230173

OCALA ELECTRIC UTILITY
OCALA, FLORIDA

FIRST REVISED SHEET NO. 19.0
CANCELS ORIGINAL SHEET NO. 19.0

APPLICATION FOR INTERCONNECTION OF CUSTOMER-OWNED RENEWABLE GENERATION SYSTEMS

TIER 1 - Ten (10) kW or Less
TIER 2 - Greater than 10 kW and Less Than or Equal to 100 kW
TIER 3 - Greater than 100 kW and Less Than or Equal to Two (2) MW

Note: These customer-owned renewable generation system size limits may be subject to a cumulative enrollment limit on net-metering customers located in the area served by the City of Ocala Electric Utility. Please refer to the Ocala Electric Utility Net-Metering Rate Schedule.

Ocala Electric Utility customers who install customer-owned renewable generation systems (RGS) and desire to interconnect those facilities with the Ocala Electric Utility system are required to complete this application. When the completed application and fees are returned to Ocala Electric Utility, the process of completing the appropriate Tier 1, Tier 2 or Tier 3 Interconnection Agreement can begin. This application and copies of the Interconnection Agreements may be obtained at Ocala Electric Utility, located at 201 SE 3rd Street, Ocala, Florida 34471, or may be requested by email from OEU@ocalafl.org.

1. Customer Information

Name: Alexis V. Monroe

Mailing Address: 2841 Southeast 6th Place

City: Ocala State: FL Zip Code: 34471

Phone Number: (254) 206-6822 Alternate Phone Number: _____

Email Address: lexygyrl630@yahoo.com Fax Number: _____

Ocala Electric Utility Customer Account Number: 533117-200124

2. RGS Facility Information

Facility Location: 2841 Southeast 6th Place Ocala FL 34471

Ocala Electric Utility Customer Account Number: 533117-200124

RGS Manufacturer: HANWHA Q CELL / SOLAREDGE

Manufacturer's Address: 2860 Innovation Drive London, Ontario N6M 0C5, Canada

Reference or Model Number: (27) Q.PEAK DUO BLK ML-G10+ 400W / (1) SE10000H-US

Serial Number: _____

(Continued on Sheet No.19.1)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

3. Facility Rating Information

Gross Power Rating: 9.18 ("Gross power rating" means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with Ocala Electric Utility's distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.)

Fuel or Energy Source: SOLAR PV

Anticipated In- Service Date: 9/22

4. Application Fee

The application fee is based on the Gross Power Rating and must be submitted with this application. The non-refundable application fee is $375 for Tier 2 and $750 for Tier 3 installations. There is no application fee for Tier 1 installations.

5. Interconnection Study Fee

For Tier 3 installations, a deposit in the amount of the estimated costs of the study (to be determined at time of application) must be paid along with this application in addition to the application fee referenced in Article 4 above. This deposit will be applied toward the cost of an interconnection study. The customer will be responsible for the actual costs of the study. Should the actual cost of the study be less than the deposit, the difference will be refunded to the customer. Customer agrees to comply with all interconnection requirements identified in the interconnection study report.

6. Required Documentation

Prior to completion of the Interconnection Agreement, the following information must be provided to the Ocala Electric Utility by the customer.

A. Documentation demonstrating that the installation complies with (or most current version at time of inspection approval):

1. IEEE 1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power Systems.
2. IEEE 1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
3. UL 1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.

(Continued on Sheet No. 19.2)

B. Documentation that the customer-owned renewable generation has been inspected and approved by local code officials prior to its operation in parallel with the Ocala Electric Utility system to ensure compliance with applicable local codes. OEU will also require proof of commission testing by a qualified 3rd party testing company (not affiliated in any way with the manufacturer, vendor or installation contractor), for compliance with all required and applicable codes, standards, and interconnection study requirements, prior to setting of OEU metering equipment.

C. Proof of insurance in the amount of:
Tier 1 - $100,000.00
Tier 2 - $1,000,000.00
Tier 3 - $2,000,000.00

Customer

By: Alexis V. Monroe Date: August 16, 2022
(Print Name)

DocuSigned by:
Alexis Monroe
665B88AA144F40A...

(Signature)

Tier 1 – Standard Interconnection Agreement
Customer-Owned Renewable Generation System

This **Agreement** is made and entered into this 16 day of August, 20 22, by and between Alexis V. Monroe, (hereinafter called "**Customer**"), located at 2841 SE 6TH PL in Ocala, Florida, and the City of Ocala doing business as Ocala Electric Utility (hereinafter called OEU), a body politic. Customer and OEU shall collectively be called the "**Parties**". The physical location/premise where the interconnection is taking place: 2841 SE 6TH PL OCALA FL 34471-2777.

WITNESSETH

Whereas, a Tier 1 Renewable Generation System (RGS) is an electric generating system that uses one or more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power as defined in Section 377.803, Florida Statutes, rated at no more than ten (10) kilowatts (10 kW) alternating current (AC) power output and is primarily intended to offset part or all of the Customer's current electric requirements; and

Whereas, OEU operates an electric system serving the City of Ocala; and

Whereas, Customer has made a written Application to OEU, a copy being attached hereto, to interconnect its RGS with OEU' electrical supply grid at the location identified above; and

Whereas, the City of Ocala and the Florida Municipal Power Agency (hereinafter called "FMPA") have entered into the All-Requirements Power Supply Contract pursuant to which the City of Ocala has agreed to purchase and receive, and FMPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU' ability to directly purchase excess energy from customer-owned renewable generation; and

Whereas, in order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU customers to offset their electric consumption with customer-owned renewable generation, FMPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU customers interconnected to OEU's electric system; and

Whereas, the OEU desires to provide interconnection of a RGS under conditions which will insure the safety of OEU customers and employees, reliability and integrity of its distribution system;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

(Continued on Sheet No. 21.1)

1. The Customer shall be required to enter into a Tri-Party Net-Metering Purchase Power Agreement with FMPA and the City of Ocala Electric Utility (OEU).

2. "Gross power rating" (GPR) means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with OEU's distribution facilities. For inverter-based systems, the GPR shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.

3. This agreement is strictly limited to cover a Tier 1 RGS as defined above. It is the Customer's responsibility to notify OEU of any change to the GPR of the RGS by submitting a new application for interconnection specifying the modifications at least 30 days prior to making the modifications. Increase in GPR above the ten kilowatt (10 kW) limit would necessitate entering into a new agreement at either Tier 2 or Tier 3 which may impose additional requirements on the Customer. In no case does the Tier 1, Tier 2 or Tier 3 agreement cover increases in GPR above two megawatts (2MW).

4. The RGS GPR must not exceed 90 percent (90%) of the Customer's OEU calculated distribution service rating at the Customer's location (including shared electric facilities). If the GPR does exceed the 90 percent (90%) limit, the Customer shall be responsible to pay the cost of upgrades to the distribution facilities required to accommodate the GPR capacity and ensure the 90 percent (90%) threshold is not breached. OEU will not allow a RGS GPR greater than required to offset the customer's annual kWh energy consumption (based on customer's historical consumption data or by means of estimated usage of similar type of service as determined by OEU).

5. The Customer shall not be required to pay any special fees due solely to the installation of the RGS.

6. The Customer shall fully comply with OEU's Design Standards following NEC standards as those documents may be amended or revised by OUS from time to time.

7. The Customer certifies that its installation, its operation and its maintenance shall be in compliance with the following standards (or most current version at time of inspection approval):
   a. IEEE-1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power System;
   b. IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnection Distributed Resources with Electric Power Systems;
   c. UL-1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed *Energy Resources.*
   d. The National Electric Code, state and/or local building codes, mechanical codes and/or electrical codes;
   e. The manufacturer's installation, operation and maintenance instructions.

(Continued to Sheet No. 21.2)

8. The Customer is not precluded from contracting for the lease, operation or maintenance of the RGS with a third party. Such lease may not provide terms or conditions that provide for any payments under the agreement to any way indicate or reflect the purchase of energy produced by the RGS. Customer shall not enter into any lease agreement that results in the retail purchase of electricity; or the retail sale of electricity from the customer-owned renewable generation. Notwithstanding this restriction, in the event that Customer is determined to have engaged in the retail purchase of electricity from a party other than OEU, then Customer shall be in breach of this Agreement and may be subject to the jurisdiction of the Florida Public Service Commission and to fines/penalties.

9. The Customer shall provide a copy of the manufacturer's installation, operation and maintenance instructions to OEU. If the RGS is leased to the Customer by a third party, or if the operation or maintenance of the RGS is to be performed by a third party, the lease and/or maintenance agreements and any pertinent documents related to these agreements shall be provided to OEU.

10. Prior to commencing parallel operation with OEU's electric system, Customer shall have the RGS inspected and approved by the appropriate code authorities having jurisdiction. Customer shall provide a copy of this inspection and approval to OEU.

11. The Customer agrees to permit OEU, if it should so choose, to inspect the RGS and its component equipment and the documents necessary to ensure compliance with this Agreement both before and after the RGS goes into service and to witness the initial testing of the RGS equipment and protective apparatus. OEU will provide Customer with as much notice as reasonably possible, either in writing, email, facsimile or by phone as to when OEU may conduct inspections and or document review. Upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, Customer agrees to provide OEU access to the Customer's premises for any purpose in connection with the performance of the obligations required by this Agreement or, if necessary, to meet OEU's legal obligation to provide service to its customers. At least ten (10) business days prior to initially placing the customer-owned renewable generation system in service, Customer shall provide written notification to OEU advising of the date and time at which Customer intends to place the system in service, and OEU shall have the right to have personnel present on the in-service date in order to ensure compliance with the requirements of this Agreement.

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12. The Customer's RGS must have an appropriately sized grid-tie inverter system that includes applicable protective systems. Customer certifies that the RGS equipment includes an OEU interactive inverter or interconnection system equipment that ceases to interconnect with the OEU system upon a loss of OEU's electric power. The inverter shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741. The NRTL shall be approved by the Occupational Safety & Health Administration (OSHA).

13. If Customer adds another RGS that (i) utilizes the same OEU interactive inverter for both systems, or (ii) utilizes a separate OEU interactive inverter for each system, Customer shall provide OEU with sixty (60) days advance written notice of the addition.

14. The Customer shall not energize the OEU system when OEU's system is deenergized. The Customer shall cease to energize the OEU system during a faulted condition on the OEU system and/or upon any notice from OEU that the deenergizing of Customer's RGS equipment is necessary. The Customer shall cease to energize the OEU system prior to automatic or non-automatic reclosing of OEU's protective devices. There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and OEU' systems.

15. The Customer is responsible for the protection of its generation equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on OEU system in delivering and restoring system power. Customer agrees that any damage to any of its property, including, without limitation, all components and related accessories of its RGS system, due to the normal or abnormal operation of OEU system, is at Customer's sole risk and expense. Customer is also responsible for ensuring that the customer-owned renewable generation equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.

