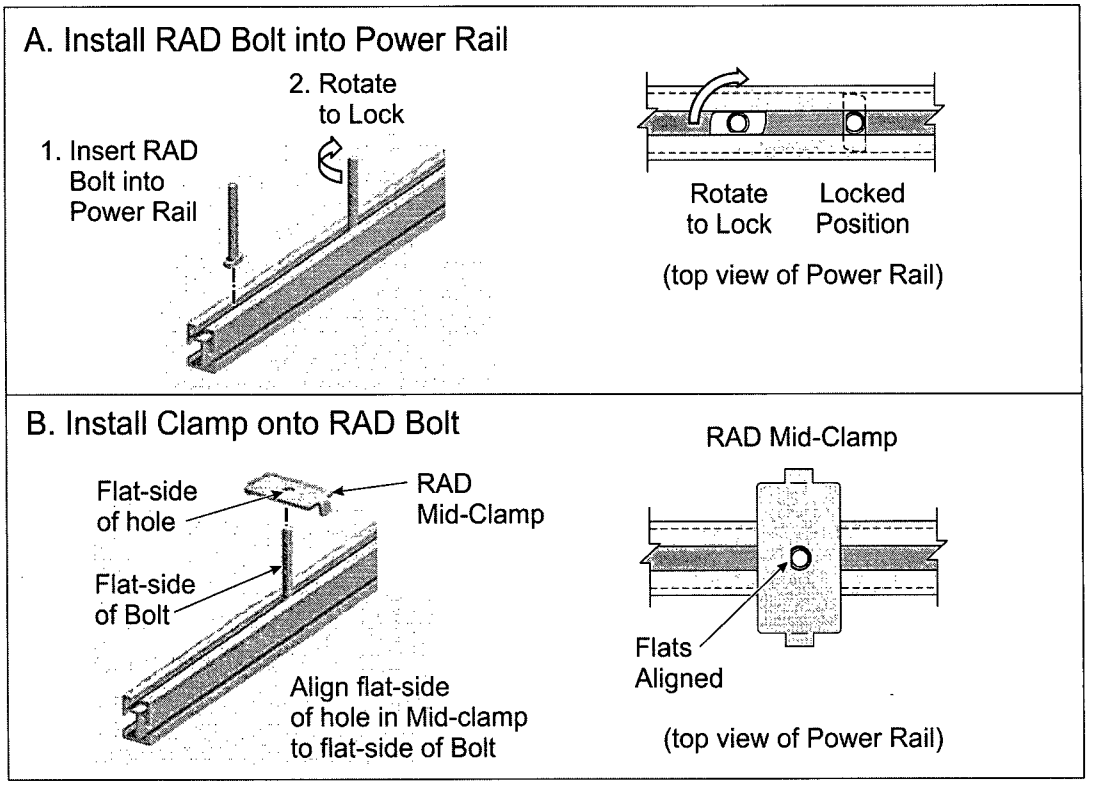


Figure 3-3: Installing PV Modules using RAD Hardware

NOTE:
If using standard 5/16" carraige bolts for Mid Clamps they must be inserted into Power Rail before installing interior PV Modules.

If using RAD hardware they can be inserted anytime at any position along the Power Rail.

Installing interior PV Modules.

A. Before placing an interior PV Module onto the Power Rails, first insert 5/16" x 2, 2 1/4, or 2 1/2 inch carriage bolts (bolt length is dependent on depth of PV Module frame) into the Module Rail, sliding the bolts inward adjacent to the previously installed exterior PV Module.

