



City of Belle Isle

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

PERMIT CARD – PLEASE POST AT JOB SITE

THIS DOCUMENT BECOMES YOUR PERMIT WHEN PROPERLY VALIDATED

Per FBC 105.3.3: An enforcing authority may not issue a building permit for any building construction, erection, alteration, modification, repair or addition unless the permit either includes on its face or there is attached to the permit the following statement: "NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies." The issuance of this permit does not grant permission to violate any applicable City, Orange County, State of Florida and/or Federal codes and/or ordinances. Separate permits are required for Signs, Roofing, Electrical, Gas, Plumbing and Mechanical services. This permit becomes VOID if the work authorized is not commenced within 6 months, or is suspended or abandoned for a period of 6 months after commencement. **WORK SHALL BE CONSIDERED SUSPENDED IF AN APPROVED INSPECTION HAS NOT BEEN MADE WITHIN A 6 MONTH PERIOD.** PERMISSION IS GRANTED TO DO THE FOLLOWING WORK ACCORDING TO THE CONDITIONS HEREON AND THE APPROVED PLANS AND SPECIFICATIONS, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF BELLE ISLE, FLORIDA.

<p>Scope of Work: BUILDING: Photo Voltaic System with Electric</p> <p>comments: NONE</p> <p>Project Information Address: 4155 Bell Tower Ct, Belle Isle, FL 32809 Parcel ID: 20-23-30-1618-00-470 Property Owner: Grozio, Derek Phone Number: 321 662 9627 ***** Company Name: SEM – Solar Energy Management Contractor Name: Emes, Brett License Number: CVC56782 & CBC1250267 Address: 4640 Eagle Falls Place, Tampa, FL 33619 Phone Number: 813 785 6799</p>	<p style="text-align: right;">Permit Number: 2016-04-023</p> <p style="text-align: right;">Date of Application: 04/14/2016 Date Permit Issued: 04/15/2016</p> <p>WARNING TO OWNER: "YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT." ON THE JOB INSPECTION(S) MUST BE MADE BEFORE PROCEEDING WITH SUBSEQUENT WORK. THIS CARD MUST BE DISPLAYED OUTSIDE AND BE PROTECTED FROM THE WEATHER WHILE BEING VISIBLE FROM THE STREET UNTIL THE FINAL INSPECTIONS HAVE BEEN APPROVED.</p>
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BUILDING FEATURES

<p>IMPACT FEES</p> <p>School \$ Traffic \$</p> <p>ZONING FEES</p> <p>Zoning Fee \$50.00</p> <p>UNIVERSAL ENG - BUILDING FEES</p> <p>Cert of Occ \$ Demo \$ Building \$109.00 Fence \$ Driveway \$ Shed \$ Window(s) \$ Door(s) \$ PrePower \$ Electrical \$ Temp Pole \$ Plumbing \$ Mechanical \$ Gas \$ Roofing \$ Boat Dock \$ Screen Encl \$ Swimming Pool \$ Sign \$</p> <p>SURCHARGE FEES</p> <p>Surcharge Fee \$2.00 Surcharge Fee \$2.00</p> <p style="text-align: center;">TOTAL FEES \$163.00</p> <p>Date Paid <u>4-15-16</u></p> <p>CC or Check # <u>2698</u></p> <p>Amount Paid <u>163.00</u></p> <p>The person accepting this permit shall conform to the terms of the application on file and construction shall conform to the requirements of the Florida Building Code (FS 553).</p>	<p style="text-align: center;">BUILDING INSPECTOR USE ONLY</p> <p>IF APPLICABLE: Have Zoning Approval Conditions Been Met? YES NO Have Stormwater Approval Conditions Been Met? YES NO Silt fencing in place? YES NO Turbidity Barrier in place? YES NO</p> <p>BUILDING</p> <p>1st _____ (Footing/Foundation) Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? _____</p> <p>2nd _____ (Slab)</p> <p>3rd _____ (Lintel)(Wall Reinforcing on Masonry Building)</p> <p>4th _____ (Exterior Framing)(Roof/Wall Sheathing)</p> <p>5th _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins & Windows/Doors Installed)</p> <p>6th _____ (Insulation to be Made After Roof Installed)</p> <p>7th _____ (Drywall)</p> <p>8th _____ (Sidewalk/Driveway)</p> <p>9th _____ (Other)</p> <p>10th _____ (Final – After MEP and Other Applicable Finals)</p> <p>ROOFING</p> <p>1ST ROOFING Deck Nailing/Dry-in/Flashing _____</p> <p>2nd ROOFING Covering In-Progress _____</p> <p>3rd ROOFING Covering Final _____</p> <p>PLUMBING (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...)</p> <p>1ST _____ (Underground) 2nd _____ (Sewer)</p> <p>3rd _____ (Rough-In/Tub Set) 4th _____ (Final)</p> <p>CHECK APPROPRIATE BOX</p> <p><input type="checkbox"/> GAS <input type="checkbox"/> Natural <input type="checkbox"/> LP <input type="checkbox"/> MECHANICAL <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> LOW VOLTAGE</p> <p>1st _____ (Rough-In) 2nd _____ (Final)</p>
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Inspection requests are to be emailed to IDScheduling@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.

For a copy of your permit, or to check inspection results, please visit <https://universalengineering.sharefile.com>
 login ID = cobi@universalengineering.com password = universal13



APR 12 2016

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 15 2016
Angelo
348-7705

Building Permit (Land Use) Application

DATE: 3-23-16

PERMIT # 2016-04-023

PROJECT ADDRESS 4155 Bell Tower Ct

Belle Isle, FL 32809 32812

PROPERTY OWNER Derek P Grozio

PHONE 321-662-9627

VALUE OF WORK (labor & material) \$ 22,222.00

PLEASE LIST THE NATURE OF YOUR PROPOSED IMPROVEMENTS

20,222 + 2000 Electric

Install Photo Voltaic System w/ electric

Please provide information, if applicable.

- SINGLE FAMILY RESIDENCE:** 8.5"x11" Plat Survey, Plot Plan of Home and Floor Plans of New Construction/Revision Required
- BOAT DOCK:** DEP Clearance Required with Application (Call 407-897-4100); please provide a copy of their report
- SEPTIC SYSTEM (RESIDENTIAL):** - Provide verification of OC Health Dept approval for on-site septic tank system, per FAC Chap. 64E-6
- Homeowners will be required to have a contractor on record for homes that are rented and/or not homestead

Please Complete for the City of Belle Isle Zoning Review: Parcel Id Number: 20-23-30-1618-00-470

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

SPECIAL CONDITIONS: STRUCTURES MAY NOT ENCROACH INTO ANY EASEMENT OR REQUIRED SETBACK. Survey specific foundation plan required to show compliance with zoning setbacks. Note: this Zoning Approval MAY or MAY NOT be in conflict with your Deed Restrictions. For New Single Family Residence, a Traffic Impact Fee and School Impact will be assessed.

Wind Exposure Category: B ___ C ___ D ___

PLANNING & ZONING APPROVAL: _____
DATE _____

PLEASE COMPLETE for Building Review (min. of 2 sets of signed/sealed plans required)

CONSTRUCTION TYPE _____

OCCUPANCY GROUP Comm Res: Single Fam Multi Fam

#BLDG. _____ #UNITS _____ #STORIES _____ TOTAL SQ.FT. _____

MAX. FLOOR LOAD _____ MAX. OCCUPANCY _____

MIN. FLOOD ELEV. _____ LOW FLOOR ELEV. _____

WATER SERVICE WELL SEPTIC _____

BUILDING REVIEWER [Signature] DATE 4/15/16

VERIFIED CONTRACTOR'S LICENSE & INSURANCE ARE ON FILE [Signature] DATE 4-13-16

Per FSS 105.3.3:
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Republic Services is by legal contract the sole authorized provider of garbage, recycling, yard waste, and commercial garbage and construction debris collection and disposal services with the city limits of the City. Contractors, homeowners and commercial businesses may contact Republic Services at 407-293-8000 to set up accounts for Commercial, Construction Roll Off, or other services needed. Rates are fixed by contract and are available at City Hall or from Republic Services. The City enforces the contract through its code enforcement office. Failure to comply will result in a stop work order.

SEPARATE PERMITS ARE REQUIRED FOR ROOFING, ELECTRICAL, PLUMBING, GAS, MECHANICAL, SIGNS, POOLS, ENCLOSURES, ETC.

Page 1 of 2

Riday: 813 347-7161
wo 66675

1571K 25
21 x 4 84
109

SPRINKLERS REQ'D	Y	N	
If Required - SUBMIT COPY OF PLANS FOR FIRE REVIEW			
	Date: Sent	RCD	
ZONING	<input checked="" type="radio"/>	N	\$ 50.00
CERT OF OCC	<input type="radio"/>	N	\$
TRAFFIC	<input type="radio"/>	N	\$
SCHOOL	<input type="radio"/>	N	\$
FIRE	<input type="radio"/>	N	\$
SWIMMING POOL	<input type="radio"/>	N	\$
SCREEN ENCLOSURE	<input type="radio"/>	N	\$
ROOFING	<input type="radio"/>	N	\$
BOAT DOCK	<input type="radio"/>	N	\$
BUILDING	<input checked="" type="radio"/>	N	\$ 169.00
WINDOW(S)	<input type="radio"/>	N	\$
DOOR(S)	<input type="radio"/>	N	\$
FENCE	<input type="radio"/>	N	\$
SHED	<input type="radio"/>	N	\$
DRIVEWAY	<input type="radio"/>	N	\$
OTHER	<input type="radio"/>	N	\$
3% FL SURCHARGE			\$ 4.00
TOTAL			\$ 163.00
By Owner Form	Y	NA	
Notice of Commencement	Y	NA	
Power of Attorney	Y	NA	
Contractor Packet Included?	Y	N	
OTHER PERMITS REQUIRED:			
ELECTRICAL	Y	NA	
PREPOWER	Y	NA	
MECHANICAL	Y	NA	
PLUMBING	Y	NA	
ROOFING	Y	NA	
GAS	Y	NA	



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 Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
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Building Permit (Land Use) Application
 To be completed as required by State Statute Section 713 and other applicable sections.