16. The Customer must install, at their expense, a manual disconnect switch of the visible load break type to provide a separation point between the AC power output of the customer-owned renewable generation system and any Customer wiring connected to OEU's system, such that back feed from the customer-owned renewable generation system to OEU's system cannot occur when the switch is in the open position. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The switch shall be readily accessible to OEU and capable of being locked in the open position with an OEU padlock. When locked and tagged in the open position by OEU, this switch will be under the control of OEU.

(Continued on Sheet No. 21.4)

17. Subject to an approved inspection, including installation of acceptable disconnect switch, this Agreement shall be executed by OEU within thirty (30) calendar days of receipt of a completed application. Customer must execute this Agreement and return it to OEU at least thirty (30) calendar days prior to beginning parallel operations with OEU's electric system, subject to the requirements of Section 18, below, and within one (1) year after OEU executes this Agreement.

18. Once OEU has received Customer's written documentation that the requirements of this Agreement have been met, all agreements and documentation have been received and the correct operation of the manual switch has been demonstrated to an OEU representative, OEU will, within fifteen (15) business days, send written notice that parallel operation of the RGS may commence.

19. OEU requires the Customer to maintain general liability insurance for personal injury and property damage in the amount of not less than one hundred thousand dollars ($100,000.00).

20. OEU will furnish, install, own and maintain metering equipment capable of measuring the flow of kilowatt-hours (kWh) of energy. The Customer's service associated with the RGS will be metered to measure the energy delivered by OEU to Customer, and measure the energy delivered by Customer to OEU. Customer agrees to provide safe and reasonable access to the premises for installation, maintenance and reading of the metering and related equipment. The Customer shall not be responsible for the cost of the installation and maintenance of the metering equipment necessary to measure the energy delivered by the Customer to OEU.

21. The Customer shall be solely responsible for all legal and financial obligations arising from the design, construction, installation, operation, maintenance and ownership of the RGS.

22. The Customer must obtain all permits, inspections and approvals required by applicable jurisdictions with respect to the generating system and must use a licensed, bonded and insured contractor to design and install the generating system. The Customer agrees to provide OEU with a copy of the local building code official inspection and certification of installation. The certification shall reflect that the local code official has inspected and certified that the installation was permitted, has been approved, and has met all electrical and mechanical qualifications.

(Continued on Sheet No. 21.5)

23. In no event shall any statement, representation, or lack thereof, either express or implied, by OEU, relieve the Customer of exclusive responsibility for the Customer's system. Specifically, any OEU inspection of the RGS shall not be construed as confirming or endorsing the system design or its operating or maintenance procedures or as a warranty or guarantee as to the safety, reliability, or durability of the RGS. OEU's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any RGS equipment or procedure. Further, as set forth in Sections 15 and 26 of this Agreement, Customer shall remain solely responsible for any and all losses, claims, damages and/or expenses related in any way to the operation or misoperation of its RGS equipment.

24. Notwithstanding any other provision of this Interconnection Agreement, OEU, at its sole and absolute discretion, may isolate the Customer's system from the distribution grid by whatever means necessary, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. The system will be reconnected as soon as practical once the conditions causing the disconnection cease to exist. OEU shall have no obligation to compensate the Customer for any loss of energy during any and all periods when Customer's RGS is operating at reduced capacity or is disconnected from OEU' electrical distribution system pursuant to this Interconnection Agreement. Typical conditions which may require the disconnection of the Customer's system include, but are not limited to, the following:

a. OEU system emergencies, forced outages, uncontrollable forces or compliance with prudent electric OEU practice.
b. When necessary to investigate, inspect, construct, install, maintain, repair, replace or remove any OEU equipment, any part of OEU's electrical distribution system or Customer's generating system.
c. Hazardous conditions existing on OEU's system due to the operation of the Customer's generation or protective equipment as determined by OEU.
d. Adverse electrical affects (such as power quality problems) on the electrical equipment of OEU's other electric consumers caused by the Customer's generation as determined by OEU.
e. When Customer is in breach of any of its obligations under this Interconnection Agreement or any other applicable policies and procedures of OEU.
f. When the Customer fails to make any payments due to OEU by the due date thereof.

25. Upon termination of services pursuant to this Agreement, OEU shall open and padlock the manual disconnect switch and remove any additional metering equipment related to this Agreement. At the Customer's expense, within thirty (30) working days following the termination, the Customer shall permanently isolate the RGS and any associated equipment from OEU's electric supply system, notify OEU that the isolation is complete, and coordinate with OEU for return of OEU's lock.

(Continued to Sheet No. 21.6)

26. To the fullest extent permitted by law, and in return for adequate, separate consideration, Customer shall indemnify, defend and hold harmless OEU, any and all of their members of its governing bodies, and its officers, agents, and employees for, from and against any and all claims, demands, suits, costs of defense, attorneys fees, witness fees of any type, losses, damages, expenses, and liabilities, whether direct, indirect or consequential, related to, arising from, or in any way connected with:

a. Customer's design, construction, installation, inspection, maintenance, testing or operation of Customer's generating system or equipment used in connection with this Interconnection Agreement, irrespective of any fault on the part of OEU.
b. The interconnection of Customer's generating system with, and delivery of energy from the generating system to, OEU's electrical distribution system, irrespective of any fault on the part of OEU.
c. The performance or nonperformance of Customer's obligations under this Interconnection Agreement or the obligations of any and all of the members of Customer's governing bodies and its officers, agents, contractors (and any subcontractor or material supplier thereof) and employees.

Customer's obligations under this Section shall survive the termination of this Interconnection Agreement.

27. Customer shall not have the right to assign its benefits or obligations under this Agreement without OEU's prior written consent and such consent shall not be unreasonably withheld. If there is a change in ownership of the RGS, Customer shall provide written notice to OEU at least thirty (30) days prior to the change in ownership. The new owner will be required to assume, in writing, the Customer's rights and duties under this Agreement, or execute a new Standard Interconnection Agreement. The new owner shall not be permitted to net meter or begin parallel operations until the new owner assumes this Agreement or executes a new Agreement.

28. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between OEU and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described. This Agreement shall continue in effect from year to year until either party gives sixty (60) days' notice of its intent to terminate this Agreement.

(Continued on Sheet No. 21.7)

29. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and OEU's tariff as it may be modified, changed, or amended from time to time, including any amendments modification or changes to OEU's Net-Metering Service Rate Schedule, the schedule applicable to this Agreement. The Customer and OEU agree that any action, suit, or proceeding arising out of or relating to this Interconnection Agreement shall be initiated and prosecuted in the state court of competent jurisdiction located in Marion County, Florida, and OEU and the Customer irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, each Party hereby irrevocably waives any and all rights to a trial by jury and covenants and agrees that it will not request a trial by jury with respect to any legal proceeding arising out of or relating to this Interconnection Agreement.

None of the provisions of this Interconnection Agreement shall be considered waived by either Party except when such waiver is given in writing. No waiver by either Party of any one or more defaults in the performance of the provisions of this Interconnection Agreement shall operate or be construed as a waiver of any other existing or future default or defaults. If any one or more of the provisions of this Interconnection Agreement or the applicability of any provision to a specific situation is held invalid or unenforceable, the provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this Interconnection Agreement and all other applications of such provisions shall not be affected by any such invalidity or unenforceability. This Interconnection Agreement does not govern the terms and conditions for the delivery of power and energy to non-generating retail customers of OEU's electrical distribution system.

30. This Agreement incorporates by reference the terms of the tariff filed with the Florida Public Service Commission by OEU, including OEU's Net-Metering Service Rate Schedule, and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference, as amended from time to time. To the extent of any conflict between this Agreement and such tariff, the tariff shall control.

31. OEU and Customer recognize that the Florida Statutes and/or the Florida Public Service Commission Rules, including those directly addressing the subject of this Agreement, may be amended from time to time. In the event that such statutes and/or rules are amended that affect the terms and conditions of this Agreement, OEU and Customer agree to supersede and replace this Agreement with a new Interconnection Agreement, which complies with the amended statutes/rules.

(Continued on Sheet No. 21.8)

32. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the OEU's Net-Metering Service Rate Schedule, (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU system.

33. This Agreement is solely for the benefit of OEU and Customer and no right nor any cause of action shall accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than OEU or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon OEU and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by OEU of the sovereign immunity applicable to OEU as established by Florida Statutes, 768.28.

(Continued on Sheet No. 21.9)

IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility:

By: Ken Whitehead

Title: Asst. City Manager

Date: 02 / 01 / 2023

Customer:

By: Alexis V. Monroe
Alexis Monroe
665B88AA144F40A...

(Print Name)

(Signature)

Date: August 16,2022

City of Ocala Electric Utility Account Number:

53317-200124

Approved as to form and legality:

William E. Sexton

William E. Sexton
City Attorney

Tri-Party Net-Metering Power Purchase Agreement

This Tri-Party Net-Metering Power Purchase Agreement (this "Agreement") is entered into this __16__ day of __August__, 20__22__, by and between the Florida Municipal Power Agency, a governmental joint action agency created and existing under the laws of the State of Florida (hereinafter "FMPA"), the City of Ocala doing business as Ocala Electric Utility, a body politic (hereinafter "OEU"), and Alexis V. Monroe, a retail electric customer of OEU (hereinafter "Customer").

Section 1. Recitals

1.01. OEU and Customer have executed OEU's Standard Interconnection Agreement for a Customer-Owned Renewable Generation System (RGS) pursuant to which OEU has agreed to permit interconnection of Customer's renewable generation to OEU's electric system at Customer's presently-metered location, and Customer has agreed to deliver excess electric energy generated by Customer's Renewable Generation System to OEU's electric distribution system;

1.02. The City of Ocala and FMPA have entered into the All-Requirements Power Supply Contract, dated as of May 1, 1986, (hereinafter the "ARP Contract") pursuant to which the City of Ocala has agreed to purchase and receive, and FMPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU's ability to directly purchase excess energy from customer-owned renewable generation.

1.03. In order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU's electric customers to offset their electric consumption with customer-owned renewable generation, FMPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU's electric customers interconnected to OEU's electric system.

NOW THEREFORE, for and in consideration of the mutual covenants and agreements set forth herein, the Parties covenant and agree as follows:

Section 2. Interconnection

2.01. Customer shall not begin parallel operations with the OEU electric distribution system until Customer has executed OEU's electric Standard Interconnection Agreement for Small Customer-Owned Renewable Generation and is in compliance with all terms and conditions

OEU requires that the customer install and operate the RGS in accordance with all applicable safety codes and standards. OEU shall establish and enforce terms and conditions of operation and disconnection of all interconnected customer-owned renewable generation as it relates to the effect of the RGS on OEU's electric distribution system.

(Continued on Sheet No. 20.1)

Section 3. Metering

3.01 In accordance with the OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation, OEU shall install metering equipment at the point of delivery capable of recording two separate kWh meter readings: (1) the flow of electricity from OEU to the Customer (Delivered), and (2) the flow of excess electricity from the Customer to OEU. OEU shall take meter readings on the same cycle as the otherwise applicable rate schedule.

