



City of Belle Isle Job Site Card **Building PERMIT 2018-08-088**

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

Permit Number: 2018- 08-088

Issue Date: 8/31/2018

Site Address: 2817 Alsace Ct 32812

Parcel # 18-23-30-4384-00-422

Class: Residential

Subdivision:

Description of Work: **INSTALLATION OF 8.19 KW PV SOLAR PHOTOVOLTAIC SYSTEM**

Issued To: GOLDIN SOLAR, LLC

Business Phone: 407 286-1771

Name: GOLDIN, DAREN TAL

Contractor License: CVC56965

Payment Date & Method: 8 / 31 / 2018 Picked up by

Visa Master Card Amex Discover Check / Money Order # 5060

Schedule Inspections via Email at: BDscheduling@universalengineering.com

SCHEDULE INSPECTIONS BY 3:00PM CUT OFF TIME

Inspection Results Will Be Sent Out the Following Business Day

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR 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."

BUILDING	INSPECTOR	DATE	COMMENTS
100 Demo Final			
110 Footing			
120 Stem Wall			
130 Slab			
140 Lintel/Tie Beam			
150 Down Pour			
160 Tilt Panel			
170 Window In-progress			
180 Sheathing (wall)			
190 Sheathing (roof)			
195 Dry-in (roof/walls)			
200 Framing			
205 Drywall Nail/Screw			
210 Fire Rated Assembly			
220 Above-Ceiling			
230 Insulation			
240 Lathe			
250 Final			
260 Other			

Inspection requests are to be emailed to BDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. **Next-Day Inspection requests must be made by 3pm.** 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.** Inspection results will be sent out the following business day. **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 -**

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



City of Belle Isle

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Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

RECEIVED
BY:
AUG 27 2018

Building / Land Use Permit Application

DATE: 6-25-18

PERMIT # 2018-08-088

PROJECT ADDRESS 2817 ALSACE CT. 2817 Alsace Ct., Belle Isle, FL 32809 32812

PROPERTY OWNER STEPHEN M. UDOUJ Udoj, Stephen PHONE 407-851-8454 VALUE OF WORK (labor & material) \$ 19,000

PLEASE LIST THE NATURE OF YOUR PROPOSED IMPROVEMENTS

INSTALLATION OF 8.19KW PV SOLAR

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: 18-23-30-4384-00-422

18-23-30-4384-00-422

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

SPECIAL CONDITIONS: STRUCTURES MAY NOT ENCR OACH 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: X Single Fam Multi Fam

#BLDG. _____ #UNITS_ #STORIES 1 TOTAL SQ.FT. 3580

MAX. FLOOR LOAD _____ MAX. OCCUPANCY _____

MIN. FLOOD ELEV. _____ LOW FLOOR ELEV. _____

WATER SERVICE _____ WELL _____ SEPTIC _____

SPRINKLERS REQ'D Y N
If Required - SUBMIT COPY OF PLANS FOR FIRE REVIEW Date: Sent RCD

REVIEW	Date: Sent	Y	N	RCD
ZONING		Y	N	\$
CERT OF OCC		Y	N	\$
TRAFFIC		Y	N	\$
SCHOOL		Y	N	\$
FIRE		Y	N	\$
SWIMMING POOL		Y	N	\$
SCREEN ENCLOSURE		Y	N	\$
ROOFING		Y	N	\$
BOAT DOCK		Y	N	\$
BUILDING		Y	N	\$ 145.50
WINDOW(S)		Y	N	\$
DOOR(S)		Y	N	\$
FENCE		Y	N	\$
SHED		Y	N	\$
DRIVEWAY		Y	N	\$
OTHER		Y	N	\$

BUILDING REVIEWER [Signature] DATE 8/29/18

VERIFIED CONTRACTOR'S LICENSE & INSURANCE ARE ON FILE for DATE 8-27-2018

PENDING - PLANS / Specifications NOC
NOV 8-27-2018 ALL CONTRACTORS

Per FSS 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."

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 setup 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.

1% BCAIB FEE 2 min

1.5% DCA FEE 2.18

TOTAL 149.68

OTHER PERMITS REQUIRED:

PERMIT	Y	NA
ELECTRICAL	Y	NA
PREPOWER	Y	NA
MECHANICAL	Y	NA
PLUMBING	Y	NA
ROOFING	Y	NA
GAS	Y	NA

PAID
8-31-2018
MC 5060

18x4
1st 1k 25
70
97 = 2
48.50
145.50

120771



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

Building Permit (Land Use) Application
 To be completed as required by State Statute Section 713 and other applicable sections.

PERMIT # _____

Owner's Name STEPHEN M. UDOUJ


Owner's Address 2817 ALSACE CT., BELLE ISLE, FL 32812

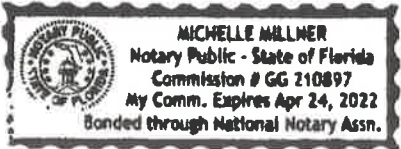
Contractor Name <u>DAREN GOLDIN</u>	Company Name <u>GOLDIN SOLAR, LLC</u>
License # <u>CVC56965</u>	Company Address <u>3447 PERCIVAL AVE.,</u>
Contact Phone/Cell <u>843-425-3519</u>	City, State, ZIP <u>MIAMI, FL 33133</u>
Contact Email <u>BETH@GOLDINSOLAR.COM</u>	Contact Fax <u>407-286-1771</u>

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 S. M. Udouj
 The foregoing instrument was acknowledged before me this 8/23/18
 by Stephen Udouj who is personally known to me
 and who produced _____
 as identification and who did not take an oath.
 Notary as to Owner Elizabeth Salmon
 State of Florida
 County of Orange


Contractor Signature Daren Goldin
 COMPANY NAME GOLDIN SOLAR, LLC
 The foregoing instrument was acknowledged before me this 8/22/18
 by Daren Goldin who is personally known to me
 and who produced _____
 as identification and who did not take an oath.
 Notary as to Owner Michelle Millner
 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

Permit Number: _____
 Folio/Parcel Identification Number: 18-23-30-4384-00-422
 Prepared by: Elizabeth Salmon

DOCH 20180507127
 08/24/2018 12:53:41 PM Page 1 of 1
 Rec Fee: \$10.00
 Phil Diamond, Comptroller
 Orange County, FL
 IP - Ret To: GOLDIN SOLAR LLC

Return to: Beth Salmon
1700 WOODBURY RD
ORLANDO, FL 32828



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)
LAKE CONWAY ESTATES SECTION FOUR SECOND ADDITION 1/106 LOT 422
2. **General description of improvement**
INSTALLATION OF 8.19KW PV SOLAR
3. **Owner information or Lessee information if the Lessee contracted for the improvement**
 Name STEPHEN M. UDOUJ
 Address 2817 ALSACE CT., BELLE ISLE, FL 32828 32812 FL
 Interest in Property OWNER
 Name and address of fee simple titleholder (if different from Owner listed above)
 Name _____
 Address _____
4. **Contractor**
 Name GOLDIN SOLAR, LLC Telephone Number 843-425-3519
 Address 3447 Percival Ave., Miami, FL 33133
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) _____



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: [Signature]
 DATED: 8/21/18

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.

S. M. Udouj _____ **OWNER**
 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 23 day of Aug 18 by STEPHEN M. UDOUJ
 as _____ for _____
 Type of authority, e.g., officer, trustee, attorney in fact Name of party on behalf of whom instrument was executed

Elizabeth Salmon _____
 Signature of Notary Public - State of Florida Print, type, or stamp the complete name of the Notary Public
ELIZABETH SALMON
 MY COMMISSION # GG110427
 EXPIRES June 01, 2021
 Form Revised: September 26, 2011

Personally Known OR Produced ID _____
 Type of ID Produced _____



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

POWER OF ATTORNEY

Date: 5/19/2018

Permit #: _____

I hereby name and appoint Elizabeth Salmon and Nelson Pena of
 (print name)

Goldin Solar, LLC to be my lawful attorney-in-fact to act for
 (company name)

me and apply to the City of Belle Isle Building Department for a Building/Electric permit
 (type of permit)

for work to be performed at the following location:

2817 Alsace Ct., Belle Isle, FL 32809 32812 and
 (street address)

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

Certified Contractor's Printed Name: Daren Goldin

License Number: CVC56965

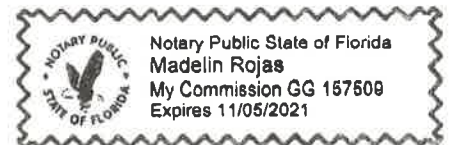
Certified Contractor's Signature: *Daren Goldin*

The foregoing instrument was acknowledged before me this 31st days of May of 2018

by Daren Goldin who is personally known to me or who produced
Personally known as identification and who did not take an oath.

