



CONSTRUCTION PERMIT APPLICATION

C-17-001377

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

I. IDENTIFICATION

1. Proposed Work Site at: 574 Alabama Ave., Brick, NJ 08724

2. Name of Owner in Fee: George Jones

Tel. [redacted] e-mail [redacted]

Address 574 Alabama Ave., Brick, NJ 08724

3. Ownership in Fee: Public ☒ Private ☐ XXXX

4. Principal Contractor: SolarCity Corporation Tel. (609) 642-9018

Address 9 Corporate Drive Cranbury, NJ 08512 e-mail mheminghaus@solarcity.com

License No. OR, if new home, Builder Reg. No. 13VH06160600 Exp. Date 03/31/2017

Home Improvement Contractor Registration No. or Exemption Reason

Federal Emp. ID No. 020781046 FAX: (609) 269-2166

5. Architect or Engineer SolarCity Corporation Contact Marcus Hecht-Nelson

Address 9 Corporate Dr, Cranbury, NJ 08512 e-mail mhechtnielsen@ SolarCity.com

Tel. (609) 642-9018 FAX: (609) 269-2166

6. Responsible Person in Charge once Work has Begun SolarCity - Melanie Heminghaus

Tel. (609) 642-9018 FAX: (609) 269-2166

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$ 150		
2. Electrical	\$ 240		
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	\$		
8. Subtotal	\$ 19		
9. State Permit Surcharge Fee	\$ 15		
10. Subtotal	\$ 2		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$ 484		

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	
2. Height of Structure	
3. Area — Largest Floor No Change	7.5 sq. ft.
4. New Building Area Solar Array =	7.450 sq. ft.
5. Volume of New Structure N/A	cu. ft.
6. Max. Live Load N/A	
7. Max. Occupancy Load N/A	
8. If Industrialized Building: State Approved HUD	
9. Total Land Area Disturbed	sq. ft.
10. Flood Hazard Zone N/A	
11. Base Flood Elevation N/A	ft.
12. Wetlands yes no X	

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)

	Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates	Re-viewer
☒ Building	2,970	CW	3/31/17		4-18-17	JOP		
☒ Electrical	6,930				4-14-17	M		
☐ Plumbing								
☐ Fire Protection								
☐ Elevator								
TOTAL COST \$9,900		Eng Exempt 4/11/17 ecc						

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: SFH

2. Use Group, Proposed: Select Group

3. Change in Use Group, Indicate Prese Select Group

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: Select Group Select Group

3. Change in Use Group, Indicate Present

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

D. Construct. Classification: Present Proposed

III. PLAN REVIEW (optional)

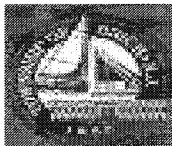
DO YOU WANT:

1. ☐ Partial Releases

2. ☐ Prototype Processing

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

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



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 5/26/2017
Control Number C-17-001377
Permit Number 17-1330
Permit Issue Date 4/27/2017
Certificate Number 17-1330

Certificate

Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 574 ALABAMA AVE. Brick Township, NJ Block: 1413.11 Lot: 70 Qual: _____
Owner in Fee: JONES, GEORGE
Owner Address: 574 ALABAMA AVE BRICK NJ 08724
Telephone: [REDACTED]
Contractor SOLAR CITY CORPORATION
Address 9 CORPORATE DR. CRANBURY NJ 08512
Telephone: (609) 642-9018 Fax: (609) 269-2166
License Number or Builders Registration Number: 34EB01732700 Federal Emp. Number: 020781046
13VH06160600

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: R-5 Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: SOLAR PANELS ...INSTALL 7.5 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

Certificate Comments:

☐ **Certificate of Occupancy**

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

☒ **Certificate of Approval**

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

☐ **Certificate of Continued Occupancy**

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

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:

This certificate has an expiration date of:

Conditions to be met:

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

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

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

☐ **Certificate of Clearance - Asbestos Abatement**

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

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

☐ **Certificate of Compliance**

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

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate:

This certificate has an expiration date of:

Conditions to be met:


Construction Official

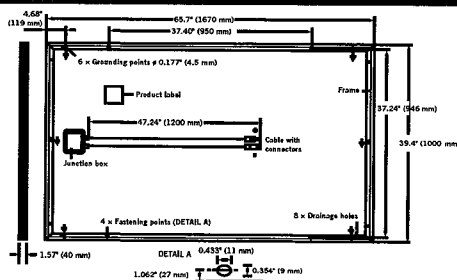
Fee: \$0.00

Check Number: _____

Collected By: _____

MECHANICAL SPECIFICATION

Format	65.7 in x 39.4 in x 1.57 in (including frame) (1670 mm x 1000 mm x 40 mm)
Weight	44.09 lbs (20.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 x 10 monocrystalline Q.ANTUM ULTRA solar cells
Junction box	2.60-3.03 in x 4.37-3.54 in x 0.59-0.75 in (66-77 mm x 111-90 mm x 15-19 mm), Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) 47.24 in (1200 mm), (-) 47.24 in (1200 mm)
Connector	Multi-Contact MC4, IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS			295	300	305
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)					
Minimum	Power at MPP ²	P _{MPP} [W]	295	300	305
	Short Circuit Current*	I _{SC} [A]	9.70	9.77	9.84
	Open Circuit Voltage*	V _{OC} [V]	39.48	39.76	40.05
	Current at MPP*	I _{MPP} [A]	9.17	9.26	9.35
	Voltage at MPP*	V _{MPP} [V]	32.19	32.41	32.62
	Efficiency ²	η [%]	≥ 17.7	≥ 18.0	≥ 18.3
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC ³					
Minimum	Power at MPP ²	P _{MPP} [W]	218.1	221.8	225.5
	Short Circuit Current*	I _{SC} [A]	7.82	7.88	7.94
	Open Circuit Voltage*	V _{OC} [V]	36.92	37.19	37.46
	Current at MPP*	I _{MPP} [A]	7.20	7.27	7.35
	Voltage at MPP*	V _{MPP} [V]	30.30	30.49	30.67