B. Slide the mid clamp fasteners to be flush with the edge of the installed module frame, opposite the end clamps.

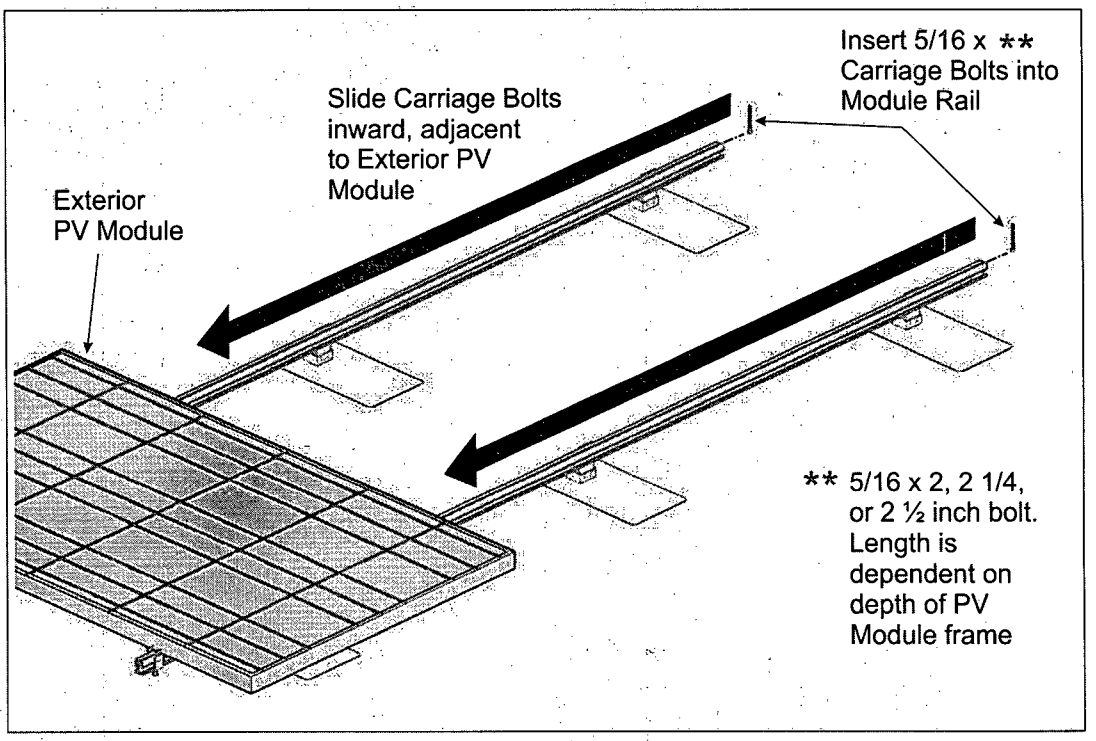


Figure 3-4: Inserting Mid Clamp Hardware into Power Rail

(continued on next page)

WARNING:
This is a two person activity. In addition to working on a sloped rooftop PV Modules are heavy. One person should hold and align the modules while a second person secures modules with clamping hardware. Failure to do so could lead to serious personal injury and/or damaged components.

WARNING:
Be certain that all Flange Nuts on End and Mid Clamps are tightened and torque to the stated values. Failure to do so could lead to serious personal injury and/or damaged components and property.

C. Place the interior PV Module onto the Power Rails, aligning it with the previously installed exterior PV Module. Positioning it adjacent to 5/16" bolts and the previously installed exterior PV Module.

D. Use a square to square-up Module to Power Rails.

E. Install one Mid Clamp on each of the 5/16" bolts that are between each of the interior PV Modules. Be sure that the tabs of the Mid Clamp rests between the two Modules. Secure each of the Mid Clamps with a 5/16" flange nut. **Torque Mid Clamps to 80-85 in.-lbs.**