Section 4. Purchase of Excess Customer-Owned Renewable Generation

4.01. Customer-owned renewable generation shall be first used for Customer's own load and shall offset Customer's demand for OEU's electricity. All electric power and energy delivered by OEU to Customer shall be received and paid for by Customer to OEU (Received) pursuant to the terms, conditions and rates of the OEU otherwise applicable rate schedule.

4.02. Excess customer-owned renewable generation shall be delivered to the OEU Electric distribution system. For purposes of this Agreement, the term "excess customer-owned renewable generation" means any kWh of electrical energy produced by the customer-owned renewable generation system that is not consumed by Customer and is delivered to the OEU electric distribution system. FMPA agrees to purchase and receive, and Customer agrees to sell and deliver, all excess customer-owned renewable generation at the energy rate established by FMPA, which shall be calculated in accordance with Schedule A. Excess customer-owned renewable generation shall be purchased in the form of a credit on Customer's monthly energy consumption bill from OEU.

4.03. In the event that a given monthly credit for excess customer-owned renewable generation exceeds the total billed amount for Customer's consumption in any corresponding month, then the excess credit shall be applied to the subsequent month's bill. Excess energy credits produced pursuant to the preceding sentence shall accumulate and be used to offset Customer's energy consumption bill for a period of not more than twelve (12) months. At the end of each calendar year, any unused excess energy credits shall be paid by OEU to the Customer in accordance with the OEU Electric Net-Metering Service Rate Schedule.

(Continued on Sheet No. 20.2)

4.04. FMPA and OEU shall not be required to purchase or receive excess customer-owned renewable generation, and may require Customer to interrupt or reduce production of customer-owned renewable generation, (a) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any OEU equipment or part of OEU's system; or (b) if either FMPA or OEU determine, in their sole judgment, that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, force majeure, or compliance with any applicable electric code or standard.

4.05. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the Net-Metering Service Rate Schedule (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU electric system.

Section 5. Renewable Energy Credits

5.01. Customer shall offer FMPA a first right of refusal before selling or granting to any third party the right to the Green Attributes associated with its customer-owned renewable generation that is interconnected to OEU electric distribution system. The term "Green Attributes" shall include any and all credits, certificates, benefits, environmental attributes, emissions reductions, offsets, and allowances, however entitled, attributable to the generation of electricity from the customer-owned-renewable generation and its displacement of conventional energy generation.

5.02. Any additional meter(s) installed to measure total renewable electricity generated by the Customer for the purposes of measuring Green Attributes, including and renewable energy certificates (or similarly titled credits for renewable energy generated), shall be installed at the expense of the Customer, unless determined otherwise during negotiations for the sale of the Customer's credits to FMPA.

Section 6. Term and Termination

6.01. This Agreement shall become effective upon execution by all Parties, and shall remain in effect thereafter on a month-to-month basis until terminated by any Party upon thirty (30) days written notice to all other Parties.

6.02. This Agreement shall terminate immediately and without notice upon: (a) termination of the electric distribution service by OEU or (b) failure by Customer to comply with any of the terms and conditions of this Agreement or OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation.

(Continued on Sheet No. 20.3)

Section 7. Miscellaneous Provisions

7.01. Assignment. It is understood and agreed that no party may transfer, sell, mortgage, pledge, hypothecate, convey, designate, or otherwise assign this Agreement, or any interest herein or any rights or obligations hereunder, in whole or in part, either voluntarily or by operation of law, (including, without limitation, by merger, consolidation, or otherwise), without the express written consent of the other parties (and any such attempt shall be void), which consent shall not be unreasonably withheld. Subject to the foregoing, this Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

7.02 Amendment. It is understood and agreed that FMPA and OEU reserve the right, on no less than an annual basis, to change any of the terms and conditions, including pricing, in this Agreement on sixty (60) days advance written notice. FMPA and OEU may make such changes on an immediate basis in the event any applicable law, rule, regulation or court order requires them. In such event, FMPA and OEU will give Customer as much notice as reasonably possible under the circumstances.

7.03. Indemnification. To the fullest extent permitted by laws and regulations, and in return for adequate, separate consideration, Customer shall defend, indemnify, and hold harmless FMPA and OEU, their officers, directors, agents, guests, invitees, and employees from and against all claims, damages, losses to persons or property, whether direct, indirect, or consequential (including but not limited to fees and charges of attorneys, and other professionals and court and arbitration costs) arising out of, resulting from, occasioned by, or otherwise caused by the operation or misoperation of the customer-owned renewable generation, or the acts or omissions of any other person or organization directly or indirectly employed by the Customer to install, furnish, repair, replace or maintain the customer-owned renewable generation system, or anyone for whose acts any of them may be liable.

7.04. Governing Law. The validity and interpretation of this Agreement and the rights and obligations of the parties shall be governed and construed in accordance with the laws of the State of Florida without regard for any conflicts of law provisions that might cause the law of other jurisdictions to apply. All controversies, claims, or disputes arising out of or related to this Agreement or any agreement, instrument, or document contemplated hereby, shall be brought exclusively in the County or Circuit Court for Marion County, Florida, or the United States District Court sitting in Marion County, Florida, as appropriate.

(Continued on Sheet No. 20.4)

7.05. Enforcement of Agreement. In the event that either party is required to enforce this Agreement by court proceedings or otherwise, the prevailing party shall be entitled to recover all fees and costs incurred, including reasonable attorney's fees and costs for trial, alternative dispute resolution, and/or appellate proceedings.

7.06. Severability. To the extent any provision of this Agreement is prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

7.07. Third Party Beneficiaries and Sovereign Immunity. This Agreement is solely for the benefit of FMPA, OEU, and Customer and no right nor shall any cause of action accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than FMPA, OEU, or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon FMPA, OEU, and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by either FMPA or OEU of the sovereign immunity applicable to either or both of them as established by Florida Statutes, 768.28.

(Continued on Sheet No. 20.5)

IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility
By: Ken Whitehead
Title: Asst. City Manager
Date: 02 / 01 / 2023

Florida Municipal Power Agency
By: [signature]
Title: Bus Dev & Sys Ops Director
Date: 02 / 01 / 2023

Customer
By: Alexis V. Monroe Date: August 16, 2022
(Print Name) Alexis Monroe
685B88AA144F40A...
(Signature)

Customer's City of Ocala Electric Utility Account Number: 533117-200124

Approved as to form and legality:

William E. Sexton
William E. Sexton
City Attorney

(Continued on Sheet No. 20.6)

Tri-Party Net-Metering Power Purchase Agreement
Schedule A

I. All-Requirements Project Calculation of Excess Customer-Owned Renewable Generation Credit

a) FMPA shall pay OEU for the excess kWh energy delivered by customer-owned renewable generation to OEU's electric system. Every month, OEU shall determine the total kWh of customer-owned renewable generation that is delivered to OEU's electric system, and shall send the information to FMPA as soon as it becomes available, but no later than the second working day of every month. FMPA will then provide a monthly payment to OEU in the form of a credit on the ARP power bill for the excess energy delivered to the distribution grid. The ARP Renewable Generation Credit will be calculated as follows:

ARP Renewable Generation Credit = Quarterly Energy Rate * Monthly kWh of excess customer-owned renewable generation

Quarterly Energy Rate = 3 month average of ARP energy rate. FMPA will update the Quarterly Energy Rate every April 1, July 1, October 1 and January 1.

b) As part of the monthly bill adjustment, FMPA will also increase OEU's kWh billing amount by the same kWh amount as the customer-owned renewable generation purchased by FMPA. This adjustment is necessary because excess customer generation that flows onto OEU's electric system has been purchased by FMPA, but will remain on OEU's electric system and be used by OEU to meet its other customers' electric needs. As a result, OEU's monthly ARP bill will be adjusted accordingly to reflect FMPA's subsequent sale of this energy to OEU.

II. Payment for Unused Excess Energy Credits

a) Monthly excess energy credits shall accumulate and be used to offset the Customer's following month energy consumption bill for a period of not more than twelve (12) months.

b) At the end of each calendar year, OEU shall pay the Customer for any unused excess energy credits in accordance with the OEU Electric Net-Metering Service Rate Schedule.

Tower Hill Insurance Exchange
P.O. Box 147018 Gainesville, FL 32614-7018

HOMEOWNERS DECLARATIONS

POLICY NUMBER
W013981748
New
Issued On.
07/31/2022

THIS IS NOT A BILL

Payment notice will be sent separately to: Mortgagee

Insured
Alexis Monroe
2841 SE 6TH PL
OCALA, FL 34471

AGENCY FL8715
Goosehead Insurance
4837 SWIFT ROAD SUITE 212
SARASOTA, FL 34231

PHONE NUMBER: (800) 474-1377

POLICY PERIOD: 08/27/2022 to 08/27/2023 Each period begins and ends at 12:01 AM standard time at the insured location.

INSURED LOCATION: Same as address shown under Insured.

Coverage is provided where a premium or limit is shown for the coverage.

SECTION I - PROPERTY COVERAGE	LIMIT	SECTION II - LIABILITY COVERAGE	LIMIT
COVERAGE A - Dwelling	$286,344	COVERAGE E - Personal Liability Each Occurrence	$300,000
COVERAGE B - Other Structures	$28,634		
COVERAGE C - Personal Property	$143,172	COVERAGE F - Medical Payments to Others Each Person	$5,000
COVERAGE D - Loss of Use	$57,269		

BREAKDOWN OF PREMIUM:

Charges	Limit	Premium
Section I and II Premium		$1,181.00
Age of Dwelling Surcharge		Incl
Age of Roof Surcharge		Incl
Catastrophic Ground Cover Collapse Coverage		Incl
Limited Fungi, Wet or Dry Rot, or Bacteria Coverage	$10,000 $10,000	Incl
Limited Screened Enclosure and Carport Coverage (Total Amount)	$10,000	$18.00
Loss Assessment Coverage	$1,000	Incl
Loss of Use - Increased Limit		Incl
Ordinance or Law Coverage	25%	$108.00
Personal Property Replacement Cost without Holdback		$180.00
Unscheduled Other Structures - Increased Limit		Incl
Water Back-Up and Sump Discharge or Overflow Deductible = $250		$100.00
Emergency Management Preparedness and Assistance Trust Fund (EMPAT) Fee		$2.00
Florida Insurance Guaranty Association (FIGA) Assessment Fee 07-2022		$20.63
Florida Insurance Guaranty Association (FIGA) Assessment Fee 2022		$11.11
Managing General Agency (MGA) Fee		$25.00
Surplus Contribution		$158.70

Credits		Premium
Age of Roof Credit		Incl
All Other Perils Deductible Credit		Incl
Damage Caused by Water and Tear Out Limitation	$10,000	Incl
Hurricane Deductible Credit		Incl
Residential Windstorm Loss Mitigation Devices Credit		Incl
Sinkhole Exclusion		Incl

Total Policy Premium: $1,804.44

DEDUCTIBLE (Section I Only):

The Calendar Year Hurricane Deductible is $5,727 (2% of Coverage A).
The All Other Perils Deductible is $2,500.