PERMIT # 2016-04-023

Owner's Name Derek P Grozio

Owner's Address 4155 Bell Tower Ct Belle Isle, FL 32812

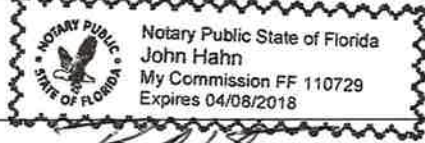
Contractor Name Brett L Emes	Company Name SEM LLC dba Solar Energy Management
License # CVC56782 & CBC1250267	Company Address 4640 Eagle Falls Place
Contact Phone/Cell 813-785-6799	City, State, ZIP Tampa, FL 33619
Contact Email gia@solarenergymgmt.com	Contact Fax

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 if job is \$2500(+) or if A/C Replacement \$7500(+) 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.

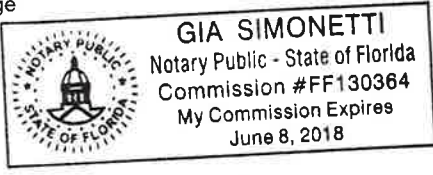
I hereby make Application for Permit as outlined above, and if same is granted I agree to conform to all Division of Building Safety Regulations (www.floridabuilding.org) and City Ordinances (www.municode.com) regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable City and/or State of Florida codes and /or ordinances. Application is hereby made to obtain a permit to do the work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards of all laws regulating construction in this jurisdiction. I understand that a **separate** permit must be secured for all other construction including ROOFING, ELECTRICAL, MECHANICAL, PLUMBING, GAS, SIGNS, POOLS, SCREEN ENCLOSURES, ETC.

OWNER'S AFFIDAVIT: I certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

Owner Signature [Signature]
 The foregoing instrument was acknowledged before me this 03/25/16
 by Derek P. Grozio who is personally known to me
 and who produced FL Driver's License
 as identification and who did not take an oath.
 Notary as to Owner [Signature]
 State of Florida
 County of Orange



Contractor Signature [Signature]
COMPANY NAME SEM LLC dba Solar Energy Management
 The foregoing instrument was acknowledged before me this 3/30/16
 by Brett L Emes who is personally known to me
 and who produced [Signature]
 as identification and who did not take an oath.
 Notary as to Owner [Signature]
 State of Florida
 County of Orange



Impervious Surface Ratio Worksheet
 Development Zoned A-1, A-2, R-1-AAA, R-1-AA, R-1-A, R-1 per City Code, Section 50-74: Impervious Surface Ratio

- Total Lot Area (sqft) X 0.35 = Allowable Impervious Area (BASE).
 Total Lot Area _____ X 0.35 =
 Allowable Impervious Area (BASE) _____
- Calculate the "proposed" impervious area on the lot. This includes the sum of all areas that do not allow direct percolation of rainwater. Examples include house, pool, deck, driveway, accessory building, etc.
 - House _____
 - Driveway _____
 - Walkway _____
 - Accessory Buildings _____
 - Pool & Spa _____
 - Deck & Patio _____
 - Other _____
 Actual Impervious Area (AIA) _____
- If AIA is less than BASE, subtract AIA from BASE to determine the amount of impervious area that may be added without providing onsite retention.
- If AIA is greater than BASE, then onsite retention **must be provided**.

Assuming 7.5 inches of rainfall based on a 24hr 10 year Rain Event (TP40), the formula is: (7.5 inches rainfall/12 inches p/foot) X (result from line 4) = cubic feet of storage volume needed

Belle Isle

Permit Number: 2016-04-023
Folio/Parcel Identification Number: 20-23-30-1618-00-470
Prepared by: _____

DOCH 20160190507
04/15/2016 11:48:29 AM Page 1 of 1
Rec Fee: \$10.00
Martha O. Haynie, Comptroller
Orange County, FL
MB - Ret To: SOLAR ENERGY MANAGEMENT



Return to: _____

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.

- Description of property** (legal description of the property, and street address if available)
CONWAY GROVES UNIT 1 36/3 LOT 47
- General description of improvement**
Install Photo Voltaic System w/ electric
- Owner information or Lessee information if the Lessee contracted for the improvement**
Name Derek P. Grozio
Address 4155 Bell Tower Ct Belle Isle, FL 32812
Interest in Property Owner
Name and address of fee simple titleholder (if different from Owner listed above)
Name _____
Address _____
- Contractor**
Name SEM LLC dba Solar Energy Management Telephone Number 813-785-6799
Address 4640 Eagle Falls Place Tampa, FL 33619
- Surety** (if applicable, a copy of the payment bond is attached)
Name _____ Telephone Number _____
Address _____ Amount of Bond \$ _____
- Lender**
Name _____ Telephone Number _____
Address _____
- 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 _____
- 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 _____
- 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)



STATE OF FLORIDA, County of ORANGE
I hereby certify that this is a true copy of the document as recorded in the Official Records of ORANGE COUNTY, FLORIDA.
MARTHA O. HAYNIE, COUNTY COMPTROLLER
Cy: Ms. Sampson
Deputy Comptroller
Dated: 4-15-16

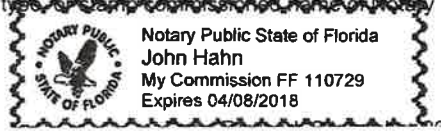
WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED 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.

[Signature] _____ Derek P Grozio
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 25th day of 03, 2016 by Derek P. Grozio
as owner for Derek P. Grozio
Type of authority, e.g., officer, trustee, attorney in fact Name of party on behalf of whom instrument was executed
[Signature] _____ John Hahn
Signature of Notary Public - State of Florida Print, type or stamp commissioned name of Notary Public

Personally Known _____ OR Produced ID X
Type of ID Produced FL Driver G620175833110





Solar Energy Management
Energy Saving Solutions

March 23, 2016

City of Belle Isle
Grozio Residence
4155 Eell Tower Ct
Eelle Isle, FL 32812

Subject: Solar Module Racking System

To Whom It May Concern,

This letter serves as written verification that the solar module rack mounting system was installed in accordance with the Ironridge manufacturing instructions.

In addition, the mounting system was installed in accordance with the structural engineer's drawings and specifications on said drawings.

Thank you for your time and consideration.

Very truly yours,

BRETT L. EMES
SEM, LLC
CVC56782

SEM, LLC, 4640 Eagle Falls PL, Tampa, Florida 33619
813-677-6655 (office) ~ 866-820-0265 (toll-free FAX)
CBC1250267 - CVC 56782 - EC13004784
brett@solarenergymgmt.com

LIMITED POWER OF ATTORNEY

Date: 4-12-16

I hereby name and appoint Angelo Santiago, Brenda Gunther to be my lawful attorney in fact to act for me and apply for a Solar permit for work to be performed at the location described as:

4155 Bell Tower Ct.
(Address of Job)

Derek Grozio
(Owner of Property)

And to sign my name and do all things necessary to this appointment.

[Signature]
(Signature of Certified Contractor)

John McDonald EC13004784
(Printed Name of Contractor and License Number)

STATE OF FLORIDA

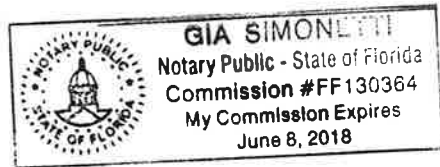
COUNTY OF Hillsborough

The foregoing instrument was acknowledged before me this 5 day of April, 20 16 by John McDonald, who is personally known to me or has produced _____ (type of identification) as identification and who did take an oath.

