City of Belle Isle Job Site Card Electrical PERMIT 2018-04-006

PERMIT MUST BE POSTED ON SITE - A permit expires in 6 months if approved inspections are not recorded /scheduled within that time frame. You are responsible for scheduling and keeping track of all your inspections -

Permit Number: 2018- 04-006
Site Address: 4210 Kezar Ct 32812
Class: ☐ Residential Subdivision:
Description of Work: Photovaltaic system – roof mounted

Issue Date: 4/03/2018
Parcel #: 20-23-30-1661-00-870

Issued To: TESLA ENERGY OPERATIONS, INC.
Name: ARMSTRONG, NICHOLAS EDWIN

Business Phone: 702 716-0084
Contractor License #: EC13006226

Payment Date & Method: / / 2018
☑ Visa ☐ Master Card ☐ Amex ☐ Discover ☐ Check / Money Order # 2875

Inspection requests are to be emailed to BIDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. Next-Day Inspection requests must be made by 4pm. Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed.

Universal Engineering Sciences - 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 Fax 407-581-0313 www.universalengineering.com

ELECTRICAL	INSPECTOR	DATE	COMMENTS
300 Temp Pole			
310 TUG			
320 Underground			
330 Rough			
340 Footer Steel Bonding			
350 Pool Light			
360 PrePower			
370 Meter ReSet			
380 Final			

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IYOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

RECEIVED APR 03 2018

APPLICATION FOR ELECTRICAL PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: _____ **PERMIT NUMBER** 2018-04-006

The undersigned hereby applies for a permit to make electrical installations as indicated below. PLEASE PRINT

Project Address 4210 Kezar Ct 4210 Kezar Ct., Belle Isle FL ☐ 32809 ☑ 32812

Property Owner John Carr John Carr Phone (407) 947-5400

Property Owner's Mailing Address 4210 Kezar Ct Same City Belle Isle

State F Zip Code 32812 **Parcel Id Number:** 20-23-30-1661-00-870 20-23-30-1661-00-870

To obtain this information, please visit http://www.ocpafl.org/Searches/ParcelSearch.aspx

Class of Building: Old ☑ New ☐ **Type of Building:** Residential ☑ Commercial ☐ Other ☐

Type of Work: New ☐ Alteration ☑ Addition ☐ Repair ☐ Low Voltage New ☐ Existing ☐

INDICATE THE QUANTITY OF ALL EQUIPMENT TO BE INSTALLED

Dishwasher	Exhaust Fan	Disposal	Water Heater
Hood Fan	Dryer	Paddle Fan	Outlets
Fixtures	Spa	Pool	Switches
Electric Signs	Meter Reset	Low Voltage	Stoves
Pumps	Motors	Air Conditioning (tons)	Furnace (KW)

Temporary Construction Pole _____ **One (1) New Meter Service** _____ Amperage/Voltage/Phase

Meter Service Upgrade from _____ to _____ = _____
Amperage/Voltage/Phase Amperage/Voltage/Phase Difference in Size

Relocate Existing Meter Service (No Service Size Change) _____

Other: Installation of roof-mounted photo-voltaic system photovoltaic system - roof mounted

☐ **PERMIT FEE BASED ON METER SERVICE SIZE SCHEDULE** ..... $ _____
(IF NO METER SERVICE WORK BEING DONE, USE VALUATION OF JOB FOR PERMIT FEE)

☐ **VALUATION OF JOB** (VALUATION OF ALL MATERIALS, LABOR, AND FIXTURES INSTALLED $ 26,132 26,132

Building Official _____ Date 4-4-18

Verified Contractor's Licenses & Insurance are on file _____ Date _____

Permit Fee = $ 167.-
Review Fee = $ 83.50
3% FL Surcharge = $ 6.27
TOTAL Permit = $ 256.77

I hereby certify that the above is true and correct to the best of my knowledge. 1% = 2.51 1.5% = 3.76

I hereby make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances.

LICENSE HOLDER SIGNATURE _____ LICENSE # EC13006226 EC13006226

LICENSE HOLDER NAME Nick Armstrong Nick Armstrong COMPANY NAME SolarCity DBA Tesla Energy

Street Address 8500 Parkline Blvd Ste 100 6500 Parkline Blvd Ste 100 SolarCity DBA Tesla Energy

City Orlando Orlando State FL Zip Code 32809 Phone Number (702) 716-0084

Email Address emccurdy@tesla.com 32809 702-716-0084

emccurdy@tesla.com

NOTE: The Building Permit Number is required if the Electrical Installation is associated with any construction or alteration where a Building Permit has been issued.

PAID 4-6-2018 VISA 2875

Building Permit Number _____

1ST FLR 37
2665 130
167 ÷ 2
83.50
25 0.52

WO # 105273

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

ELECTRICAL CONTRACTORS LICENSING BOARD (850) 487-1395
2601 BLAIR STONE ROAD
TALLAHASSEE FL 32399-0783

ARMSTRONG, NICHOLAS EDWIN
TESLA ENERGY OPERATIONS, INC.
3055 CLEARVIEW WAY
SAN MATEO CA 94402

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto **www.myfloridalicense.com**. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

EC13006226 ISSUED: 02/08/2018

CERTIFIED ELECTRICAL CONTRACTOR
ARMSTRONG, NICHOLAS EDWIN
TESLA ENERGY OPERATIONS, INC.

IS CERTIFIED under the provisions of Ch. 489 FS.
Expiration date: AUG 31, 2018 L1802080000751

DETACH HERE

RICK SCOTT, GOVERNOR JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ELECTRICAL CONTRACTORS LICENSING BOARD

LICENSE NUMBER
EC13006226

The ELECTRICAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2018

ARMSTRONG, NICHOLAS EDWIN
TESLA ENERGY OPERATIONS, INC.
3055 CLEARVIEW WAY
SAN MATEO CA 94402

ISSUED: 02/08/2018 DISPLAY AS REQUIRED BY LAW SEQ # L1802080000751

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 04/04/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH RISK & INSURANCE SERVICES 345 CALIFORNIA STREET, SUITE 1300 CALIFORNIA LICENSE NO. 0437153 SAN FRANCISCO, CA 94104 998301-STND-GAWUC-16-18	**CONTACT NAME:** **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:**
INSURED Tesla Energy Operations, Inc. 3055 Clearview Way San Mateo, CA 94402	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** Zurich American Insurance Company — 16535 **INSURER B :** American Zurich Insurance Company — 40142 **INSURER C :** N/A — N/A **INSURER D :** N/A — N/A **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** SEA-003544839-01 **REVISION NUMBER:** 2

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR X SIR: $750,000 X Tort Contrac Liab, No XCU Excl GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC X OTHER: $6M per Project/Loc Agg	X		GLO 1074588-00 Includes Host Liquor Liability	10/31/2017	10/31/2018	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	2,500,000 2,500,000 5,000 2,500,000 20,000,000 6,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			BAP 1074586-00	10/31/2017	10/31/2018	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $	5,000,000
	UMBRELLA LIAB OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE AGGREGATE	$ $	
B B A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC 1074583-00 (AOS) WC 1074584-00 (MA, WI) EWS 1074585-00 (CA) Limits apply excess of $750K SIR-CA	10/31/2017 10/31/2017 10/31/2017	10/31/2018 10/31/2018 10/31/2018	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $	1,000,000 1,000,000 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate holder is included as Additional Insured on the General Liability policy as required by written contract, but only with respect to liability arising out of the Named Insured's operations.

CERTIFICATE HOLDER

City of Belle Isle
1600 Nela Ave
Belle Isle, FL 32809

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
of Marsh Risk & Insurance Services

Stephanie Guaiumi Stephanie Guaiumi

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Scott Randolph, Tax Collector — Local Business Tax Receipt — Orange County, Florida

This local business tax receipt is in addition to and not in lieu of any other tax required by law or municipal ordinance. Businesses are subject to regulation of zoning, health and other lawful authorities. This receipt is valid from October 1 through September 30 of receipt year. **Delinquent penalty is added October 1.**

2017 **EXPIRES 9/30/2018** 5000-1186363

5000	BUSINESS OFFICE	$50.00	30 EMPLOYEES	T802	ELECTRICAL CONTR	$30.00	1 EMPLOYEE

SCOTT RANDOLPH, TAX COLLECTOR • ORANGE COUNTY, FLORIDA •

TOTAL TAX	$80.00
TRANSFER FEES	$8.00
PREVIOUSLY PAID	$88.00
TOTAL DUE	$0.00

MARON TODD- PRESIDENT
ARMSTRONG NICHOLAS EDWIN-QUALIFIER

TESLA ENERGY OPERATIONS INC
MARON TODD- PRESIDENT
3055 CLEARVIEW WAY
SAN MATEO CA 94402

8500 PARKLINE BLVD #100
U - ORLANDO, 32809
ARMSTRONG NICHOLAS EDWIN
PAID: $88.00 (Multiple) 2504-03846125 4/5/2018

This receipt is official when validated by the Tax Collector.