State of Florida
 County of Orange

Madelin Rojas
 Notary Public, Orange County, Florida



(seal)

solar**edge**

Reviewed for Code
Compliance
Universal Engineering
Sciences

Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US /
SE6000H-US / SE7600H-US / SE10000H-US

INVERTERS



Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)





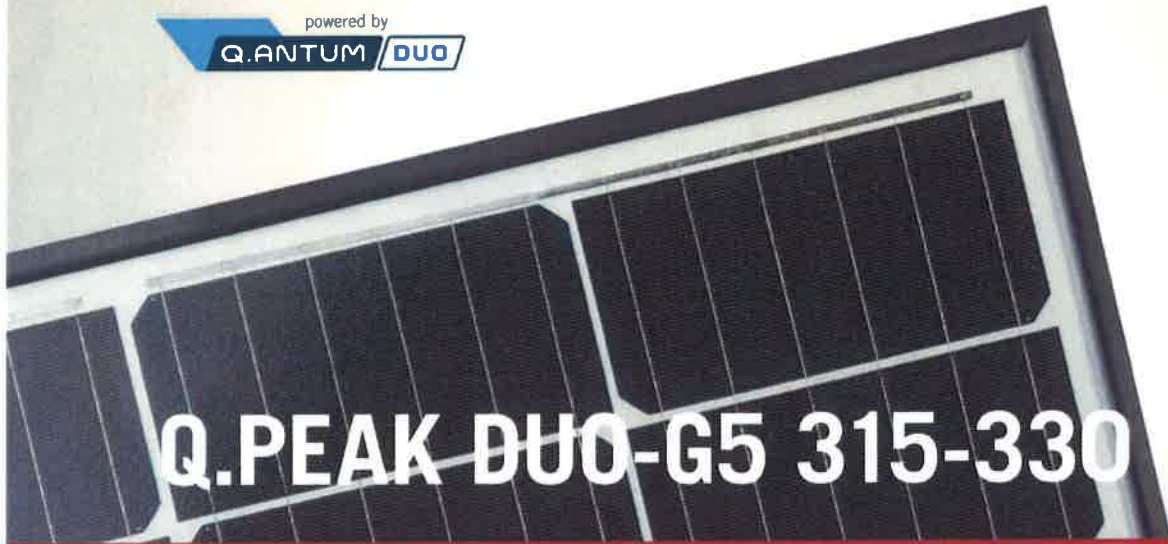
Single Phase Inverter

with HD-Wave Technology for North America
 SE3000H-US / SE3800H-US / SE5000H-US /
 SE6000H-US/ SE7600H-US / SE10000H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US		
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	VA	
Max. AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	VA	
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	Vac	
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	Vac	
AC Frequency (Nominal)	-	-	59.3 - 60 - 60.5 ⁽¹⁾	-	-	-	Hz	
Maximum Continuous Output Current 208V	-	16	-	24	-	-	A	
Maximum Continuous Output Current@240V	12.5	16	21	25	32	42	A	
GFDI Threshold	-	-	-	1	-	-	A	
Utility Monitoring, Islanding Protection, Country	-	-	-	Yes	-	-	-	
Configurable Thresholds	-	-	-	-	-	-	-	
INPUT								
Maximum DC Power	4650	5900	7750	9300	11800	15500	W	
Transformer-less, Ungrounded	-	-	-	Yes	-	-	-	
Maximum Input Voltage	-	-	-	480	-	-	Vdc	
Nominal DC Input Voltage	-	380	-	-	400	-	Vdc	
Maximum Input Current 208V	-	9	-	13.5	-	-	A	
Maximum Input Current@240V	8.5	10.5	13.5	16.5	20	27	A	
Max. Input Short Circuit Current	-	-	-	45	-	-	A	
Reverse-Polarity Protection	-	-	-	Yes	-	-	-	
Ground-Fault Isolation Detection	-	-	600µs Sensitivity	-	-	-	-	
Maximum Inverter Efficiency	99	-	-	99.2	-	-	%	
CEC Weighted Efficiency	-	-	-	99	-	-	%	
Nighttime Power Consumption	-	-	< 2.5	-	-	-	W	
ADDITIONAL FEATURES								
Supported Communication Interfaces	-	RS485, Ethernet, ZigBee (optional), Cellular (optional)					-	-
Revenue Grade Data, ANSI C12.20	-	Optional ⁽²⁾					-	-
Rapid Shutdown - NEC 2014 and 2017 690.12	-	Automatic Rapid Shutdown upon AC Grid Disconnect					-	-
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (H)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 20-4 AWG						-	
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG	-	
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185	in / mm	
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6	-	-	lb / kg	
Noise	< 25			< 50	-	-	dB(A)	
Cooling	Natural Convection			Natural convection	-	-	-	
Operating Temperature Range	-13 to +140 / -25 to +60 ⁽³⁾ (-40°F / -40°C option) ⁽⁴⁾							
Protection Rating	NEMA 3R (Inverter with Safety Switch)							

⁽¹⁾ For other regional settings please contact SolarEdge support
⁽²⁾ Revenue grade inverter P/N: SExxxxH-US000NNC2
⁽³⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>
⁽⁴⁾ -40 version P/N: SExxxxH-US000NNU4





Q.ANTUM SOLAR MODULE

The new Q.PEAK DUO-G5 solar module from Q CELLS impresses thanks to innovative Q.ANTUM DUO Technology, which enables particularly high performance on a small surface. Q.ANTUM's world-record-holding cell concept has now been combined with state-of-the-art circuitry half cells and a six-busbar design, thus achieving outstanding performance under real conditions — both with low-intensity solar radiation as well as on hot, clear summer days.



Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.9%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

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



ENDURING HIGH PERFORMANCE

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



EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².



STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.



Reviewed for Code Compliance
Universal Engineering Sciences



www.VDEInfo.com
ID: 40032587

¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings



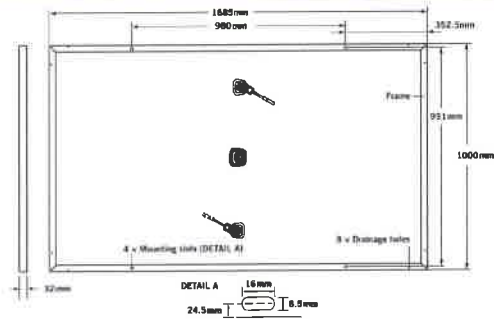
Rooftop arrays on commercial/industrial buildings

Engineered in Germany



MECHANICAL SPECIFICATION

Format	1685 mm x 1000 mm x 32 mm (including frame)
Weight	18.7 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 x 20 monocrystalline Q.ANTUM solar half cells
Junction box	70-85 mm x 50-70 mm x 13-21 mm Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) 1100 mm, (-) 1100 mm
Connector	Multi-Contact, MC4, IP65 and IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS		315	320	325	330	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)						
Minimum	Power at MPP ²	P _{MPP} [W]	315	320	325	330
	Short Circuit Current [*]	I _{SC} [A]	10.04	10.09	10.14	10.20
	Open Circuit Voltage [*]	V _{OC} [V]	39.87	40.13	40.40	40.66
	Current at MPP [*]	I _{MPP} [A]	9.55	9.60	9.66	9.71
	Voltage at MPP [*]	V _{MPP} [V]	32.98	33.32	33.65	33.98
	Efficiency ²	η [%]	≥ 18.7	≥ 19.0	≥ 19.3	≥ 19.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC ³						
Minimum	Power at MPP ²	P _{MPP} [W]	233.4	237.2	240.9	244.6
	Short Circuit Current [*]	I _{SC} [A]	8.09	8.14	8.18	8.22
	Open Circuit Voltage [*]	V _{OC} [V]	37.30	37.54	37.79	38.04
	Current at MPP [*]	I _{MPP} [A]	7.51	7.56	7.60	7.64
	Voltage at MPP [*]	V _{MPP} [V]	31.07	31.39	31.70	32.01

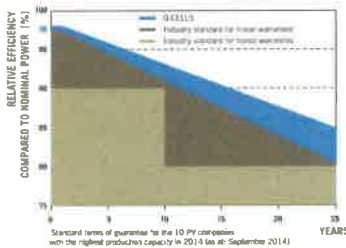
¹1000 W/m², 25 °C, spectrum AM 1.5G

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

³800 W/m², NOCT, spectrum AM 1.5G

^{*} typical values, actual values may differ

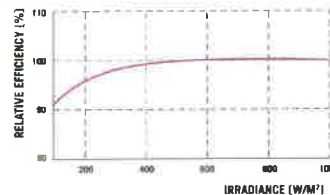
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

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

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.28
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.37	Normal Operating Cell Temperature	NOCT	[°C]	45

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V _{sys}	[V]	1000	Safety Class	II
Maximum Reverse Current	I _r	[A]	20	Fire Rating	C
Push/Pull Load (Test-load in accordance with IEC 61215)		[Pa]	5400/4000	Permitted Module Temperature On Continuous Duty	-40 °C up to +85 °C

QUALIFICATIONS AND CERTIFICATES

VDE Quality Tested, IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A
This data sheet complies with DIN EN 50380.