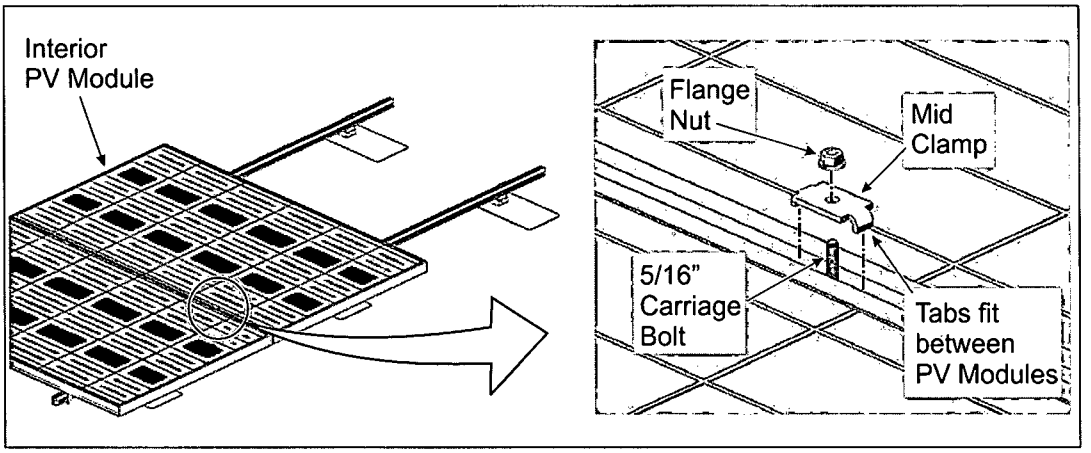


Figure 3-5: Inserting Mid Clamps

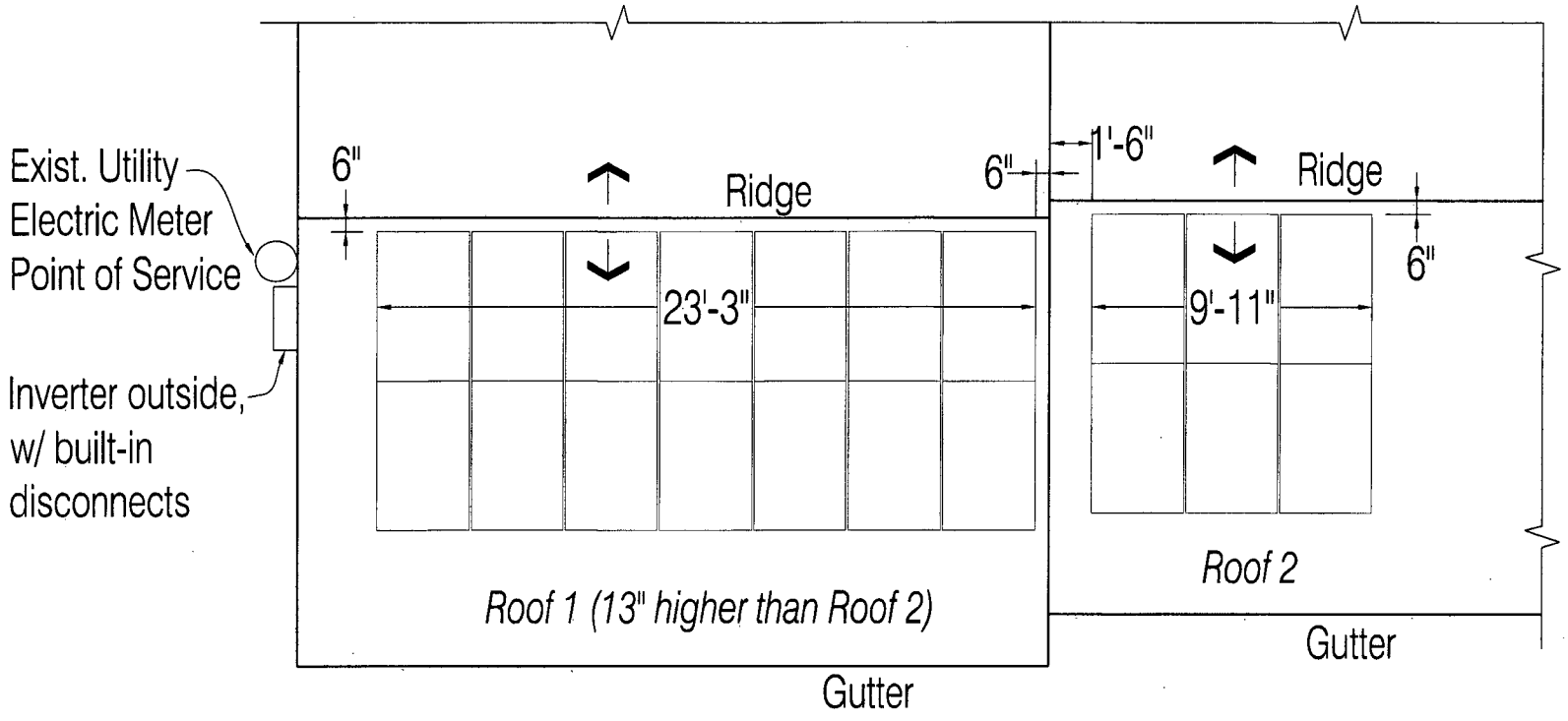
DPW SOLAR

PREFORMED LINE PRODUCTS

4000-B Vassar Drive NE
Albuquerque, New Mexico 87107
USA

Telephone: 800.260.3792
Fax: 505.889.3548
Web Site: www.DPWSolar.com
E-mail: info@power-fab.com

PCN 090310-1
Version 1, Rev C



SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

(1) SB-4000us W/ (2) Strings of (10) Panels

RACKING:

DPW Power Rail System

SOLAR ARRAY
158°

NOTES:

1. See specifications for additional information.
2. See electrical One-line drawing (PV-2) for wiring connections.
3. North arrow and Array orientation based on "True" direction (magnetic compass reading minus Magnetic Declination of 11 degrees equals true Array orientation (Azimuth) of 158 degrees.)