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

APPLICATION FOR ELECTRICAL PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: _____ **PERMIT NUMBER** _____

The undersigned hereby applies for a permit to make electrical installations as indicated below. PLEASE PRINT

Project Address 4210 Kezar Ct Belle Isle FL ☐ 32809 ☑ 32812

Property Owner John Carr Phone (407) 947-5400

Property Owner's Mailing Address 4210 Kezar Ct City Orlando

State FL Zip Code 32812 **Parcel Id Number:** 20-23-30-1661-00-870

To obtain this information, please visit http://www.ocpafl.org/Searches/ParcelSearch.aspx

Class of Building: Old ☑ New ☐ **Type of Building:** Residential ☐ Commercial ☐ Other ☐

Type of Work: New ☐ Alteration ☑ Addition ☐ Repair ☐ Low Voltage New ☐ Existing ☐

INDICATE THE QUANTITY OF ALL EQUIPMENT TO BE INSTALLED

Dishwasher _____	Exhaust Fan _____	Disposal _____	Water Heater _____
Hood Fan _____	Dryer _____	Paddle Fan _____	Outlets _____
Fixtures _____	Spa _____	Pool _____	Switches _____
Electric Signs _____	Meter Reset _____	Low Voltage _____	Stoves _____
Pumps _____	Motors _____	Air Conditioning (tons) _____	Furnace (KW) _____

Temporary Construction Pole _____ **One (1) New Meter Service** _____ Amperage/Voltage/Phase

Meter Service Upgrade from _____ Amperage/Voltage/Phase **to** _____ Amperage/Voltage/Phase = _____ Difference in Size

Relocate Existing Meter Service (No Service Size Change) _____

Other: Installation of roof-mounted photovoltaic system

☐ **PERMIT FEE BASED ON METER SERVICE SIZE SCHEDULE** ..... $ _____
(IF NO METER SERVICE WORK BEING DONE, USE VALUATION OF JOB FOR PERMIT FEE)

☐ **VALUATION OF JOB** (VALUATION OF ALL MATERIALS, LABOR, AND FIXTURES INSTALLED $ 26,132

Building Official: _____ **Date** _____

Verified Contractor's Licenses & Insurance are on file _____ Date _____

Permit Fee = $ _____

Review Fee = $ _____

3% FL Surcharge = $ _____

TOTAL Permit = $ _____

I hereby certify that the above is true and correct to the best of my knowledge.

I hereby make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances.

LICENSE HOLDER SIGNATURE Kasey Taylor LICENSE # EC13006226

LICENSE HOLDER NAME Nick Armstrong COMPANY NAME Tesla Energy Operations

Street Address 6500 Parkline Blvd Ste 100

City Orlando State FL Zip Code 32809 Phone Number 702-716-0084

Email Address emccurdy@tesla.com

NOTE: The Building Permit Number is required if the Electrical Installation is associated with any construction or alteration where a Building Permit has been issued.

Building Permit Number _____

SIGNATURE Rtgl

RECEIVED
APR 05 2018
BY: _____

DOC# 20180195704
04/03/2018 09:13:19 AM Page 1 of 1
Rec Fee: $10.00
Phil Diamond, Comptroller
Orange County, FL
IP - Ret To: TESLA ENERGY

Permit Number: _____
Folio/Parcel Identification Number: 20-23-30-11661-00-870
Prepared by: % SolarCity DBA Tesla Energy
8500 Parkline Blvd. Ste 100
Orlando, FL, 32809
Return to: SolarCity DBA Tesla Energy
8500 Parkline Blvd. Ste. 100
Orlando, FL, 32809

NOTICE OF COMMENCEMENT

State of Florida, County of Orange
The undersigned hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. **Description of property** (legal description of the property, and street address if available)
   Conway Groves unit 2 40/4 lot 87 4210 Kezar Ct
2. **General description of improvement**
   Installation of roof-mounted photo-voltaic system.
3. **Owner information or Lessee information if the Lessee contracted for the improvement**
   Name John Carr
   Address 4210 Kezar Ct Orlando, FL 32812
   Interest in Property Homeowner
   Name and address of fee simple titleholder (if different from Owner listed above)
   Name _____
   Address _____
4. **Contractor**
   Name SolarCity Corporation DBA Tesla Energy Telephone Number (702) 716-0084
   Address 8500 Parkline Blvd Ste 100 Orlando, FL 32809
5. **Surety** (if applicable, a copy of the payment bond is attached)
   Name _____ Telephone Number _____
   Address _____ Amount of Bond $ _____
6. **Lender**
   Name _____ Telephone Number _____
   Address _____
7. **Persons within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by §713.13(1)(a)7, Florida Statutes.**
   Name _____ Telephone Number _____
   Address _____
8. **In addition to himself or herself, Owner designates the following to receive a copy of the Lienor's Notice as provided in §713.13(1)(b), Florida Statutes.**
   Name _____ Telephone Number _____
   Address _____
9. **Expiration date of notice of commencement** (the expiration date may not be before the completion of construction and final payment to the contractor, but will be 1 year from the date of recording unless a different date is specified) _____

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

Under penalty of perjury, I declare that I have read the foregoing notice of commencement and that the facts stated in it are true to the best of my knowledge and belief.

_____ Homeowner
Signature of Owner or Lessee, or Owner's or Lessee's Authorized Officer/Director/Partner/Manager — Signatory's Title/Office

The foregoing instrument was acknowledged before me this 17th day of Feb 2018 by JOHN CARR
month/year — name of person

as HOMEOWNER for N/A
Type of authority, e.g., officer, trustee, attorney in fact — Name of party on behalf of whom instrument was executed

_____ DEEDRA SIMMONS
Signature of Notary Public – State of Florida — Print, type, or stamp commissioned name of Notary Public

Personally Known ____ OR Produced ID ✓
Type of ID Produced FL DL

DEEDRA SIMMONS
Commission # GG 74562
My Commission Expires
February 26, 2019

Form 200-30-12 September 26, 2011

State of FLORIDA, County of ORANGE
I hereby certify that this is a true copy of the document as reflected in the Official Records
PHIL DIAMOND, COUNTY COMPTROLLER
BY: _____, D.C.
DATED: 4/3/18
SEAL

SolarCity

Date: 1 / 22 / 18

RE: PERMIT AUTHORIZATION

Dear Sir or Madam:

This letter is to verify that Kasey Taylor is an authorized representative of SolarCity Corporation and is authorized to pull any and all permits, business licenses, and other project related documents as needed. Please don't hesitate to call if you have any questions.

Sincerely,

Nicholas Armstrong
Responsible Managing Employee, License #EC13006226
Regional Vice President

ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGEMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of Oregon
County of Multnomah
On 01 / 22 / 18 before me, A. Bentley-Farias, personally appeared **Nicholas Armstrong**, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or entity upon behalf of which the person acted, executed the instrument.

I certify under penalty of perjury under the law of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature of Notary Public

OFFICIAL STAMP
ANA MELISSA BENTLEY-FARIAS
NOTARY PUBLIC - OREGON
COMMISSION NO. 958451
MY COMMISSION EXPIRES FEBRUARY 13, 2021

(Notary Seal)

AL 05500, AR M-8937, AZ ROC 243711/ROC 245450, CA CSLB 888104, CO EC8041, CT HIC.0632778/ELC.0125305, DC 410516000080/ECC902585, DE 2011120384/ T1-6032, FL EC13006226, HI C1-29770, IL 15-0052, MA HIC 168872/ EL-1134MR, MD HIC 128948/11905, NC 30801-U, NH 0347C/125234, NJ NJHIC#13VH06160600/34EB01352700, NM EE98-329590, NV NV2012135172/C2-0078448/B2-0079219, OH EL 42707, OR CB180498/C562, PA HICPA077543, RI AC4047/M/Reg 3833, TX TECL27006, UT 8726950-5501, VA ELE2705163270, VT EN-06829, WA SOLARC*919D1/601 ARC*1908P7, Albany 437, Greene A 486, Nassau 112409710000, Putnam PC6041, Rockland H-11864 40 00 00, Suffolk 52057-H, Westchester WC-26088-H13, N Y C #2003584-DCA, SCENYC: N Y C Licensed Electrician #12610, #0044885, 155 Water St, 6th Fl., Unit 10, Brooklyn, NY 11201. #2013966-DCA. All loans provided by SolarCity Finance Company, LLC CA Finance Lenders License 6054796. SolarCity Finance Company, LLC is licensed by the Delaware State Bank Commissioner to engage in business in Delaware under license number 019422. MD Consumer Loan License 2241. NV Installment Loan License IL11023 / IL11024. RI Licensed Lender #20155103LL. TX Registered Creditor 14000509863-202404. VT Lender License #6766.

UNIVERSAL
ENGINEERING SCIENCES
Consultants In: Geotechnical Engineering • Environmental Sciences
Geophysical Services • Materials Testing • Threshold Inspection
Building Code Administration, Compliance Inspection & Plan Review
3532 Maggie Blvd, Orlando, FL 32811 - P: 407.423.0504 - F: 407.423.3106

Work Order No. 105273

Inspection Report

Project Name:	4210 Kezar Court ~ COBI	Date:	04/03/2018 Any any
Address:	4210 Kezar Court ~ COBI, Belle Isle, Orange County, FL	Permit No:	2018-04-006
Client:	City of Belle Isle	Lot No.:	
ProjectNo.:	0115.1800129.0000-0115	Contact:	Frank Matos at 407 5818161

Scope of Inspection: REVIEW - Electrical permit photovoltaic system on roof

Inspection Type:

Disposition of Inspection:

Comments:

I hereby affirm that to the best of my knowledge and belief, the above listed inspection was performed as indicated and the work was reviewed for compliance with the approved plans, and all pertinent sections of the Florida Building Code.

Approved

Inspector: Dale Baker, BN 3927

Dale Baker

NOC ✓

need insurance & lic holder Sig.

Version #72.1 - TBD
RU

March 30, 2018

RE:	CERTIFICATION LETTER
Project/Job # 328765	
Project Address:	Sampson Residence 3903 Isle Vista Ave Orlando, FL 32812
AHJ	Belle Isle
SC Office	Orlando

Design Criteria:

- Applicable Codes = 2017 Florida Building Code (6th Edition) / IEBC, ASCE 7-10, and 2012 NDS
- Risk Category = II
- Wind Speed = 140 mph, Exposure Category C, Partially/Fully Enclosed Method
- Ground/Roof Snow Load = 0 psf
- MP1: 2x6 @ 24" OC, Roof DL = 14.5 psf, Roof LL = 20 psf
- MP2: 2x4 @ 24" OC, Roof DL = 14 psf, Roof LL = 20 psf

Reviewed for Code Compliance
Universal Engineering Sciences

Note: Per IBC 1613.1; Seismic check is not required because Ss = 0.09561 < 0.4g and Seismic Design Category (SDC) = A < D

To Whom It May Concern,

A jobsite survey of the existing framing system of the address indicated above was performed by a site survey team from Tesla. Structural evaluation was based on site observations and the design criteria listed above.

