

DEC 18 2023

PUBLIC SERVICE  
COMMISSION

December 18, 2023

*Via Electronic Filing*

Linda C. Bridwell, P.E., Executive Director  
Kentucky Public Service Commission  
211 Sower Boulevard  
P. O. Box 615  
Frankfort, Kentucky 40602

RE: KY PSC Case No. 2023-00421  
Roger D. Shocklee, Complainant, versus Kenergy Corp, Defendant

Dear Ms. Bridwell:

Please accept the attached Public Version and Non-Public Version of Rodger D. Shocklee's Complaint against Kenergy Corp. The original, a copy for service and two (2) more copies of each pleading will be filed with the Commission by overnight delivery service to the Commission's Office at 211 Sower Boulevard, Frankfort, Kentucky 40601. The documents in electronic format are submitted in anticipation of the matter being docketed as a case and the Complainant's pertinent account information, among other things, has been redacted from the public version in accordance with 807 KAR 5:001, Section 4(10).

Counsel certifies that all material filed with the Commission is included in this electronic submission, and the material in this electronic submission is a true representation of the materials prepared for the filing.

Please contact me if you have any questions regarding this filing.

Respectfully submitted,

/s/ David E. Spenard

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*Counsel for Roger D. Shocklee*

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ROGER D. SHOCKLEE	)	
	)	
COMPLAINANT	)	CASE NO.
	)	2023- <u>00421</u>
V.	)	
	)	
KENERGY CORP.	)	
	)	
DEFENDANT	)	

**Public Version**

Comes now Roger D. Shocklee, Complainant, by and through counsel, and for his Formal Complaint through 807 KAR 5:001, Section 20, KRS 278.260(1), and also pursuant to KRS 278.467 which vests the Kentucky Public Service Commission (“PSC” or “Commission”) with original jurisdiction over any dispute between a retail electric supplier and an eligible-customer generator regarding net metering matters, states the following for his Complaint against Kenergy Corp. (“Kenergy”), Defendant.

1. The full name and post office address of Complainant: Roger D. Shocklee, 666 Barrett Hill Road, Livermore, KY 42352-9701.
2. Complainant is a member and customer of Kenergy with multiple service accounts.
3. The full name and post office address of the Defendant per the UMS Directory: Kenergy Corp. (ATTN: Tim Lindahl, President and CEO), P. O. Box 18, Henderson, KY 42419.

4. Kenergy is a retail electric supplier and “utility” as that term is defined by KRS 278.010(3)(a).
5. The Commission has “exclusive jurisdiction over the regulation of rates and service of utilities.” KRS 278.040(2).
6. The Commission has “original jurisdiction over complaints as to rates or service of any utility, and upon a complaint in writing made against any utility by any person that ... any regulation, measurement, practice or act affecting or relating to the service of the utility or any service in connection therewith is unreasonable, unsafe, insufficient or unjustly discriminatory, or that any service is inadequate or cannot be obtained.” KRS 278.260(1) (pertinent part).
7. The Commission has “original jurisdiction over any dispute between a retail electric supplier and an eligible customer-generator, regarding net metering rates, service, standards, performance of contracts, and testing of net meters.” KRS 278.467(1).
8. The acts or omissions, of which this Complaint is made, with reference to the law, order, or administrative regulation of which failure to comply is alleged, and other matters or facts in aid of a full understanding of the details of the alleged failure, are as follows:
  - a. Complainant is a member and customer of Kenergy with service through multiple accounts including, but not limited to, Account Number [REDACTED] (“Account One”) and Account Number [REDACTED] (“Account Two”).
  - b. Kenergy, through its Commission-approved tariffs, offers net metering service. The pertinent section of Kenergy’s tariffs for net metering is named “Schedule

- 46” and comprises Kenergy Tariff Sheet Numbers 46 through 46Z. (**Exhibit “A”** to this Complaint)
- c. Complainant seeks the installation of an “eligible electric generating facility” (as that phrase is defined by KRS 278.465(2)) for net metering service through Account One and the installation of a separate “eligible electric generating facility” for net metering service through Account Two.
  - d. In furtherance of Complainant’s efforts to obtain net metering service through each of these accounts, Solar Energy Solutions LLC (“SES”) is providing services concerning the design and installation of the generating facilities.
  - e. An Application for Interconnection relating to Account One (“Application One”) (on a form provided by Kenergy) was tendered to Kenergy, and SES is listed as the “Project Contact Person” for the application. (**Exhibit “B”** to this Complaint)
  - f. Application One is for a proposed project that falls within the definition of an “eligible electric generating facility.”
  - g. An Application for Interconnection relating to Account Two (“Application Two”) (on a form provided by Kenergy) was tendered to Kenergy, and SES is listed as the “Project Contact Person” for the application. (**Exhibit “C”** to this Complaint)
  - h. Application Two is for a proposed project that falls within the definition of an “eligible electric generating facility.”
  - i. Both applications were tendered to Kenergy by SES on November 9, 2023.