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

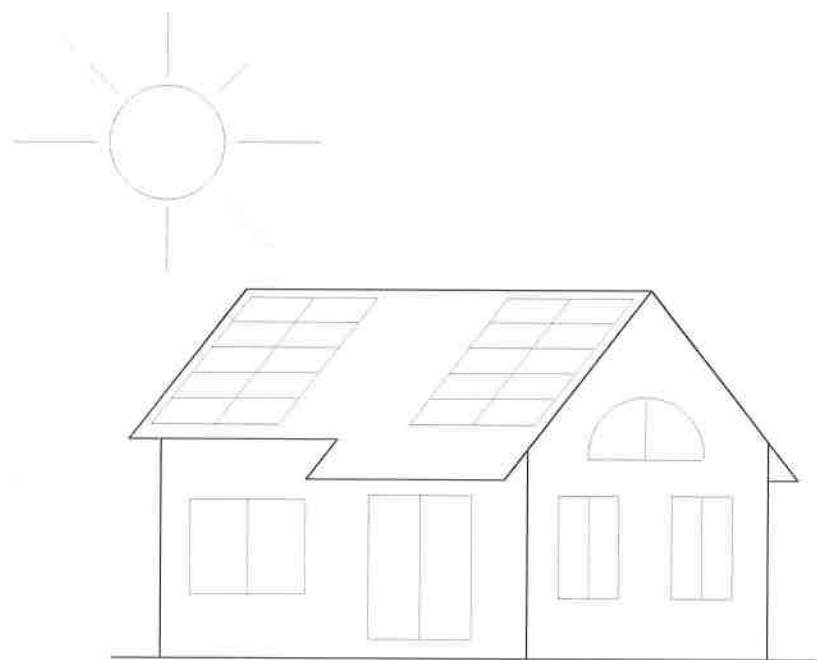
Hanwha Q CELLS GmbH

Sonnenallee 17-21, 06766 Bitterfeld-Wolfen, Germany | TEL +49 (0)3494 66 99-23444 | FAX +49 (0)3494 66 99-23000 | EMAIL sales@q-cells.com | WEB www.q-cells.com

Specifications subject to technical changes © Hanwha Q CELLS Q PEAK DUO-G5-315-330_2017-07_Rev01_EN

Engineered in Germany

Q CELLS

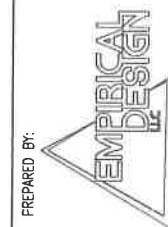
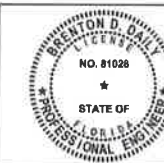


SOLAR PHOTOVOLTAIC SYSTEM

SURLAK RESIDENCE

2817 ALSACE COURT,
BELLE ISLE, FL, 32812

Digitally signed
by Brenton Daily
Date: 2018.08.09
06:34:28-04'00



INDEX OF DRAWINGS

ARCHITECTURAL/STRUCTURAL

- CVR COVER SHEET
- S-1 SITE PLAN
- S-2 PV MODULES LAYOUT
- S-3 DETAILS

ELECTRICAL

- E-1 ROOF ELECTRICAL PLAN & LAYOUT
- E-2 ELECTRICAL DIAGRAMS & SCHEDULES

SYMBOLS

NOTE REFERENCE		REFERENCE NUMBER
REVISION REFERENCE		REVISION NUMBER
DETAIL REFERENCE		ELEVATION NUMBER SHEET NUMBER

PROJECT:
SURLAK RESIDENCE
2817 ALSACE COURT,
BELLE ISLE, FL, 32812

BY: BDD
DATE: 7/27/2018
REVISION:

SHEET TITLE:
CVR

SHEET NUMBER:
1 OF 6



LOCATION SKETCH
NOT TO SCALE

ABBREVIATED LEGAL DESCRIPTION

TAKEN FROM ORANGE COUNTY PROPERTY APPRAISERS WEBSITE:
ORANGE COUNTY: LAKE CONWAY ESTATES SECTION FOUR SECOND ADDITION
1/106 LOT 422

ZONING INFORMATION

PRIMARY LAND USE: Single Fam Class III
CITY: BELLE ISLE
CITY ZONING CODE: 0103
NET LAND AREA: 13,017 SQ. FT.

SCOPE OF WORK

THIS SET OF PLANS DETAILS THE INSTALLATION OF A 8,190KW GRID INTERACTIVE, SOLAR PHOTOVOLTAIC SYSTEM ON THE ROOF OF THE EXISTING PROPERTY DETAILED BELOW.

SITE DETAILS

PROPERTY OWNER NAME: LORRAINE SURLAK
PROPERTY ADDRESS: 2817 Alsace Ct, Belle Isle, FL 32812-1056

CONTRACTOR INFORMATION

CONTRACTOR COMPANY NAME: GOLDIN SOLAR LLC
CONTRACTOR REGISTERED ADDRESS: 3447 PERCIVAL AVENUE MIAMI, FLORIDA 33133
LICENCE NUMBER: CVC 96965
NAME OF LICENSE HOLDER: DAREN GOLDIN
PHONE: (305) 463 9180

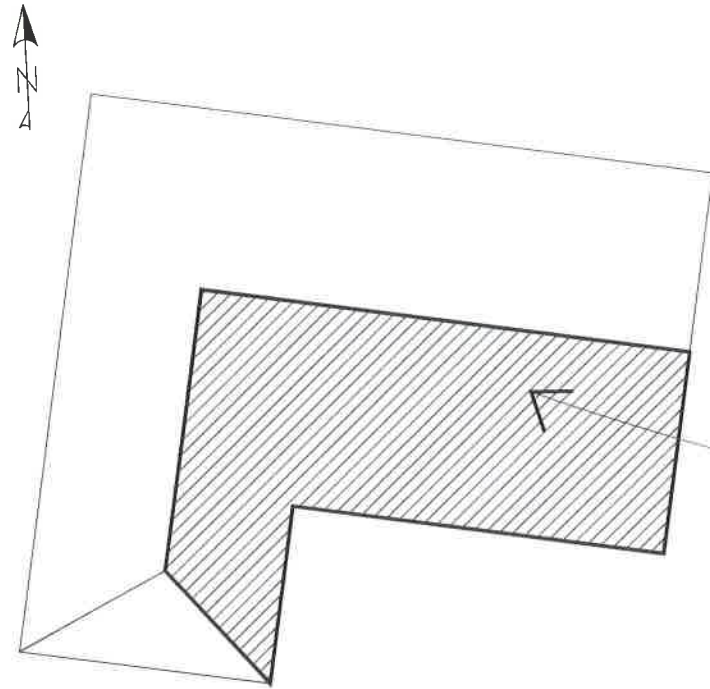
DESIGNERS INFORMATION

COMPANY NAME: EMPIRICAL DESIGN, LLC
REGISTERED ADDRESS: 149 OAK VIEW CIRCLE, LAKE MARY, FL 32746
PHONE: (407) 848-7877

GENERAL NOTES

UNLESS OTHERWISE NOTE (U.O.N.) ON PLANS OR IN THE SPECIFICATIONS, THE FOLLOWING GENERAL STRUCTURAL NOTES SHALL APPLY TO THIS PROJECT.