Based on this evaluation, I certify that the alteration to the existing structure by installation of the PV system, with upgrades specified in the plans, meets the requirements of the applicable existing building and/or new building provisions adopted/referenced above.

Additionally, I certify that the PV module assembly including all standoffs supporting it have been reviewed to be in accordance with the manufacturer's specifications and to meet and/or exceed all requirements set forth by the referenced codes for loading.

The PV assembly hardware specifications are contained in the plans/docs submitted for approval.

HUMPHREY KANJA KARIUKI
LICENSE
No. 81206
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Digitally signed by Humphrey Kariuki
Date: 2018.03.30 13:33:18 -04'00'

Sincerely,

Humphrey Kariuki, P.E.
Professional Engineer
T: 443.451.3515
email: hkariuki@tesla.com

Version #72.1 - TBD
RU

HARDWARE DESIGN AND STRUCTURAL ANALYSIS RESULTS SUMMARY TABLES

Landscape Hardware	Hardware - Landscape Modules' Standoff Specifications					
	X-X Spacing	X-X Cantilever	Y-Y Spacing	Y-Y Cantilever	Configuration	Uplift DCR
MP1	48"	20"	52"	24"	Not-Staggered	69.4%
MP2	48"	20"	52"	24"	Not-Staggered	69.4%

Portrait Hardware	Hardware - Portrait Modules' Standoff Specifications					
	X-X Spacing	X-X Cantilever	Y-Y Spacing	Y-Y Cantilever	Configuration	Uplift DCR
MP1	48"	19"	52"	24"	Not-Staggered	69.4%
MP2	48"	19"	52"	24"	Not-Staggered	69.4%

Mounting Plane	Structure Information			Qualification Results
	Type	Pitch	Spacing	Member Evaluation Results
MP1	Pre-Fab Truss	14°	24" O.C.	Member Impact Check OK
MP2	Pre-Fab Truss	14°	24" O.C.	Member Impact Check OK

Refer to the submitted drawings for details of information collected during a site survey. All member analysis and/or evaluation is based on framing information gathered on site. The existing gravity and lateral load carrying members were evaluated in accordance with the IEBC and the IBC.

STRUCTURE ANALYSIS - LOADING SUMMARY AND MEMBER CHECK - MP1

Member Properties Summary					
MP1		Horizontal Member Spans		Rafter Properties	
		Overhang	1.16 ft	Actual W	1.50"
Roof System Properties		Span 1	9.58 ft	Actual D	5.50"
Number of Spans (w/o Overhang)	4	Span 2	6.80 ft	Nominal	Yes
Roofing Material	Spanish Tile Roof	Span 3	2.89 ft	A (in^2)	8.25
Re-Roof	No	Span 4	3.38 ft	Sx (in.^3)	7.56
Plywood Sheathing	Yes	Span 5		Ix (in^4)	20.80
Board Sheathing	None	Total Rake Span	24.54 ft	TL Defl'n Limit	120
Vaulted Ceiling	No	PV 1 Start	2.67 ft	Wood Species	SPF
Ceiling Finish	1/2" Gypsum Board	PV 1 End	23.08 ft	Wood Grade	#2
Rafter Slope	14°	PV 2 Start		Fb (psi)	875
Rafter Spacing	24" O.C.	PV 2 End		Fv (psi)	135
Top Lat Bracing	Full	PV 3 Start		E (psi)	1,400,000
Bot Lat Bracing	At Supports	PV 3 End		E-min (psi)	510,000

Member Loading Summary					
Roof Pitch	3/12	Initial	Pitch Adjust	Non-PV Areas	PV Areas
Roof Dead Load	DL	14.5 psf	x 1.03	14.9 psf	14.9 psf
PV Dead Load	PV-DL	3.0 psf	x 1.03		3.1 psf
Roof Live Load	RLL	20.0 psf	x 1.00	20.0 psf	
Live/Snow Load	LL/SL[1,2]				
Total Load (Governing LC)	TL			34.9 psf	18.0 psf

Notes: 1. ps = Cs*pf; Cs -roof, Cs -pv per ASCE 7 [Figure 7-2] 2. pf = 0.7 (C_e) (C_t) (I_s) p_g; C_e=0.9, C_t=1.1, I_s=1.0

Member Analysis Results Summary					
Governing Analysis	Pre-PV	Load (psf)	Post-PV	Net Impact	Result
Gravity Loading Check	34.9		18.0	-48%	Pass

ZEP HARDWARE DESIGN CALCULATIONS - MP1

Mounting Plane Information			
Roofing Material		Spanish Tile Roof	
Roof Slope		14°	
Framing Type / Direction		Y-Y Rafters	
PV System Type		SolarCity SleekMount™	
Zep System Type		ZS Span	
Standoff (Attachment Hardware)		Mighty Hook HDG ST	
Tile Reveal		13	
Tile Attachment System		SM Span	

Wind Design Criteria			
Design Code	IBC 2015	ASCE 7-10	
Wind Design Method		Partially/Fully Enclosed Method	
Ultimate Wind Speed	V-Ult	140 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 26.2

Wind Pressure Calculation Coefficients			
Wind Pressure Exposure	K_z	0.85	Table 30.3-1
Topographic Factor	K_{zt}	1.00	Section 26.8
Wind Directionality Factor	K_d	0.85	Section 26.6-1
Importance Factor	I	NA	
Velocity Pressure	q_h	qh = 0.00256 (Kz) (Kzt) (Kd) (V^2) 36.2 psf	Equation 30.3-1

		Wind Pressure	
Ext. Pressure Coefficient (Up)	GCp (Up)	-0.88	Fig. 30.4-2A/B/C-5A/B
Ext. Pressure Coefficient (Down)	GCp (Down)	0.45	Fig. 30.4-2A/B/C-5A/B
Design Wind Pressure	p	p = qh (GCp)	Equation 30.4-1
Wind Pressure Up	$p_{(up)}$	-31.7 psf	
Wind Pressure Down	$p_{(down)}$	16.3 psf	

ALLOWABLE STANDOFF SPACINGS

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Landscape	48"	52"
Max Allowable Cantilever	Landscape	20"	24"
Standoff Configuration	Landscape	Not-Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-299 lbs	
Uplift Capacity of Standoff	T-allow	431 lbs	
Standoff Demand/Capacity	DCR	69.4%	

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Portrait	48"	52"
Max Allowable Cantilever	Portrait	19"	24"
Standoff Configuration	Portrait	Not-Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-299 lbs	
Uplift Capacity of Standoff	T-allow	431 lbs	
Standoff Demand/Capacity	DCR	69.4%	

STRUCTURE ANALYSIS - LOADING SUMMARY AND MEMBER CHECK - MP2

Member Properties Summary					
MP2		Horizontal Member Spans		Upgraded Rafter Properties	
		Overhang	1.16 ft	Net W	1.50"
Roof System Properties		Span 1	6.55 ft	Equiv D	3.50"
Number of Spans (w/o Overhang)	1	Span 2		Nominal	Yes
Roofing Material	Spanish Tile Roof	Span 3		A (in^2)	5.25
Re-Roof	No	Span 4		Sx (in.^3)	3.06
Plywood Sheathing	Yes	Span 5		Ix (in^4)	5.36
Board Sheathing	None	Total Rake Span	7.95 ft	TL Defl'n Limit	120
Vaulted Ceiling	No	PV 1 Start	7.17 ft	Wood Species	SPF
Ceiling Finish	1/2" Gypsum Board	PV 1 End	7.71 ft	Wood Grade	#2
Rafter Slope	14°	PV 2 Start		Fb (psi)	875
Rafter Spacing	24" O.C.	PV 2 End		Fv (psi)	135
Top Lat Bracing	Full	PV 3 Start		E (psi)	1,400,000
Bot Lat Bracing	At Supports	PV 3 End		E-min (psi)	510,000

Member Loading Summary					
Roof Pitch	3/12	Initial	Pitch Adjust	Non-PV Areas	PV Areas
Roof Dead Load	DL	14.0 psf	x 1.03	14.4 psf	14.4 psf
PV Dead Load	PV-DL	3.0 psf	x 1.03		3.1 psf
Roof Live Load	RLL	20.0 psf	x 1.00	20.0 psf	
Live/Snow Load	LL/SL[1,2]				
Total Load (Governing LC)	TL			34.4 psf	17.5 psf

Notes: 1. ps = Cs*pf; Cs -roof, Cs -pv per ASCE 7 [Figure 7-2] 2. $p_f = 0.7\ (C_e)\ (C_t)\ (I_s)\ p_g$; C_e=0.9, C_t=1.1, I_s=1.0

Member Analysis Results Summary					
Governing Analysis	Pre-PV	Load (psf)	Post-PV	Net Impact	Result
Gravity Loading Check	34.4		17.5	-49%	Pass

ZEP HARDWARE DESIGN CALCULATIONS - MP2

Mounting Plane Information			
Roofing Material		Spanish Tile Roof	
Roof Slope		14°	
Framing Type / Direction		Y-Y Rafters	
PV System Type		SolarCity SleekMount™	
Zep System Type		ZS Span	
Standoff (Attachment Hardware)		Mighty Hook HDG ST	
Tile Reveal		13	
Tile Attachment System		SM Span	

Wind Design Criteria			
Design Code	IBC 2015	ASCE 7-10	
Wind Design Method		Partially/Fully Enclosed Method	
Ultimate Wind Speed	V-Ult	140 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 26.2

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Wind Pressure Exposure	K_z	0.85	Table 30.3-1
Topographic Factor	K_{zt}	1.00	Section 26.8
Wind Directionality Factor	K_d	0.85	Section 26.6-1
Importance Factor	I	NA	
Velocity Pressure	q_h	qh = 0.00256 (Kz) (Kzt) (Kd) (V^2) 36.2 psf	Equation 30.3-1

		Wind Pressure	
Ext. Pressure Coefficient (Up)	GCp (Up)	-0.88	Fig. 30.4-2A/B/C-5A/B
Ext. Pressure Coefficient (Down)	GCp (Down)	0.45	Fig. 30.4-2A/B/C-5A/B
Design Wind Pressure	p	p = qh (GCp)	Equation 30.4-1
Wind Pressure Up	$p_{(up)}$	-31.7 psf	
Wind Pressure Down	$p_{(down)}$	16.3 psf	