1 / PV-1 PLAN N.T.S.

Solar (Photovoltaic) Panel

Direction of Roof Slope

LEGEND:

GeoGenix, LLC
Leaders in Energy-Saving Design and Construction
GeoGenix, LLC
79 East River Road
Rumson, NJ 07760
(T) 732.895.9550
(F) 801.382.0751

STRUCTURAL ENGINEER:
Ascent Consulting
James A. Marx, P.E.
10 High Mountain Road
Ringwood, NJ 07456
(T) 973.557.6080

CUSTOMER:
Diane Collis Residence
128 John Street
Brick, NJ, 08724

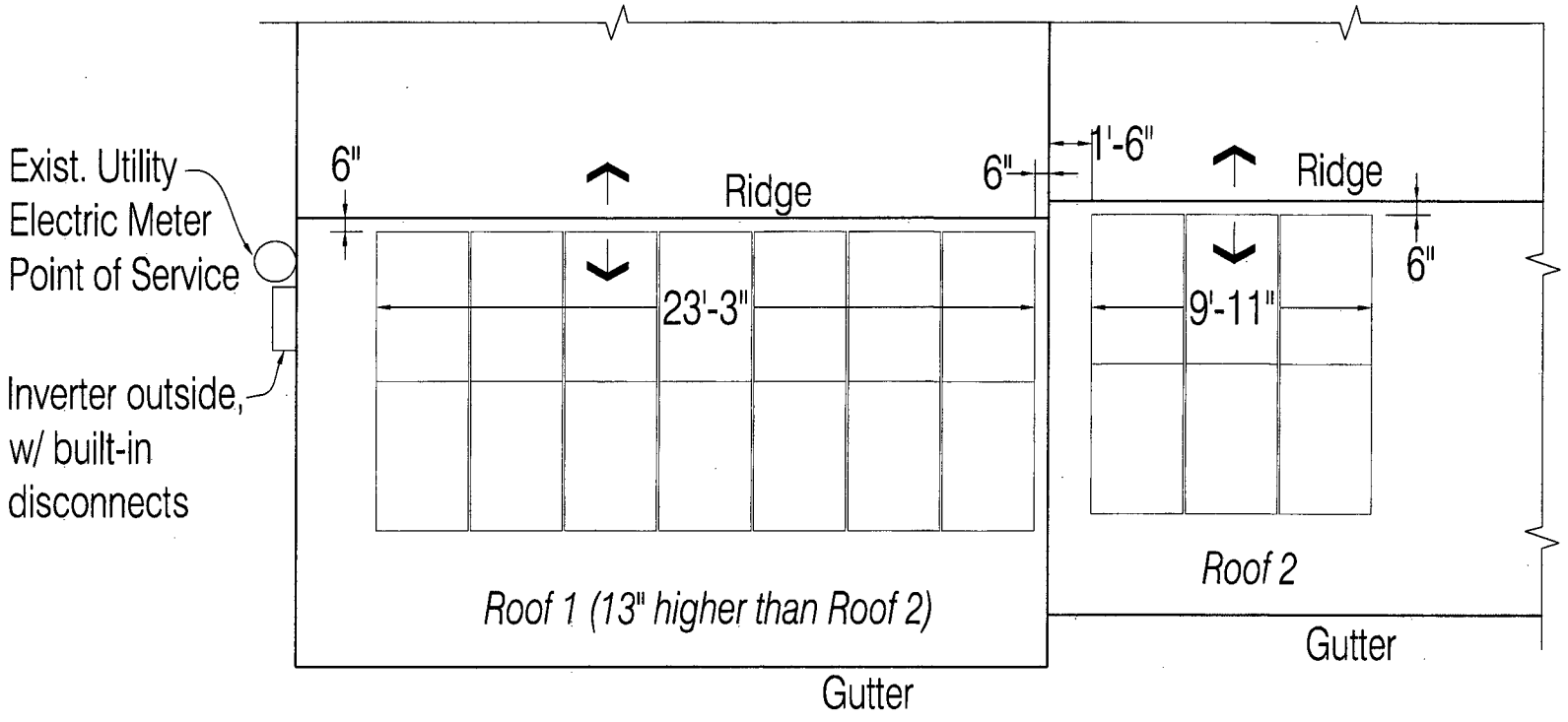
UTILITY COMPANY:
JCPL

UTILITY ACCOUNT #:
10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1



SOLAR PANEL ARRAY

Roof Pitch = 25°±

(20) TrinaSolar TSM PA05 230w panels (4.6 kW total)

INVERTER

(1) SB-4000us W/ (2) Strings of (10) Panels

RACKING:

DPW Power Rail System

SOLAR ARRAY
158°

NOTES:

1. See specifications for additional information.
2. See electrical One-line drawing (PV-2) for wiring connections.
3. North arrow and Array orientation based on "True" direction (magnetic compass reading minus Magnetic Declination of 11 degrees equals true Array orientation (Azimuth) of 158 degrees.)