[Signature]
Signature of Notary Public, State of Florida

(SEAL)

Gia Simonetti
Print/Type/Stamp Name of Notary Public





**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

CONSTRUCTION INDUSTRY LICENSING BOARD
1940 NORTH MONROE STREET
TALLAHASSEE FL 32399-0783

(850) 487-1395

EMES, BRETT L
SOLAR ENERGY MANAGEMENT
4640 EAGLE FALLS PLACE
TAMPA FL 33619

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**

CBC1250267 ISSUED: 09/03/2015

**CERTIFIED BUILDING CONTRACTOR
EMES, BRETT L
SOLAR ENERGY MANAGEMENT**

IS CERTIFIED under the provisions of Ch. 489 FS
Expiration date AUG 31, 2016 L1509030002343

DETACH HERE

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD**

LICENSE NUMBER	
CBC1250267	

The BUILDING CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

EMES, BRETT L
SOLAR ENERGY MANAGEMENT
4640 EAGLE FALLS PLACE
TAMPA FL 33619



ISSUED: 09/03/2015

DISPLAY AS REQUIRED BY LAW

SEQ # L1509030002343



**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

**ELECTRICAL CONTRACTORS LICENSING BOARD
1940 NORTH MONROE STREET
TALLAHASSEE FL 32399-0783**

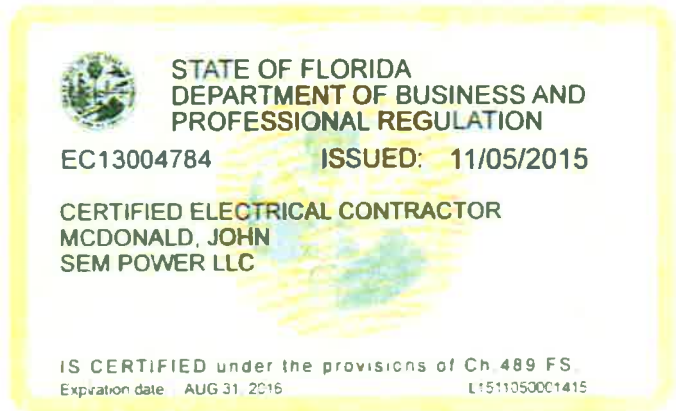
(850) 487-1395

**MCDONALD, JOHN
SEM POWER LLC
4640 EAGLE FALLS PLACE
TAMPA FL 33619**

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.

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DETACH HERE

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

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

LICENSE NUMBER	
EC13004784	

The ELECTRICAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016

**MCDONALD, JOHN
SEM POWER LLC
2802 LESLIE ROAD
TAMPA FL 33619**



ISSUED: 11/05/2015

DISPLAY AS REQUIRED BY LAW

SEQ # L1511050001415

2015 - 2016 HILLSBOROUGH COUNTY BUSINESS TAX RECEIPT
OCC. CODE
090.008002 ELECTRICAL CONTRACTOR

EXPIRES SEPTEMBER 30, 2016

19586
NEW BUSINESS

1 Employees	Receipt Fee	18.00
	Hazardous Waste Surcharge	0.00
	Law Library Fee	0.00
EC13004784		

BUSINESS MCDONALD JOHN
MATRIX CONSTRUCTION INC
4640 EAGLE FALLS PLACE
TAMPA, FL 33619

2015 - 2016

NAME MCDONALD JOHN
MAILING MATRIX CONSTRUCTION INC
ADDRESS 4640 EAGLE FALLS PLACE
TAMPA, FL 33619

Paid 15-107-000215
10/13/2015 18.00

BUSINESS TAX RECEIPT

DOUG BELDEN, TAX COLLECTOR
813-635-5200

HAS HEREBY PAID A PRIVILEGE TAX TO ENGAGE
IN BUSINESS, PROFESSION, OR OCCUPATION SPECIFIED HEREON

THIS BECOMES A TAX RECEIPT WHEN VALIDATED.



CERTIFICATE OF LIABILITY INSURANCE

CONSTRMA01

BWARNER

DATE (MM/DD/YYYY)

4/5/2016

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 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
ASSOCIATES AGENCY, INC.
11470 N 53rd St
Temple Terrace, FL 33617

CONTACT NAME
PHONE (A/C No, Ext) (813) 988-1234 FAX (A/C No) (813) 988-0989
E-MAIL ADDRESS certs@associatesins.com

INSURED

SEM LLC
4640 Eagle Falls Place
Tampa, FL 33619

INSURER(S) AFFORDING COVERAGE NAIC #
INSURER A Southern Owners Insurance Co 10190
INSURER B American Interstate Insurance Co 31895
INSURER C
INSURER D
INSURER E
INSURER F

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

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 SUBR INSP. WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY		20157240	05/29/2015	05/29/2016	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES, Ea occurrence \$ 300,000 MED EXP - Any one person \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP OP AGG \$ 2,000,000
	CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR					
	GEN'L AGGREGATE LIMIT APPLIES PER					
	POLICY PRO-JECT LOC					
	OTHER					
	AUTOMOBILE LIABILITY					COMBINED SINGLE LIMIT \$ Ea accident \$ BODILY INJURY / Per person \$ BODILY INJURY / Per accident \$ PROPERTY DAMAGE \$ Per accident \$
	ANY AUTO					
	ALL OWNED AUTOS	SCHEDULED AUTOS				
	HIRED AUTOS	NON-OWNED AUTOS				
	UMBRELLA LIAB	OCCUR				EACH OCCURRENCE \$
	EXCESS LIAB	CLAIMS-MADE				AGGREGATE \$
	DED	RETENTION \$				
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY		AVWCFL2398752015	05/29/2015	05/29/2016	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
	ANY PROPRIETOR PARTNER EXECUTIVE OFFICER MEMBER ENCLOSED (Mandatory in NH)	Y/N				
	DESCRIPTION OF OPERATIONS below	Y N/A				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Brett Emes CVC56782/CBC1250267
John McDonald EC13004787

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

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RESIDENTIAL GENERIC STRUCTURAL PLAN.
(COMMERCIAL REQUIRES SITE-SPECIFIC PLAN.)

4. CERTIFY THAT THE FRAMING OF THIS STRUCTURE WILL SAFELY ACCOMMODATE CALCULATED WIND UPLIFT AND LATERAL FORCES AND EQUIPMENT DEAD LOADS. THIS IS ATTESTED TO BY MY SIGNATURE AND SEAL ON THIS DRAWING AT THE UPPER RIGHT.

VOID WITHOUT RAISED OR ELECTRONIC SEAL, NEVER PERMIT PULLED REQUIRES A SEALED ELECTRONIC PLAN OR SEALED ORIGINAL PAPER COPY OF THE PLAN.

ENGINEER
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PE 59180

IRONRIDGE PV RAIL GENERIC INSTALLATION PLAN

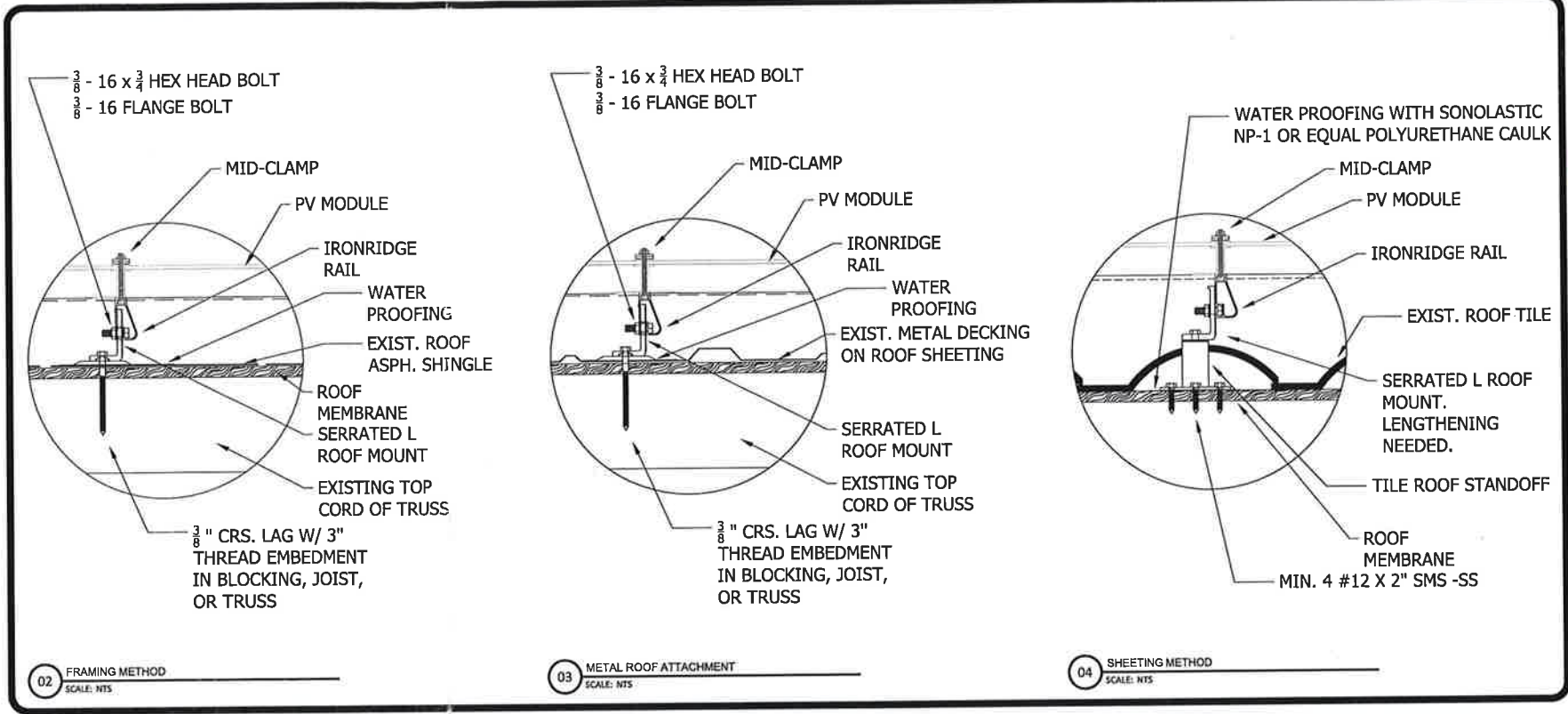
THIS PAPER PLAN IS INTENDED TO PROVIDE THE ESSENTIAL INFORMATION NEEDED BY AHJ (AUTHORITY HAVING JURISDICTION AKA BUILDING DEPARTMENT) AND INSTALLERS. USERS ARE ENCOURAGED TO ACCESS EV (ELECTRONIC VERSION) OF THIS PLAN. ACTIVE HYPERLINKS ON EV PROVIDE EASY ACCESS TO SUPPLEMENTAL INFORMATION. EV ALSO ALLOWS VIEWER TO STUDY THE PLAN AND OEM (ORIGINAL EQUIPMENT MANUFACTURER) DETAILS AT MAGNIFICATION OF VIEWER CHOICE UP TO 6400%, IF A CONFLICT SHOULD OCCUR BETWEEN A DRAWING AND/OR SPECIFICATIONS HEREON AND AN OEM DETAIL, OEM SHALL PREVAIL.