ALLOWABLE STANDOFF SPACINGS

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Landscape	48"	52"
Max Allowable Cantilever	Landscape	20"	24"
Standoff Configuration	Landscape	Not-Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-299 lbs	
Uplift Capacity of Standoff	T-allow	431 lbs	
Standoff Demand/Capacity	DCR	69.4%	

		X-Direction	Y-Direction
Max Allowable Standoff Spacing	Portrait	48"	52"
Max Allowable Cantilever	Portrait	19"	24"
Standoff Configuration	Portrait	Not-Staggered	
Max Standoff Tributary Area	Trib	17 sf	
PV Assembly Dead Load	W-PV	3.0 psf	
Net Wind Uplift at Standoff	T-actual	-299 lbs	
Uplift Capacity of Standoff	T-allow	431 lbs	
Standoff Demand/Capacity	DCR	69.4%	

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
BLDG	BUILDING
CONC	CONCRETE
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
(E)	EXISTING
EMT	ELECTRICAL METALLIC TUBING
FSB	FIRE SET-BACK
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
HDG	HOT DIPPED GALVANIZED
I	CURRENT
Imp	CURRENT AT MAX POWER
Isc	SHORT CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kW	KILOWATT
LBW	LOAD BEARING WALL
MIN	MINIMUM
(N)	NEW
NEUT	NEUTRAL
NTS	NOT TO SCALE
OC	ON CENTER
PL	PROPERTY LINE
POI	POINT OF INTERCONNECTION
PV	PHOTOVOLTAIC
SCH	SCHEDULE
S	STAINLESS STEEL
STC	STANDARD TESTING CONDITIONS
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAINTIGHT

ELECTRICAL NOTES

1. THIS SYSTEM IS GRID-INTERTIED VIA A UL-LISTED POWER-CONDITIONING INVERTER.
2. THIS SYSTEM HAS NO BATTERIES, NO UPS.
3. A NATIONALLY-RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH ART. 110.3.
4. WHERE ALL TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A SIGN WILL BE PROVIDED WARNING OF THE HAZARDS PER ART. 690.17.
5. EACH UNGROUNDED CONDUCTOR OF THE MULTIWIRE BRANCH CIRCUIT WILL BE IDENTIFIED BY PHASE AND SYSTEM PER ART. 210.5.
6. CIRCUITS OVER 250V TO GROUND SHALL COMPLY WITH ART. 250.97, 250.92(B).
7. DC CONDUCTORS EITHER DO NOT ENTER BUILDING OR ARE RUN IN METALLIC RACEWAYS OR ENCLOSURES TO THE FIRST ACCESSIBLE DC DISCONNECTING MEANS PER ART. 690.31(E).
8. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY INTO BOXES AS REQUIRED BY UL LISTING.
9. MODULE FRAMES SHALL BE GROUNDED AT THE UL-LISTED LOCATION PROVIDED BY THE MANUFACTURER USING UL LISTED GROUNDING HARDWARE.
10. MODULE FRAMES, RAIL, AND POSTS SHALL BE BONDED WITH EQUIPMENT GROUND CONDUCTORS.

JURISDICTION NOTES

LICENSE

MODULE GROUNDING METHOD: ZEP SOLAR

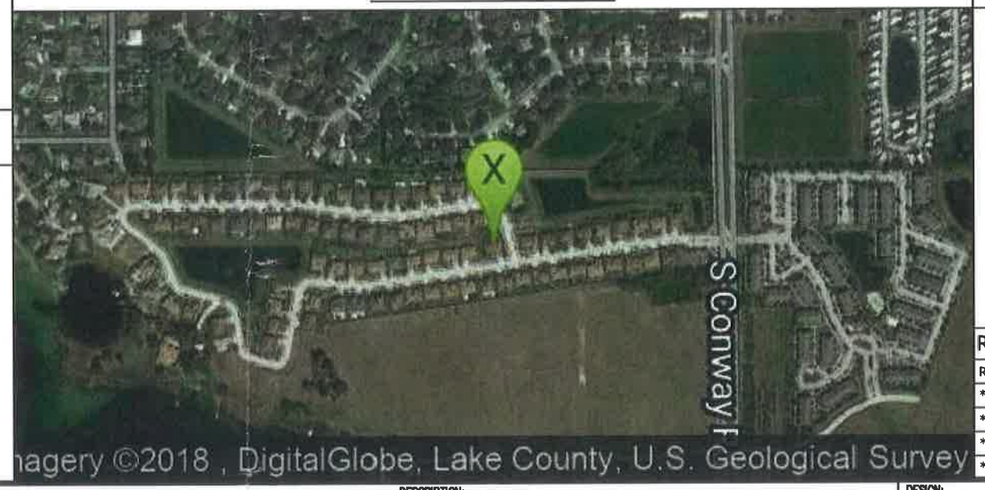
AHJ: Belle Isle

UTILITY: Duke Energy (FL)

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE 2017 FLORIDA BUILDING CODE (6TH EDITION).
2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 NATIONAL ELECTRIC CODE.

VICINITY MAP



INDEX

Reviewed for Code Compliance
Universal Engineering Sciences
4-4-18

REV	BY	DATE	COMMENTS
REVA	Andrew	03/14/18	Added a AC Disconnect
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*

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JOB NUMBER: JB-328765 00

MOUNTING SYSTEM: ZEP Mighty Hook

MODULES: (40) SolarCity Standard #SC325

INVERTER: Multiple Inverters

CUSTOMER:
SHELDON SAMPSON
3903 ISLE VISTA AVE
ORLANDO, FL 32812

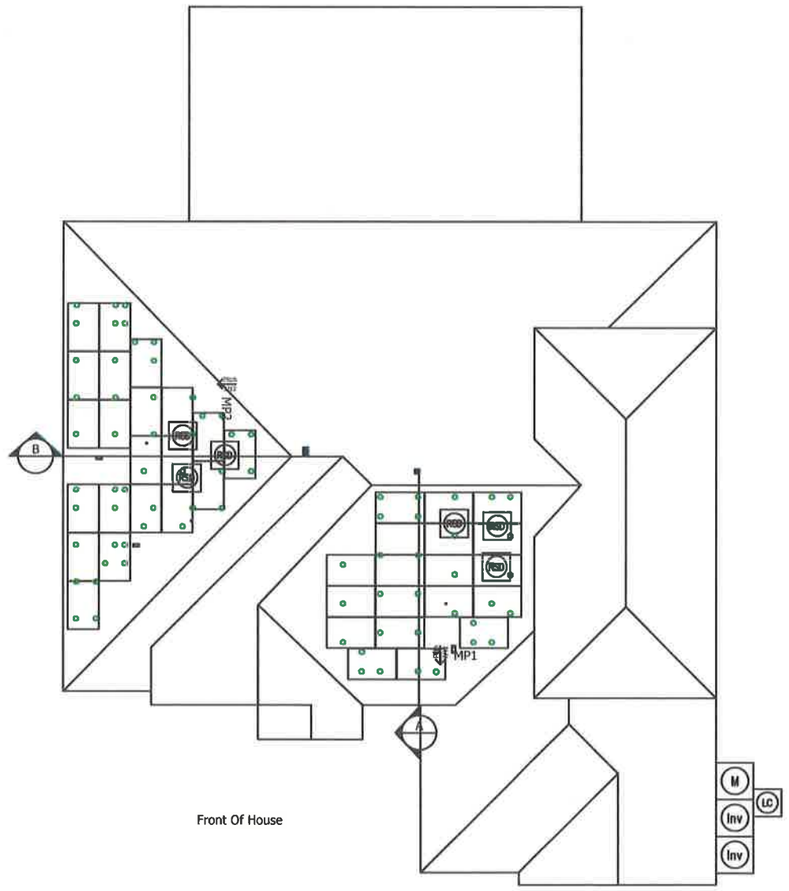
DESCRIPTION: 13 KW PV ARRAY

PAGE NAME: COVER SHEET

DESIGN: Bertha Paz Mendez

SHEET: 1 REV: a DATE: 3/14/2018

TESLA



HUMPHREY KANJA KARIUKI
LICENSE
No. 81206
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Digitally signed by Humphrey Kariuki
Date: 2018.03.15 14:12:55 -04'00'

MP1	PITCH: 14 AZIMUTH: 165 MATERIAL: Spanish Tile	ARRAY PITCH: 14 ARRAY AZIMUTH: 165 STORY: 1 Story
MP2	PITCH: 14 AZIMUTH: 255 MATERIAL: Spanish Tile	ARRAY PITCH: 14 ARRAY AZIMUTH: 255 STORY: 1 Story

LEGEND

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

Reviewed for Code Compliance
Universal Engineering Sciences

SITE PLAN

Scale: 1/16" = 1'

01' 16' 32'

N W E S

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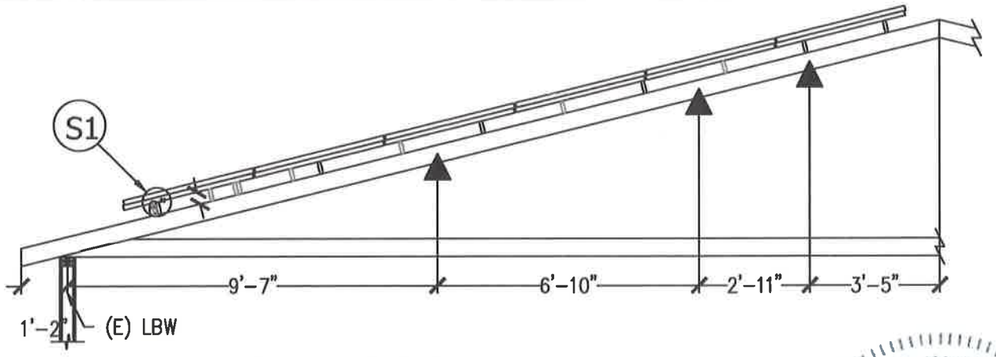
13 KW PV ARRAY