- In case of loss under Section I, we cover only that part of the covered loss over the deductible stated, unless otherwise stated in your policy.

Mortgagee Information:
CC, Union Home Mortgage Corp Isaoa/Atima
ISAOA/ATIMA
PO BOX 1176
SYLVIA, OH 43560
Loan Id: 774509

Important: Please notify your agent immediately if the mortgage company shown is incorrect.

BASIC RATING INFORMATION:

PROGRAM	FORM CODE	TERRITORY	COUNTY	CONSTRUCTION YEAR	CONSTRUCTION TYPE
TEFLHO	HO-3	522	MARION	1962	Masonry

FIRE PROTECTION CLASS	ROOF TYPE	ROOF MATERIAL	ROOF YEAR
2	Gable	Standard Shingle	2010

BUILDING CODE (BCEG) GRADE	WIND PROTECTIVE DEVICE	PROTECTIVE DEVICE
Does Not Apply	None	None

PREMIUM SUMMARY:

Hurricane Premium:	$364.00
Non-hurricane Premium:	$1,440.44

Section II Other Location(s):

NONE

APPLICABLE FORMS AND ENDORSEMENTS:
RPIC HO 09 COV (08/21), HO 00 03 (04/91), HO 04 96 (04/91), HP-0074-00 (08/21), HP-0087-00 (10/10), HP-0458-00 (07/21), HP-0477-00 (01/09), HP-0490-00 (09/05), HP-0645-00 (08/21), HP-0800-00 (07/21), IL-0301-00 (09/11), IL-0503-00 (09/16), IL-0506-00 (06/07), IL-P-001 (01/04), IL-WMCA (04/11), Privacy Notice (08/21), RP-0435-00 (08/18), RP-CKLS HO (08/21), RPI HO 09 DN (08/21), RPI HO 09 ED (12/08), RPI HO 09 ELE (08/21), RPI HO 09 FCE (09/16), RPI HO 09 HD (09/18), RPI HO 09 SP3 (08/21), RPI HO 09 WBU (08/21), RPI HO 09 WSE (09/18), RPI HO3 09 OTL (08/21)

NOTICES:

- **This policy does not provide Animal Liability coverage.**
- **This policy does not include the peril of "Sinkhole Loss".**
- **This policy does not provide Flood coverage.**
- This Declarations replaces all previously issued policy Declarations, if any. This Declarations together with your policy and endorsements completes your policy. Refer to your policy and endorsements for details regarding your coverages, limits, and exclusions.
- To request the complete copy of your policy including all forms, endorsements, terms and conditions, please contact our Customer Service Center at (800) 342-3407 between the hours of 8:00 am and 6:00 pm, Monday through Friday (Eastern Time), excluding holidays.
- Your Ordinance or Law Coverage limit is 25% (25% of Coverage A: $71,586).

PROJECT DESCRIPTION

SYSTEM CAPACITY: 10.8 KW DC / 10.0 KW AC

PV PANELS: (27) Q.PEAK DUO BLK ML-G10+ 400W BY QCELLS

OPTIMIZERS: (27) P401 BY SOLAR EDGE

INVERTER: (1) SE10000H-US BY SOLAR EDGE

RACKING SYSTEM: CROSS RAIL SYSTEM 44-X BY K2 SYSTEMS

PROJECT INFORMATION

PROJECT LATITUDE	[illegible]	MIN AMBIENT TEMP	-6 °C
PROJECT LONGITUDE	[illegible]	MAX AMBIENT TEMP	34 °C
AHJ	OCALA CITY	WIND EXPOSURE	B
		DESIGN WIND SPEED	130 MPH

DRAWINGS INDEX

GENERAL NOTES

PER FL STATUTE 377.705 (REVISED 7/1/2017), I RAFAEL A. GONZALEZ SOTO, P.E. 83104 AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE.

APPLICABLE CODES: 2020 FLORIDA BUILDING CODE 7TH EDITION, ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, FFPC 7TH EDITION, NFPA 2018, NFPA 70 AND NEC 2017.

CONTRACTOR SHALL ENSURE ALL ROOF PENETRATIONS TO BE INSTALLED AND SEALED PER 2020 FLORIDA BUILDING CODE 7TH EDITION OR LOCAL GOVERNING CODE.

ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) 2017, LOCAL STATE CODES, AND OTHER APPLICABLE LOCAL CODES. MEANS SHALL BE PROVIDED TO DISCONNECT ALL CURRENT CARRYING CONDUCTORS OF THE PHOTOVOLTAIC POWER SOURCE FROM ALL OTHER CONDUCTORS IN THE BUILDING. CONNECTORS TO BE TORQUED PER DEVICE LISTING, OR MANUFACTURERS RECOMMENDATIONS. NON-CURRENT CARRYING METAL PARTS SHALL BE CHECKED FOR PROPER GROUNDING.

REQUIRED SAFETY SIGNS AND LABELS SHALL BE PERMANENTLY ATTACHED BY ADHESIVE, OR OTHER MECHANICAL MEANS. LABELS SHALL COMPLY WITH ARTICLE 690 VI OF THE NEC 2017 OR OTHER APPLICABLE STATE AND LOCAL CODES. SEE LABELS AND MARKING PAGE FOR MORE INFORMATION.

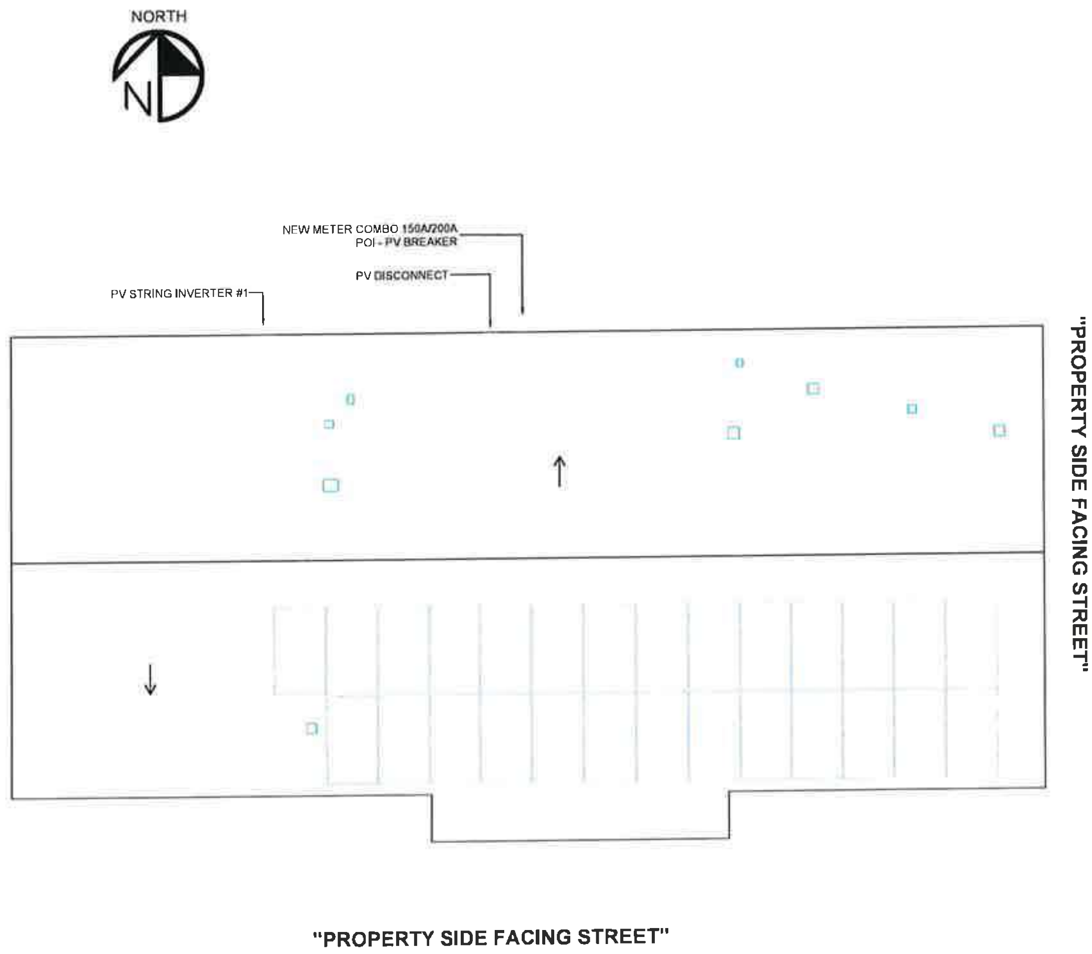
RACKING ROOF MOUNT SYSTEM SHALL BE INSTALLED FOLLOWING MANUFACTURERS INSTRUCTION SPEC'S, INCLUDING ALL GROUNDING WEEB CLIPS, GROUND LUGS, AND RAIL SPLICE KITS FOR ELECTRICAL CONTINUITY.

MECAWIND TOOL IS BASED ON THE C&C WIND LOADS FOR ENCLOSED BUILDINGS. DESIGN WIND PRESSURES ARE CALCULATED USING ASCE 7-16 EQUATION 30.6-1. ALL NOTES IN FIGURES ASCE 7-16 30.4-1 AND 30.4-2(A,B AND /67C) HAVE BEEN INCORPORATED. MEAN ROOF HEIGHT MUST BE LESS THAN 60 FEET.

2 LOCATION MAP / WIND ZONES
N.T.S.

3 IRRADIANCE MAP
N.T.S.

4 3D RENDERING
N.T.S.