- ABBREVIATIONS NOTED ON THE DRAWINGS OR SPECIFICATIONS ARE THOSE COMMONLY USED UPON REQUEST. THE ENGINEER WILL DEFINE ANY ABBREVIATION THAT IS QUESTIONED BY THE CONTRACTOR.
- QUALIFICATION OF SUB-CONTRACTORS: ALL SUB-CONTRACTORS SHALL BE LICENSED BY THE STATE OF FLORIDA.
- PROTECTION: PROTECT THE EXISTING BUILDING AND ADJACENT PROPERTIES FROM DAMAGE.
- THE ARCHITECT/ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE HELD RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, NOR FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR OR ANY OTHER PERSONS PERFORMING THE WORK. THE ARCHITECT/ENGINEER DOES NOT GUARANTEE PERFECTION IN HER PLANS AND SPECIFICATIONS, NOR DOES GUARANTEE THAT A SATISFACTORY AND/OR FLAWLESS BUILDING WILL RESULT FROM HIS WORK.
- EXISTING CONDITIONS: CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND/OR BEGINNING ANY WORK TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE SITE. SUB-CONTRACTORS SHALL BE HELD RESPONSIBLE FOR HAVING EXAMINED THE SITE, VERIFIED THE LOCATION OF ALL PROPOSED WORK, AND FOR HAVING SATISFIED THEMSELVES FROM THEIR OWN PERSONAL KNOWLEDGE AND EXPERIENCE OR PROFESSIONAL ADVICE AS TO THE CHARACTER, LOCATION OF THE SITE, THE NATURE OF THE EXISTING CONDITIONS, LOCATION OF THE EXISTING UTILITIES AND ANY OTHER CONDITIONS SURROUNDING AND AFFECTING THE WORK, ANY OBSTRUCTION, THE NATURE OF THE EXISTING CONSTRUCTION AND ALL OTHER PHYSICAL CHARACTERISTICS OF THE SITE SO THEY MAY INCLUDE IN THEIR INITIAL BID ALL COSTS FOR THE SATISFACTORY COMPLETION OF THE JOB. SUCH COST SHALL INCLUDE THE REMOVAL, RELOCATION OR REPLACEMENT OF ANY OBJECTS OR OBSTRUCTIONS THAT MAY BE ENCOUNTERED IN DOING THE PROPOSED WORK. ALL CONTRACTORS SHALL BE REQUIRED TO FIELD CHECK AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE ARCHITECT/ENGINEER IF ANY DISCREPANCY EXISTS. COMPLETION OF WORK SHALL CONSTITUTE FULL ACCEPTANCE OF SITE CONDITIONS. DISCREPANCIES, OMISSIONS OR VARIATIONS NOTED ON THE DRAWINGS DISCOVERED DURING THE BIDDING OR CONSTRUCTION PERIOD SHALL BE IMMEDIATELY COMMUNICATED IN WRITING TO THE ARCHITECT/ENGINEER.
- DO NOT SCALE THE DRAWINGS. IF THERE ARE ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS, STOP WORK AND NOTIFY IN WRITING THE ARCHITECT/ENGINEER IMMEDIATELY FOR CLARIFICATION.
- FIRE PROTECTION NOTE: ALL PENETRATIONS OF FIRE RESISTANT ASSEMBLIES (IE RECESSED LIGHT FIXTURES, FIRE OR CONDUIT PENETRATIONS, HVAC PENETRATIONS OR DEVILON (ETC)) SHALL BE PROTECTED AS TO NOT DECREASE THE FIRE RESISTANCE OF SUCH ASSEMBLIES.
- ALL NEW MATERIALS AND FINISHES TO MATCH EXISTING UNLESS OTHERWISE NOTED.
- ALL NEW FINISHES, MATERIALS, PAINTS AND COLORS SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.
- ALL WORK SHALL BE PERFORMED IN A MANNER CONSISTENT WITH THE BEST PRACTICES FOR THE RESPECTIVE TRADES AND QUALITY SPECIFIED.
- CUTTING OR DRILLING OF ANY STRUCTURAL MEMBER IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT/ENGINEER.
- NO WORKS WILL BE MADE IN THE CITY RIGHT OF WAY W/ INCLUDE APRON AND SUIVAE.
- TAKE PRECAUTIONS AS NECESSARY TO CONTROL EXCESSIVE DUST AND NOISE.



KEY PLAN (SKETCH)
1/16"=1'-0"

- DO NOT CONCEAL ANY WORK UNTIL ENGINEER OR BUILDING DEPARTMENT INSPECTOR APPROVE INSPECTION WORK.
- ANY AND ALL ITEMS REQUIRED TO FURNISH A COMPLETE CONSTRUCTION BUT NOT SPECIFICALLY SHOWN OR SPECIFIED ON THESE DRAWINGS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH 2017 FBC, 6TH EDITION AND LOCAL ORDINANCES AND GOOD WORKMANLIKE MANNER.
- THE CONTRACTOR SHALL COORDINATE ALL PARKING, STORAGE, TRASH-REMOVAL ETC WITH THE OWNERS AND THE CITY OF ORLANDO.
- SECTIONS AND DETAILS SHOWN TYPICAL ON THE DRAWINGS MAY NOT BE SPECIFICALLY NOTED AT EACH LOCATION HOWEVER THESE DETAILS MAY BE APPLICABLE OR MAY BE REQUIRED IN MORE THAN ONE LOCATION.
- SUPPORTING ROOF STRUCTURE SHALL BE VERIFIED FOR PROPOSED PANEL LAYOUT.
- EXISTING CONDITIONS DEPICTED REPRESENT CONDITIONS OBSERVED/ASSUMED ON FIELD VISITS BY THE ENGINEER IS NOT WARRANTED THAT CONDITIONS SHOWN ARE REPRESENTATIVE OF ACTUAL EXISTING CONDITIONS. CONSULTING ENGINEER ASSUMES NO RESPONSIBILITY FOR EXISTING CONDITIONS. THEY ARE SHOWN ONLY FOR REFERENCE.

PV MODULES DESIGN CRITERIA AND INSTALLATION

- DETAILS SHOWN ON THESE PLANS ARE PART OF THE SHARNACK PV MOUNTING SYSTEMS, SERIES 100 ROOF MOUNT STRUCTURAL REPORT AND CALCULATIONS, ISSUE BY NORMAN J. SCHEELPFE LICENCE NO. 18002, STATE OF FLORIDA DATED NOV. 11, 2015, AND ARE SHOWN AS REFERENCE ONLY. UPON REQUEST A FULL REPORT CAN BE PROVIDED.
- SOLAR MODULES USED:
 - MUST BE LISTED AND MUST BE IDENTIFIED AS CLASS C (IEC61730) BY AN APPROVED TESTING AGENCY. SEE ATTACHED MANUFACTURER SPEC'S.
 - MUST WITHSTAND A MINIMUM WIND LOAD OF 33.0 PSF. SEE ATTACHED MANUFACTURER SPEC'S.
 - MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL 1703 (TYPE I) AND WILL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 - MUST COMPLY WITH SECTION 1505.1.0 OF THE 2017 FBC, 6TH EDITION.
- MUST BE INSTALLED FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS IN THE INSTALLATION AND OPERATION MANUAL.

STRUCTURAL DESIGN CRITERIA

- ALL REFERENCED CODES AND SPECIFICATIONS SHALL BE LATEST EDITION AT TIME OF PERMIT.
- THE GOVERNING BUILDING CODE FOR THIS PROJECT IS THE 2017 FBC, 6TH EDITION TO THE BEST OF OUR KNOWLEDGE, THIS DESIGN COMPLIES WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE.
- WIND LOAD CRITERIA AS PER ASCE 7-10. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES:
 - BASIC WIND VELOCITY: 113.8 MILES PER HOUR
 - EXPOSURE: C
 - BUILDING CATEGORY: II
- SUPERIMPOSED LOADS (PSF) EXISTING STRUCTURE TO BE USED UNLESS OTHERWISE NOTE ON PLANS:
 - DEAD LOAD ROOFING: 25 + 10 + 35
 - LIVE LOAD ROOF: 30

SITE PLAN (SKETCH)

3/32"=1'-0"

NOTE:
- SITE PLAN AERIAL BASED ON SATELLITE IMAGE FROM PROPERTY APPRAISER TO BE FIELD VERIFIED.