PAGE NAME:
SITE PLAN

DESIGN:
Bertha Paz Mendez

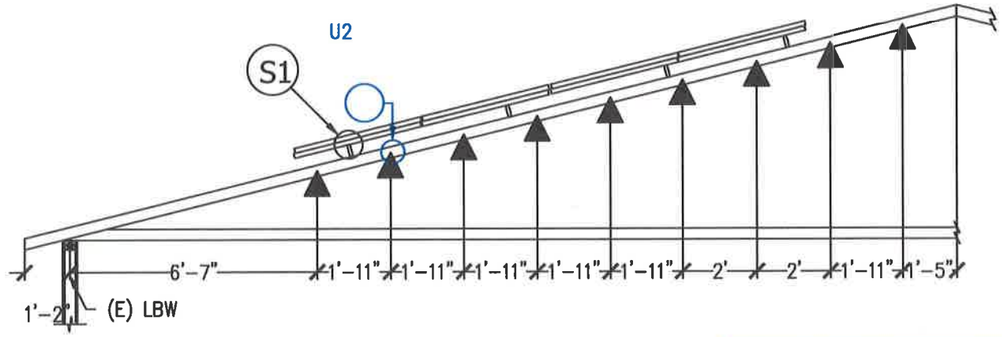
SHEET: 2 REV: a DATE: 3/14/2018

TESLA



A SIDE VIEW OF MP1 NTS

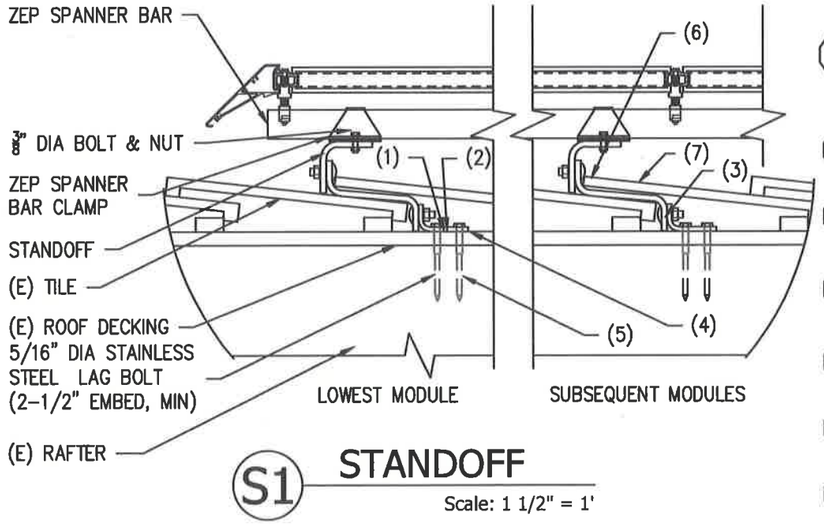
MP1	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	48"	20"	52"	24"	
PORTRAIT	48"	19"	52"	24"	
TOP CHORD 2x6 @ 24" OC BOT CHORD 2x6 @24" OC			ROOF AZI 165 PITCH 14 ARRAY AZI 165 PITCH 14 S-Tile (Cement)		STORIES: 1
X AND Y ARE ALWAYS RELATIVE TO THE STRUCTURE FRAMING THAT SUPPORTS THE PV. X IS ACROSS RAFTERS AND Y IS ALONG RAFTERS.					



B SIDE VIEW OF MP2 NTS

MP2	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	48"	20"	52"	24"	
PORTRAIT	48"	19"	52"	24"	
TOP CHORD 2x4 @ 24" OC BOT CHORD 2x4 @24" OC			ROOF AZI 255 PITCH 14 ARRAY AZI 255 PITCH 14 S-Tile (Cement)		STORIES: 1
X AND Y ARE ALWAYS RELATIVE TO THE STRUCTURE FRAMING THAT SUPPORTS THE PV. X IS ACROSS RAFTERS AND Y IS ALONG RAFTERS.					

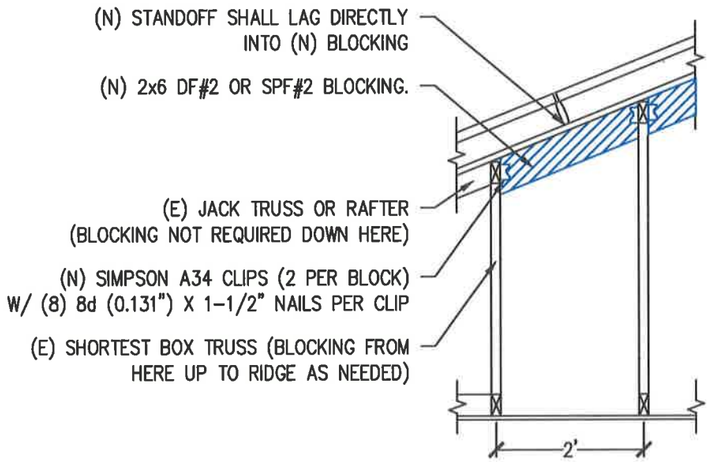
THIS STRUCTURE WILL RECEIVE A BLOCKING UPGRADE.



S1 STANDOFF

Scale: 1 1/2" = 1'

INSTALLATION ORDER	
(1)	LOCATE RAFTER, MARK RAFTER LOCATION, AND REMOVE TILE. PLACE STANDOFF BASE & DRILL PILOT HOLES AT THE RAFTER LOCATION.
(2)	CLEAN PAPER AROUND PILOT HOLE.
(3)	ADJUST STANDOFF TO BATTEN HEIGHT.
(4)	SEAL PILOT HOLES AND BOTTOM OF STANDOFF WITH POLYURETHANE SEALANT.
(5)	LAG STANDOFF INTO RAFTER.
(6)	NOTCH TILE WEATHERING TO FIT AROUND STANDOFF.
(7)	REINSTALL TILE.



U2 NEW BLOCKING SIDE VIEW

Scale: 1/2" = 1'

INSTALLATION NOTES:
1. CUT (N) BLOCKING TO FIT TIGHT BETWEEN (E) TRUSSES AND KEEP FLUSH TO ROOF SHEATHING. ENSURE THERE ARE NO GAPS BETWEEN MEMBERS.
2. INSTALL (N) BLOCKING WITH TWO A34 CLIPS, ONE AT EACH END OF BLOCKING.
3. NAIL A34 CLIPS TO EXISTING RAFTERS WITH (8) 8D (0.131") X 1.5" NAILS, FILLING ALL HOLES. ENSURE ALL NAILS ARE LOCATED AWAY FROM EDGE OF MEMBERS TO AVOID SPLITTING WOOD.

* INSTALL BLOCKING ONLY BELOW STANDOFF LOCATIONS.

Reviewed for Code Compliance
Universal Engineering Sciences

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INVERTER: Multiple Inverters

CUSTOMER:
SHELDON SAMPSON
3903 ISLE VISTA AVE
ORLANDO, FL 32812

DESCRIPTION:
13 KW PV ARRAY

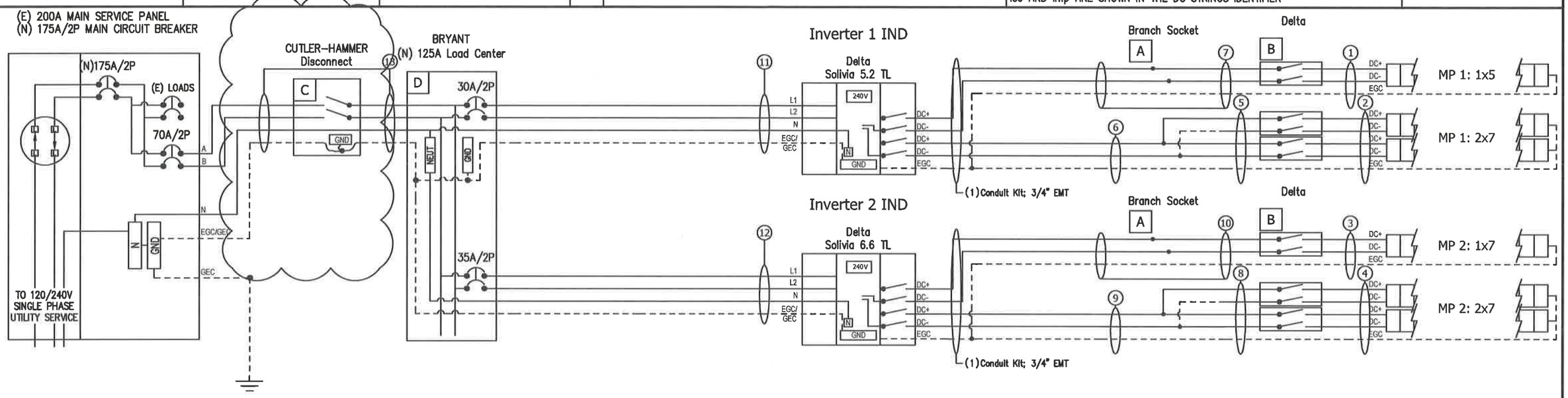
PAGE NAME:
STRUCTURAL VIEWS

DESIGN:
Bertha Paz Mendez

SHEET: 3 REV: a DATE: 3/14/2018

TESLA

GROUND SPECS	MAIN PANEL SPECS	GENERAL NOTES	INVERTER SPECS	MODULE SPECS	LICENSE
BOND (N) #8 GEC TO (N) GROUND ROD AT PANEL WITH IRREVERSIBLE CRIMP	Panel Number: NoMatch Meter Number: 61938037 Underground Service Entrance	Inv 1: DC Ungrounded Inv 2: DC Ungrounded Downsizing Main Breaker For Tie-In	INV 1 — (1) Delta # Solivia 5.2 TL Inverter; 5200W, 240V, 97.5%, Zigbee, PLC INV 2 — (1) Delta # Solivia 6.6 TL Inverter; 6600W, 240V, 97.5%, Zigbee, PLC INV 3	— (40) SolarCity Standard #SC325 PV Module; 325W, 306.5 PTC, 40MM, Blk Frm, Wht Backsheet, MC4, 600v Voc: 69.6 Vpmax: 57.6 Isc AND Imp ARE SHOWN IN THE DC STRINGS IDENTIFIER	ZEP,