1 ROOF PLAN VIEW / BOS LOCATION
N.T.S.

DOCUMENT CONTROL		DATE	CAD	CAD
ISSUED FOR PERMIT		08-11-22	LAL	EQ
REV	DESCRIPTION	DATE	CAD	CAD

ENGINEER CONTACT INFORMATION: ENGIPARTNERS LLC, C.A. 32661, 1825 PONCE DE LEON BLVD #114, CORAL GABLES, FL 33134, DESIGN@ENGIPARTNERS.COM, 833 - 888 - 3644

ENGINEERING STAMP: Rafael A Gonzalez Soto 2022.09.26 13:32:30 -04'00'

CONTRACTOR CONTACT INFORMATION: TITAN SOLAR POWER FL, 901 ARMSTRONG BLVD, KISSIMMEE, FL 34741, (813) 982 -9001, #EC13008824

CONTRACTOR LOGO: TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE

PROJECT ADDRESS: 2841 SOUTHEAST 6TH PLACE, OCALA FL 34471

PARCEL NUMBER: 2782 040 012

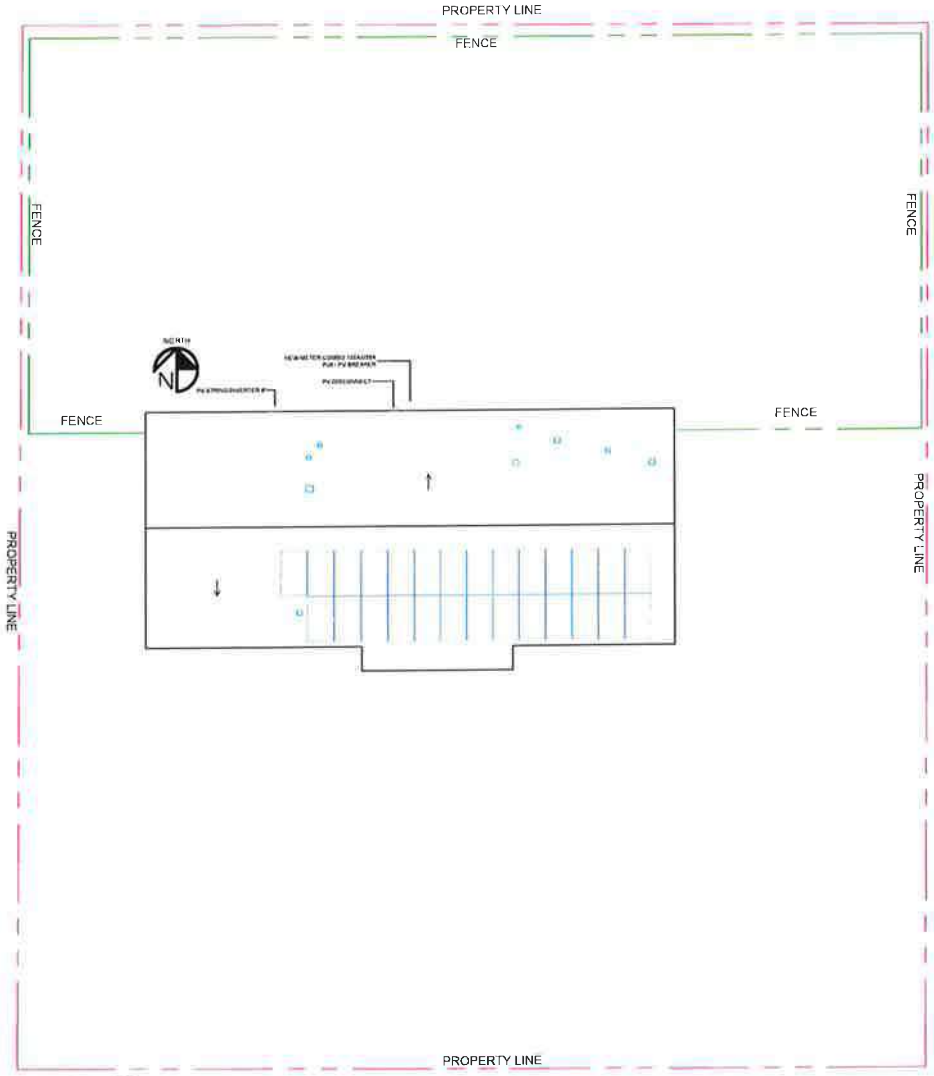
SHEET NAME: COVER SHEET

PROJECT ID: TSP136150

ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE

DATE: 08-11-22

SHEET TITLE: C-1



"PROPERTY SIDE FACING STREET"

1 SAFETY PLAN
N.T.S.

"PROPERTY SIDE FACING STREET"

LOCATION OF NEAREST URGENT CARE FACILITY

NAME:

ADDRESS:

PHONE NUMBER:

NOTES:

1. INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME
2. INSTALLERS SHALL UPDATE NAME ADDRESS AND PHONE NUMBER OF NEAREST URGENT CAR FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK

DOCUMENT CONTROL	DATE	vCAD	vCAD
ISSUED FOR PERMIT	08-11-22	LAL	EG
REV. DESCRIPTION	DATE	vCAD	vCAD

ENGINEER CONTACT INFORMATION
ENGIPARTNERS LLC
C.A 32661
1825 PONCE DE LEON BLVD #114
CORAL GABLES, FL 33134
DESIGN@ENGIPARTNERS.COM
833 - 888 - 3644

ENGINEERING STAMP
Rafael A Gonzalez Soto
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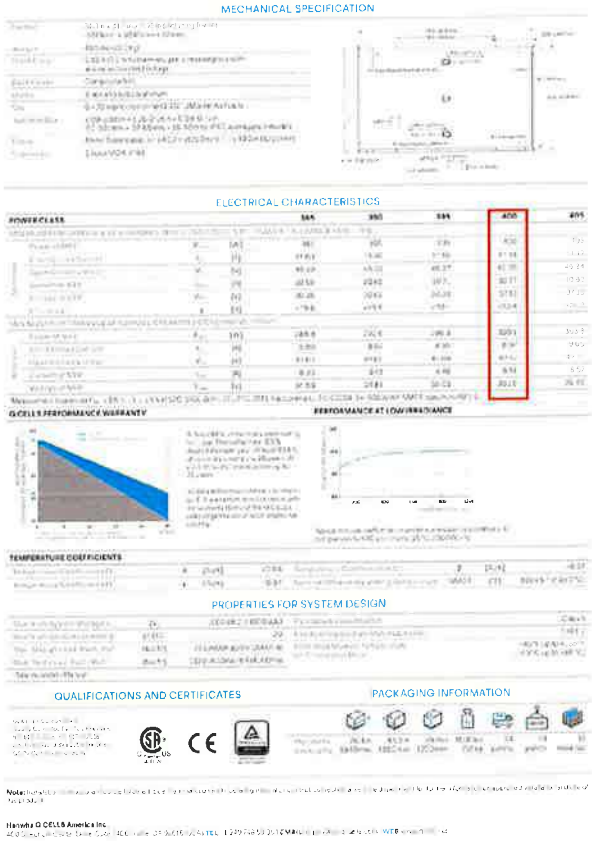
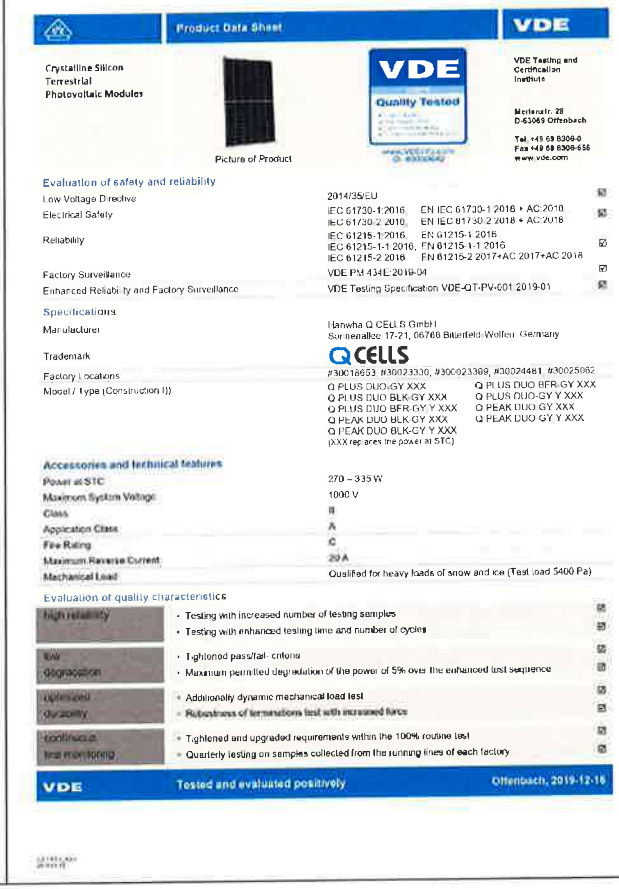
CONTRACTOR CONTACT INFORMATION
TITAN SOLAR POWER FL
901 ARMSTRONG BLVD,
KISSIMMEE, FL 34741
(813) 982 -9001
#EC13009924

CONTRACTOR LOGO
TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 2641 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER: 2782-040-012

SHEET NAME: SAFETY PLAN
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE
DATE: 08-11-22
SHEET TITLE: C-2





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REV DESCRIPTION	DATE	xCAD	xCAD

ENGINEER CONTACT INFORMATION

ENGIPARTNERS LLC
C.A. 32661
1825 PONCE DE LEON BLVD #114
CORAL GABLES, FL 33134
DESIGN@ENGIPARTNERS.COM
833 - 888 - 3644

ENGINEERING STAMP

Rafael A Gonzalez Soto
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CONTRACTOR CONTACT INFORMATION

TITAN SOLAR POWER FL
901 ARMSTRONG BLVD,
KISSIMMEE, FL 34741
(813) 887 -9001
#EC13009924

CONTRACTOR LOGO

TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE

PROJECT ADDRESS: 2841 SOUTHEAST 61TH PLACE OCALA FL 34471

PARCEL NUMBER: 2762-040-012

SHEET NAME: PV MODULES DATA SHEET

PROJECT ID: TSP136150

ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE

DATE: 09-11-22

SHEET TITLE: D-1

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, 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
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT									
Rated Input DC Power	320	340	370	400	401	405	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	80	125		83	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8 - 80	12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	11	10.1	10.1	11		14	Adc
Maximum DC Input Current	13.75			12.5	12.63	12.5		17.5	Adc
Maximum Efficiency	99.5								%
Weighted Efficiency	98.8							98.6	%
Overvoltage Category	II								
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)									
Maximum Output Current	15								Adc
Maximum Output Voltage	60					85			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer	1 ± 0.1								Vdc
STANDARD COMPLIANCE									
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3								
Safety	IEC62109-1 (class II safety), UL1741								
Material	UL94 V-0, UV Resistant								
RoHS	Yes								
INSTALLATION SPECIFICATIONS									
Maximum Allowed System Voltage	1000								Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters								
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1"		128 x 152 x 35 / 5 x 6 x 1.4"	128 x 152 x 27.5 / 5 x 6 x 1.1"	128 x 152 x 35 / 5 x 6 x 1.4"	128 x 152 x 49.5 / 5 x 6 x 1.9"		128 x 152 x 59 / 5 x 6 x 2.3"	mm / in
Weight (including cables)	630 / 1.4		750 / 1.7	655 / 1.45	845 / 1.9			1064 / 2.3	gr / lb
Input Connector	MC4*						Single or dual MC4**	MC4*	
Input Wire Length	0.16 / 0.52				0.95 to 2.3 / 3.1 to 7.5		0.16 / 0.52		m / ft
Output Wire Type / Connector	Double Insulated; MC4								
Output Wire Length	1.05 / 3.5			1.2 / 3.9					m / ft
Operating Temperature Range	-40 to +85 / -40 to +185								°C / °F
Protection Rating	IP68 / NEMA6P								
Relative Humidity	0 - 100								%

PV System Design Using a SolarEdge Inverter[1][2][3]		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P405	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Power per String		5250		6000[4]	12750[4]	W
Parallel Strings of Different Lengths or Orientations		Yes				

RoHS

DOCUMENT CONTROL	DATE	sCAD	eCAD
ISSUED FOR PERMIT	08-11-22	LAL	EG
REV DESCRIPTION	DATE	sCAD	eCAD

ENGINEER CONTACT INFORMATION
ENGIPARTNERS LLC
C.A. 32661
1825 PONCE DE LEON BLVD #114
CORAL GABLES, FL 33134
DESIGN@ENGIPARTNERS.COM
833 - 588 - 3644