1 / PV-1 PLAN N.T.S.

Solar (Photovoltaic) Panel

Direction of Roof Slope

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10 00 59 9522 6 5

SHEET:
PHOTOVOLTAIC SYSTEM
Solar Panel
Array Layout

PROJECT #:	DATE: 7/6/11
DRAWN BY: GLK	REV #:
SCALE: As Noted	

PV-1

GeoGenix
The Experts to Trust

7753

Payment
312.00
312.00

312.00

ute 18
08857

Brick Twp. Building Dept.
401 Chambers Bridge Road
Brick, NJ 08723

7/22/2011 Discount

Check Amount

Dear Building Department:

Please find a check for $312.00 (che ion of a photovoltaic (solar-electric) system c , Brick, NJ 08724 (Block 1170.04, Lot 3).

Balance Due 312.00

Please mail the Permit Approval "pa velope.

Original Amt. 312.00

Should you have any questions, ple this application so quickly, it is very muc

GeoGenix, LLC
Brick Township
Date Type Reference
7/22/2011 Bill Collis Permit Fee

GeoGenix TD Bank C Collis Permit Fee

KU
MATH. REA

Please re
permits w/ enclosed
envelope. Thank you!

Kumon of Howell
4242 Route 9 South • Howell, New Jersey 07731
732-889-4385 • www.kumonhowellnj.com

CONSTRUCTION PERMIT

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 3 Qualification Code

Work Site Location 128 Jona St. Brick, NJ 08724

Owner in Fee Diane Collis

Address Same as above

Tel. [redacted]

Contractor GeoGenix, LLC

Address 8998 Route 18 Old Bridge, NJ 08857

Tel. (732) 761-8841

Lic. No. or Bldrs. Reg. No. I3VH02387400

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 **Solar Panels**

DESCRIPTION OF WORK:

Install 20 solar electric panels on roof.

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 $ 21,850—

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

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

(see reverse side)

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. 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

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 3 Qualification Code

Work Site Location 128 Jona ST. Brick NJ 08724

Owner in Fee Diane Collis

Address Same as above

Tel. [redacted]

Contractor GeoGenix, LLC

Address 8998 Route 18 Old Bridge, NJ 08857

Tel. (732) 761-8841

Lic. No. or Bldrs. Reg. No. I3VH02387400

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 Solar Panels

DESCRIPTION OF WORK:

Install 20 solar electric panels on roof.

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 $ 21,850-

Construction Official

Date

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

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)

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. 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.

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

NEW JERSEY UNIFORM CONSTRUCTION CODE

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 1170.04 Lot 3 Qualification Code ______

Work Site Location [illegible]

[illegible]

Owner in Fee [illegible]

Address Same as above

Contractor GeoGenix, LLC

Address 8998 Route 18

Old Bridge, NJ 08857

Tel. (732) 761-8841

Lic. No. or Bldrs. Reg. No. I3VH02387400

[redacted] llowing work:

[✓] BUILDING [ ] PLUMBING [ ] LEAD HAZARD ABATEMENT

[✓] ELECTRICAL [ ] FIRE PROTECTION [ ] DEMOLITION

[ ] ELEVATOR DEVICES [ ] ASBESTOS ABATEMENT (Subchapter 8 only) [✓] OTHER Solar Panels

DESCRIPTION OF WORK:

Install 20 solar electric panels on roof.

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 $ 21,550—

Construction Official

Date

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

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)

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3. Utility services, including septic.
4. 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.

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

CONSTRUCTION PERMIT

Date Issued

Permit #

IDENTIFICATION Block 1110.04 Lot 3 Qualification Code

Work Site Location

Owner in Fee

Address

Tel. ( )

Contractor GeoGenix, LLC

Address 8998 Route 18
Old Bridge, NJ 08857

Tel. (732) 761-8841

Lic. No. or Bldrs. Reg. No. I3VH02387400

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 Solar Panels

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

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

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)

REQUIRED INSPECTIONS

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