Voc* = MAX VOC AT MIN TEMP

POI
- (1) SQUARE D # HOM270 PV BACKFEED BREAKER Breaker; 70A/2P, 2 Spaces
- (1) Ground Rod 5/8" x 8', Copper

C — (1) CUTLER-HAMMER # DG323URB Disconnect; 100A, 240Vac, Non-Fusible, NEMA 3R
- (1) CUTLER-HAMMER # DG100NB Ground/Neutral Kit; 60-100A, General Duty (DG)

D — (1) BRYANT # BR48L125RP Load Center; 125A, 120/240V, NEMA 3R
- (1) CUTLER-HAMMER # BR230 Breaker; 30A/2P, 2 Spaces
- (1) CUTLER-HAMMER # BR235 Breaker; 35A/2P, 2 Spaces

AC

B — (6) Delta # Solivia Smart RSS Rapid Shutdown, 600V, 20A, NEMA 4X, MC4

A — (2) #32.0019 MULTI-CONTACT # PV-AZB4 Branch Socket; MC4 U-Joint Connector, Female Female Male
- (2) #32.0018 MULTI-CONTACT # PV-AZS4 Branch Plug; MC4 U-Joint Connector, Male Male Female

DC

Reviewed for Code Compliance Universal Engineering Sciences

13	10AWG	(1) AWG #6, THWN-2, Black (1) AWG #6, THWN-2, Red (1) AWG #6, THWN-2, White NEUTRAL Vmp = 240 VAC Imp= 49.1 AAC (1) AWG #8, THWN-2, Green EGC/GEC — (1) Conduit Kit; 3/4" EMT				
11	10AWG	(1) AWG #10, THWN-2, Black (1) AWG #10, THWN-2, Red (1) AWG #10, THWN-2, White NEUTRAL Vmp = 240 VAC Imp= 21.6 AAC (1) AWG #8, THWN-2, Green EGC/GEC — (1) Conduit Kit; 3/4" EMT				
12	10AWG	(1) AWG #8, THWN-2, Black (1) AWG #8, THWN-2, Red (1) AWG #10, THWN-2, White NEUTRAL Vmp = 240 VAC Imp= 27.5 AAC (1) AWG #8, THWN-2, Green EGC/GEC — (1) Conduit Kit; 3/4" EMT				
5	SCH 40	(4) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT	Voc* = 518.87 VDC Isc = 12.06 ADC Vmp = 403.2 VDC Imp= 11.3 ADC	1	15A	(2) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 370.62 VDC Isc = 6.03 ADC Vmp = 288 VDC Imp= 5.65 ADC
6	SCH 40	(2) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 518.87 VDC Isc = 12.06 ADC Vmp = 403.2 VDC Imp= 11.3 ADC		2	20A	(4) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 518.87 VDC Isc = 6.03 ADC Vmp = 403.2 VDC Imp= 5.65 ADC
7	SCH 40	(2) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 370.62 VDC Isc = 6.03 ADC Vmp = 288 VDC Imp= 5.65 ADC		3	20A	(2) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 518.87 VDC Isc = 6.03 ADC Vmp = 403.2 VDC Imp= 5.65 ADC
8	SCH 40	(4) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 518.87 VDC Isc = 12.06 ADC Vmp = 403.2 VDC Imp= 11.3 ADC		4	20A	(4) AWG #10, PV Wire, 600V, Black (1) AWG #10, THWN-2, Green EGC (1) Conduit Kit; 3/4" EMT Voc* = 518.87 VDC Isc = 6.03 ADC Vmp = 403.2 VDC Imp= 5.65 ADC

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JOB NUMBER: JB-328765 00

MOUNTING SYSTEM: ZEP Mighty Hook

MODULES: (40) SolarCity Standard #SC325

INVERTER: Multiple Inverters

CUSTOMER:
SHELDON SAMPSON
3903 ISLE VISTA AVE
ORLANDO, FL 32812

DESCRIPTION: 13 KW PV ARRAY

PAGE NAME: THREE LINE DIAGRAM

DESIGN: Bertha Paz Mendez

SHEET: 5 REV: a DATE: 3/14/2018

TESLA

ELECTRICAL CALCULATIONS

Panel Schedule

Load	Breaker
SPA	20A/2P
Range	40A/2P
Dryer	30A/2P
Other	30A/2P
Water Heater	35A/2P
Oven	40A/2P
Air Conditioner	70A/2P
Laundry	20A/1P
Bathroom	20A/1P
Lighting Circuit	15A/1P
Lighting Circuit	15A/1P

NEC 220.83 - Residential Load Calculation

Version 2.1

L1/L2 240 V

NEC 220.83(B) "The general calculated load shall be not less than 100% of the first 8 kVA plus 40% of the remainder of the following loads..."

NEC 220.83(B)(1) "The calculated floor area shall not include open porches, garages, or unused ... spaces..."

Floor Area 3,763 square feet x 3VA/sq ft 11,289 VA

NEC 220.83(B)(2) "1500 volt-amperes for each 2-wire, 20-ampere small appliance branch circuit and each laundry branch circuit..."

Small Appliance Circuits	10 circuits x 1500VA/circuit	15,000 VA
Laundry Circuits	1 circuits x 1500VA/circuit	1,500 VA

NEC 220.83(B)(3) "The nameplate rating of all appliances... ranges, wall-mounted ovens, counter-mounted cooking units... clothes dryers that are not connected to the laundry branch circuit... [and] water heaters"

Load (240V unless otherwise indicated)	Breaker	VA
Air Handler/FAU	30	5,760
Air Handler/FAU	35	6,720
Spa	20	3,840
Range	40	7,680
Dryer	30	5,000
Oven	40	7,680
	0	0
	0	0
	0	0
	0	0
	0	0
		36,680 total VA

Total of non air-conditioning loads:	64,469 total VA
First 8 kVA of load at 100%	8,000
Remainder of load at 40%	22,588
Adjusted total of non air-conditioning load	30,588 VA

NEC 220.83(B) "Heating and air-conditiong load..."

	Breaker	VA
Sum of A/C Equipment Units	70	9,720
Sum of Electric Furnaces	0	0
Sum of Electric Vehicle Charging Supply	0	0
Total of A/C Loads and All Other Loads:		40,308 total VA

Total Proposed Calculated Load: 167.95 Amps

Reviewed for Code Compliance Universal Engineering Sciences

SolarCity

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JOB NUMBER: JB–328765 00

MOUNTING SYSTEM: ZEP Mighty Hook

MODULES: (40) SolarCity Standard #SC325

INVERTER: Multiple Inverters

CUSTOMER: SHELDON SAMPSON
3903 ISLE VISTA AVE
ORLANDO, FL 32812

DESCRIPTION: 13 KW PV ARRAY

PAGE NAME: ELECTRICAL LOAD CALCULATIONS

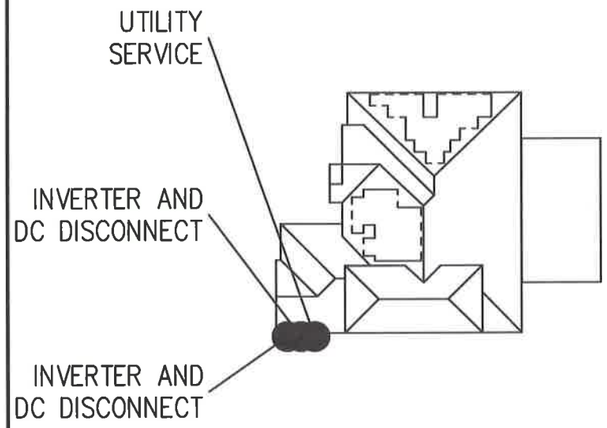
DESIGN: Bertha Paz Mendez

SHEET: 6 REV: a DATE: 3/14/2018

TESLA

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN:



SOLAR PHOTOVOLTAIC ARRAY(S)

PHOTOVOLTAIC BACK-FED CIRCUIT BREAKER IN MAIN ELECTRICAL PANEL IS AN A/C DISCONNECT PER NEC 690.17

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JOB NUMBER: JB-328765 00
MOUNTING SYSTEM: ZEP Mighty Hook
MODULES: (40) SolarCity Standard #SC325
INVERTER: Multiple Inverters

CUSTOMER:
SHELDON SAMPSON
3903 ISLE VISTA AVE
ORLANDO, FL 32812

DESCRIPTION:
13 KW PV ARRAY

PAGE NAME:
SITE PLAN PLACARD

DESIGN:
Bertha Paz Mendez

SHEET: 7 REV: a DATE: 3/14/2018

TESLA

WARNING: PHOTOVOLTAIC POWER SOURCE

Label Location:
(C)(CB)(JB)
Per Code:
NEC 690.31.G.3

PHOTOVOLTAIC DC DISCONNECT

Label Location:
(DC) (INV)
Per Code:
NEC 690.14.C.2

MAXIMUM POWER-POINT CURRENT (Imp) ____ A
MAXIMUM POWER-POINT VOLTAGE (Vmp) ____ V
MAXIMUM SYSTEM VOLTAGE (Voc) ____ V
SHORT-CIRCUIT CURRENT (Isc) ____ A

Label Location:
(DC) (INV)
Per Code:
NEC 690.53

WARNING
ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED
NORMALLY GROUNDED
CONDUCTORS MAY BE
UNGROUNDED AND ENERGIZED

Label Location:
(DC) (INV)
Per Code:
NEC 690.5(C)

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
DC VOLTAGE IS
ALWAYS PRESENT WHEN
SOLAR MODULES ARE
EXPOSED TO SUNLIGHT

Label Location:
(DC) (CB)
Per Code:
NEC 690.17(4)