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PREPARED BY:



PROJECT:
SURLAK RESIDENCE
2817 ALSACE COURT,
BELLE ISLE, FL 32812

BY: BDD
DATE: 7/27/2018
REVISION:

SHEET TITLE:
S-1

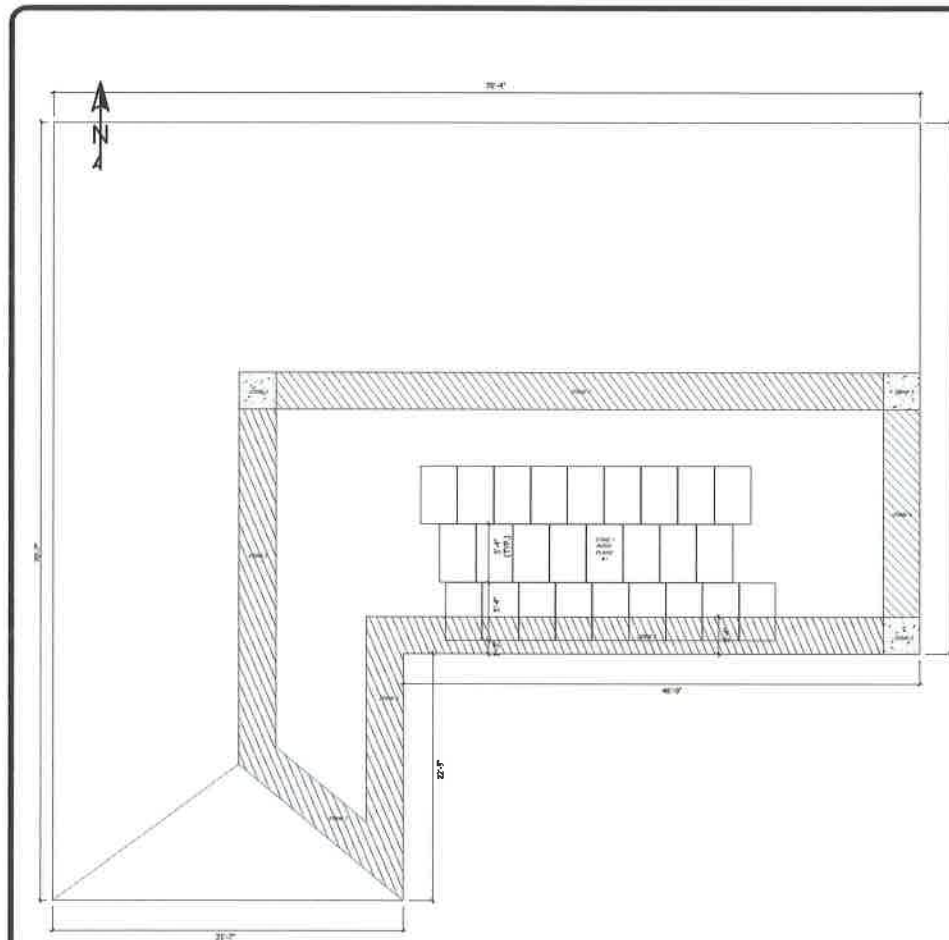
SHEET NUMBER:
2 OF 6

ALSACE CT

EXIST. SETBACK

EXISTING ONE STORY BUILDING

EXISTING DRIVEWAY TO REMAIN

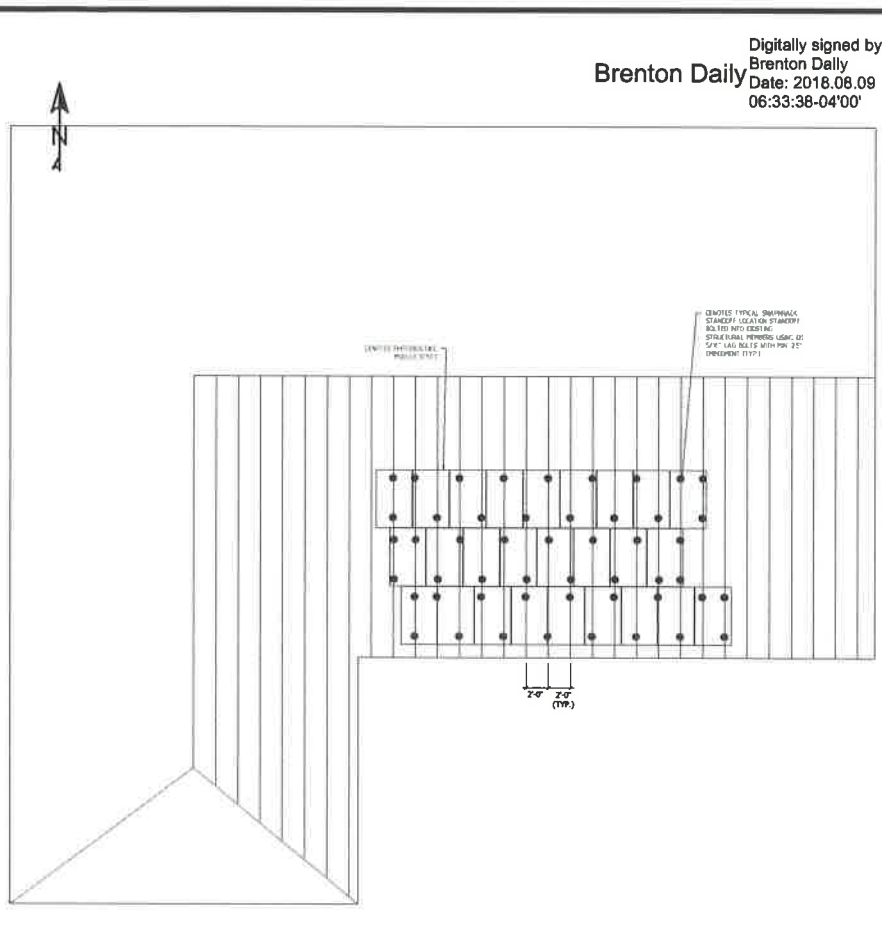


ROOF PLAN PHOTOVOLTAIC MODULES LAYOUT
SCALE: 3/16"=1'-0"

NOTES:
 - ROOF DIMENSIONS BASED ON FIELD VISIT AND SATELLITE IMAGE FROM ST. LUCIE COUNTY PROPERTY APPRAISER.
 - EXISTING AREA OF WORK:
 - ROOF PLANE #1
 - TYPE OF EXISTING STRUCTURAL ROOF DECK: 2" X 4" WOOD TRUSSES AT 24" O.C.
 - CONDITION OF THE ROOF ASSEMBLY: EXISTING ROOF (NO CHANGE TO ROOF ASSEMBLY) FIRE RATING OF THE EXISTING ROOF ASSEMBLY SHALL BE MAINTAINED.
 - EXISTING ROOFING MATERIAL USED FOR THE ROOF ASSEMBLY:

PANEL LOCATION TYPE #1
 - 100% LOCATED IN ZONE 1
 PANEL LOCATION TYPE #2 (WORST CONDITION)
 - 50% LOCATED IN ZONE 1
 - 50% LOCATED IN ZONE 2

WIND SPEED: 7-10 = 138 MPH
 STRUCTURE CATEGORY: 2
 EXPOSURE CATEGORY: C
 STRUCTURAL TYPE: ENCLOSURE
 BUILDING TYPE: ENCLOSURE
 ROOF TYPE: GABLE
 ROOF SLOPE: 6:12 - ASSUMED
 DISTANCE, X: 3'-4"
 NOTE: REFER TO STRUCTURAL CALCULATIONS FOR WIND ZONE VALUES AND APPROPRIATE APPLICATION OF SAID VALUES



ROOF PLAN ATTACHMENT LAYOUT
SCALE: 3/16"=1'-0"

NOTE:
 - REFER TO SHEET S-1 FOR TYPICAL INSTALLATION DETAILS
 - LOCATION OF EXISTING STRUCTURAL MEMBERS HAVE BEEN ASSUMED AND MUST BE FIELD VERIFIED PRIOR BEGINNING OF WORK

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PROJECT:
SURAK RESIDENCE
 2017 ALASKA COURT
 BELLE GLADE, FL 33412

BY: BDD
 DATE: 7/27/2018
 REVISION:

SHEET TITLE:
 S-2

SHEET NUMBER:
 3 OF 6



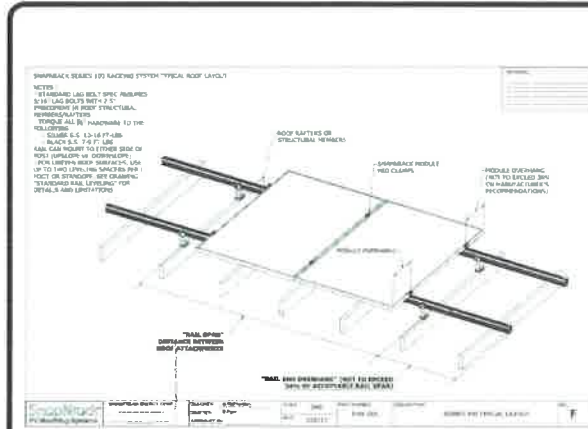
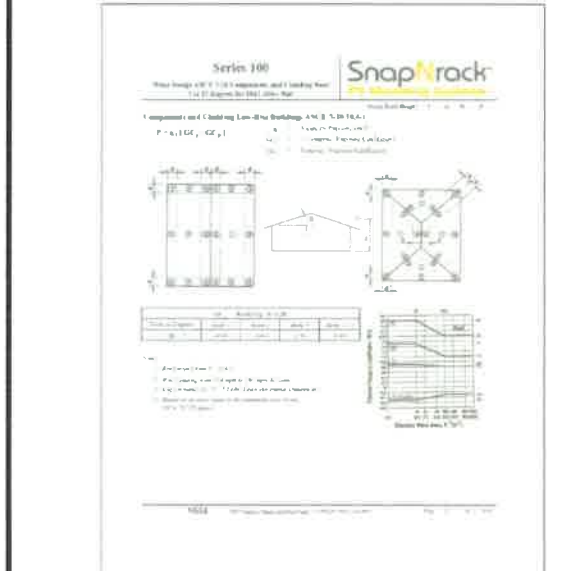
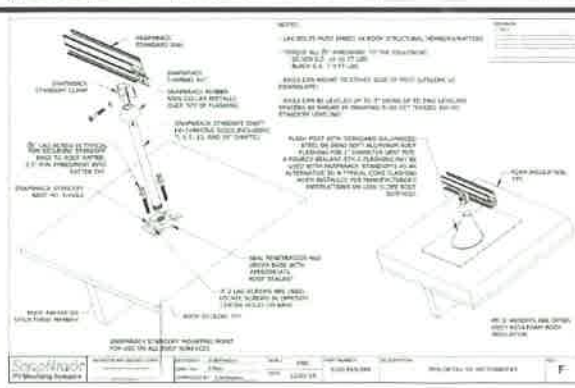
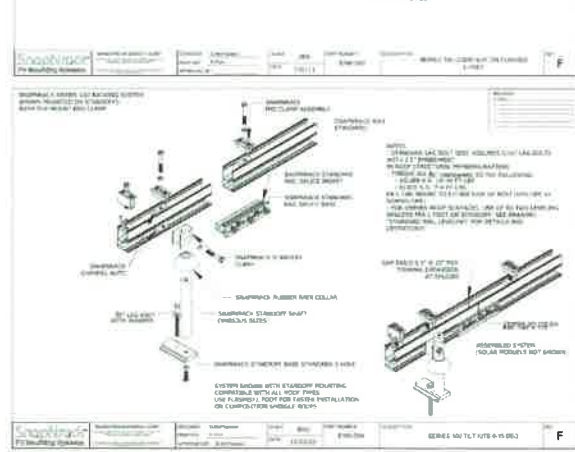
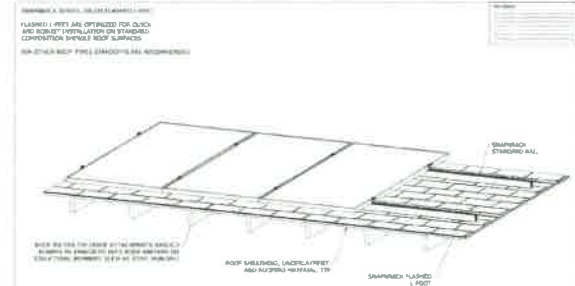


Table 24 - Rail Spacing for Roof Slopes and Pitch Angles 2° to 19° 6/005 A-10

Roof Slope (Pitch)	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
Feet	23.5	25.5	27.5	29.5	31.5	33.5	35.5	37.5	39.5	41.5	43.5	45.5	47.5	49.5	51.5	53.5	55.5	57.5
Meters	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2	13.8	14.4	15.0	15.6	16.2	16.8	17.4



MOUNTING SYSTEM LAYOUT
SCALE: 1/8"



RAIL AND STRUCTURAL ATTACHMENT DETAIL
SCALE: 1/8"

SHIMMER 3 SERIES, SOLAR UNIFORMITY: 5000
 MOUNTING SYSTEM COMPONENT DETAIL
 SCALE: 1/8"

SHIMMER 3 SERIES, SOLAR UNIFORMITY: 5000
 MOUNTING SYSTEM COMPONENT DETAIL
 SCALE: 1/8"

SHIMMER 3 SERIES, SOLAR UNIFORMITY: 5000
 MOUNTING SYSTEM COMPONENT DETAIL
 SCALE: 1/8"

THESE DETAILS ARE PART OF THE SUNTRACK P7
 MOUNTING SYSTEMS SERIES 100 ROOF TOUNT
 SYSTEMS AND CALCULATIONS SHALL BE
 PERFORMED BY AN ENGINEER REGISTERED IN
 THE STATE OF FLORIDA. ALL LOCAL CODES
 AND REGULATIONS SHALL BE OBSERVED.
 REFERENCE TO LOCAL PERMITS AND
 REGULATIONS SHALL BE OBTAINED PRIOR
 TO INSTALLATION. ALL MATERIALS
 MUST BE APPROVED BY THE LOCAL
 PERMITS DEPARTMENT.

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PROJECT: **SUNRAK RESIDENCE**
 12437 BELLE HAVEN BL, SEBIE BEACH, FL 32926

DATE: 7/27/2018

SHEET TITLE:
 S-3

SHEET NUMBER:
 4 OF 6



HellermannTyton
PHOTOVOLTAIC SYSTEM LABELING REQUIREMENTS
NEC 2014 Article 690 and IFC 2012

Additional Fastener Signs
690.23(A) - 2011: Fastener safety signs at Array, inverter, combiner, and disconnect locations are required when applicable in residential applications. NEC (690.23(A)).
The label shall be located for the maximum visible connection for the maximum visible connection. NEC (690.23(A)).
When required, the sign shall be clearly visible, tamper-resistant, and include the following information:
1. A warning sign shall be placed at the maximum visible connection for the maximum visible connection.
2. A warning sign shall be placed at the maximum visible connection for the maximum visible connection.

Labels and Signs:

- Warning: Photovoltaic Power Source**
- Warning: High Voltage**
- Warning: No Open Flames**
- Warning: No Smoking**
- Warning: No Flammable Liquids**
- Warning: No Flammable Solids**
- Warning: No Flammable Gases**
- Warning: No Flammable Dusts**
- Warning: No Flammable Fibers**
- Warning: No Flammable Liquids**
- Warning: No Flammable Solids**
- Warning: No Flammable Gases**
- Warning: No Flammable Dusts**
- Warning: No Flammable Fibers**
- Warning: No Open Flames**
- Warning: No Smoking**
- Warning: No Flammable Liquids**
- Warning: No Flammable Solids**
- Warning: No Flammable Gases**
- Warning: No Flammable Dusts**
- Warning: No Flammable Fibers**

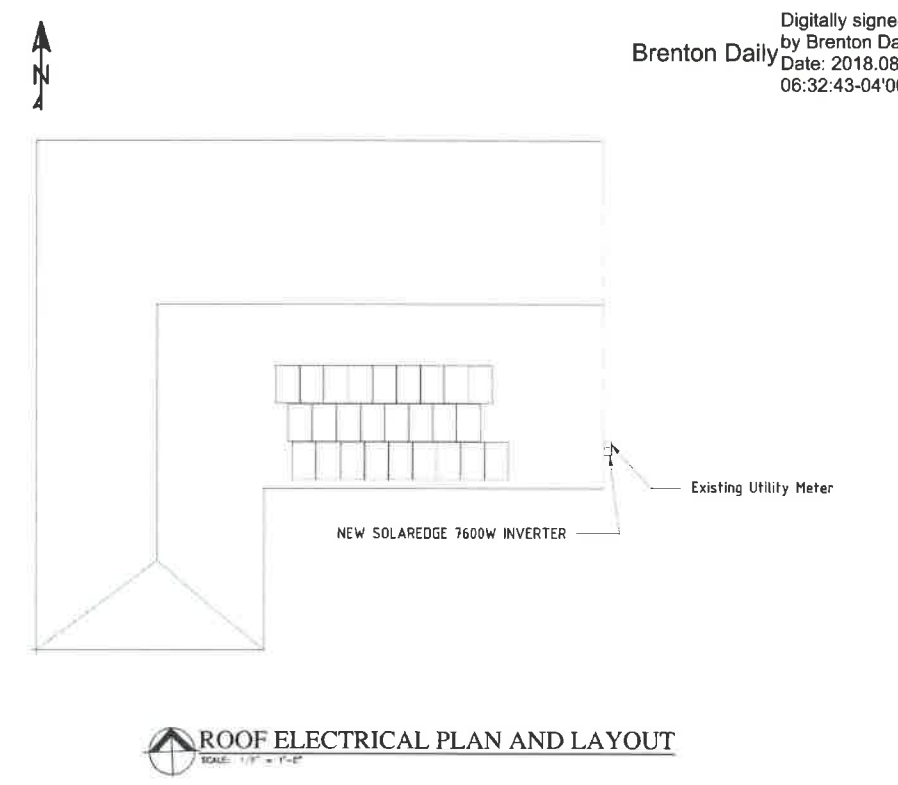
LABELING REQUIREMENTS FOR ARTICLE 690

REQUIREMENTS FOR ELECTRICAL INSTALLATIONS (FIELD BIDDING)