- j. Kenergy rejected each of these applications. The reason for the rejection is documented through a November 30, 2023 letter from Rob Stumph, P.E., Vice President, Eng./Ops. For Kenergy. (**Exhibit “D”** to this Complaint)
- k. At pertinent part, Mr. Stumph states: Complainant’s “application was rejected because he is not the owner of the property where the proposed solar facility was to be installed. KRS 278.465 defines an “eligible customer-generator” as one who owns and operates an electric generating facility ... located on the customer’s premises.”
- l. KRS 278.465(1) sets forth the definition of an “eligible customer-generator” and states, in pertinent part: “means a customer of a retail electric supplier who owns and operates an electric generating facility that is located on the customer’s premises, for the primary purpose of supplying all or part of the customer’s own electricity requirements.”
- m. There is no statutory requirement though KRS 278.465(1) that a customer be the owner in fee simple of the real property serving as the customer’s premises.
- n. KRS 278.465(2) sets forth the definition of an “eligible electric generating facility” and does not require a facility to be operated on premises by a customer who is the owner in fee simple of the real property serving as the premises.
- o. KRS 278.466 sets forth, among other things, the statutory requirements regarding the availability of net metering service. The statute does not contain any provision through which an applicant for net metering service must demonstrate that ownership in fee simple of the real property serving as the

- premises for the “eligible electric generating facility” by the “eligible customer-generator.”
- p. Schedule 46, at Sheet Number 46B, describes the application and approval process for interconnection and net metering. In identifying the grounds for rejection, Sheet Number 46B states: “Kenergy may reject an Application for violations of any code, standard, or regulation relating to reliability or safety; however, Kenergy will work with the customer to resolve those issues to the extent practicable.”
  - q. Kenergy’s tariffs, generally, do not establish a requirement that a member/customer demonstrate ownership in fee simple of the real property at which service will be received, the premises.
  - r. Kenergy’s “Application for Membership” (**Exhibit “E”** to the Complaint) does not require proof that the applicant owns, in fee simple, the real property at which service will be received, the premises.
  - s. Sheet 46B does not set forth any requirement that a member/customer demonstrate ownership of the real property upon which the “eligible electric generating facility” is proposed for location.
  - t. Complainant meets the requirements for membership in Kenergy, and he is properly a customer through both Account One and Account Two.
  - u. Complainant is, through a lease agreement, a lawful occupant of the premises upon which net metering service is sought.
  - v. Complainant is (1) a customer of Kenergy who proposes to (2) own and operate an electric generating facility that is (3) located on the customer’s premises, for

- (4) the primary purpose of supply all or part of the customer's own electricity requirements.
- w. Complainant fully satisfies all requirements for having his net metering service interconnection applications accepted for processing and review by Kenergy.
  - x. Kenergy unlawfully and unreasonably rejected Complainant's applications for net metering service interconnection in violation of KRS 278.465 through KRS 278.468, and the rejection results in a net metering service dispute reviewable by the Commission pursuant to KRS 278.467(1).
  - y. Kenergy unlawfully and unreasonably rejected Complainant's applications for net metering service interconnection in violation of KRS 278.160 reviewable by the Commission pursuant to KRS 278.260(1).
  - z. Kenergy's addition of non-statutorily authorized requirements for the definitions applicable for net metering service is a practice or act affecting or relating to the service of the utility that is unreasonable and unjustly discriminatory and is reviewable by the Commission upon written complaint pursuant to KRS 278.260(1).
  - aa. Kenergy's failure to comply with KRS 278.465 through KRS 278.468 is unlawful and results in Complainant being unable to obtain a service and is reviewable by the Commission upon written complaint pursuant to KRS 278.260(1).
  - bb. Kenergy's documentation of its determinations concerning this matter have not been reasonably sufficient.
9. Complainant seeks the following relief from this Commission:

- a. Find that Complainant is a customer and member of Kenergy, a retail electric supplier.
- b. Find that Complainant proposes to own and operate an “electric generating facility” (as that phrase is defined through KRS 278.465(2)) located on Complainant’s premises for the primary purpose of supplying all or part of the Complainant’s own electricity requirements for two (2) of his service accounts with Kenergy.
- c. Find that Kenergy’s rejection of Complainant’s applications for net metering service interconnection does not demonstrate any lack of right of Complainant to occupy the premises upon which net metering is sought.
- d. Find that Rob Stumph, P.E., is a Vice President of Kenergy and an “officer, agent, employee of a utility” (as that phrase is used in KRS 278.990(1)).
- e. Find that Kenergy, acting through Rob Stump, P.E., rejected Complainant’s applications for net metering service interconnections for review and processing (for approval or denial).
- f. Find that Kenergy’s rejection of Complainant’s applications for net metering service interconnection for review and processing (for approval or denial) was based upon the claim that Complainant “is not the owner of the property where the proposed solar facility was to be installed” and the further claim that “KRS 278.465 defines an ‘eligible customer-generator’ as one who owns and operates an electric generating facility ... located on the customer’s premises.”



- g. Find that KRS 278.465 through KRS 278.468 do not establish ownership of the real property in fee simple of the premises upon which net metering service is located is a requirement of obtaining net metering service.
- h. Find that Kenergy's rejection of Complainant's application for net metering service interconnection for review and processing (for approval or denial) was not based upon any claim of violation of any code, standard, or regulation related to reliability or safety.
- i. Find that the rejection of a net metering service interconnection application for review and processing (for approval or denial) is a practice or act affecting or relating to the service of the utility, and Complainant alleges that Kenergy's rejection of his applications is a practice or act that is unreasonable and unjustly discriminatory.
- j. Find that Kenergy's rejection of Complainant's net metering service interconnection applications for review and processing (for approval or denial) demonstrates that service cannot be obtained by Complainant.
- k. Find that Complainant's allegations and proof concerning Kenergy's rejection of this net metering service interconnection application for review and processing (for approval or denial) demonstrates a dispute between a retail electric supplier and an otherwise eligible customer-generator regarding net metering service.
- l. Find that Complainant alleges that Kenergy's legal conclusion is contrary to the plain language of KRS 278.465 through KRS 278.468 and a violation of Kentucky's net metering statutes; therefore, a dispute concerning the

interpretation of provisions within KRS Chapter 278 is set forth through the Complaint.

- m. Find that the Commission has original jurisdiction over the Complaint pursuant to KRS 278.260 and KRS 278.467.
- n. Find that Complainant tenders a Complaint containing a *prima facie* case.
- o. Conclude that Kenergy should be required to satisfy or answer the complaint pursuant to the process in the Commission's administrative regulations.
- p. Conclude that if Kenergy desires to satisfy the complaint through accepting for review and processing (and approval or denial) Complainant's applications for net metering service interconnections, it shall include in its statement of relief filed a discussion of all Kenergy findings and conclusions regarding whether the generating facility can be safely and reliably connected to the Kenergy system if the proposed generating facility is alleged to meet all of the criteria set forth through Kenergy's Commission-approved tariffs for interconnection consequent to a Level 1 application.
- q. The relief sought by Complainant includes a request for Kenergy to demonstrate compliance with Net Metering Schedule 46 during the review and processing of the applications.

Respectfully submitted,

/s/ David E. Spenard

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*Counsel for Roger D. Shocklee*

**Notice Regarding Privacy Protection for Filings**

Pursuant to 807 KAR 5:001, Section 4(10) (privacy protection for filings), the following steps have been taken for this pleading. The digits of the account numbers have been redacted in the “Public Version” (but are not redacted in the “Non-Public Version”) tendered to the Commission.

/s/ David E. Spenard  
David E. Spenard

**Notice Regarding Filing of Complaint and Service**

Pursuant to 807 KAR 5:001, Section 20(3), the original, a copy for service, and two (2) more copies of both the Public Version and Non-Public Version of the pleading have been filed with the Commission (by overnight delivery service to the Commission’s Office at 211 Sower Boulevard, Frankfort, Kentucky 40601); and an electronic copies of both the Public and Non-Public version of the pleading have been sent, by electronic mail message, to the Commission’s Executive Director; furthermore, courtesy copies of both the Public Version and Non-Public Version were transmitted by electronic mail message to attorneys Allyson Honaker and Brittany Koenig, all on this 18<sup>th</sup> day of December 2023.