- THIS IS A SINGLE SHEET GENERIC PLAN.
CONTRACTOR SHALL PROVIDE AHJ WITH SITE-SPECIFIC INFORMATION AS REQUIRED.
THIS PLAN OFFERS THREE INSTALLATION METHODS.
- FRAMING METHOD. SEE DRAWING.
 - SHEETING METHOD. SEE DRAWING.
 - STANDING SEAM METAL ROOF. USE CLAMP OF CHOICE;
 - ACE™. <http://www.pmcind.com/aceclamp/>
 - S-5™. <http://www.s-5.com/clamps/>
 - TRA™. <http://trasnowandsun.com/product-category/solar-mounting/>
- SOLAR EQUIPMENT ADDS LESS THAN 4-PSF GRAVITY LOAD TO STRUCTURE.
 - THERE SHALL BE A PV MODULE TO RAIL MOUNTING AT EVERY MODULE/RAIL CROSSING POINT WITH MINIMUM 4 CLAMPS PER MODULE. ADJOINING MODULES SHALL SHARE CLAMPS. MODULES MAY BE LANDSCAPE OR PORTRAIT AT CONTRACTOR OPTION.
 - ROOF IS ASSUMED TO BE FRAMED WITH TRUSSES ON 24-INCH CENTERS & DECKED WITH 5/8" PLYWOOD. CONTRACTOR SHALL VERIFY AND SHALL NOTIFY EOR (ENGINEER OF RECORD) IF DIFFERING CONDITIONS EXIST & SHALL FOLLOW EOR INSTRUCTIONS IF ISSUED AS CONSEQUENCE OF DIFFERING CONDITIONS.
 - PV MOUNTING RAILS SHALL BE INSTALLED PERPENDICULAR TO ROOF FRAMING. SEE ROOF ATTACHMENT SPAN TABLE HEREON.
 - THERE SHALL BE A MINIMUM OF TWO RAILS UNDER EACH PV MODULE.
 - RAILS SHALL NOT CANTILEVER BEYOND OUTSIDE OF END ROOF ATTACHMENT BY MORE THAN 1-FOOT.
 - RAILS SHALL ATTACH TO ROOF THRU L-FEET ROOF AS SHOWN HEREON. L-FEET REQUIRE FLASHINGS WHICH CAN BE SF-SO (SELF-FLASHING, SHEETING ONLY) ROOF ATTACHMENTS SHOWN HEREON OR 4" x 8" x MIN. 26 GA. ALUMINUM SHEET OR INDUSTRY STANDARD OEM FLASHINGS LAGGED INTO ROOF FRAMING SUCH AS SOLAR MOUNT, IRONRIDGE FLASHFOOT, OR OTHER ACCEPTABLE TO AHJ.
 - SF-SO ROOF ATTACHMENTS ARE INTENDED TO BE INSTALLED INTO SHEETING ALONE. HAVE BEEN SO TESTED AND ARE RATED AT 900-POUNDS ALLOWABLE PER ROOF ATTACHMENT.
 - ALL FLASHINGS SHALL BE INSTALLED IN A GENEROUS BED OF FLORIDA PRODUCT CONTROL APPROVED (PCA) POLYURETHANE ROOF SEALANT.
 - OPTIONAL STANDOFFS ARE PERMITTED AS NEEDED FOR ADDITIONAL ROOF CLEARANCE.
 - FOLLOW OEM INSTALLATION INSTRUCTIONS FOR ALL DETAILS SHOWN HEREON.
- ENGINEER OF RECORD (EOR) PREFERS EMAIL COMMUNICATION : allen@gezelmanpe.com

CODE FBC 2014 (5TH EDITION) FLORIDA BUILDING CODE

WIND DESIGNED FOR $V_{ULT}=200$ MPH., RISK III, EXPOSURE D.

VERIFY CONTRACTOR RESPONSIBLE TO VERIFY THE FIT OF THIS ARRAY PRIOR TO INSTALLATION. THE SOLAR MODULE ARRAY SHOWN HERE IS BASED ON THE FIELD DATA PROVIDED BY THE CONTRACTOR. CONTRACTOR SHALL CONTACT THE ENGINEER IF THE ARRAY MAY NOT FIT AS PROJECTED. SATELLITE IMAGERY SHOWN MAY NOT CORRECTLY INDICATE POTENTIAL CURRENT SHADING OF PROPERTIES. CONTRACTOR RESPONSIBLE TO VERIFY SUN EXPOSURE AND SHADING OF INSTALLATION PRIOR TO INSTALLATION!



IRONRIDGE RAIL SPAN TABLE NOTES
USERS SHALL NOTE THAT A MAJOR LIMITING FACTOR IN SOLAR ATTACHMENT TO RESIDENTIAL ROOF FRAMING IS THAT SOLAR ABC'S & OTHER AUTHORITIES HAVE DETERMINED THAT RESIDENTIAL ROOF FRAMING MUST BE PROTECTED FROM LARGE SOLAR ATTACHMENT LOADS (BOTH UPLIFT & GRAVITY). SEE FOLLOWING:
<http://www.solarabcs.org/about/publications/reports/expedited-permit/pdfs/Expeditedprocess.pdf>

- THE BOTTOM LINE IS THAT SOLAR ATTACHMENTS TO RESIDENTIAL ROOF FRAMING SHALL BE LIMITED TO TRIBUTARY AREAS OF ABOUT 10-SQUARE FEET PER ROOF ATTACHMENT IN PZ1 & PZ2.
- SHEETING ONLY ATTACHMENT METHODS ARE NOT SO LIMITED BECAUSE THEY PASS THEIR LOADS AS DISTRIBUTED FORCES TO RESIDENTIAL ROOF FRAMING THROUGH THE ROOF ASSEMBLY & ROOF DIAPHRAGM. THE FOLLOWING SPANS REFLECT THE ABOVE COMMERCIAL ROOFS ARE NOT SO LIMITED & SHOULD BE INSTALLED USING SITE-SPECIFIC ENGINEERING IN ORDER TO MAKE THE MOST EFFICIENT USE OF THE EXCELLENT SPAN CHARACTERISTICS OF IRONRIDGE XR SERIES RAILS.

IRONRIDGE		Roof Mount System		
RAIL	METHOD	PZ1	PZ2	PZ3
XR 10	FRAMING	4-FT	4-FT	2-FT
	SHEETING	4-FT	4-FT	2-FT
XR 100	FRAMING	4-FT	4-FT	2-FT
	SHEETING	8-FT	6-FT	4-FT
XR 1000	FRAMING	4-FT	4-FT	2-FT
	SHEETING	10-FT	8-FT	6-FT

PRIMARY COMPONENTS

XR10

- 6' spanning capability
- Moderate load capability
- Clear anodized finish

XR100

- 8' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available

XR1000

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

06 SHEETING ATTACHMENT
SCALE: NTS

SELF-FLASHING WITH FL-PCA SEALANT

TYPICAL CONCRETE TILE READY FOR SEALANT

900-LBF ALLOWABLE

OEM TESTED FACTORY/FIELD

07 QMS MOUNT
SCALE: NTS

Quick Mount PV

PNL NO.	DESCRIPTION	QTY.
1	FLASHING, 12" x 12" x .025", 3002, MS1	1
2	DRILLER, CLASSIC, AS101, CASI AL, MS1	1
3	4 ANCHOR BOLT, PLAIN CENTER, 5/16" x 4", 18-8 SS	1
4	WASHER, SEALING, 5/16" x 5/16" x 3/16" O.D., EPDM, BICOEDED SS	1
5	NUT, HEX, 5/16" x 1/2", 18-8 SS, 18-8 SS	2
6	WASHER, FLAT, 1/2" x 1/2" x 3/16" O.D. x 1/2" EPDM	1
7	WASHER, FENDER, 5/16" x 1/2" x 1/8" SS	1
8	WASHER, SHIELD, 5/16" x 1/2" x 1/8" SS	1

08 SELF-FLASHING, SHEETING-ONLY ROOF ATTACHMENTS.
SCALE: NTS

09 FLASHING INSTRUCTIONS. (SHINGLE FLASHING APPEARANCE MAY VARY, BUT NEEDED ONLY FLASHING, SHEETING-ONLY ROOF ATTACHMENTS)
SCALE: NTS

Classic Composition Mounting Instructions

Installing Tools Required: tape measure, roofing bar, chalk line, stiff index caulking gun, sealant compatible with roofing materials, drill with 7/32" for g-style bit, drill or impact gun with 1/2" deep socket.

WARNING: Quick Mount PV products are NOT designed for and should NOT be used to anchor fall protection equipment.