ENGINEERING STAMP
Rafael A Gonzalez Soto
2022.09.26 13:36:11 -04'00'

CONTRACTOR CONTACT INFORMATION
TITAN SOLAR POWER FL
901 ARMSTRONG BLVD.
KISSIMMEE, FL 34741
(813) 982 -0001
#EC13009824

CONTRACTOR LOGO
TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 2841 SOUTHEAST 61TH PLACE OCALA FL 34471
PARCEL NUMBER: 2782-040-012

SHEET NAME: SMART MONITORING DATA SHEET
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE
DATE: 08-11-22
SHEET TITLE: D-2

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
APPLICABLE TO INVERTERS WITH PART NUMBER	SExxxxH-xxxxxBXx4						
OUTPUT							
INPUT							

Single Phase Inverter with HD-Wave Technology

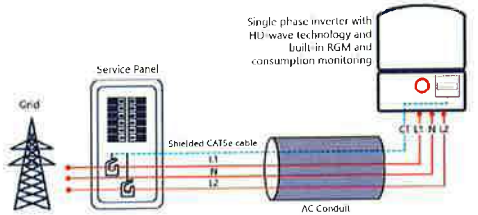
for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
ADDITIONAL FEATURES							
STANDARD COMPLIANCE							
INSTALLATION SPECIFICATIONS							

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



RoHS

DOCUMENT CONTROL	DATE	sCAD	eCAD
ISSUED FOR PERMIT	08-11-22	LAL	EQ
REV DESCRIPTION	DATE	sCAD	eCAD

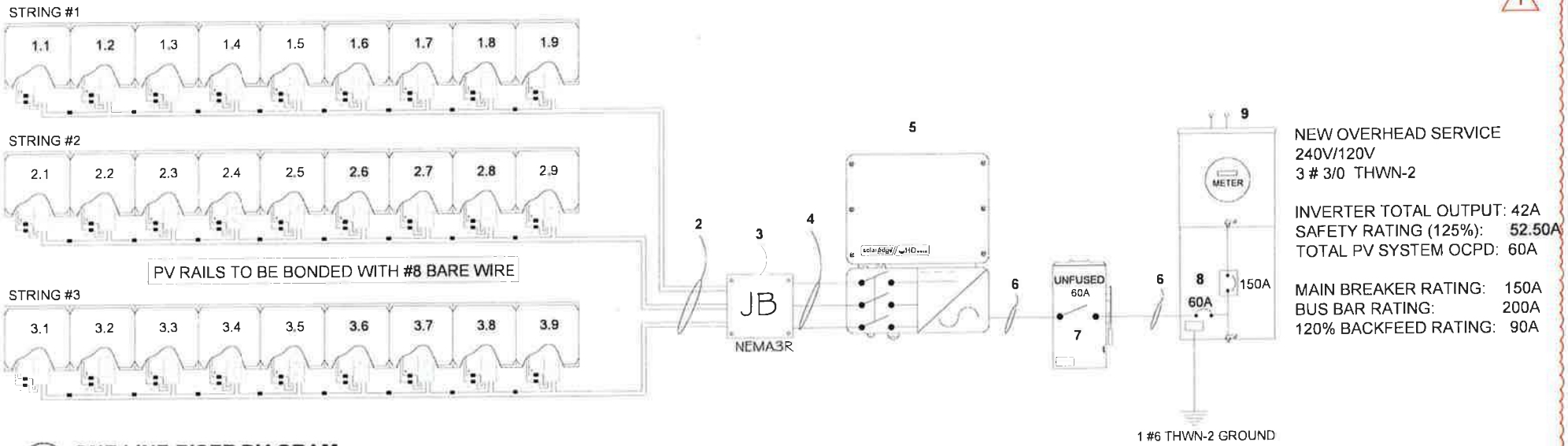
ENGINEER CONTACT INFORMATION	ENGINEERING STAMP	CONTRACTOR CONTACT INFORMATION	CONTRACTOR LOGO
ENGIPARTNERS LLC C.A. 32661 1825 PONCE DE LEON BLVD #114 CORAL GABLES, FL 33134 DESIGN@ENGIPARTNERS.COM 833 - 888 - 3644	Rafael A Gonzalez Soto 2022.09.26 13:36:32 -04'00'	TITAN SOLAR POWER FL 901 ARMSTRONG BLVD. KISSIMMEE, FL 34741 (813) 982 -9001 #EC13009924	TITAN SOLAR POWER

CUSTOMER:	ALEXIS MONROE
PROJECT ADDRESS:	2841 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER:	2782-040-012

SHEET NAME: INVERTER DATA SHEET

PROJECT ID:	ENGINEER OF RECORD:	SHEET TITLE:
TSP136150	ENG. RAFAEL A. GONZALEZ SOTO, PE DATE: 8a 11-22	D-3

WIRE TAG	WIRE SIZES, QUANTITY & TYPE			RACEWAY SIZE, TYPE & LOCATION			WIRE AMPACITY CALCULATIONS							ADDITIONAL INFORMATION			
	CONDUCTOR QTY., SIZE & TYPE	NEUTRAL QTY., SIZE & TYPE	GROUND QTY., SIZE & TYPE	RACEWAY SIZE & TYPE	RACEWAY LOCATION	RACEWAY HEIGHT ABOVE ROOF	OUTPUT CURRENT	125% OF OUTPUT CURRRENT	MIN OCPD	WIRE DE-RATED CALCULATION				DIST.,	VOLTAGE	VOLTAGE DROP %	CONDUIT FILL %
										WIRE RATING	AMBIENT TEMPERATURE COEFFICIENT	# OF CONDUCTORS COEFFICIENT	DE-RATES AMPACITY				
DC (BEFORE JB)	(6) #10 AWG PV WIRE	N/A	(1) #8 AWG BARE COPPER	NOT APPLICABLE	UNDER ARRAY	1/2" TO 3-1/2"	15A	18.8A	20A	40A	0.76	1	30A	10 FT.,	350V	0.11%	6.4%
DC (AFTER JB)	(6) #10 AWG THWN-2	N/A	(1) #8 AWG THWN-2	3/4" EMT CONDUIT	ABOVE ROOF	1/2" TO 3-1/2"	15A	18.8A	20A	40A	0.76	0.8	24.3A	20 FT.,	350V	0.21%	8.1%
AC (INVERTER TO METER)	(2) #6 AWG THWN-2	(1) #6 AWG THWN-2	(1) #8 AWG THWN-2	3/4" EMT CONDUIT	EXTERIOR WALL	"N/A"	42A	52.5A	60A	75A	1	1	75A	5 FT.,	240V	0.1%	7.7%



1 ONE LINE RISER DIAGRAM

N.T.S.

LEGEND:

1	(27) Q.PEAK DUO BLK ML-G10+ 400W BY QCELLS REFER TO D-1 SHEET	2	2 #10 PV WIRE PER STRING 1 #8 BARE WIRE GROUND 3/4" EMT CONDUIT	3	NEMA3R JUNCTION BOX
4	2 #10 THWN-2 PER STRING 1 #8 THWN-2 GROUND 3/4" EMT CONDUIT	5	SE10000H-US BY SOLAREDGE REFER TO D-3 SHEET	6	2 #6 L1,L2 THWN-2 1 #6 THWN-2 NEUTRAL 1 #8 THWN-2 GROUND 3/4" EMT CONDUIT
7	PV SYSTEM DISCONNECT - 60A RATED	8	PV INTERCONNECTION POINT - PV BREAKER	9	NEW METER COMBO RATED 150A/200A

DOCUMENT CONTROL	DATE	sCAD	eCAD
ISSUED FOR PERMIT	08-11-22	LAL	EQ
REV DESCRIPTION	DATE	sCAD	eCAD
ADDED 1 #6 CU GND WIRE	09-13-22	JC	

ENGINEER CONTACT INFORMATION
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CONTRACTOR CONTACT INFORMATION
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901 ARMSTRONG BLVD,
KISSIMMEE, FL 34741
(813) 982 -9001
#EC13009924

CONTRACTOR LOGO
TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 2841 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER: 2761-040-012

SHEET NAME: ONE LINE RISER DIAGRAM
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE
DATE: 09-11-22
SHEET TITLE: E-1

WARNING
ELECTRICAL SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:
AC DISCONNECT,
POINT OF INTERCONNECTION
PER CODE: NEC 690.13 (B)

WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL LOCATION:
AC DISCONNECT, MAIN PANEL
PER CODE: NEC 110.27 (C)
OSHA 1910.145(f)(7)

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.

LABEL LOCATION:
AC DISCONNECT, MAIN PANEL
PER CODE: NEC 690.56(C)(1)(a)

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SYSTEM SHUTDOWN

LABEL LOCATION:
AC DISCONNECT
POINT OF INTERCONNECTION
PER CODE: NEC 690.56(C)

EMERGENCY RESPONDER
THIS SOLAR PV SYSTEM IS EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN THE ENTIRE PV SYSTEM.

LABEL LOCATION:
AC DISCONNECT, MAIN PANEL
PER CODE: FFPC 7TH EDITION: 11.12.2.1.1.1.1

INVERTER #1

NOMINAL OPERATING AC VOLTAGE	240 V
NOMINAL OPERATING AC FREQUENCY	60 HZ
MAXIMUM AC POWER	10.0 KW
MAXIMUM AC CURRENT	42A
MAX OVERCURRENT DEVICE RATING FOR AC MODULE PROTECTION	N/A

LABEL LOCATION:
INVERTER
PER CODE: NEC 690.52

MAXIMUM VOLTAGE	480 VDC
MAXIMUM CIRCUIT CURRENT	27 A
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)	15A

LABEL LOCATION:
INVERTER
PER CODE: NEC 690.53

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT:	42 A
NOMINAL OPERATING AC VOLTAGE:	240V

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 690.54

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

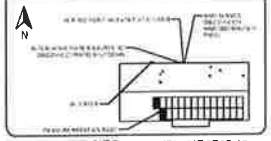
LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 690.13 (B)

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
MAIN SERVICES
DISCONNECT, DC CONDUIT
PER CODE: NEC 690.31 (G) (3)

CAUTION

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



PER CODE: NEC 690.56 (B) , NEC705.10

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE: NEC 705.12 (B)(3)

WARNING
POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE: NEC
705.12(B)(2)(3)(b)

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION:
MAIN SERVICE PANEL
PER CODE: NEC 690.45(B)(5)

DO NOT DISCONNECT UNDER LOAD

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE:
NEC 690.33(E)(2) & NEC
690.15 (C)

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 690.15, NEC 690.13(B)

LABEL LOCATION: ADJACENT TO MAIN DISCONNECT

TITAN SOLAR POWER
FLORIDA
901 ARMSTRONG BLVD, KISSIMMEE, FL 34741
1-855-SAY-SOLAR

GENERAL NOTE:
ADHESIVE FASTENED SIGNS:
- THE LABEL SHALL BE VISIBLE, REFLECTIVE AND SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED [NFPA 1, 11.12.2.1]
- WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD COMPLY WITH ANSI Z535.4 [NEC 110.21(B) FIELD MARKING].
- ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]

1 **PV SAFETY LABELS DATA**
N.T.S.