/s/ David E. Spenard  
David E. Spenard

## **Exhibit A**

P.S.C. NO. 2

CANCELS P.S.C. NO. 1

**KENERGY CORP.**  
**OF**  
**HENDERSON, KENTUCKY**

**CLASSIFICATION OF SERVICE AND RULES AND REGULATIONS FOR  
FURNISHING ELECTRIC SERVICE TO ALL OR PORTIONS OF:**

**BRECKENRIDGE, CALDWELL, CRITTENDEN, DAVIESS, HANCOCK,  
HENDERSON, HOPKINS, LIVINGSTON, LYON, MCLEAN, OHIO,  
MUHLENBERG, UNION, AND WEBSTER COUNTIES IN KENTUCKY**

**FILED WITH THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

**T** **DATE ISSUED: November 23, 2016 EFFECTIVE DATE: May 20, 2016**

**KENERGY CORP.**

**BY:**

*Jeff Hohn*  
*Talina R. Mathews*  
**Jeff Hohn, President & CEO**

**KENTUCKY  
PUBLIC SERVICE COMMISSION**

**Talina R. Mathews  
EXECUTIVE DIRECTOR**

**EFFECTIVE**

**5/20/2016**

**PURSUANT TO 807 KAR 5:011 SECTION 9 (1)**

**T**



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

Third Revised SHEET NO. 46

CANCELLING PSC NO. 1

Second Revised SHEET NO. 46

**CLASSIFICATION OF SERVICE**

Schedule 46 – Net Metering

APPLICABLE

In all territory served.

AVAILABILITY OF SERVICE

Net Metering is available to eligible customer-generators in Kenergy's service territory, upon request, and on a first-come, first-served basis up to a cumulative capacity of one percent (1%) of Kenergy's single hour peak load in Kentucky during the previous year. If the cumulative generating capacity of net metering systems reaches 1% of Kenergy's single hour peak load during the previous year, Kenergy may cease providing net metering service to new customer-generators only upon Commission approval. An eligible customer-generator shall mean a retail electric customer of Kenergy with a generating facility that:

- (1) Generates electricity using solar energy, wind energy, biomass or biogas energy, or hydro energy;
- (2) Has a rated capacity of not greater than forty-five (45) kilowatts;
- (3) Is located on the customer's premises;
- (4) Is owned and operated by the customer;
- (5) Is connected in parallel with Kenergy's electric distribution system; and
- (6) Has the primary purpose of supplying all or part of the customer's own electricity requirements.

At its sole discretion, Kenergy may provide Net Metering to other customer-generators not meeting all the conditions listed above on a case-by-case basis.

DATE OF ISSUE October 14, 2022  
 Month / Date / Year

DATE EFFECTIVE September 7, 2022  
 Month / Date / Year

ISSUED BY [Signature] [Signature]  
 (Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2020-00332 DATED September 7, 2022

**KENTUCKY  
PUBLIC SERVICE COMMISSION**

**Linda C. Bridwell**  
Executive Director

*Linda C. Bridwell*

**EFFECTIVE  
9/7/2022**

PURSUANT TO 807 KAR 5:011 SECTION 9 (1)



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

First Revised SHEET NO. 46A

CANCELLING PSC NO. 1

Original SHEET NO. 46A

CLASSIFICATION OF SERVICE

Schedule 46 – Net Metering

The term "Customer" hereinafter shall refer to any customer requesting or receiving Net Metering services under this tariff.

METERING

Kenergy shall provide net metering services, without any cost to the Customer for metering equipment, through a standard kilowatt-hour metering system capable of measuring the flow of electricity in two (2) directions. This provision does not relieve Customer of his or her responsibility to pay metering costs embedded in the Kenergy's Commission-approved base rates.

Any additional meter, meters, or distribution upgrades needed to monitor the flow in each direction shall be installed at the Customer's expense.

BILLING

- A. The amount of electricity billed to the customer shall be calculated by taking the difference between the electricity supplied by Kenergy to the Customer and the electricity generated and fed back by the Customer. If time-of-day or time-of-use metering is used, the electricity fed back to the electric grid by the Customer shall be net-metered and accounted for at the specific time it is fed back to the electric grid in accordance with the time-of-day or time-of-use billing agreement with the Customer then currently in place.
B. If the electricity supplied by Kenergy exceeds the electricity generated and fed back to Kenergy during the billing period, the Customer shall be billed for the net electricity supplied. If the electricity fed back to Kenergy by the Customer exceeds the electricity supplied by Kenergy during a billing period, the Customer shall be credited for the excess kilowatt-hours, and this electricity credit shall appear on the Customer's next bill. Credits shall carry forward for the life of the customer-generator's account.
C. The energy rates, rate structure, and monthly charges shall be identical to those in the contract or tariff to which the Customer would be assigned if the Customer were not receiving service under this tariff.