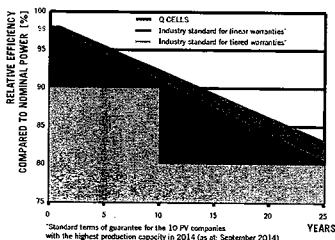
¹1000 W/m², 25 °C, spectrum AM 1.5G

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

³800 W/m², NOCT, spectrum AM 1.5G

* typical values, actual values may differ

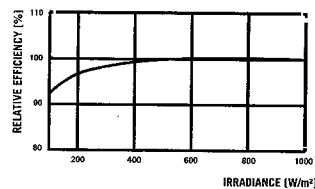
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.6% degradation per year. At least 92.6% of nominal power up to 10 years. At least 83.6% of nominal power up to 25 years.

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

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.28
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.39	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

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

QUALIFICATIONS AND CERTIFICATES

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



PACKAGING INFORMATION

Number of Modules per Pallet	26
Number of Pallets per 53' Container	32
Number of Pallets per 40' Container	26
Pallet Dimensions (L x W x H)	68.7 in x 45.3 in x 46.1 in (1745 mm x 1150 mm x 1170 mm)
Pallet Weight	1254 lbs (569 kg)

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

Hanwha Q CELLS America Inc.

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

Specifications subject to technical changes © Hanwha Q CELLS Q.PEAK-G4.1_SC_295-305-2016-08_Rev01_NA

powered by
Q.ANTUM

Q.PEAK-G4.1/SC 295-305

Q.ANTUM ULTRA SOLAR MODULE

The new high-performance module Q.PEAK-G4.1/SC is the ideal solution for all applications thanks to its innovative cell technology Q.ANTUM ULTRA and a black Zep Compatible™ frame design for improved aesthetics, easy installation and increased safety. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 18.6%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



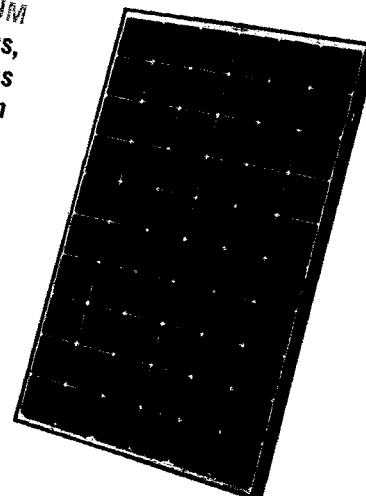
ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology¹, Hot-Spot-Protect and Traceable Quality Tra.Q™.



A RELIABLE INVESTMENT

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



QCELLS
Best polycrystalline
solar module 2014
LP80-G2 235
174 modules tested

THE IDEAL SOLUTION FOR:



Rooftop arrays on
residential buildings

Engineered in **Germany**

¹ APT test conditions: Cells at -1500V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h
² See data sheet on rear for further information.

QCELLS

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 SolarCity - Melanie Heminghaus

Address 9 Corporate Dr Cranbury NJ 08512

Telephone 609 642 9018

Signature [Signature]

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

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



ELECTRICAL SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION, WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.
Block 1413.11 Lot 70 Qualification Code _____

Work Site Location 574 Alabama Ave., Brick, NJ 08724

Owner in Fee: George Jones

Tel. _____ e-mail _____

Address 574 Alabama Ave., Brick, NJ 08724

street

municipality

zip code

Contractor: SolarCity Corporation

Tel. (609) 642-9018

Address 9 Corporate Drive

e-mail mheminghaus@solarcity.com

Cranbury, NJ 08512

Contractor License No. 34EI01732700

Exp. Date 03/31/18

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

Federal Emp. ID No. 020781046

FAX: (609) 269-2166

B. ELECTRICAL CHARACTERISTICS

Use Group Present SFD Proposed No Change

☐ Pole/Pad # _____ ☐ Temporary ☐ Other _____

Building Occupied as _____ Utility Co. PSE&G

Est. Cost of Elec. Work \$ 6,930

JOB SUMMARY (Office Use Only)

PLAN REVIEW

☐ No Plans Required

☐ Partial - Underslab Utilities Approved

Date: _____ Approved by: _____

☒ Electric Plans Approved

Date: 4-14-17 Approved by: WM

Joint Plan Review Required:

☐ Bldg. ☐ Plumb. ☐ Fire. ☐ Elev. Service

SUBCODE APPROVAL for PERMIT

Date: 4-14-17

Approved by: WM

SUBCODE APPROVAL for CERTIFICATE

☐ CO ☐ CCO ☒ CA

Date: 5-24-18

Approved by: WM

INSPECTIONS

Type: _____

Rough _____

Barrier-Free _____

Trench _____

Temp. Serv. _____

Constr. Serv. _____

TCO _____

Other _____

Service _____

Barrier-Free _____

Temp. Cut-In-Card Date Issued _____

Final Cut-In-Card Date Issued _____

Annual Pool Inspection _____

Date of Grounding and Bonding _____

Certification _____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner, architect, and/or authorized to make this application and perform the work listed on this application.
Applicant sign/Contractor sign and seal here:

Print name here: Javier Hurtado

☒ Licensed Elec. Contractor ☐ Certif'd Landscape Irrigation Contractor ☐ Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:

Install sleekmount (rail-less) system for (25) solar panels

QTY. _____ SIZE _____

ITEMS _____

Lighting Fixtures _____

Receptacles _____

Switches _____

Detectors _____

Light Poles _____

Motors—Fract. HP _____

Emergency & Exit Lights _____

Communications Points _____

Alarm Devices/F.A.C. Panel _____

TOTAL NUMBERS _____

Pool Permit/with UV 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 _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

AMP _____

Date Received _____

Control # _____

Date Issued _____

Permit # _____



BUILDING SUBCODE TECHNICAL SECTION



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

Block 1413.11 Lot 70 Qualification Code _____
Work Site Location 574 Alabama Ave., Brick, NJ 08724

Owner: George Jones

Tel. _____ e-mail _____

Address 574 Alabama Ave., Brick, NJ 08724

Contractor: SolarCity Corporation

Address 9 Corporate Drive

Cranbury, NJ 08512

Contractor License No. or Builder Registration No. 13VH06160600

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

Federal Emp. ID No. 020781046

FAX: (609) 269-2166

Exp. Date 03/31/2017

JOB SUMMARY (Office Use Only)

PLAN REVIEW

Date _____

INSPECTIONS

Dates (Month/Day)

Initial

☐ No Plans Required

4-18-17

Type:

Failure

Approval

☒ All

5/18/17

Footings

Failure

Approval

☐ Footings/Foundations

5/18/17

Footings Bonding

Failure

Approval

☐ Structural/Framework

5/18/17

Foundation

Failure

Approval

☐ Exterior

5/18/17

Slab

Failure

Approval

☐ Interior

5/18/17

Truss Sys./Bracing

Failure

Approval

☐ Joint Plan Review Required:

5/18/17

Barrier-Free

Failure

Approval

☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator

5/18/17

Insulation

Failure

Approval

☐ SUBCODE APPROVAL FOR PERMIT

5/18/17

Finishes -Base Layer

Failure

Approval

☐ SUBCODE APPROVAL FOR CERTIFICATE

5/18/17

Finishes -Final

Failure

Approval

☐ Approved by: _____

5/18/17

Energy

Failure

Approval

☐ SUBCODE APPROVAL FOR CERTIFICATE

5/18/17

Mechanical

Failure

Approval

☐ CO ☐ CCO

5/18/17

TCO

Failure

Approval

☐ Date: _____

5/18/17

Other

Failure

Approval

☐ Approved by: _____

5/18/17

Barrier-Free

Failure

Approval

☐ B. BUILDING CHART

5/18/17

Barrier-Free

Failure

Approval

☐ Use Group Present

5/18/17

Barrier-Free

Failure

Approval

☐ No. of Stories _____

5/18/17

Barrier-Free

Failure

Approval

☐ Height of Structure _____

5/18/17

Barrier-Free

Failure

Approval

☐ Area - Largest Floor _____

5/18/17

Barrier-Free

Failure

Approval

☐ New Bldg. Area/All Floors _____

5/18/17

Barrier-Free

Failure

Approval

☐ Volume of New Structure _____

5/18/17

Barrier-Free

Failure

Approval

☐ Max. Live Load _____

5/18/17

Barrier-Free

Failure

Approval

☐ Max. Occupancy Load _____

5/18/17

Barrier-Free

Failure

Approval

C. CERTIFICATION IN LIEU OF OATH

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

Sign here: _____

Print name here: Melanie Hemminghaus

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Install sleekmount (rail-less) system for (25) solar panels

TYPE OF WORK:

☐ New Building

☐ Addition

☐ Rehabilitation

☐ Roofing

☐ Siding

☐ Fence _____

☐ Sign _____

☐ Pool

☐ Retaining Wall _____

☐ Asbestos Abatement Subchapter 8

☐ Lead Haz. Abatement NJAC 5:17

☐ Radon Remediation

☒ Other Solar Panels

☐ Demolition

FEE (Office Use Only)

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

Date Received

4/27/17

Control #

Date Issued

Permit #

17-1330



CONSTRUCTION PERMIT

4/27/17
Date Issued
Control # C-17-001377
Permit # 17-1330

IDENTIFICATION Block: 1413.11 Lot: 70 Qualifier
Work Site Location: 574 ALABAMA AVE Brick Township, NJ Contractor: SOLAR CITY CORPORATION
Address: 9 CORPORATE DR. CRANBURY NJ 08512
Owner in Fee: JONES, GEORGE
574 ALABAMA AVE BRICK NJ 08724 Telephone: (609) 642-9018
Telephone: [REDACTED] Lic. No. or Bldrs. Reg. No. 13VH06160600 34EB01732700
Federal Employee No. 020781046

Is hereby granted permission to perform the following work:

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

DESCRIPTION OF WORK:

SOLAR PANELS ...INSTALL 7.5 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

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

Estimated Cost of Work \$9,900

Construction Official

Date

4/19/17

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

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$150
Electrical	\$240
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$19
CO Fee	
Other	\$0
Total	\$409
Check No.	706601
Cash	\$0
Credit	\$0
Collected By	M. Fugere

REQUIRED INSPECTIONS

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

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

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

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

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

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

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

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

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

ENGINEERING PERMIT APPLICATION

RECEIVING CLERK: _____
PERMIT #: _____

BLOCK: 1413.11 LOT: 70 ADDRESS: 574 Alabama Ave.