DOCUMENT CONTROL	DATE	xCAD	xCAD
ISSUED FOR PERMIT	08-11-22	LAL	EQ
REV DESCRIPTION	DATE	xCAD	xCAD

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833-888-3644

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901 ARMSTRONG BLVD.
KISSIMMEE, FL 34741
(813) 982-8001
#EC13009924

CONTRACTOR LOGO
TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 2841 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER: 2782-040-012

SHEET NAME: SAFETY LABELS
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE
DATE: 08-11-22
SHEET TITLE: E-2

SOLAR MODULE

Q.PEAK DUO BLK ML-G10+ 400W

UL 1703 CERTIFIED
MAX. DESIGN LOAD: 55.0 psf
APPLIED WIND LOAD : -26.63 psf

74.0" × 41.1"

NOTES:
-INSTALL MID CLAMPS BETWEEN MODULES AND ENDS CLAMPS AT THE END OF EACH ROW OF MODULES.
-ALUMINUM RAILS SHOULD ALWAYS BE SUPPORTED BY MORE THAN ONE FOOTING ON BOTH SIDES OF THE SPLICE.

WORST CASE MODULE:
ZONE 01: 70%
ZONE 2e: 30%

26.63(0.70) + 26.63(0.30) =26.63psf

ULTIMATE WIND SPEED	130	mph
DESIGN WIND SPEED	130	mph
RISK CATEGORY	II	
EXPOSURE CATEGORY	B	
ROOF SLOPE (°)	15	
ROOF TYPE	GABLED	
MATERIAL ROOF TYPE	ASPHALT SHINGLES	
PRESSURE ZONE	1&2	
MEAN ROOF HEIGHT	11.75	'
0.5 MEAN ROOF HEIGHT	5.88	'
$2H_2$	8	"
PERIMETER WIDTH	3.00	'
K_d	0.85	
K_{zt}	1.0	
K_z	0.57	
VELOCITY PRESSURE (q) = $0.60*0.00256*K_zK_{zt}K_dV^2$		
VELOCITY PRESSURE (ASD)	12.68	

NON EXPOSED EDGE FACTOR: $\gamma_E = 1.0$	EXPOSED EDGE FACTOR: $\gamma_E = 1.5$	ARRAY EQUALIZATION FACTOR: γ_a = 0.7	
EXTERNAL PRESSURE COEFFICIENT Z1		0.7	-2.00
EXTERNAL PRESSURE COEFFICIENT Z2e		0.7	-2.00
EXTERNAL PRESSURE COEFFICIENT Z2n		0.7	-3.00
EXTERNAL PRESSURE COEFFICIENT Z2r		0.7	-3.00
EXTERNAL PRESSURE COEFFICIENT Z3e		0.7	-3.00
EXTERNAL PRESSURE COEFFICIENT Z3r		0.7	-3.60
INTERNAL PRESSURE COEFFICIENT			0.18

ZONES	PRESSURES (PSF)	NON EXPOSED PRESSURES (PSF)	EXPOSED PRESSURES (PSF)	MAX SPAN (FT)	MAX CANTI-LEVER (IN)
1	-27.64	-17.75	-26.63	4'	16"
2e	-27.64	-17.75	-26.63	4'	16"
2n	-40.33	-26.63	-39.94	4'	16"
2r	-40.33	-26.63	-39.94	4'	16"
3e	-40.33	-26.63	-39.94	4'	16"
3r	-47.93	-31.95	-47.93	4'	16"

TOTAL ROOF AREA	2278.43	sq.-ft
TOTAL MODULES	27	
TOTAL PHOTOVOLTAIC AREA	570.66	sq.-ft
TOTAL PERCENTAGE AREA OF PV SYSTEM	25.05	%
WIND LOAD (PSF)	-26.63	
TOTAL WIND LOAD (LBS)	-15,196.68	
TOTAL ROOF MOUNTS	52	
TENSION FORCE PER MOUNT (LBS)	-292.24	

LEGEND & SYMBOLS

- OBS — ROOF OBSTRUCTIONS
- NON-EXPOSED MODULES
- EXPOSED MODULES
- EDGE MODULES
- TRUSSES OR RAFTERS
- ROOF MOUNTS & RAIL
- ROOF SLOPE

ROOF'S GENERAL NOTES:

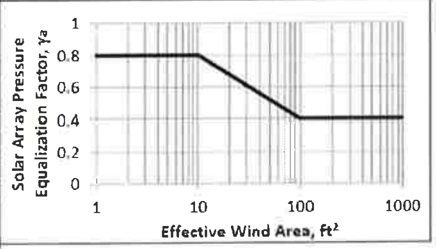
1- CONTRACTOR/INSTALLER TO VERIFY ROOF CONDITIONS FOR PROPER INSTALLATION OF THE PV SYSTEM.
2- CONTRACTOR/INSTALLER TO NOTIFY THE OWNER IMMEDIATELY OF ANY ROOF DEFICIENCIES AND/OR REPAIR REQUIRED TO INSTALL THE PV SYSTEM.
3- EOR DOES NOT ASSUME ANY RESPONSIBILITY FOR THE INSTALLATION OF ANY PV SYSTEM ON DEFICIENT ROOFS.
4-CONTRACTOR/INSTALLER ASSUMES ALL RESPONSIBILITY TO INSTALL AS PER MANUFACTURER STANDARDS.

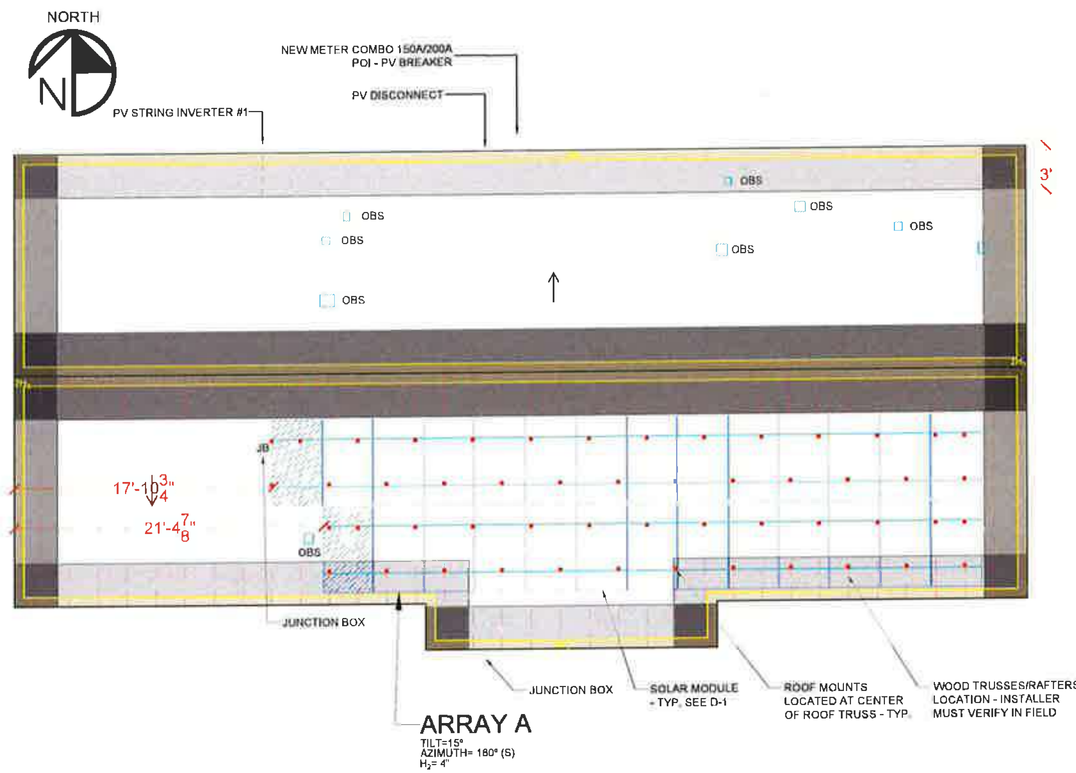
ROOF INSPECTION NOTE:

A PANEL IS DEFINED AS EXPOSED IF D1 TO THE ROOF EDGE >0.5H AND ONE OF THE FOLLOWING APPLIES:
1. D1 TO THE ADJACENT ARRAY > 4 FT (1.2 M) OR
2. D2 TO THE NEXT ADJACENT PANEL> 4 FT. (1.2 M)

ASCE 7.16 - 29.4-7
DESIGNED WIND PRESSURES:

$$p = q_h (GC_p)(\gamma_E)(\gamma_a)$$





1 STRUCTURAL ROOF PLAN & PV MODULES LAYOUT
N.T.S.

DOCUMENT CONTROL	DATE	CAD	QC
ISSUED FOR PERMIT	08-11-22	LAL	EQ
REV DESCRIPTION	DATE	CAD	QC

ENGINEER CONTACT INFORMATION: ENGIPARTNERS LLC, C.A. 32661, 1825 PONCE DE LEON BLVD #114, CORAL GABLES, FL 33134, DESIGN@ENGIPARTNERS.COM, 833 - 888 - 3644

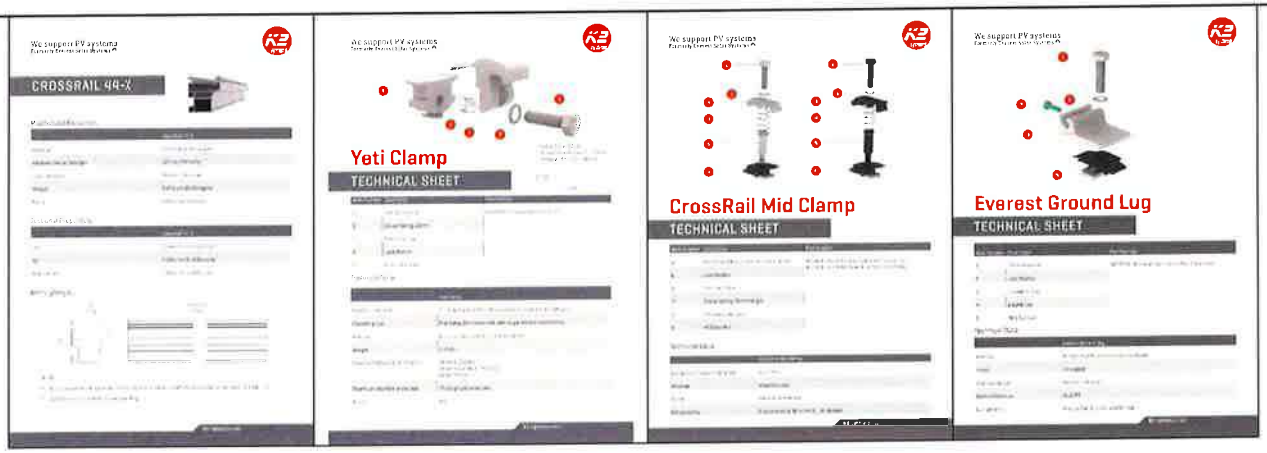
ENGINEERING STAMP: Rafael A Gonzalez Soto 2022.09.26 13:34:25 -04'00'