Labels and Signs:

- Warning: Photovoltaic Power Source**
- Warning: High Voltage**
- Warning: No Open Flames**
- Warning: No Smoking**
- Warning: No Flammable Liquids**
- Warning: No Flammable Solids**
- Warning: No Flammable Gases**
- Warning: No Flammable Dusts**
- Warning: No Flammable Fibers**
- Warning: No Open Flames**
- Warning: No Smoking**
- Warning: No Flammable Liquids**
- Warning: No Flammable Solids**
- Warning: No Flammable Gases**
- Warning: No Flammable Dusts**
- Warning: No Flammable Fibers**

PV SYSTEM LABELING REQUIREMENTS



ELECTRICAL LEGEND

- ⊕ JUNCTION BOX, WALL OR CEILING MOUNT
- GROUND CONNECTION
- CONDUIT CONCEALED IN OR UNDER FLOOR
- CONDUIT CONCEALED ABOVE CEILING OR IN WALL
- FLEXIBLE CONNECTION TO EQUIPMENT
- PANEL
- DISCONNECT SWITCH
- ⊕ WEATHERHEAD
- ⊕ GROUND FAULT CIRCUIT INTERRUPTER AND FAULT INTERRUPTER
- ⊕ ABOVE FINISHED FLOOR
- ⊕ EXISTING TO REMAIN

ELECTRICAL GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE FLORIDA BUILDING CODE, THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND/OR REGULATIONS.
2. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
3. THE MATERIAL, INSTALLATION, AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL COMPLY AT LEAST TO THE REQUIREMENTS OF LOCAL, STATE AND FEDERAL CODES. ALL MATERIALS USED SHALL BE NEW AND SHALL BE LISTED AND/OR BEAR UL APPROVAL.
4. ALL CONDUITS SHALL BE MADE OF 90 PERCENT COPPER/10 PERCENT COPPER. ALL CABLES SHALL BE SINGLE CONDUCTOR 90% VULCANIZED INSULATION, SUITABLE FOR CONTINUOUS OPERATION AT 75 DEGREES C. CONDUCTOR TEMPERATURE IN BOTH VET AND 90% LOCATIONS. THESE CABLES SHALL BE RIGID INSULATION CLASSIFICATION TYPE THHN OR TUV, EXCEPT FOR AWG SIZES #6 AND SMALLER TYPE TUV MAY BE USED. ALL CONDUIT INSULATION SHALL BE LIGHT COLOR. CONDUIT INSULATION SHALL BE USED FOR AWG SIZES #6 AND SMALLER AND APPROXIMATE COLOR TAPES SHALL BE USED FOR AWG SIZES #6 AND LARGER.
5. ALL CONDUITS SHALL BE RUN IN CONDUIT. CONDUITS SHALL BE PERMITTED ONLY IN UNFINISHED AREAS. SOLID CHANNELS SHALL BE PAINTED TO MATCH THE SURFACE TO WHICH THE ARE ATTACHED. EXCEPT CONDUIT SHALL BE USED FOR CONNECTION TO ALL VIBRATING EQUIPMENT. SUCH AS PULSES, BELT DRIVES, ETC. CONDUIT SHALL BE USED FOR ALL FLEXIBLE CONDUIT INSTALLED TOGETHER WITH CONDUIT SHALL HAVE A GREEN BOND CONDUIT OR INSTALLED TOGETHER WITH CONDUIT. CONDUIT SHALL HAVE A GREEN BOND CONDUIT OR INSTALLED TOGETHER WITH CONDUIT. CONDUIT SHALL HAVE A GREEN BOND CONDUIT OR INSTALLED TOGETHER WITH CONDUIT.
6. ALL ELECTRICAL PANELS, CIRCUIT BREAKERS, SAFETY SWITCHES, ETC. SHALL BE SQUARE D OR APPROVED EQUIVALENT. PANELS SHALL BE 1" MIN. CIRCUIT BREAKERS MAY BE INSTALLED BY ANY OTHER VENDOR'S EQUIPMENT.
7. ALL EQUIPMENT CONNECTIONS, CIRCUIT BREAKERS AND FUSES SHALL BE CHANGED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. INSULATION SYSTEMS SHOULD BE PROTECTED BY REQUIRE AT NO ADDITIONAL COST TO THE OWNER. ALL PERFORMS AND IMPROVEMENTS SHALL BE COMPLETED WITH EQUIPMENT MANUFACTURER'S REQUIREMENTS. ALL ELECTRICAL WORK, OVERHAUL, MAINTENANCE, ETC. SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S REQUIREMENTS. ALL ELECTRICAL WORK, OVERHAUL, MAINTENANCE, ETC. SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S REQUIREMENTS.
8. ELECTRICAL INSTALLATION OF THE WORK SHOWN HERE SHALL BE IN COMPLIANCE WITH THE STATE OF FLORIDA ENERGY CODE.

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PROJECT: SURLAK RESIDENCE 2017, 1400 S. 14th Ave, Ft. Lauderdale, FL 33304

DATE: 7/23/2018

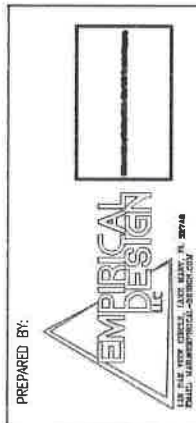
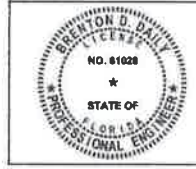
REVISION:

SHEET TITLE: F-1

SHEET NUMBER: 5 of 6



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PROJECT:
 SURLAK RESIDENCE
 2817 ALSACE COURT,
 BELLE GLADE, FL 32812

BY: BDD
 DATE: 5/31/2018
 REVISION:

SHEET TITLE:
 E-2

SHEET NUMBER:
 6 OF 6

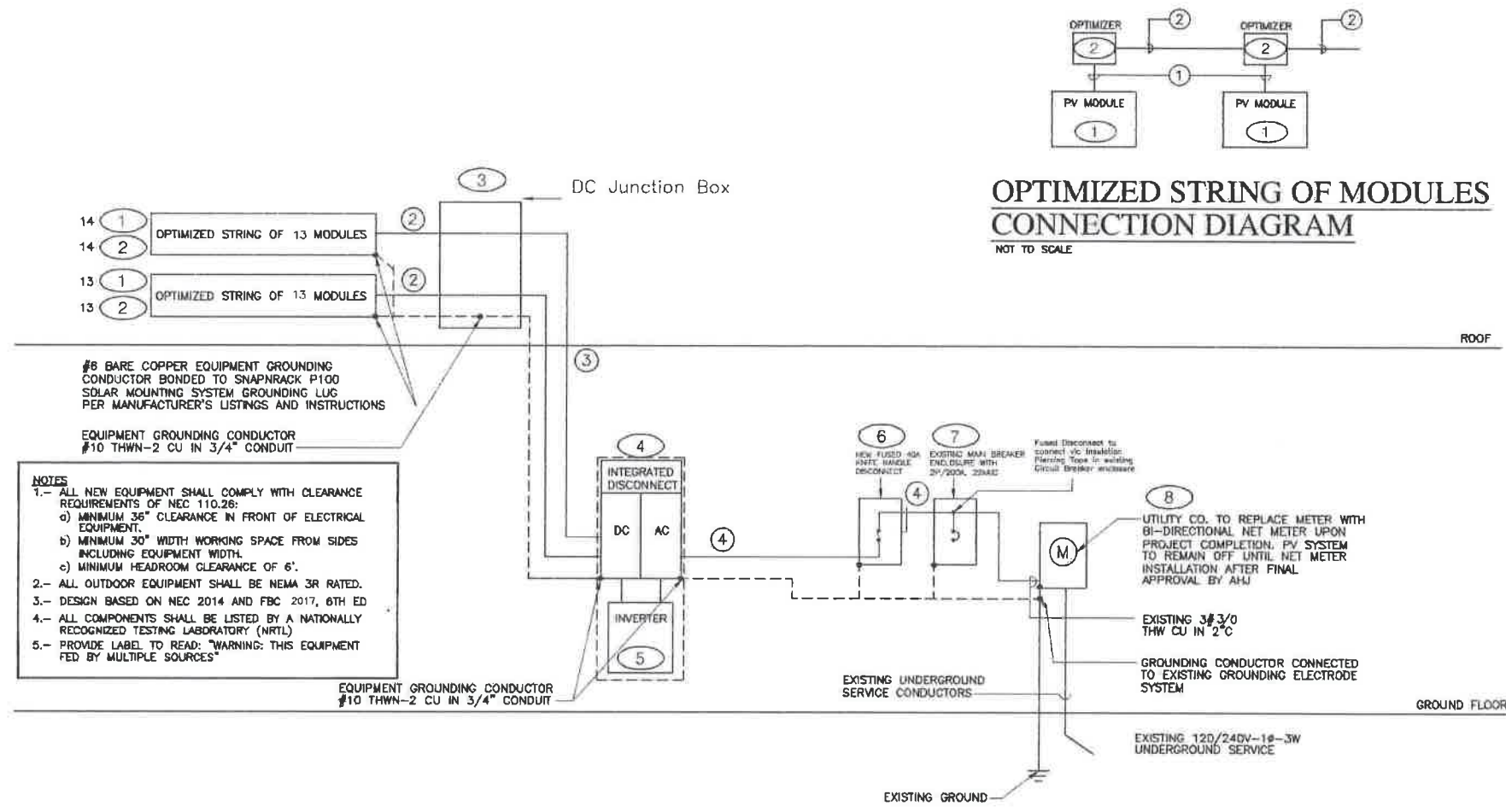
SITE CONDITIONS	
INTERCONNECTION FREQUENCY	60 HZ
VOLTAGE LINE 1 TO NEUTRAL	120 V
VOLTAGE LINE 2 TO NEUTRAL	120 V
VOLTAGE LINE 1 TO LINE 2	240 V
MINIMUM ANNUAL TEMPERATURE	14° C
MAXIMUM ANNUAL TEMPERATURE	35° C