IDENTIFICATION:

1. WORK SITE ADDRESS: 574 Alabama Ave, Brick, NJ 08724

2. NAME OF OWNER IN FEE: George Jones

ADDRESS: 574 Alabama Ave.

PHONE #: ()

Brick, NJ 08724

FAX #: ()

3. PRINCIPAL CONTRACTOR: SolarCity Corporation

ADDRESS: 9 Corporate Drive

PHONE #: () 609-642-9018

Cranbury NJ 08512

FAX #: () 609-269-2166

4. ARCHITECT OR ENGINEER: SolarCity Corporation

ADDRESS: 9 Corporate Drive Cranbury NJ PHONE: # () 609-642-9018

5. RESPONSIBLE PERSON FOR WORK: SolarCity - Melanie Hemminghaus

ADDRESS: 9 Corporate Drive, Cranbury NJ 08512

PHONE #: () 609-642-9018

FAX #: () 609-269-2166

E-MAIL: mhemminghaus@solarcity.com

PROJECT DESCRIPTION: ☐ GRADING/CLEARING ☐ ROAD OPENING

☐ SOIL REMOVAL/FILL ☐ RETAINING WALL ☐ POOL

☐ BULKHEAD/DOCK ☐ DWELING ☐ TREE REMOVAL

☒ OTHER Rooftop solar panels

LENGTH: WIDTH: HEIGHT:

ENGINEERING REVIEW:

DATE RECEIVED: DATE REJECTED: DATE APPROVED: INITIALS:

FEE SUMMARY:

APPLICATION FEE: \$

REVIEW FEE: \$

INSPECTION FEE: \$

OTHER: \$

BOND(S): \$

TOTAL: \$

SPECIAL CONDITIONS:

OCEAN COUNTY SOILS: _____

DRAINAGE EASEMENTS: _____

UTILITY EASEMENTS: _____

CONSERVATION EASEMENTS: _____

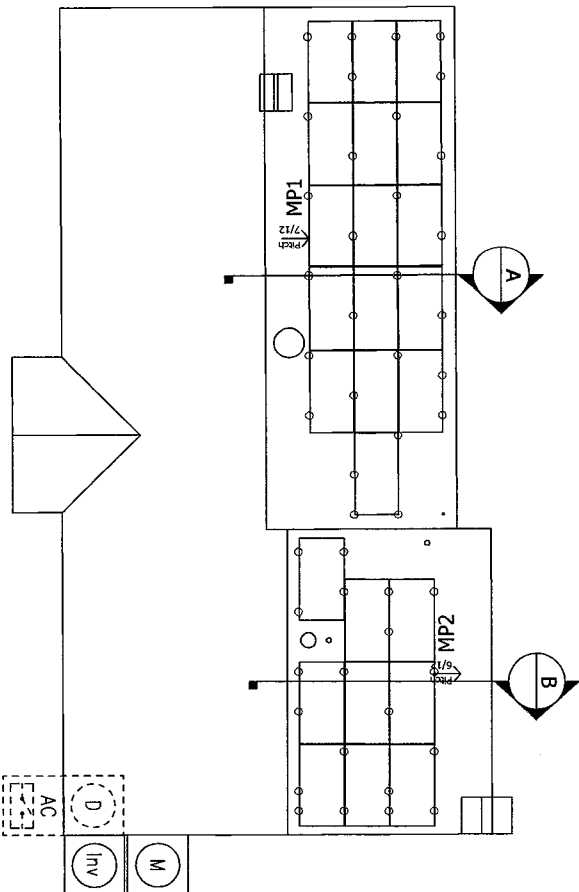
FEMA REQUIREMENTS: _____

D.E.P. PERMITS: _____

BOARD APPROVAL: ☐ PB ☐ ZB

APPLICATION NUMBER: _____

APPROVED DATE: _____



**Zoning Review
Approval**

By Eric Solar array
Date: 4-7-17

Front Of House

Digitally signed by
Marcus Hecht-Nielsen
Date: 2017.03.21
13:36:17 -07'00'

CONFIDENTIAL - THE INFORMATION HEREIN CONTAINED SHALL NOT BE USED FOR THE BENEFIT OF ANYONE EXCEPT SOLARITY INC. NOR SHALL IT BE DISCLOSED IN WHOLE OR IN PART TO ANY OTHER PERSON OR ORGANIZATION EXCEPT IN CONNECTION WITH THE SALE AND USE OF THE RESPECTIVE SOLARITY EQUIPMENT, WITHOUT THE WRITTEN PERMISSION OF SOLARITY INC.

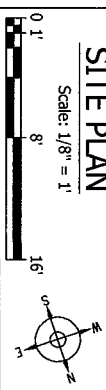
JOB NUMBER: JB-0871081 00
WORKING SYSTEM:
ZS Comp V4 w Flushing-Insert
MODULES:
(25) Homwind Q-Cells # QPEAK-Q4.1/SC300
INVERTER:
Delta # Soliva 6.6 TL

PROJECT OWNER:
GEORGE JONES
574 ALABAMA AVE
BRICK, NJ 08724

DESCRIPTION:
George Jones RESIDENCE
7.5 KW PV ARRAY
PANEL MAKE:
SITE PLAN

DESIGN:
Alfonso Maximiliano Ceballos
SHEET:
PV 2
REV: DATE:
3/21/2017

SolarCity
SolarCity
11600 128th Ave SE
Bellevue, WA 98005
T: (800) 533-1029 F: (800) 533-1029
(800) 533-0171 (755-2459) www.solarcity.com



SITE PLAN
Scale: 1/8" = 1'