PHOTOVOLTAIC AC DISCONNECT

Label Location:
(AC) (POI)
Per Code:
NEC 690.14.C.2

MAXIMUM AC OPERATING CURRENT ____ A
MAXIMUM AC OPERATING VOLTAGE ____ V

Label Location:
(AC) (POI)
Per Code:
NEC 690.54

WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

Label Location:
(AC)(POI)
Per Code:
NEC 690.17.E

PHOTOVOLTAIC POINT OF INTERCONNECTION
WARNING: ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDE MAY BE ENERGIZED IN THE OPEN POSITION. FOR SERVICE DE-ENERGIZE BOTH SOURCE AND MAIN BREAKER.
PV POWER SOURCE
MAXIMUM AC OPERATING CURRENT ____ A
MAXIMUM AC OPERATING VOLTAGE ____ V

Label Location:
(POI)
Per Code:
NEC 690.17.4; NEC 690.54

CAUTION
DUAL POWER SOURCE
SECOND SOURCE IS
PHOTOVOLTAIC SYSTEM

Label Location:
(POI)
Per Code:
NEC 690.64.B.4

CAUTION
PHOTOVOLTAIC SYSTEM
CIRCUIT IS BACKFED

Label Location:
(D) (POI)
Per Code:
NEC 690.64.B.4

WARNING
INVERTER OUTPUT
CONNECTION
DO NOT RELOCATE
THIS OVERCURRENT
DEVICE

Label Location:
(POI)
Per Code:
NEC 690.64.B.7

WARNING
ELECTRIC SHOCK HAZARD
THE DC CONDUCTORS OF THIS
PHOTOVOLTAIC SYSTEM ARE
UNGROUNDED AND
MAY BE ENERGIZED

Label Location:
(DC) (INV)
Per Code:
NEC 690.35(F)
TO BE USED WHEN
INVERTER IS
UNGROUNDED

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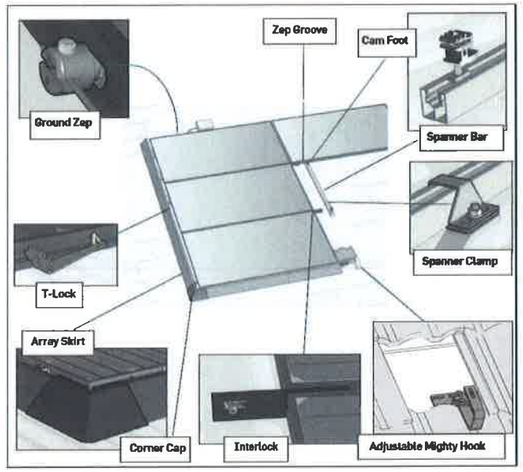
(AC): AC Disconnect
(C): Conduit
(CB): Combiner Box
(D): Distribution Panel
(DC): DC Disconnect
(IC): Interior Run Conduit
(INV): Inverter With Integrated DC Disconnect
(LC): Load Center
(M): Utility Meter
(POI): Point of Interconnection

	Label Set		

ZS Span

for concrete tile roofs



Description

- PV mounting solution for concrete tile roofs
- Works with all Zep Compatible Modules
- Auto bonding UL-listed hardware creates structural and electrical bond
- Zep System has a UL 1703 Class "A" Fire Rating when installed using modules from any manufacturer certified as "Type 1" or "Type 2"

Specifications

- Designed for pitch roofs
- Installs in portrait and landscape orientations
- Zep System supports module wind uplift and snow load pressures to 50 psf per UL 1703
- Wind tunnel report to ASCE 7-05 and 7-10 standards
- Zep System grounding products are UL listed to UL 2703 and ETL listed to UL 467
- Zep System bonding products are UL listed to UL 2703
- Engineered for spans up to 72" and cantilevers up to 24"
- Zep wire management products listed to UL 1565 for wire positioning devices
- Attachment method UL listed to UL 2582 for Wind Driven Rain

This document does not create any express warranty by Zep Solar or about its products or services. Zep Solar's sole warranty is contained in the written product warranty for each product. The end-user documentation shipped with Zep Solar's products constitutes the sole specifications referred to in the product warranty. The customer is solely responsible for verifying the suitability of ZepSolar's products for each use. Specifications are subject to change without notice. Patents and Apps: zspats.com.

Document # 800-1730-001 Rev A

Date last exported: April 20, 2015 2:14 PM

SolarCity | ZepSolar

Next-Level PV Mounting Technology

Components

1x 3x 4x Spanner Bar

Part Nos.
850-1400 - 4x
580-1399 - 3x
850-1398 - 1x

Splice Kit

Part No. 850-1401
Listed to UL 2703

Spanner Clamp

Part No. 850-1194
Listed to UL 2703

Mighty Hook V2, HDG

Part No. 850-1461
Listed to UL 2703

Interlock

Part No. 850-1388
Listed to UL 2703

Cam Foot

Part No. 850-1413
Listed to UL 2703

Ground Zep

Part No. 850-1172
ETL listed to UL 467

Array Skirt, Grip, End Caps

Part Nos. 850-0113, 850-1421,
850-1460, 850-1467
Listed to UL 1565

DC Wire Clip

Part No. 850-1448
Listed to UL 1565

zepsolar.com

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Document # 800-1730-001 Rev A

Date last exported: April 20, 2015 2:14 PM

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Universal Engineering Sciences

Rapid Shutdown Device
for Delta 3.0~7.6 TL Inverters

Delta's Rapid Shutdown Devices provide an automatic disconnect of 600VDC residential or small commericial PV array system, fully compliant with the Rapid Shutdown requirements of NEC 2014 article 690.12. It is compatible with Delta's single-phase residential inverters.

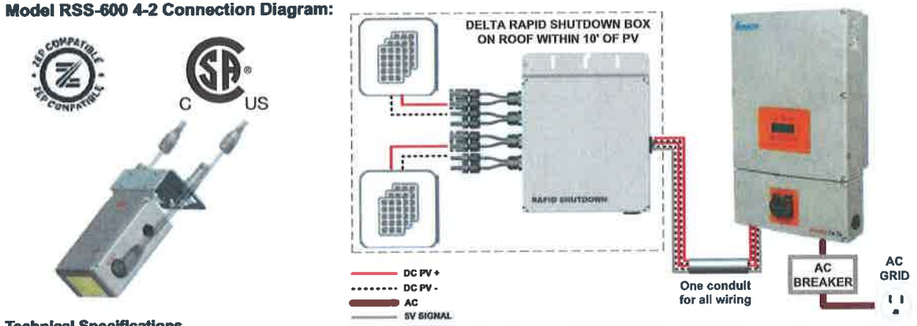
KEY FEATURES

- NEMA 4X Protection
- Compact and Lightweight
- Rack Mount Installation
- Fast Connect with PV Connectors
- Compliant with NEC 2014 article 690.12
- PLC Communication (Model RSS-600 1-1 only)

C US

www.delta-americas.com

Model RSS-600 4-2 Connection Diagram:



Technical Specifications

	RSS-600 1-1	RSS-600 4-2
Input Ratings		
Max. System Voltage	600V DC	600V DC
Max. Number of Input Circuit	1	4
Rated Input Current Per String	20A	10A
Fuse Rating	N/A	15A
Output Ratings		
Max. Number of Output Circuit	1	2
Rated Output Current Per Circuit	20A	20A
Maximum Current Controlled Conductor	25A	25A
Output Terminal Wire Size	10 AWG	12-6 AWG
Output Conduit Size	N/A	3/4" (two holes)
Control Signal Method	PLC Signal	5V Signal Wire
5V Signal Wire Voltage Rating	N/A	600V
5V Signal Wire Size Range	N/A	24-14 AWG
General Data		
Enclosure Size in Inches L x W x D (mm)	7.87 x 5.91 x 2.09 (200 x 150 x 53)	12.44 x 10.04 x 2.16 (316 x 255 x 55)
Weight	2.86lbs (1.3kg)	6.6lbs (3.0kg)
Input Connectors	MC-4 PV Connector or Amphenol H4 PV Connector	MC-4 PV Connector or Amphenol H4 PV Connector
Output Connectors	MC-4 PV Connector or Amphenol H4 PV Connector	Screw Terminal Blocks
Operating Temperature	-40 ~ 158°F (-40 ~ 70°C)	-40 ~ 158°F (-40 ~ 70°C)
Storage Temperature	-40 ~ 185°F (-40 ~ 85°C)	-40 ~ 185°F (-40 ~ 85°C)
Humidity	0 ~ 100%	0 ~ 100%
Max. Operating Altitude	2000m above sea level	2000m above sea level
Warranty	10 Years	10 Years
Standard Compliance		
Enclosure Protection Rating	NEMA 4X	NEMA 4X
Safety	UL 1741, CSA 22.2 107-1	UL 1741, CSA 22.2 107-1
NEC Code	NEC 2014 Article 690.12	NEC 2014 Article 690.12

Finished specifications subject to change without notice

Delta Products Corporation, Inc.
46101 Fremont Blvd.
Fremont, CA 94538
Sales Email: Inverter.Sales@delta-corp.com
Support Email: Inverter.Support@delta-corp.com
Sales Hotline: +1-877-440-5851 or
+1-626-369-8021
Support Hotline: +1-877-442-4832
Support (Intl.): +1-626-369-8019
Monday to Friday from 7am to 5pm PST (apart from Holidays)

www.delta-americas.com/solarinverters

Rev. 01/2017 - All information and specifications are subject to change without notice.