- Check, check, and mark corners of where to be mounted. Select the corners of shingles where mounts will be placed.
- Use of flashing between bit and drill motor. Make sure top edge of flashing is at least 1/4" higher than the top edge of the bit. Check and lower flashing edge to align the top edge of bit with the center for drilling.
- Use of flashing between bit and drill motor. Make sure top edge of flashing is at least 1/4" higher than the top edge of the bit. Check and lower flashing edge to align the top edge of bit with the center for drilling.
- Use of flashing between bit and drill motor. Make sure top edge of flashing is at least 1/4" higher than the top edge of the bit. Check and lower flashing edge to align the top edge of bit with the center for drilling.
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- Use of flashing between bit and drill motor. Make sure top edge of flashing is at least 1/4" higher than the top edge of the bit. Check and lower flashing edge to align the top edge of bit with the center for drilling.

05 OEM STANDOFF AND RACKING SYSTEM
SCALE: NTS

10 SHINGLE MOUNTING INSTRUCTIONS
SCALE: NTS

11 APPROVED STANDING SEAM CLAMPS
SCALE: NTS

ENGINEERED OR ELECTRONIC SEAL
FEB 11 2016
Allen Gezelman

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GENERIC

Reviewed for Code Compliance
Universal Engineering Sciences

SYSTEM:
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AI-IR-09.10.15

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 www.GezelmanPE.com
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 http://gezelmanpe.com/REFERENCE/AG/C-700.PDF
 ENLARGED VIEWING & HYPERLINKS:
 PRINT VERSION OF THIS PLAN PROVIDES INFORMATION NEEDED BY USERS.
 ELECTRONIC VERSION PROVIDES VIEWING UP TO 6400%.

ABBREVIATIONS

A	AMPERAGE
AC	ALTERNATING CURRENT
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CKT	CIRCUIT
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
EMT	ELECTRICAL METALLIC TUBING
EXIST	EXISTING
G,GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFDI	GROUND FAULT DETECTION & INTERRUPTION
KAIC	THOUSAND AMPERES INTERRUPTING CAPACITY
MAX	MAXIMUM
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE
P	POLE
φ	PHASE
PV	PHOTOVOLTAIC
RGSC	RIGID GALVANIZED STEEL CONDUIT SYSTEM
THHN	THERMOPLASTIC HIGH HEAT RESISTANT NYLON
THWN	THERMOPLASTIC HIGH HEAT & WATER RESISTANT NYLON
UL	UNDERWRITER LABORATORIES
USE	UNDERGROUND SERVICE ENTRANCE
V	VOLTAGE
W	WIRE

GENERAL NOTES (PHOTOVOLTAIC SYSTEM):

- PHOTOVOLTAIC SOURCE CIRCUIT SHALL BE LISTED AND LABELED FOR USE IN PV APPLICATIONS WITH IDENTIFICATION SUCH AS "PV WIRE", PV CABLES, PHOTOVOLTAIC WIRE, OR PHOTOVOLTAIC CABLE.
- PROVIDE PLACARDS FOR ALL PV SYSTEM INVERTERS AND DISCONNECT SWITCHES. PROVIDE AN ELECTRICAL WIRING DIAGRAM FOR THE PV SYSTEM AT EACH INVERTER AND DISCONNECT LOCATIONS. ALL PLACARDS SHALL BE MIN. 3" X 3", UV RESISTANT, AND INCLUDE WHITE LETTERS AND RED BACKGROUND.
- PROVIDE LABELING OR APPROVED PERMANENT MARKING TO READ: "PHOTOVOLTAIC POWER SOURCE" FOR ALL EXPOSED RACEWAY, CABLE TRAYS, COVER OR ENCLOSURES OF PULL BOXES AND JUNCTION BOXES AND CONDUITS THAT CONTAIN PV SYSTEM DC CONDUCTORS (SOURCE & OUTPUT). LABELING OR MARKING FOR EVERY SECTION OF THE WIRING SYSTEM SHALL NOT BE SPACED MORE THAN 10 FEET AND INSTALLED IN ACCORDANCE TO NEC 690.31(E).
- ALL PV SYSTEMS EQUIPMENT, WIRING AND CONNECTIONS SHALL BE INSTALLED PER THE NEC, ARTICLE 690 "SOLAR PHOTOVOLTAIC SYSTEMS" AND STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION MANUALS.
- ALL PV SYSTEMS CABLES SHALL BE COPPER AND RATED FOR 600V, TYPE "PV", 90° CELSIUS.
- ALL DC EQUIPMENT AND WIRING SHALL BE DC RATED.
- EXPOSED NON-CURRENT CARRYING METAL PARTS OF THE SOLAR MODULE FRAMES, EQUIPMENT ENCLOSURES, AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.
- GROUND WIRE SHALL BE CONTINUOUS AND INSTALLED TO ALLOW FOR SOLAR MODULE REMOVAL WITHOUT DISRUPTING CONTINUITY OF THE GROUNDING SYSTEM. ALL SOLAR MODULES SHALL BE INSTALLED IN ACCORDANCE WITH NEC 690.4 (C).
- ALL INVERTERS SHALL BE INSPECTED BY THE LOCAL POWER COMPANY BEFORE COMMISSIONING, TESTING, AND OPERATION OF THE SYSTEM.
- THE UTILITY GRID-TIE INTERACTIVE INVERTER AND SYSTEM SHALL CONFORM WITH UL 1741(2005), IEEE 1547 (2003), AND IEEE 1547.1 (2005).
- POINT OF CONNECTION OF PV SYSTEM TO A/C POWER SHALL BE MARKED WITH RATED A/C OUTPUT CURRENT AND NOMINAL OPERATING A/C VOLTAGE.
- ALL HARDWARE AND MOUNTS SHALL BE STAINLESS STEEL OR ALUMINUM.

GENERAL NOTES:

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A FLORIDA STATE LICENSED CONTRACTOR.
- PROVIDE ALL NECESSARY EQUIPMENT, JUNCTION BOXES, CABLES, CONDUITS, AND OTHER PV AND ELECTRICAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- ALL ELECTRICAL EQUIPMENT SHALL BE NEW, UL LISTED AND APPROVED FOR INTENDED USE. ALL CONDUITS AND JUNCTION BOXES SHALL BE LABEL WITH BLACK PERMANENT MARKER AT EACH ENDS INDICATING THE PANEL AND CIRCUIT NUMBER(S). ALL OUTDOOR EQUIPMENT SHALL BE NEMA TYPE 3R ENCLOSURES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE LOCAL POWER COMPANY.
- ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40. ALL CONDUIT EXPOSED TO WEATHER SHALL BE RIGID GALVANIZED STEEL OR EMT CONDUIT WITH COUPLINGS AND CONNECTORS THAT ARE LISTED FOR USE IN WET LOCATIONS.
- PROVIDE INSULATED GREEN EQUIPMENT GROUNDING CONDUCTORS FOR ALL RACEWAYS. GROUNDING CONDUCTORS SHALL BE SEPARATE FROM ELECTRICAL SYSTEM NEUTRAL CONDUCTOR. ALL GROUNDING REQUIREMENTS SHALL BE INSTALLED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON DRAWINGS.
- GROUND EXPOSED, NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN METALLIC AND NON-METALLIC RACEWAYS, AND NEUTRAL CONDUCTORS OF WIRING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ARTICLE 250.
- PV SYSTEM DC CONDUCTORS (SOURCE & OUTPUT) ROUTED INSIDE A BUILDING STRUCTURE SHALL BE CONTAINED IN A METAL RACEWAY, TYPE MC CABLE (COMPLIES WITH NEC 250.118(10)), OR METAL ENCLOSURE PER NEC 690.31.
- CONDUCTORS NO. 8 AWG AND LARGER SHALL BE STRANDED. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE STRANDED OR SOLID. ALL CONDUCTORS SHALL BE COPPER. MINIMUM SIZE FOR BRANCH CIRCUITS SHALL BE NO. 12 AWG. COLOR SHALL BE GREEN FOR EQUIPMENT GROUNDING CONDUCTORS AND WHITE FOR NEUTRALS. CONDUCTORS SHALL BE 600 VOLT, 90° C. INSULATION, TYPE "THHN/THWN-2" UNLESS NOTED OTHERWISE.
- SECURELY SUPPORT ALL EQUIPMENT AND CONDUITS INDEPENDENTLY OF ALL OTHER SYSTEMS, PRIMARILY TO BUILDING STRUCTURE.
- OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, FLOORS, OR CEILINGS SHALL BE SEALED WITH APPROVED FIRESTOPPED MATERIALS. PENETRATE CONDUITS IN EXISTING MECHANICAL AND ELECTRICAL ROOMS. DO NOT ROUTE CONDUITS THROUGH STAIRWAYS OR ELEVATOR MACHINE ROOM.
- UNLESS INDICATED OTHERWISE, CONCEAL CONDUITS WITHIN FINISHED WALLS, CEILING, OR FLOOR SLABS. INSTALL CONDUITS PARALLEL WITH OR AT RIGHT ANGLES TO CEILINGS, WALLS, AND STRUCTURAL MEMBER.
- PROVIDE PERMANENT PLAQUE PROVIDING THE LOCATION OF THE BUILDING SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF NOT LOCATED AT THE SAME LOCATION PER NEC, 690.56.
- ALL INDOOR CONDUIT SHALL BE "EMT" CONFORMING TO UL 797/ANSI C80.2 AND FITTINGS CONFORMING TO UL 514B OR RACEWAY INSTALLED IN ACCORDANCE WITH NEC.
- DIRECTIONAL BORE OR CUT/TRENCH UNDER EXISTING CONCRETE SLAB OR PAVEMENT FOR UNDERGROUND INSTALLATIONS. OBTAIN OWNER WRITTEN APPROVAL FOR INSTALLATIONS OF CONDUITS UNDER EXISTING CONCRETE SLAB OR PAVEMENT PRIOR TO CONSTRUCTION.
- DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, 240VAC OR 600VAC, HORSEPOWER RATED, FUSED OR NON-FUSED AS INDICATED, NEMA TYPE 3R ENCLOSURE (FOR OUTDOOR), WITH PADLOCK PROVISIONS AND CONFORMING TO NEMA KS-1. PROVIDE NAMEPLATE FOR ALL PV SYSTEM DISCONNECT SWITCHES AND PROVIDE AN ELECTRICAL WIRING DIAGRAM FOR THE PV SYSTEM AT EACH DISCONNECT.
- ALL NONMETALLIC-SHEATHED CABLE (ROMEX) AND CONNECTIONS SHALL BE INSTALLED AND CONFORM PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, ARTICLE 334 "NONMETALLIC-SHEATHED CABLE" AND PER MANUFACTURER'S RECOMMENDATIONS.