LEGEND

- (E) UTILITY METER & WARNING LABEL
- INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS
- DC DISCONNECT & WARNING LABELS
- AC DISCONNECT & WARNING LABELS
- DC JUNCTION/COMBINER BOX & LABELS
- DISTRIBUTION PANEL & LABELS
- LOAD CENTER & WARNING LABELS
- DEDICATED PV SYSTEM METER
- RAPID SHUTDOWN
- STANDOFF LOCATIONS
- CONDUIT RUN ON EXTERIOR
- CONDUIT RUN ON INTERIOR
- GATE/FENCE
- HEAT PRODUCING VENTS ARE RED
- INTERIOR EQUIPMENT IS DASHED



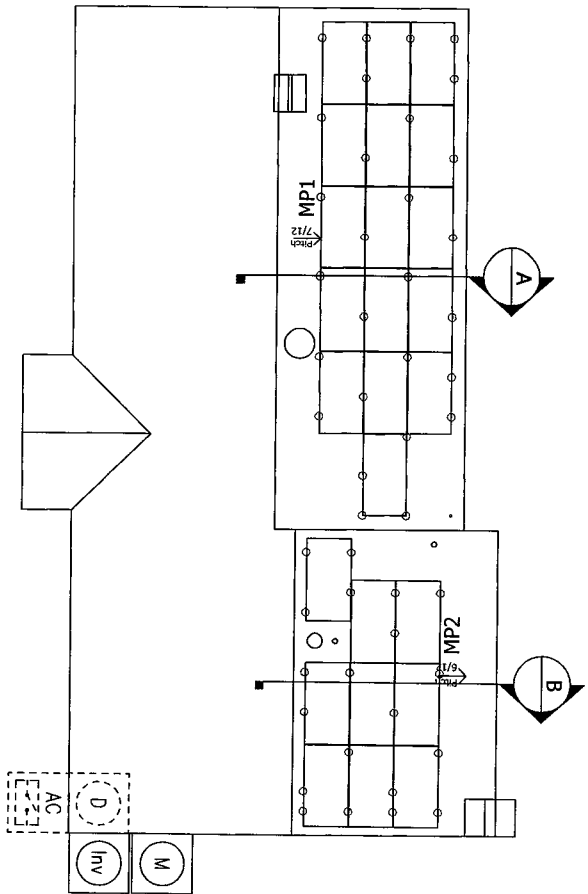
CONFIDENTIAL - THE INFORMATION HEREIN CONTAINED SHALL NOT BE USED FOR THE BENEFIT OF ANYONE EXCEPT SOLARCITY INC. NOR SHALL IT BE DISCLOSED IN WHOLE OR IN PART TO OTHERS OUTSIDE THE RECIPIENT'S COMPANY WITHOUT THE WRITTEN PERMISSION OF SOLARCITY INC.

JOB NUMBER: JB-0871081 00
 DRAWING: ZS Comp V4 w Flashing-Insert
 ADDRESS: (25) Homing Q-Calls # QPEAK-GA1/SC300
 PROJECT: Delto # Solivio 6.6 TL

PROJECT OWNER: GEORGE JONES
 574 ALABAMA AVE
 BRICK, NJ 08724
 PROJECT NAME: George Jones RESIDENCE
 7.5 kW PV ARRAY
 SITE PLAN

DESIGNER: Alfonso Mexilitiano Cabellos
 SHEET: PV 2
 REV: 3/21/2017

3055 Chandler Hwy
 San Mateo, CA 94402
 (650) 638-1028 F: (650) 638-1029
 (800)-500-0171 (705)-2689 www.solarcity.com



Front Of House

Digitally signed by
 Marcus Hecht-Nielsen
 Date: 2017.03.21
 13:36:17 -07'00'

SITE PLAN

Scale: 1/8" = 1'



LEGEND

- (E) UTILITY METER & WARNING LABEL
- INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS
- DC DISCONNECT & WARNING LABELS
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- HEAT PRODUCING VENTS ARE RED
- INTERIOR EQUIPMENT IS DASHED



03/21/2017

MP1	PITCH: 28	ARRAY PITCH: 28
	AZIMUTH: 288	ARRAY AZIMUTH: 288
	MATERIAL: Comp Shingle	STORY: 1 Story
MP2	PITCH: 26	ARRAY PITCH: 26
	AZIMUTH: 288	ARRAY AZIMUTH: 288
	MATERIAL: Comp Shingle	STORY: 1 Story

NOT AN
ELECTRICIAN'S
OR PLUMBER'S
LICENSE

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

THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs

HAS REGISTERED

SolarCity Corporation
Lyndon Rive
3055 Clearview Way
San Mateo CA 94402

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

02/20/2016 TO 03/31/2017
VALID

Signature of Licensee/Registrant/Certificate Holder

13VH06160600
LICENSE/REGISTRATION/CERTIFICATION #

ACTING DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
DIVISION OF CONSUMER AFFAIRS
HAS REGISTERED

SolarCity Corporation
Home Improvement Contractor

NOT AN ELECTRICIAN'S OR PLUMBER'S LICENSE

02/20/2016 TO 03/31/2017

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

PLEASE DETACH HERE

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

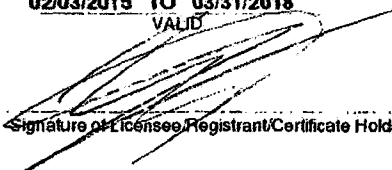
THIS IS TO CERTIFY THAT THE
Board of Exam. of Electrical Contractors