DATE OF ISSUE April 1, 2009

Month / Date / Year

DATE EFFECTIVE April 30, 2009

Month / Date / Year

ISSUED BY [Signature]

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

First Revised SHEET NO. 46B

CANCELLING PSC NO. 1

Original SHEET NO. 46B

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering

- T D. Excess electricity credits are not transferable between customers or locations.
E. No cash refund for residual generation-related credits shall be paid if an account under this tariff is closed.

APPLICATION AND APPROVAL PROCESS

The Customer shall submit an Application for Interconnection and Net Metering ("Application") and receive approval from Kenergy prior to connecting the generator facility to Kenergy's system.

Applications will be submitted by the Customer and reviewed and processed by Kenergy according to either Level 1 or Level 2 processes defined below.

Kenergy may reject an Application for violations of any code, standard, or regulation related to reliability or safety; however, Kenergy will work with the Customer to resolve those issues to the extent practicable.

Customers may contact Kenergy to check on status of an Application or with questions prior to submitting an Application. Kenergy contact information can be found on the Application form. The Application may be submitted by mail to, or in person at, the address found on the Application form.

LEVEL 1

A Level 1 Application shall be used if the generating facility is inverter-based and is certified by a nationally recognized testing laboratory to meet the requirements of Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources" (UL 1741).

Kenergy will approve the Level 1 Application if the generating facility also meets all of the following conditions:

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY [Signature]
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director





Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
First Revised SHEET NO. 46C
CANCELLING PSC NO. 1
Original SHEET NO. 46C

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering

T

- (1) For interconnection to a radial distribution circuit, the aggregated generation on the circuit, including the proposed generating facility, will not exceed 15% of the Line Section's most recent annual one hour peak load.
(2) If the proposed generating facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed generating facility, will not exceed the smaller of 20 kVA or the nameplate rating of the transformer.
(3) If the proposed generating facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.
(4) If the generating facility is to be connected to three-phase, three wire primary utility distribution lines, the generator shall appear as a phase-to-phase connection at the primary utility distribution line.
(5) If the generating facility is to be connected to three-phase, four wire primary utility distribution lines, the generator shall appear to the primary utility distribution line as an effectively grounded source.
(6) The interconnection will not be on an area or spot network. Area and spot networks are systems in which multiple transformers are interconnected on the secondary side and multiple primary voltage circuits are used to feed the transformers. A spot network is typically used to serve a single building and all the transformers are in one location. An area network typically serves multiple customers with secondary conductors covering multiple city blocks and with transformers at various locations.
(7) Kenergy does not identify any violations of any applicable provisions of Institute of Electrical and Electronics Engineers Standard 1547 (IEEE 1547), "Standard for Interconnecting Distributed Resources with Electric Power Systems."

DATE OF ISSUE April 1, 2009
Month / Date / Year
DATE EFFECTIVE April 30, 2009
Month / Date / Year
ISSUED BY [Signature]
(Signature of Officer)
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
First Revised SHEET NO. 46D
CANCELLING PSC NO. 1
Original SHEET NO. 46D

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering

(8) No construction of facilities by Kenergy on its own system will be required to accommodate the generating facility.

If the generating facility does not meet all of the above listed criteria, Kenergy, in its sole discretion, may either: 1) approve the generating facility under the Level 1 Application if Kenergy determines that the generating facility can be safely and reliably connected to Kenergy's system; or 2) deny the Application as submitted under the Level 1 Application.

Kenergy shall notify the customer within 20 business days whether the Application is approved or denied, based on the criteria provided in this section.

If the Application lacks complete information, Kenergy shall notify the Customer that additional information is required, including a list of such additional information. The time between notification and receipt of required additional information will add to the time to process the Application.

When approved, Kenergy will indicate by signing the approval line on the Level 1 Application Form and returning it to the Customer. The approval will be subject to successful completion of an initial installation inspection and witness test. The Customer shall notify Kenergy within 3 business days of completion of the generating facility installation and schedule an inspection and witness test with Kenergy to occur within 10 business days of completion of the generator facility installation or as otherwise agreed to by Kenergy and the Customer. The Customer may not operate the generating facility until successful completion of such inspection and witness test, unless Kenergy expressly permits operational testing not to exceed two hours. If the installation fails the inspection or witness test due to noncompliance with any provision in the Application and Kenergy approval, the Customer shall not operate the generating facility until any and all noncompliance is corrected and re-inspected by Kenergy.