ARRAY INFORMATION USING OPTIMIZERS			
MODULE RATED OUTPUT (W):	260		
NUMBER OF MODULES IN SERIES:	12	13	
NUMBER OF SOURCE CIRCUITS IN PARALLEL:	2	1	
TOTAL NUMBER OF MODULES IS:	37		
OPERATING VOLTAGE: (VOLTAGE IS FIXED AT 360VDC USING OPTIMIZERS)			
OPERATING VOLTAGE IS:	360 VOLTS		
OPERATING CURRENT:			
MODULE RATED OUTPUT (W):	260 W	X	
TOTAL NUMBER OF MODULES IS:	37	+	
OPERATING VOLTAGE AT STC:	360 VDC	=	
OPERATING CURRENT IS:	27.6 A		
MAXIMUM SYSTEM VOLTAGE: (VOLTAGE IS FIXED AT 600VDC USING OPTIMIZERS)			
MAXIMUM SYSTEM VOLTAGE IS:	600 VDC	<	600VDC
SHORT CIRCUIT CURRENT: (MAXIMUM CURRENT OUTPUT PER A STRING IS 16A)			
SHORT CIRCUIT CURRENT AT STC (Isc):	9.12 ADC		(MULTIPLY SHORT CIRCUIT CURRENT & NUMBER OF SOURCE BY 1.25 TO ACCOUNT FOR EXTENDED PERIODS OF SUNLIGHT ABOVE THE TESTED SOLAR INTENSITY).
NUMBER OF SOURCE CIRCUITS IN PARALLEL:	3		
SHORT CIRCUIT CURRENT IS:	34.2 A		
WIRE TYPE: PROVIDE TYPE "PV WIRE" SINGLE CONDUCTOR CABLE, RATED AT 90 DEGREE C, FOR PV MODULE INTERCONNECTIONS WIRINGS.			
CONDUCTOR AMPACITY: THE MAXIMUM PV SOURCE CIRCUIT CURRENT IS THE SUM OF PARALLEL MODULE RATED SHORT CIRCUIT MULTIPLIED BY 125 PERCENT PER NEC ARTICLE 690.8(A)(1).			
SHORT CIRCUIT CURRENT AT STC (Isc):	9.12 ADC		
MAXIMUM PV SOURCE CIRCUIT CURRENT IS:	11.4 A		
THE MINIMUM SOURCE CIRCUIT CONDUCTOR AMPACITY IS 125 PERCENT OF THE MAXIMUM PV SOURCE CIRCUIT CURRENT PER NEC ARTICLE 690.8(B)(1).			
SHORT CIRCUIT CURRENT AT STC (Isc):	9.12 ADC		
MAXIMUM PV SOURCE CIRCUIT CURRENT:	11.4 A		
MINIMUM SOURCE CIRCUIT CONDUCTOR AMPACITY:	14.25 A		
THE MINIMUM PHOTOVOLTAIC OUTPUT CIRCUIT CONDUCTOR AMPACITY IS THE SUM OF THE MAXIMUM CURRENT OF THE PARALLEL SOURCE CIRCUITS PER NEC ARTICLE 690.8(B)(1) TIMES 1.25.			
MINIMUM SOURCE CIRCUIT CONDUCTOR AMPACITY:	14.25		
NUMBER OF SOURCE CIRCUITS IN PARALLEL:	2		
MINIMUM CONDUCTOR AMPACITY IS:	28.5 A		

ISSUED DATE, 11/20/2015

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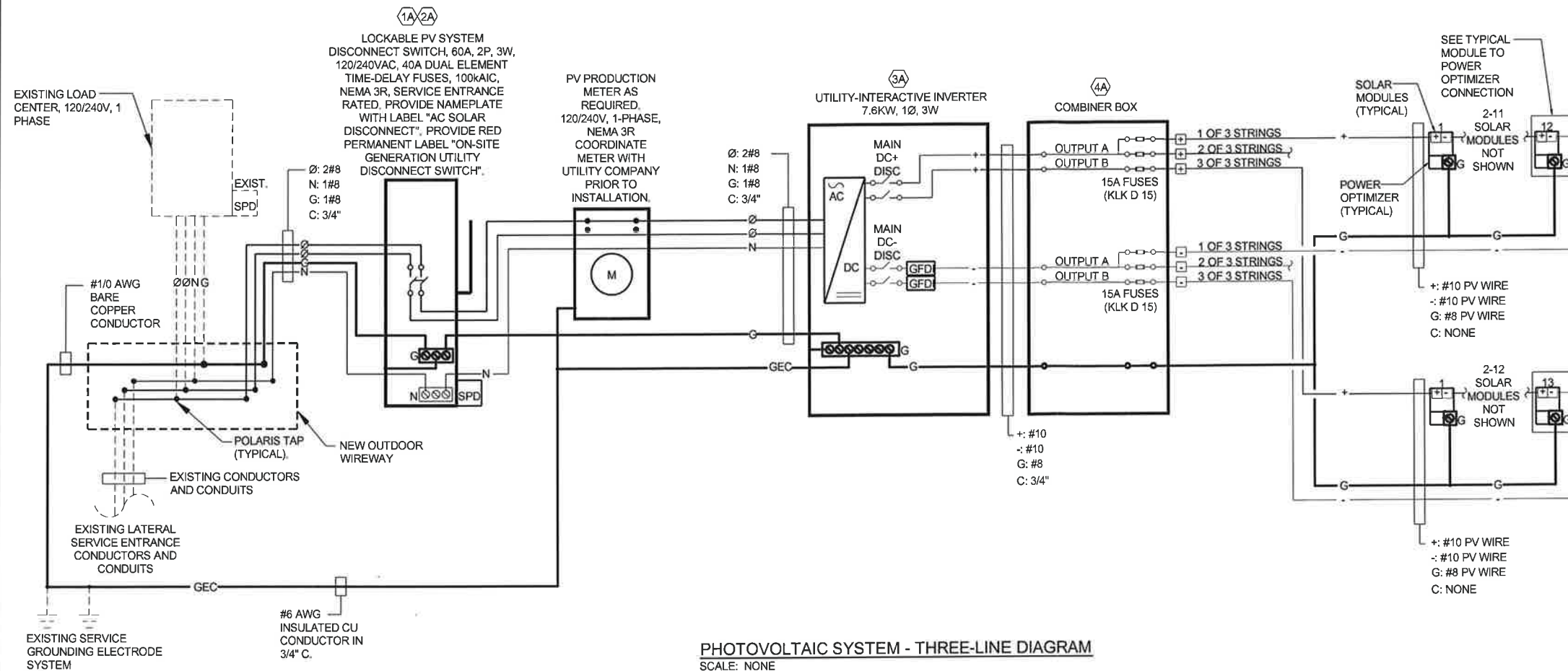
NEW PHOTOVOLTAIC SYSTEM
9.62KW Solar System
260W Canadian Panel
& Solar Edge SE7600A-US

Solar Photovoltaic Plan

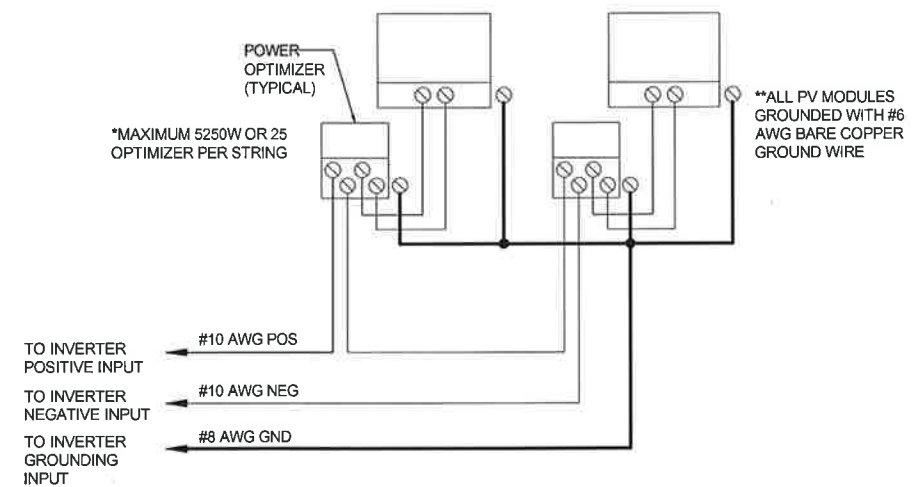
Project No: 15-105-00000
Date: November 2015

Professional Engineer
KATY WOOD GIBSON
FLORIDA REG. #3246
NOV 12 2015
STATE OF FLORIDA

e0.1



PHOTOVOLTAIC SYSTEM - THREE-LINE DIAGRAM
SCALE: NONE



TYPICAL MODULE TO POWER OPTIMIZER CONNECTION
SCALE: NONE

MINIMUM INVERTER OUTPUT CIRCUIT AMPACITY AND OVERCURRENT PROTECTION (SOLAR EDGE SE7600A-US):
MINIMUM INVERTER OUTPUT CIRCUIT CONDUCTOR AMPACITY IS EQUAL TO THE INVERTER CONTINUOUS OUTPUT CURRENT RATING TIMES 1.25 FOR THE STANDARD LISTING OF WIRE TO 80% OF MAXIMUM CIRCUIT CURRENT FOR CONTINUOUS DUTY.