HAS LICENSED

**SOLAR CITY CORPORATION
JAVIER HURTADO
9 Corporate Drive
Cranbury NJ 08512**

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

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


Signature of Licensee/Registrant/Certificate Holder

**34EB01732700
LICENSE/REGISTRATION/CERTIFICATION #**


ACTING DIRECTOR

RECEIVING CLERK 1/16/17
DATE REC'D 3/31/17

ZONING PERMIT APPLICATION

PERMIT # 2D-17-0056
DATE ISSUED 4/27/17

BLOCK: 1413.11 LOT: 70

QUALIFIER: _____ SITE ADDRESS: _____

574 Alabama Ave.

IDENTIFICATION:

George Jones

1. NAME OF OWNER IN FEE: _____
COMPLETE ADDRESS: 547 Alabama Ave, Brick NJ 08724

PHONE: _____ EMAIL: _____

2. NAME OF APPLICANT: Melanie Heminghaus(SolarCity)
APPLICANT ADDRESS: 9 Corporate Drive
Cranbury, NJ 08512

PHONE # 609-642-9018 EMAIL: mheminghaus@Solarcity.Com

3. RESPONSIBLE PERSON FOR WORK: Melanie Heminghaus-SolarCity
PHONE# 609-642-9018 FAX# 609-266-2166

4. SIGNATURE OF APPLICANT: _____

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: \$ 75
OTHER: \$ _____
TOTAL: \$ 75

REQUIRED BY APPLICANT

RESIDENTIAL: X
COMMERCIAL: _____
EXISTING USE: SFD
PROPOSED USE No change

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 Panels

DESCRIPTION: Install (25) on existing SFD, flush with roof, 5 inches above roof, will not exceed roof ridge in elevation.

ZONING REVIEW:

DATE REVIEWED: 4-7-17 DATE DENIED: _____ DATE APPROVED: 4-7-17 INTLS: aw

(SEE BACK PAGE)



Brick Township
401 Chambers Bridge Rd.

Brick, NJ 08723
(732) 262-1336

Date Issued: 4/27/17
Application Number: ZA-17-00433
Application Date: 04/07/2017
Project Number: _____
Permit Number: 2P-17-00516
Fee: \$75.00

Zoning Permit

Worksite **574 ALABAMA AVE.**
Location: **Brick Township, NJ 08724**

Block: **1413.11**
Lot: **70**
Qualifier: _____
Zone: **R-7.5**

Owner: **JONES, GEORGE**
Address: **574 ALABAMA AVE**
BRICK, NJ 08724

Applicant: **SOLAR CITY CORPORATION**
Address: **9 Corporate Dr.**
CRANBURY, NJ 08512

Application Approved Date: 04/07/2017

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

Use is: Single-Family Residential

Nonconforming Use is: _____

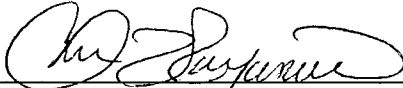
Work Description:

Solar Energy System - Installation of an 8 KW solar panel system, mounted on the roof of the house.

Additional Zoning Permit is required for additional work.

Upon review it was determined that the Zoning Permit:

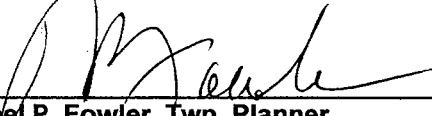
- ☒ Permitted by Ordinance
☐ Permitted by Variance approved on: _____
☐ Valid Nonconforming Use is established by
 ☐ Zoning Board of Adjustment
 ☐ Zoning Officer



Christopher J. Romano, Assistant Zoning Officer

04/07/2017

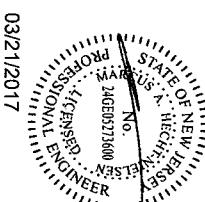
Date



Michael P. Fowler, Twp. Planner

4/10/17
Date

MP1	PITCH: 28	ARRAY PITCH: 28
	AZIMUTH: 288	ARRAY AZIMUTH: 288
	MATERIAL: Comp Shingle	STORY: 1 Story
MP2	PITCH: 26	ARRAY PITCH: 26
	AZIMUTH: 288	ARRAY AZIMUTH: 288
	MATERIAL: Comp Shingle	STORY: 1 Story