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Solar Inverters

Transformerless (TL): 3.8 kW, 5.2 kW, 6.6 kW, 7.6 kW

- Wide Operating Voltage Range: 85 ~ 550V
- Wide Operating Temperature Range: -13 ~ 158°F (-25 ~ 70°C)
- High CEC Efficiency: 97.5%
- Integrated AFCI (Arc Fault Circuit Interruption)
- NEMA 4X plus Salt Mist Corrosion Protection
- Natural Convection Cooling
- Dual MPPT (5.2kW / 6.6kW / 7.6kW)
- Compact and Lightweight
- UL 1741 / IEEE 1547 / IEEE 1547.1 / CEC Listed /UL 1699B(Type 1) / NEC 690.11

C US

DELTA

Delta Solar Inverters Datasheet for SolarCity

	SOLIVIA 3.0 TL	SOLIVIA 3.8 TL	SOLIVIA 5.2 TL	SOLIVIA 6.6 TL	SOLIVIA 7.6 TL
INPUT (DC)					
Max. System Voltage	600 V				
Nominal Voltage	380 V				
Operating Voltage Range	85 ~ 550 V				
Full Power MPPT Range	200 - 500 V				
Max. Usable Current	18.0 A	20.0 A	20.0 A per MPP tracker		
Max. Short Circuit Current @ STC	25.0 A per MPP tracker				
Max. Allowable Inbalance Power	-		4200 W	5000 W	5600 W
Allowed DC Loading Ratio	1.5				
DC Disconnect	Internal				
MPP Tracker	1			2	
Total Input Strings Available	2			4	
OUTPUT (AC)					
Nominal Power	3000 W	3800 W	5200 W	6600 W	7600 W
Max. Continuous Power	3000 W @ 208 V / 3000 W @ 240 V	3300 W @ 208 V / 3800 W @ 240 V	5200 W @ 208 V / 5200 W @ 240 V	6600 W @ 208 V / 6600 W @ 240 V	6600 W @ 208 V / 7600 W @ 240 V
Voltage Range	183 ~ 228 V @ 208 V / 211 ~ 264 V @ 240 V				
Nominal Current	14.4 A @ 208 V / 12.5 A @ 240 V	15.8 A @ 208 V / 15.8 A @ 240 V	24.0 A @ 208 V / 21.6 A @ 240 V	31.7 A @ 208 V / 27.5 A @ 240 V	31.7 A @ 208 V / 31.7 A @ 240 V
Nominal Frequency	60 Hz				
Frequency Range	59.3 ~ 60.5 Hz				
Adjustable Frequency Range	57.0 ~ 63.0 Hz				
Night Consumption	< 1.5 W				
Total Harmonic Distortion @ Nominal Power	< 3%				
Power Factor @ Nominal Power	> 0.99				
Adjustable Power Factor Range	0.85i ~ 0.85c				
Acoustic Noise Emission	<50 db(A) @ 1m				
GENERAL SPECIFICATION					
Max. Efficiency	98%				
CEC Efficiency	97.5% @ 208V / 97.5% @ 240V				
Operating Temperature Range	-13 ~ 158°F (-25~70°C) | derating above 122°F (50°C)				
Storage Temperature Range	-40 ~ 185°F (-40 ~ 85°C)				
Humidity	0 ~ 100%				
Max. Operating Altitude	2000m above sea level				
MECHANICAL DESIGN					
Size L x W x D inches (L x W x D mm)	19.5 x 15.8 x 8.5 in (495 x 401 x 216 mm)		26.8 x 15.8 x 8.5 in (680 x 401 x 216 mm)		
Weight	43.0 lbs (19.5 kg)		65.0 lbs (29.5 kg)		
Cooling	Natural Convection				
AC Connectors	Spring terminals in connection box				
Compatible Wiring Guage in AC	AWG 12 ~ AWG 6 Copper (According to NEC 310.15)				
DC Connectors	2 pairs of spring terminals in connection box		4 pairs of spring terminals in connection box		
Compatible Wiring Guage in DC	AWG 12 ~ AWG 6 Copper (According to NEC 690.8)				
Communication Interface	ZigBee				
Display	3 LEDs, 4-Line LCD				
Enclosure Material	Diecast Aluminum				
STANDARDS / DIRECTIVES					
Enclosure Protection Rating	NEMA 4X, IEC 60068-2-11 Salt mist				
Safety	UL 1741 Second Edition, CSA C22.2 No.107.1-01				
EMI Approval	UL 1998				
Ground-Fault Protection	NEC 690.35, UL 1741 CRD				
Anti-Islanding Protection	IEEE 1547, IEEE 1547.1				
EMC	FCC part 15 Class B				
AFCI	UL 1699B (Type 1), NEC 690.11				
PV Rapid Shutdown	UL 1741 CRD PVRSS, NEC 690.12 (with SMART RSS)				
Integrated Meter	ANSI C12.1 (meet 1% Accuracy)				
Regulation of Grid Support	California Rule 21, HECO Compliant, IEEE1547				
WARRANTY					
Standard Warranty	10 years				

Delta Products Corporation, Inc.
46101 Fremont Blvd,
Fremont, CA 94538
Sales Email: inverter.sales@deltaww.com
Support Email: inverter.support@deltaww.com
Sales Hotline: +1-877-440-5851 or +1-626-369-8021
Support Hotline: +1-877-442-4832
Support (Intl.): +1-626-369-8019
Monday to Friday from 7 am to 5 pm PST (apart from Holidays)

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Universal Engineering Sciences

DELTA

SC325

SolarCity

More power, less panels.

With a sunlight to electricity conversion efficiency of over 19.4% the panel ranks amongst the highest in the industry. That means our panels can harvest more energy from the sun, which means it takes fewer of our panels to power your home. Plus, they generate more power output during the hottest times of the day, even in warmer climates.

More power per panel
Our 325W panel generates 20% more power than a standard 270W panel.

More energy every year
More yearly energy (kWh) compared to other panels as they perform better in the heat.

Outstanding durability
With more than 20 additional tests performed beyond what is currently mandated, these panels far exceed industry standards.

More layers, more power
Manufactured by Panasonic for SolarCity, the panel uses Heterojunction cell technology, which adds a layer of thin film silicon on top of high efficiency cyrstalline silicon.

Leading warranty
Our panels rank among the best in warranty coverage, with workmanship that extends to 15 years.

RoHS | UL LISTED | IEC61215 IEC61730-1 IEC61730-2 | Electrical Protection Class II | CE

solarcity.com

ELECTRICAL AND MECHANICAL CHARACTERISTICS

ELECTRICAL DATA

Max. power (Pmax) [W]	325
Max. power voltage (Vmp) [V]	57.6
Max. power current (Imp) [A]	5.65
Open circuit voltage (Voc) [V]	69.6
Short circuit current (Isc) [A]	6.03
Max. over current rating [A]	15
Power tolerance [%]*	+5/-0
Max. system voltage [V]	600
Solar Panel efficiency [%]	19.4

Note: Standard Test Conditions: Air mass 1.5; Irradiance = 1000W/m2; cell temp. 25°C
*Maximum power at delivery. For limited warranty conditions, please check our limited warranty document.

TEMPERATURE CHARACTERISTICS

Temperature (NOCT) [°C]	44.0
Temp. coefficient of Pmax [%/°C]	-0.258
Temp. coefficient of Voc [%/°C]	-0.235
Temp. coefficient of Isc [%/°C]	0.055

AT NOCT (NORMAL OPERATING CONDITIONS)

Max. power (Pmax) [W]	247.5
Max. power voltage (Vmp) [V]	54.2
Max. power current (Imp) [A]	4.56
Open circuit voltage (Voc) [V]	66.1
Short circuit current (Isc) [A]	4.87

Note: Normal Operating Cell Temp.: Air mass 1.5; Irradiance = 800W/m2
Air temperature 20°C; wind speed 1 m/s

AT LOW IRRADIANCE (20%)

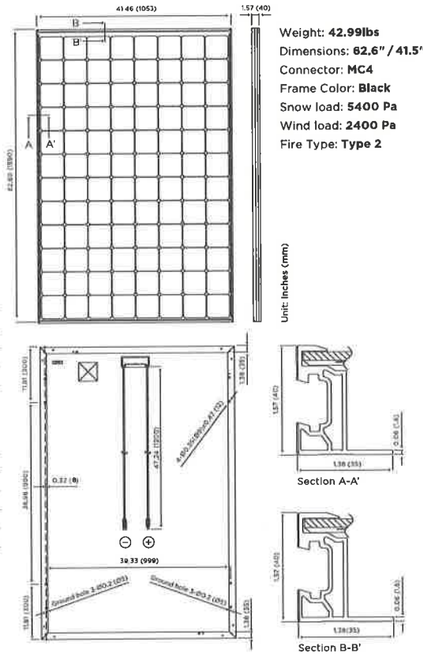
Max. power (Pmax) [W]	62.0
Max. power voltage (Vmp) [V]	55.7
Max. power current (Imp) [A]	1.11
Open circuit voltage (Voc) [V]	65.1
Short circuit current (Isc) [A]	1.21

Note: Low irradiance: Air mass 1.5; Irradiance = 200W/m2; cell temp. = 25°Cvv

LIMITED WARRANTY	Power output:	10 years (90% of Pmin) 25 years (80% of Pmin)
	Workmanship:	15 years
MATERIALS	Cell material:	5 inch photovoltaic cells
	Glass material:	AR coated tempered glass
	Frame materials:	Black anodized aluminium
	Connectors type:	MC4

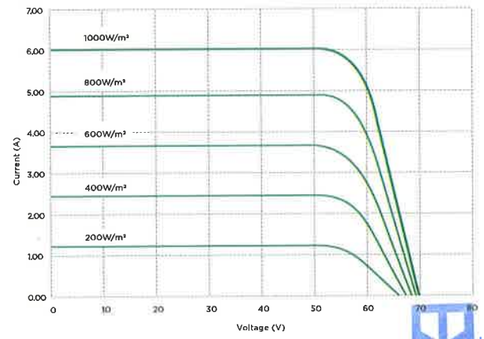
⚠ **CAUTION!** Please read the installation manual carefully before using the products.

MECHANICAL DATA



Weight: **42.99lbs**
Dimensions: **62.6" / 41.5" / 1.57"**
Connector: **MC4**
Frame Color: **Black**
Snow load: **5400 Pa**
Wind load: **2400 Pa**
Fire Type: **Type 2**

DEPENDENCE ON IRRADIANCE



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Panels are manufactured by Panasonic to the specification of SolarCity. Panels are only warranted by Panasonic if the panels are included in a PV system sold by SolarCity or Tesla. SolarCity and Tesla make no warranties related to the panels, which are sold as-is. SolarCity will handle any warranty claims on behalf of any purchaser.

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