INVERTER CONTINUOUS OUTPUT RATING:	7600 WATTS	
MINIMUM INVERTER VOLTAGE:	240 V	
MAXIMUM OPERATING CURRENT:	7600 WATTS	32 AMPS
	240 V	
MINIMUM INVERTER OUTPUT CIRCUIT AMPACITY IS:	32 AMPS X 1.25 =	40 AMPS

THEREFORE, PROVIDE MINIMUM #8 CONDUCTORS AND 40 AMP BREAKERS FOR THE INVERTER OUTPUT CIRCUIT

PROJECT NOTES:
THIS PROJECT CONSISTS OF:

- 9.62KW PHOTOVOLTAIC SYSTEM (PV) WITH 1 INVERTER, FOR A TOTAL OF 37 MODULES.
-INVERTER #1 (SOLAREGE SE7600A-US) CONSISTS OF 2 STRINGS OF 12 MODULES AND 1 STRING OF 13 MODULES.

FSEC MODULE REGISTRATION #CS13-NT90-0427 (Canadian Solar CS6P-260P)

- PROVIDE PLACARD TO READ:
- "ONSITE GENERATION UTILITY DISCONNECT SWITCH"
- PHOTOVOLTAIC ELECTRIC POWER SOURCE:
- MAX OPERATING CURRENT: 32 AAC
 - OPERATING VOLTAGE: 240 VAC
- NOTE: PROVIDE LOCKING DISCONNECT SWITCH WITH PADLOCK PROVISION FOR THE "OFF" POSITION
- PROVIDE PLACARD FOR THE DISC TO READ:
- "SOLAR PHOTOVOLTAIC SYSTEM AC DISCONNECT, BACKFED TO LOAD SIDE OF MAIN DISCONNECT SWITCH"
- NOTE: PROVIDE PADLOCK.
- PROVIDE PLACARD ON EACH INVERTER TO READ:
- "PHOTOVOLTAIC ARRAY DISCONNECT SWITCH, WARNING: ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS. TERMINALS ON BOTH LINE AND LOAD SIDES MAYBE ENERGIZED EVEN IN THE "OFF" POSITION"
- DC PHOTOVOLTAIC POWER SOURCE:
- OPERATING VOLTAGE: 350 VDC
 - OPERATING CURRENT: 27.5 ADC
 - MAX SYSTEM VOLTAGE: 500 VDC
 - SHORT CIRCUIT CURRENT: 34.2 ADC
- PROVIDE PLACARD ON EACH COMBINER AND/OR JUNCTION BOX TO READ:
- "PHOTOVOLTAIC ARRAY COMBINER/JUNCTION BOX, WARNING ELECTRIC SHOCK HAZARD. THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED."
- DC PHOTOVOLTAIC POWER SOURCE:
- OPERATING VOLTAGE: 350 VDC
 - OPERATING CURRENT: 27.5 ADC
 - MAX SYSTEM VOLTAGE: 500 VDC
 - SHORT CIRCUIT CURRENT: 34.2 ADC

- NOTES:**
- ALL PLACARDS SHALL BE MIN. 3" X 3", UV RESISTANT, AND INCLUDE WHITE LETTERS AND RED BACKGROUND.
 - POINT OF CONNECTION OF PV SYSTEM TO A/C POWER SHALL BE MARKED WITH RATED A/C OUTPUT CURRENT AND NOMINAL OPERATING A/C VOLTAGE
 - FINAL LOCATION OF EQUIPMENT TO BE DETERMINED WITH OWNER IN-FIELD.
 - ALL SOLAR MODULES ARE ROOF MOUNTED. SEE STRUCTURAL DRAWINGS FOR DETAILS.
 - MINIMIZE POWER INTERRUPTION TO EXISTING BUILDING. COORDINATE WITH OWNER FOR EXACT DATE, TIME, AND EXACT DURATION OF POWER OUTAGE PERMITTED.
 - COORDINATE WITH POWER COMPANY FOR FINAL LOCATION OF METER.
 - AVAILABLE FAULT CURRENT AT THE SECONDARY SIDE OF THE EXISTING PAD MOUNTED TRANSFORMERS WERE UNAVAILABLE AT THE TIME OF DESIGN.

ISSUED DATE: 11/20/2015

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Phone: (813) 677 6655

NEW PHOTOVOLTAIC SYSTEM
9.62KW Solar System
260W Canadian Panel
& Solar Edge SE7600A-US

Solar Photovoltaic Plan

Project No. 18-105-00000
Date: November 2015

12-03-15

PROFESSIONAL ENGINEER

e1.0



SolarEdge Single Phase Inverters For North America

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



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

USA - GERMANY - ITALY - FRANCE - JAPAN - CHINA - AUSTRALIA - THE NETHERLANDS - ISRAEL

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INVERTERS



Single Phase Inverters for North America

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

	SE3000A-US	SE3800A-US	SE5000A-US	SE6000A-US	SE7600A-US	SE10000A-US	SE11400A-US
OUTPUT							
Nominal AC Power Output	3000	3800	5000	6000	7600	9900 @ 200V	11400
Max. AC Power Output	3300	4150	5400 @ 200V 5450 @ 240V	6000	8350	10000 @ 200V 10950 @ 240V	12000
AC Output Voltage Min.-Nom.-Max. ¹⁾	183 - 208 - 229 Vac						
AC Output Voltage Min.-Nom.-Max. ²⁾	211 - 240 - 264 Vac						
AC Frequency Min.-Nom.-Max. ³⁾	59.3 - 60 - 60.5 (with full country setting 57 - 60 - 60.5)						
Max. Continuous Output Current	12.5	16	24 @ 200V 21 @ 240V	25	32	44 @ 200V 42 @ 240V	47.5
GFI Threshold	1						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
INPUT							
Maximum DC Power (STC)	4050	5100	6750	8100	10250	13500	15350
Transformerless, Ungrounded	Yes						
Max. Input Voltage	500						
Nom. DC Input Voltage	325 @ 200V / 370 @ 240V						
Max. Input Current ⁴⁾	9.5	13	16.5 @ 200V 15.5 @ 240V	18	23	33 @ 200V 30.5 @ 240V	34.5
Max. Inrush Short Circuit Current	45						
Reverse Polarity Protection	Yes						
Ground Fault Isolation Detection	800% Sensitivity						
Maximum Inverter Efficiency	97.7	98.2	98.3	98.3	98	98	98
CEC Weighted Efficiency	97.5	98	97.5 @ 200V 98 @ 240V	97.5	97.5	97.5 @ 200V 97.5 @ 240V	97.5
Nighttime Power Consumption	< 2.5						
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, RS232, Ethernet, ZigBee (optional)						
Revenue Grade Data, ANSI C12.1	Optional ⁵⁾						
Rapid Shutdown - NEC 2014 690.12	Functionality enabled when SolarEdge rapid shutdown kit is installed ⁶⁾						
STANDARD COMPLIANCE							
Safety	UL1741, UL1699B, UL1998, CSA 22.2						
Grid Connection Standards	IEEE1547						
Emissions	FCC part 15 class B						
INSTALLATION SPECIFICATIONS							
AC output conduit size / AWG range	3/4" minimum / 10-6 AWG			3/4" minimum / 8-3 AWG			
DC input conduit size / # of strings / AWG range	3/4" minimum / 1-2 strings / 10-6 AWG			3/4" minimum / 1-2 strings / 10-6 AWG			
Dimensions with Safety Switch (HxWxD)	30.5 x 12.5 x 7.2 / 77.5 x 31.5 x 18.4			77.5 x 31.5 x 29.0			
Weight with Safety Switch	51.2 / 23.2			54.7 / 24.7			
Cooling	Natural Convection			Natural convection and internal fan (user replaceable)		Fans (user replaceable)	
Noise	< 50						
Min. Max. Operating Temperature Range	-13 to +107 / -25 to +40 (-40 to +10 version available ⁷⁾)						
Protection Rating	NEMA 3R						



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SolarEdge Power Optimizer Module Add-On

P300 / P350 / P405 / P500



PV power optimization at the module-level

- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module level monitoring
- Module-level voltage shutdown for installer and firefighter safety