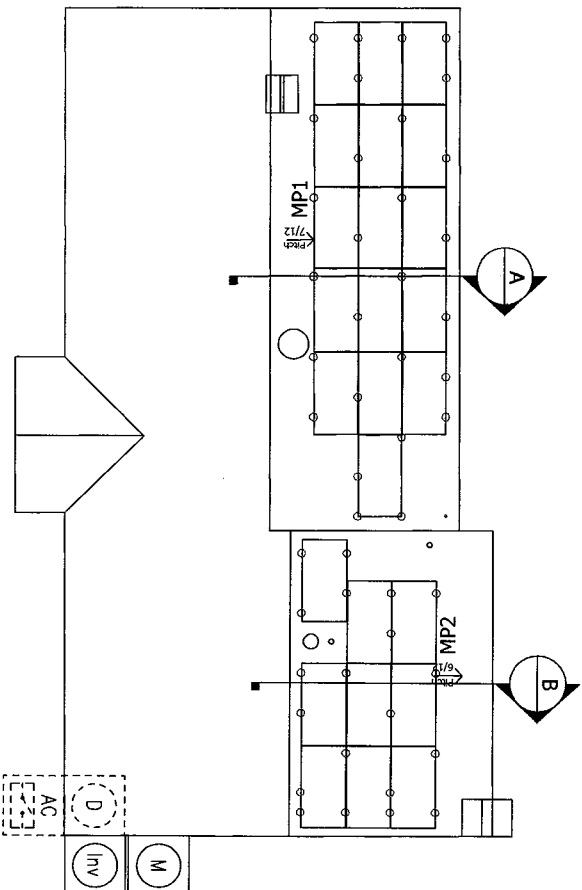


LEGEND

- (E) UTILITY METER & WARNING LABEL
- INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS
- DC DISCONNECT & WARNING LABELS
- AC DISCONNECT & WARNING LABELS
- DC JUNCTION/COMBINER BOX & LABELS
- DISTRIBUTION PANEL & LABELS
- LOAD CENTER & WARNING LABELS
- DEDICATED PV SYSTEM METER
- RAPID SHUTDOWN
- STANDOFF LOCATIONS
- CONDUIT RUN ON EXTERIOR
- CONDUIT RUN ON INTERIOR
- GATE/FENCE
- HEAT PRODUCING VENTS ARE RED
- INTERIOR EQUIPMENT IS DASHED

SITE PLAN

Scale: 1/8" = 1'



Zoning Review

Approval Front Of House

By: *[Signature]*
Date: 4/7/17

CONFIDENTIAL - THE INFORMATION HEREIN IS THE PROPERTY OF SOLARITY INC. AND IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF SOLARITY INC.	
JOB NUMBER: JB-0871081 00 DRAWING SYSTEM: ZS Comp V4 w Flushing-Insert TITLE: (25) Hawthorn Q-Cells # QPEAK-G41/SC300 NUMBER: Delta # Solivia 0.6 TL	PROJECT OWNER: GEORGE JONES 574 ALABAMA AVE BRICK, NJ 08724 DESIGNER: George Jones RESIDENCE 7.5 KW PV ARRAY SITE NAME: SITE PLAN
SHEET: PV 2 DATE: 3/21/2017	DESIGNED BY: Alfonso Moxmiliano Ceballos 2025 Charlotte, NC SOLARITY INC. 1 (650) 538-1028 F (650) 538-1029 (888) 304-0177 (765-2488) www.solarity.com

Digitally signed by
 Marcus Hecht-Nielsen
 Date: 2017.03.21
 13:36:17 -07'00'

STRUCTURE ANALYSIS - LOADING SUMMARY AND MEMBER CHECK - MP1

Member Properties Summary					
MP1		Horizontal Member Spans		Rafter Properties	
Roof System Properties		Overhang	0.49 ft	Actual W	1.50"
Number of Spans (w/o Overhang)	1	Span 1	12.18 ft	Actual L	
		Span 2		Nominal	Yes
		Span 3		Actual S	
		Span 4		Sx (in.^3)	13.14
		Span 5		Sy (in.^3)	
Re-Roof	Comp Roof	Total Rake Span		TL Defl'n Limit	120
	No	PV 1 Start	0.75 ft	Wood Species	
	Yes	PV 1 End	9.67 ft	Wood Grade	#2
Board Sheathing	None	PV 2 Start		Fv (psi)	135
	No	PV 2 End		E (ksi)	
Ceiling Finish	1/2" Gypsum Board	PV 3 Start		E-min (psi)	510,000
	28°	PV 3 End			
Rafter Spacing	16" O.C.				
Bot Lat Bracing	At Supports				

Member Loading Summary					
Roof Pitch	7/12	Initial	Pitch Adjust	Non-PV Areas	PV Areas
Roof Dead Load	DL	8.0 psf	x 1.13	9.1 psf	9.1 psf
PV Dead Load	PV-DL	3.0 psf	x 1.13		3.4 psf
Roof Live Load	RLL	20.0 psf	x 0.88	17.5 psf	
	11/16" x 2"	25.0 psf	x 0.7 x 0.7	17.5 psf	
	ft				

Notes: 1. ps = Cs*pf; Cs -roof, Cs -pv per ASCE 7 [Figure 7-2] 2. pf = 0.7 (Ce) (Ct) (Is) pg; Ce=0.9, Ct=1.1, Is=1.0

Member Analysis Results Summary					
Governing Analysis	Max Moment	@ Location	Capacity	DCR	Result
(+) Bending Stress (psi)	665.5	6.5 ft	1,388.6	48%	Pass

ZEP HARDWARE DESIGN CALCULATIONS - MP1

Mounting Plane Information

Roofing Material		Comp Roof	
Roof Slope		28°	
Rafter Spacing		16" O.C.	
Framing Type / Direction		Y-Y Rafters	
PV System Type		SolarCity SleekMount™	
Zep System Type		ZS Comp	
Standoff (Attachment Hardware)		Comp Mount SRV	
Spanning Vents		No	

Wind Design Criteria

Wind Design Code	IBC 2015	ASCE 7-10	
Wind Design Method		Partially/Fully Enclosed Method	
Ultimate Wind Speed	V-Ult	120 mph	Fig. 1609A
Exposure Category		C	Section 26.7
Roof Style		Gable Roof	Fig. 30.4-2A/B/C-5A/B
Mean Roof Height	h	15 ft	

Wind Pressure Calculation Coefficients

Wind Pressure Exposure	K_z	0.85	Table 30.3-1
Topographic Factor	K_{zt}	1.00	
Wind Directionality Factor	K_d	0.85	Section 26.6-1
Importance Factor	I	NA	
Velocity Pressure	q_h	$q_h = 0.00256 (K_z) (K_{zt}) (K_d) (V^2)$ 26.6 psf	Equation 30.3-1