CONTRACTOR CONTACT INFORMATION: TITAN SOLAR POWER FL, 901 ARMSTRONG BLVD, KISSIMMEE, FL 34741, (813) 882 -9001, #EC13009924

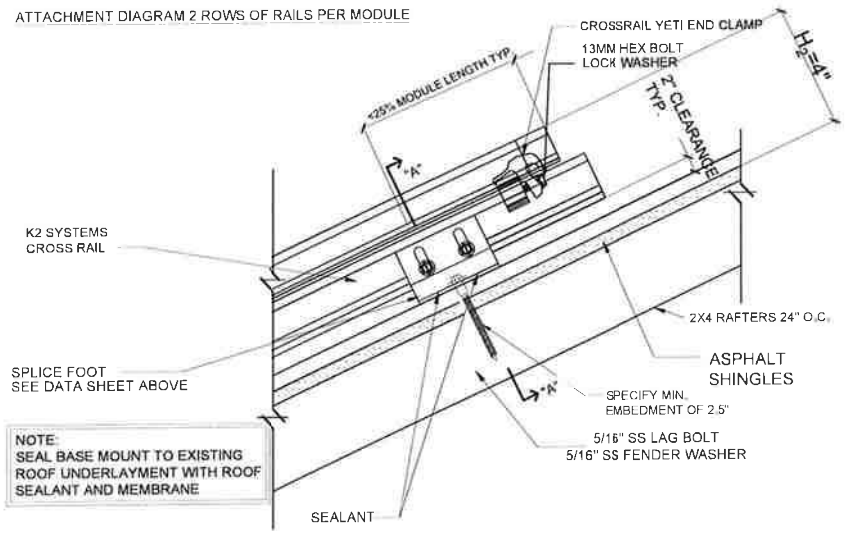
CONTRACTOR LOGO: TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 3841 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER: 2782-040-012

SHEET NAME: STRUCTURAL PLAN
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO PE
DATE: 08-11-22
SHEET TITLE: S-1



ATTACHMENT DIAGRAM 2 ROWS OF RAILS PER MODULE



1 SHINGLE ROOF MOUNT DETAIL & DATA

N.T.S.

K2 SYSTEM 44-X Portrait 72-Cell									
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed	130 mph					
			Roof Zone	1'	1	2e	2r	2n	3e	3r
0 psf	B	7 TO 20	Array Interior	68	68	68	58	58	58	53
			Array Edge	58	58	58	47	47	47	43

LAG BOLT PULL OUT CALCULATIONS

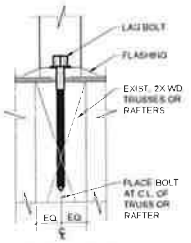
Spruce, Pine,	Per inch Thread Depth	266lbs
SS Lag Bolt 5/16" x 4"	Min. Thread Depth	0'-3"
Wood Strength x Thread Depth = Pull Out Strength		
266 lbs. x 3 in = 798 lbs.		
Allowable Pull Out Strength per Lag Bolt		798 lbs.
Max. Pull Out Strength Required per Lag Bolt		292.24
Lag Bolt Pull Out Strength Safety Factor		2.73

DISTRIBUTED LOAD CALCULATIONS

PV MODULES & RACKING WEIGHT = (INDIVIDUAL MODULE WEIGHT + 3.5 LBS) * (MODULE QTY) = (52.00 LBS) * (27) = 1,404.00 LBS

PER SQUARE FEET (PSF) ARRAY LOAD = PV MODULES & RACKING WEIGHT / TOTAL ARRAY AREA = 1,404.00 LBS / 570.68 SQFT = 2.46 PSF

HENCE, ROOF WILL CARRY THE ADDITIONAL SOLAR SYSTEM LOAD



SECTION "A-A"
N.T.S.

ASCE 7-16 Velocity Pressure

$q_{z10} = 0.00256 K_z K_{zt} K_d V^2$

Where:

q_{z10} = ASCE 7-16 velocity pressure evaluated at mean roof height (psf)
K_z = velocity pressure exposure coefficient
K_{zt} = topographic factor
K_d = wind directionality factor
V = basic wind speed (mph) from ASCE 7-16 maps referred to as ultimate wind speed maps in 2020 FBC.

As an example, for an array having an area of 158.04 sq.-ft., the total uplifting (resultant) force acting on the array would be -39.1 psf x 158.04 sq. ft. = -6,179.364 lb. Knowing this resultant force, the design engineer can now determine the number of attachment points and the size of the mounting hardware necessary to safely carry this load.

Live Loads:

Live loads associated with photovoltaic systems are usually assumed to be distributed uniformly and are small, on the order of 4 psf or less.

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

	Specific gravity	STAINLESS STEEL Lag screw specifications: 5/16" shaft, * per inch thread depth
Douglas Fir, Larch	0.50	266
Douglas Fir, South	0.46	235
Engelman Spruce, Lodgepole Pine (MSR 1650 f & higher)	0.46	235
Hem, Fir, Redwood (close grain)	0.43	212
Hem, Fir (North)	0.46	235
Southern Pine	0.55	307
Spruce, Pine, Fir	0.42	205
Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL)	0.50	266

Thread depth

Sources: American Wood Council, NDS 2005, Table 11.2A, 11.3A

DOCUMENT CONTROL	DATE	eCAD	eCAD
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REV DESCRIPTION	DATE	eCAD	eCAD

ENGINEER CONTACT INFORMATION
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CONTRACTOR CONTACT INFORMATION
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#EC13009924

CONTRACTOR LOGO
TITAN SOLAR POWER

CUSTOMER: ALEXIS MONROE
PROJECT ADDRESS: 2841 SOUTHEAST 6TH PLACE OCALA FL 34471
PARCEL NUMBER: 2782-040-012

SHEET NAME: RACKING PLAN
PROJECT ID: TSP136150
ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE
DATE: 08-11-22
SHEET TITLE: S-2

Lag Screw Installation Guidelines

1. Determine location for the Mount on roof by drilling through the center of truss from bottom with 5/32" drill bit.
2. Mark mounting holes for Mount on underlayment. Mounting holes should be centered on the trusses.
3. Drill 15/64" pilot hole.
4. Apply sealant to bottom of Mount.
5. Place Mount over roof underlayment with holes in roof.
6. Apply sealant to bottom of Mount, apply sealant to lag screws and fasten Mount securely to trusses.
7. Apply additional sealant to top assembly to be sure all penetrations are sealed.

Notes: (1) Thread must be embedded in the side grain of a Trusses or other structural member integral with the building structure.

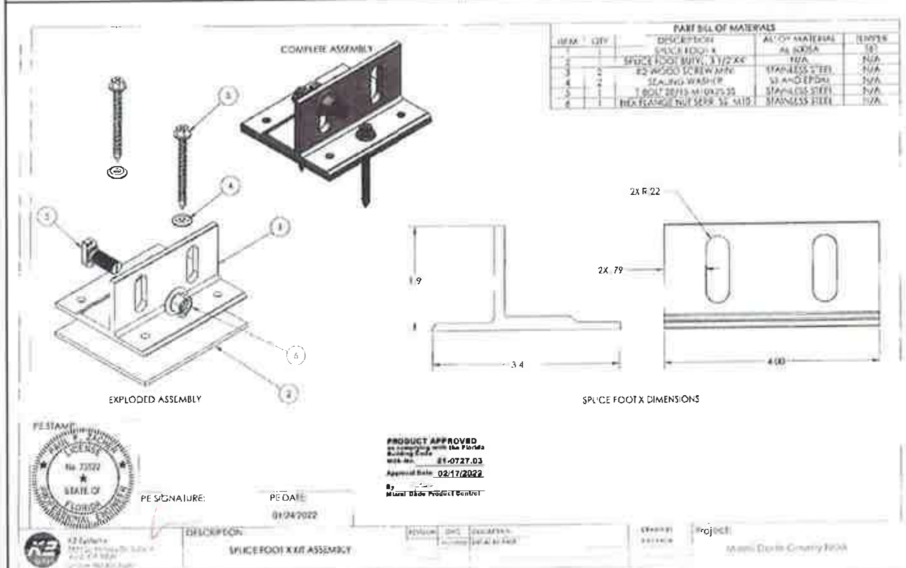
(2) Lag Bolts must be located in the middle third of the structural member.

(3) These values are not valid for wet services.

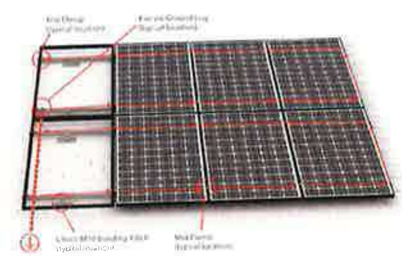
(4) This table does not include shear capacities. If necessary, contact a local engineer to specify lag bolt size with regard to shear forces.

(5) Install lag bolts with head ad washer flush to surface (no gap). Do not over-torque.

(6) Withdrawal design values for lag screw connections shall be multiplied by applicable adjustment factors if necessary. See table 10.3.1 in the American Wood Council NDS for Wood Construction.



Bonding and Grounding



1 SHINGLE ROOF MOUNT DETAIL & DATA

N.T.S.

DOCUMENT CONTROL	ENGINEER CONTACT INFORMATION	ENGINEERING STAMP	CONTRACTOR CONTACT INFORMATION	CONTRACTOR LOGO	CUSTOMER	SHEET NAME
ISSUED FOR PERMIT, DATE 08-11-22, LAL, EG	ENGIPARTNERS LLC C.A. 32661 1825 PONCE DE LEON BLVD #114 CORAL GABLES, FL 33134 DESIGN@ENGIPARTNERS.COM 833 - 888 - 3644	Rafael A Gonzalez Soto 2022.09.26 13:35:17 -04'00'	TITAN SOLAR POWER FL 801 ARMSTRONG BLVD. KISSIMMEE, FL 34741 (813) 982 -9001 #EC13009924	TITAN SOLAR POWER	ALEXIS MONROE PROJECT ADDRESS: 2841 SOUTHEAST 6TH PLACE OCALA FL 34471 PARCEL NUMBER: 2782-040-012	RACKING PLAN PROJECT ID: TSP136150 ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE DATE: 08-11-22 SHEET TITLE: S-3

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Audit trail

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Document History

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SIGNED	**02 / 01 / 2023** 13:54:40 UTC-5	Signed by William E. Sexton (wsexton@ocalafl.org) IP: 216.255.240.104
VIEWED	**02 / 01 / 2023** 16:23:36 UTC-5	Viewed by Ken Whitehead (kwhitehead@ocalafl.org) IP: 216.255.240.104
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