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www.solaredge.com

POWER OPTIMIZER

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Solar Photovoltaic Plan

File Name: e1.1.dwg
 Revisions:

Project No: 15-105-00000
 Date: November 2015



ISSUED DATE: 11/20/2015

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e1.1



SolarEdge Power Optimizer Module Add-On

P300 / P350 / P405 / P500

	P300 (for 10-cell modules)	P350 (for 12-cell modules)	P500 (for 36-cell modules)	P405 (for 36-cell modules)	
INPUT					
Rated Input DC Power ¹⁾	300	350	500	405	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48	60	80	125	Vdc
MPP Operating Range	8 - 48	8 - 60	8 - 80	12.5 - 105	Vdc
Maximum Continuous Input Current (Isc)		10			A
Maximum Efficiency		99.5			%
Weighted Efficiency		98.8			%
Overvoltage Category	II				
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)					
Maximum Output Current		15			A
Maximum Output Voltage	60		85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)					
Safety Output Voltage per Power Optimizer	1				
STANDARD COMPLIANCE					
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3				
Safety	IEC62109-1 (class II safety), UL1741				
RoHS	Yes				
Fire Safety	VDE-AR-E 2100-712:2013-05				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage	1000				Vdc
Dimensions (W x L x H)	Pxxx-2 series 141 x 212 x 40.5 / 5.55 x 8.31 x 1.59	Pxxx-5 series 128 x 152 x 27.5 / 5 x 5.97 x 1.08	128 x 152 x 35 / 5 x 5.97 x 1.37	128 x 152 x 48 / 5 x 5.97 x 1.89	mm / in
Weight (including cables)	Pxxx-2 series 770 / 1.7	Pxxx-5 series 950 / 2.1		930 / 2.05	g / lb
Input Connector	MC4 ²⁾				
Output Connector	MC4				
Output Wire Length	0.95 / 3.0	1.2 / 3.9			m / ft
Operating Temperature Range	-40 +85 / -40 +185				
Protection Rating	Pxxx-2 series IP65 / NEMA4	Pxxx-5 series IP68 / NEMA6P			
Relative Humidity	0 - 100				

¹⁾ Rated STC power of the module. Module of up to +16% power tolerance allowed.
²⁾ For other connector types, please contact SolarEdge.

PV SYSTEM DESIGN USING A SOLAREGE INVERTER ¹⁾	SINGLE PHASE		THREE PHASE
	P300, P350, P500 (Power Optimizers)	P405 (Power Optimizers)	
Minimum String Length	8	6	16
Maximum String Length (Power Optimizers)	25	25	50
Maximum Power per String	5250		11250
Parallel Strings of Different Lengths or Orientations	Yes		

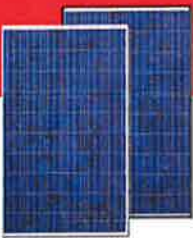
¹⁾ It is not allowed to mix P300 with P350/P405/P500 in one string.

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Canadian Solar

Make The Difference



CS6P-250 | 255 | 260P

THE BEST IN CLASS

Canadian Solar's modules are the best in class in terms of power output and long term reliability. Our meticulous product design and stringent quality control ensure our modules deliver an exceptionally high PV energy yield in live PV system as well as in PVSyst's system simulation. Our accredited in-house PV testing facilities guarantee all module component materials meet the highest quality standards possible.

PRODUCT | KEY FEATURES

- Excellent module efficiency up to 16.16%
- High performance at low irradiance above 96.5%
- Positive power tolerance up to 5W
- High PTC rating up to 91.96%
- Anti-glare module surface available
- IP67 Junction box long-term weather endurance
- Heavy snow load up to 5400Pa wind load up to 2400Pa
- Salt mist, ammonia and blown sand resistance, for seaside, farm and desert environment

PRODUCT | WARRANTY & INSURANCE



25 Year Industry leading linear power output warranty
10 Year Product warranty on materials and workmanship

Canadian Solar provides 100% non-cancellable, immediate warranty insurance

PRODUCT & MANAGEMENT SYSTEM | CERTIFICATES

IEC 61215 / IEC 61730: VDE/CE/MCS/RET/CEMCO/SI/CEC AU/ INMETRO/CCC/CQC/UL 1703 / IEC 61215 performance: CE listed (US) / FSEC (US Florida) / UL 1703: CSA | IEC 61701 ED2: VDE | IEC 62716: TÜV | IEC 60068-2-68: SGS
PV CYCLE (EU) | UN9137 Reaction to Fire: Class 1
ISO 9001:2008 Quality management system
ISO 14001:2004 The automotive industry quality management system
ISO 14001:2004 Standards for environmental management system
OCC080000:2012 The certificate for hazardous substances process management
OHSAS18001:2007 International standards for occupational health and safety



¹⁾ Please contact your sales representative for the details of certificates applicable to your products.

CANADIAN SOLAR INC.

Founded in 2003 in Canada, Canadian Solar Inc. (NASDAQ: CSIQ) is the world's TOP 3 solar power company. As a leading manufacturer of solar modules and PV project developer with about 7 GW of premium quality modules deployed around the world in the past 13 years, Canadian Solar is one of the most bankable solar companies in Europe, USA, Japan and China. Canadian Solar operates in six continents with customers in over 90 countries and regions. Canadian Solar is committed to providing high quality solar products, solar system solutions and services to customers around the world.



Make The Difference

ELECTRICAL DATA | STC

Electrical Data	CS6P-250P	CS6P-255P	CS6P-260P
Rated Maximum Power (Pmax)	250 W	255 W	260 W
Optimum Operating Voltage (Vmp)	30.1 V	30.2 V	30.4 V
Optimum Operating Current (Imp)	8.30 A	8.43 A	8.56 A
Open Circuit Voltage (Voc)	37.2 V	37.4 V	37.5 V
Short Circuit Current (Isc)	8.87 A	9.00 A	9.12 A
Module Efficiency	15.54 %	15.85 %	16.16 %
Operating Temperature	-40 °C ~ +85 °C		
Maximum System Voltage	1000V (IEC) / 1000V (UL) / 600V (UL)		
Maximum Series Fuse Rating	15 A		
Application Classification	Class A		
Power Tolerance	0 ~ +5 W		

¹⁾ Under Standard Test Conditions (STC) of irradiance of 1000W/m², spectrum AM 1.5 and cell temperature of 25 °C.

ELECTRICAL DATA | NOCT

Electrical Data	CS6P-250P	CS6P-255P	CS6P-260P
Rated Maximum Power (Pmax)	181 W	185 W	189 W
Optimum Operating Voltage (Vmp)	22.5 V	22.5 V	22.7 V
Optimum Operating Current (Imp)	6.60 A	6.71 A	6.80 A
Open Circuit Voltage (Voc)	34.2 V	34.4 V	34.5 V
Short Circuit Current (Isc)	7.19 A	7.29 A	7.38 A

¹⁾ Under Standard Operating Cell Temperature (NOCT) of irradiance of 800 W/m², spectrum AM 1.5 and cell temperature of 45 °C.

MODULE | MECHANICAL DATA

Specification	Data
Cell Type	Poly-crystalline, Black
Cell Arrangement	60 (6 x 10)
Dimensions	1678 x 992 x 40mm (64.5 x 38.7 x 1.57in)
Weight	18.5kg (40.8 lbs)
Front Cover	3.2mm tempered glass
Frame Material	Anodized aluminum alloy
Junction Box	IP67, 3 diodes
Cable	4mm ² IEC/4mm ² UL 12AWG 1000V(UL1000V)/12AWG(UL600V), 1000mm (650mm is optional)
Connections	MC4 or MC4 compatible
Standard Packaging	28pcs, 554kg (quantity and weight per pallet)
Module Finish Per Cozinclear	672pcx (407%L)

TEMPERATURE CHARACTERISTICS

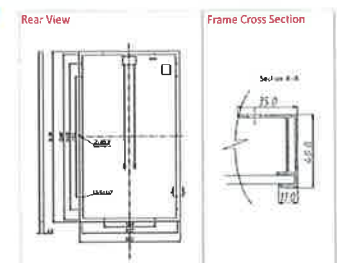
Specification	Data
Temperature Coefficient (Pmax)	-0.43 %/°C
Temperature Coefficient (Voc)	-0.34 %/°C
Temperature Coefficient (Isc)	0.055 %/°C
Nominal Operating Cell Temperature	45±2 °C

PERFORMANCE AT LOW IRRADIANCE

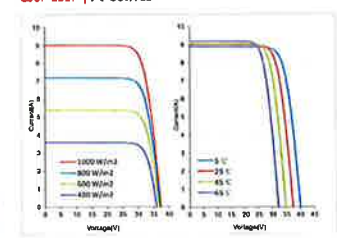
Industry leading performance at low irradiance, +96.5% module efficiency from an irradiance of 100W/m² to 200W/m² (AM 1.5, 25 °C)

¹⁾ An Alternative to the STC test conditions, the NOCT test conditions provide a more realistic representation of the operating conditions of your products. The specifications and data shown in this document are based on the NOCT test conditions. The NOCT test conditions are based on the following assumptions: irradiance of 800 W/m², spectrum AM 1.5 and cell temperature of 45 °C. Please contact your sales representative for the details of certificates applicable to your products.

MODULE | ENGINEERING DRAWING (unit: mm)



CS6P-255P | I-V CURVES



PERMANENT DISCOUNT



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