PV SPECIFICATIONS	
MANUFACTURER	HANWHA
MODEL NUMBER	HANWHA 315 G5DUO
MAXIMUM SYSTEM VOLTAGE	1000VDC
TEMPERATURE COEFFICIENT - VOLTAGE	-0.28%/K
TEMPERATURE COEFFICIENT - CURRENT	+0.04%/K
TEMPERATURE COEFFICIENT - POWER	-0.37%/K
SPECIFICATIONS AT STANDARD TEST CONDITIONS (STC)	
MPP POWER - P _{mp}	315W
MPP CURRENT - I _{mp}	9.55A
MPP VOLTAGE - M _{mp}	32.98V
SHORT CIRCUIT CURRENT - I _{sc}	10.04A
OPEN CIRCUIT VOLTAGE - V _{oc}	39.87V

DC OPTIMIZER SPECS	
MANUFACTURER	SOLAR EDGE
MODEL NUMBER	P320
RATED INPUT DC POWER	320 W
MAXIMUM INPUT VOLTAGE	48 V
MAXIMUM SHORT CIRCUIT CURRENT	10 A
MAXIMUM OUTPUT CURRENT	15 A
INVERTER INPUT VOLTAGE AT SPECIFIED INTERCONNECTION VOLTAGE	350 V
MAXIMUM POWER PER STRING	5250 W
MINIMUM OPTIMIZERS PER STRING	8

NOTE: SOLAR EDGE POWER OPTIMIZERS SHALL BE USED ONLY WITH SOLAR EDGE INVERTER, AS SPECED ON THESE DRAWINGS. STRING LIMITATIONS APPLY, BASED ON THE INVERTER SELECTED.

INVERTER SPECIFICATIONS	
MANUFACTURER	SOLAR EDGE
MODEL NUMBER	SE7600H-US
NOMINAL POWER OUTPUT	7600W
MAXIMUM AC POWER OUTPUT	7600W
MAXIMUM CONTINUOUS OUTPUT CURRENT AT SPECIFIED INTERCONNECTION VOLTAGE	32A
MAXIMUM DC POWER INPUT	11,800W



ELECTRICAL RISER DIAGRAM
 NOT TO SCALE

EQUIPMENT SCHEDULE				
ITEM	DESCRIPTION	MANUFACTURER	MODEL NUMBER	REMARKS
①	SOLAR PV MODULE	Hanwha	315 G5DUO	
②	DC OPTIMIZER	SOLAR EDGE	P320	
③	JUNCTION BOX			NEMA 3R
④	INTEGRATED DC/AC DISCONNECT	SOLAR EDGE	-----	PART OF EQUIPMENT ITEM 5
⑤	INVERTER	SOLAR EDGE	SE7600H-US	
⑥	NEW FUSED DISCONNECT	-----	-----	40A KNIFE HANDLE DISCONNECT
⑦	EXISTING 200A BREAKER ENCLOSURE	-----	-----	
⑧	EXISTING UTILITY METER	-----	-----	METER BY UTILITY

CONDUCTOR SCHEDULE						
ITEM	DESCRIPTION	CONDUCTOR	SIZE	DESIGN CURRENT	OCPD	CONDUIT
①	PV SOURCE CIRCUIT	PV WIRE-CU	2#10* AWC	12.55A	N/A	3/4"
②	PV OUTPUT CIRCUIT	PV WIRE-CU	2#10* AWC	15A	N/A	3/4"
③	INVERTER INPUT CIRCUIT	THWN-2-CU	2#10*, 1#10(G)AWC	15A	N/A	3/4"
④	INVERTER OUTPUT CIRCUIT	THWN-2-CU	2#8*, 1#10(G)AWC	32A	40A/2PCB	1"

* TEMPERATURE DERATING ADJUSTMENT APPLIED FOR ROOFTOP INSTALLATION AS PER NEC 310.15(B)(3)(C).
 #12 = 30 AMPS X 0.71 = 21.3 AMPS, #10 = 40 AMPS X 0.71 = 28 AMPS, #8 = 75 AMPS X 0.71 = 53.25 AMPS





RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE SOLAR CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

GOLDIN, DAREN TAL

GOLDIN SOLAR, LLC
3447 PERCIVAL AVENUE
MIAMI FL 33133

LICENSE NUMBER: CVC56965

EXPIRATION DATE: AUGUST 31, 2020

Always verify licenses online at MyFloridaLicense.com



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

000212

Local Business Tax Receipt
Miami-Dade County, State of Florida
-THIS IS NOT A BILL - DO NOT PAY



7180108

BUSINESS NAME/LOCATION
GOLDIN SOLAR LLC
1392 NW 78 AVE
DORAL FL 33126

RECEIPT NO.
RENEWAL
7460448

EXPIRES
SEPTEMBER 30, 2018
Must be displayed at place of business
Pursuant to County Code
Chapter 8A - Art. 9 & 10

OWNER
GOLDIN SOLAR LLC
C/O DAREN T GOLDIN MGR
Worker(s) 1

SEC. TYPE OF BUSINESS
196 SPECIALTY PLUMBING CONTRACTOR
CVC50985

PAYMENT RECEIVED
BY TAX COLLECTOR
\$45.00 07/18/2017
CREDITCARD-17-048532

This Local Business Tax Receipt only confirms payment of the Local Business Tax. The Receipt is not a license, permit, or a certification of the holder's qualifications, to do business. Holder must comply with any governmental or nongovernmental regulatory laws and requirements which apply to the business.

The RECEIPT NO. above must be displayed on all commercial vehicles - Miami-Dade Code Sec 8a-27b.

For more information, visit www.miamidade.com/taxcollector.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

08/24/2018

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		CONTACT NAME: Certificates Department	
Capital Insurance Specialists, Inc.		PHONE (A/C, No, Ext): 561-272-0742	FAX (A/C, No): 561-423-3350
16268 Apricot Way		E-MAIL ADDRESS: certificates@capitalinsurancefl.com	
Delray Beach, FL 33484			
		INSURER(S) AFFORDING COVERAGE	
		INSURER A: Scottsdale Insurance Company	NAIC # 41297
		INSURER B: Scottsdale Insurance Company	41297
		INSURER C: Wesco Insurance Company	25011
		INSURER D: Florida Citrus Business & Industries	15764
		INSURER E:	
		INSURER F:	

INSURED	CERTIFICATE NUMBER:	REVISION NUMBER:
Goldin Solar LLC		
3447 Percival Avenue		
Miami	FL	33133

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	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			CPS2895471	09/01/2017	09/01/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
C	<input type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			WPP1519465 01	12/23/2017	12/23/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N		106-59484	11/06/2017	11/06/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	INLAND MARINE -- Equipment Floater Rented or Leased						

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

CERTIFICATE HOLDER	CANCELLATION
City of Belle Isle 1600 Nela Avenue Belle Isle, FL 32809	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
	Brandon Simeone

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