		Wind Pressure	
Ext. Pressure Coefficient (Up)	$G_{Cp} (Up)$	-0.95	Fig. 30.4-2A/B/C-5A/B
Ext. Pressure Coefficient (Down)	$G_{Cp} (Down)$	0.85	
Design Wind Pressure	p	$p = q_h (G_{Cp})$	Equation 30.4-1
Wind Pressure Up	P_{up}	25.3 psf	
Wind Pressure Down	P_{down}	23.3 psf	

ALLOWABLE STANDOFF SPACINGS

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Landscape	64"	39"
Max Allowable Cantilever	Landscape	24"	NA
Standoff Configuration	Landscape	Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-235 lbs	
Uplift Capacity of Standoff	T-allow	548 lbs	
Standoff Demand/Capacity	DCR	43.0%	

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Portrait	48"	65"
Max Allowable Cantilever	Portrait	19"	NA
Standoff Configuration	Portrait	Staggered	
Max Standoff Tributary Area	Trib	22 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-294 lbs	
Uplift Capacity of Standoff	T-allow	548 lbs	
Standoff Demand/Capacity	DCR	53.7%	

STRUCTURE ANALYSIS - LOADING SUMMARY AND MEMBER CHECK - MP2

Member Properties Summary					
MP2		Horizontal Member Spans		Rafter Properties	
Roof System Properties		Overhang	0.16 ft	Actual W	1.50"
Number of Spans (w/o Overhang)	1	Span 1	13.41 ft	Actual D	
	Comp Roof	Span 2		Nominal	Yes
	Re-Roof	Span 3		Actual S	
	No	Span 4		Sx (in.^3)	13.14
	Yes	Span 5		Sy (in.^3)	
Board Sheathing	None	Total Rake Span	15.10 ft	TL Defl'n Limit	120
Vaulted Ceiling	No	PV 1 Start	3.67 ft	Wood Species	
Ceiling Finish	1/2" Gypsum Board	PV 1 End	12.67 ft	Wood Grade	#2
Rafter Slope	26°	PV 2 Start		Fb (psi)	
Rafter Spacing	16" O.C.	PV 2 End		Fv (psi)	135
Top Plate Bracing	Full	PV 3 Start		E (psi)	
Bot Lat Bracing	At Supports	PV 3 End		E-min (psi)	510,000

Member Loading Summary					
Roof Pitch	6/12	Initial	Pitch Adjust	Non-PV Areas	PV Areas
Roof Dead Load	DL	8.0 psf	x 1.11	8.9 psf	8.9 psf
PV Dead Load	PV-DL	3.0 psf	x 1.11		3.3 psf
Roof Live Load	RLL	20.0 psf	x 0.90	18.0 psf	
Roof Snow Load	11/SL ^{1,2}	25.0 psf	x 0.7 x 0.7	12.5 psf	
Roof Ice Load	IL			2.5 psf	

Notes: 1. ps = Cs*pf; Cs -roof, Cs -pv per ASCE 7 [Figure 7-2] 2. pf = 0.7 (Ce) (Ct) (Is) pg; Ce=0.9, Ct=1.1, Is=1.0

Member Analysis Results Summary					
Governing Analysis	Max Moment	@ Location	Capacity	DCR	Result
(+) Bending Stress (psi)	799.8	6.9 ft	1,388.6	58%	Pass

ZEP HARDWARE DESIGN CALCULATIONS - MP2

Mounting Plane Information

Roofing Material		Comp Roof	
Roof Slope		26°	
Rafter Spacing		16" O.C.	
Framing Type / Direction		Y-Y Rafters	
PV System Type		SolarCity SteelMount™	
Zep System Type		ZS Comp	
Standoff (Attachment Hardware)		Comp Mount SRV	
Spanning Vents		No	

Wind Design Criteria

Wind Design Code	IBC 2015	ASCE 7-10	
Wind Design Method		Partially/Fully Enclosed Method	
Ultimate Wind Speed	V-Ult	120 mph	Fig. 1609A
Exposure Category		C	Section 26.7
Roof Style		Gable Roof	Fig. 30.4-2A/B/C-5A/B
Mean Roof Height	h	15 ft	Section 26.3

Wind Pressure Calculation Coefficients

Wind Pressure Exposure	K _z	0.85	Table 30.3-1
Topographic Factor	K _z	1.00	Section 26.7
Wind Directionality Factor	K _d	0.85	Section 26.6-1
Importance Factor	I	NA	
Velocity Pressure	q _h	qh = 0.00256 (K _z) (K _{zt}) (K _d) (V ²) 26.6 psf	Equation 30.3-1

Wind Pressure			
Ext. Pressure Coefficient (Up)	G _{Cp} (Up)	-0.88	Fig. 30.4-2A/B/C-5A/B
Ext. Pressure Coefficient (Down)	G _{Cp} (Down)	0.45	
Design Wind Pressure	p	p = q _h (G _{Cp})	Equation 30.4-1
Wind Pressure Up	P _{up}	23.3 psf	
Wind Pressure Down	P _{down}	16.0 psf	

ALLOWABLE STANDOFF SPACINGS

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Landscape	64"	39"
Max Allowable Cantilever	Landscape	24"	NA
Standoff Configuration	Landscape	Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-214 lbs	
Uplift Capacity of Standoff	T-allow	548 lbs	
Standoff Demand/Capacity	DCR	39.1%	

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Portrait	48"	65"
Max Allowable Cantilever	Portrait	20"	NA
Standoff Configuration	Portrait	Staggered	
Max Standoff Tributary Area	Trib	22 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-268 lbs	
Uplift Capacity of Standoff	T-allow	548 lbs	
Standoff Demand/Capacity	DCR	48.8%	