If the Application is denied, Kenergy will supply the Customer with reasons for denial. The Customer may resubmit under Level 2 if appropriate.

DATE OF ISSUE April 1, 2009
Month / Date / Year
DATE EFFECTIVE April 30, 2009
Month / Date / Year
ISSUED BY [Signature]
(Signature of Officer)
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

First Revised SHEET NO. 46E

CANCELLING PSC NO. 1

Original SHEET NO. 46E

CLASSIFICATION OF SERVICE

Schedule 46 – Net Metering

T LEVEL 2

A Level 2 Application is required under any of the following:

- (1) The generating facility is not inverter based;
(2) The generating facility uses equipment that is not certified by a nationally recognized testing laboratory to meet the requirements of UL 1741; or
(3) The generating facility does not meet one or more of the additional conditions under Level 1.

Kenergy will approve the Level 2 Application if the generating facility meets Kenergy's technical interconnection requirements, which are based on IEEE 1547. Kenergy shall make its technical interconnection requirements available online and upon request.

Kenergy will process the Level 2 Application within 30 business days of receipt of a complete Application. Within that time Kenergy will respond in one of the following ways:

- (1) The Application is approved and Kenergy will provide the Customer with an Interconnection Agreement to sign.
(2) If construction or other changes to Kenergy's distribution system are required, the cost will be the responsibility of the Customer. Kenergy will give notice to the Customer and offer to meet to discuss estimated costs and construction timeframe. Should the Customer agree to pay for costs and proceed, Kenergy will provide the Customer with an Interconnection Agreement to sign within a reasonable time.
(3) The Application is denied. Kenergy will supply the Customer with reasons for denial and offer to meet to discuss possible changes that would result in Kenergy approval. Customer may resubmit Application with changes.

DATE OF ISSUE April 1, 2009

Month / Date / Year

DATE EFFECTIVE April 30, 2009

Month / Date / Year

ISSUED BY [Signature]

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

First Revised SHEET NO. 46F

CANCELLING PSC NO. 1

Original SHEET NO. 46F

CLASSIFICATION OF SERVICE

Schedule 46 – Net Metering

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If the Application lacks complete information, Kenergy shall notify the Customer that additional information is required, including a list of such additional information. The time between notification and receipt of required additional information will add to the 30-business-day target to process the Application.

The Interconnection Agreement will contain all the terms and conditions for interconnection consistent with those specified in this tariff, inspection and witness test requirements, description of and cost of construction or other changes to Kenergy's distribution system required to accommodate the generating facility, and detailed documentation of the generating facilities which may include single line diagrams, relay settings, and a description of operation.

The Customer may not operate the generating facility until an Interconnection Agreement is signed by the Customer and Kenergy and all necessary conditions stipulated in the agreement are met.

APPLICATION, INSPECTION AND PROCESSING FEES

No application fees, or other review, study, or inspection or witness test fees are charged for Level 1 Applications.

For Level 2 Applications, each Customer must submit, along with the Application, a non-refundable application, inspection and processing fee of \$100. In the event Kenergy determines an impact study is necessary with respect to a Level 2 Application, the Customer shall be responsible for any reasonable costs up to \$1,000 for the initial impact study. Kenergy shall provide documentation of the actual cost of the impact study. Any other studies requested by the Customer shall be at the Customer's sole expense.

TERMS AND CONDITIONS FOR INTERCONNECTION

To interconnect to Kenergy's distribution system, the Customer's generating facility shall comply with the following terms and conditions:

DATE OF ISSUE April 1, 2009

Month / Date / Year

DATE EFFECTIVE April 30, 2009

Month / Date / Year

ISSUED BY [Signature]

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

Original SHEET NO. 46G

CANCELLING PSC NO. 1

SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

- 1. Kenergy shall provide the Customer net metering services, without charge for standard metering equipment...
2. The Customer shall install, operate, and maintain, at Customer's sole cost and expense, any control, protective, or other equipment...
3. The generating facility shall comply with, and the Customer shall represent and warrant its compliance with: (a) any applicable safety and power quality standards...
4. Any changes or additions to Kenergy's system required to accommodate the generating facility shall be considered excess facilities.

DATE OF ISSUE April 1, 2009

Month / Date / Year

DATE EFFECTIVE April 30, 2009

Month / Date / Year

ISSUED BY [Signature]

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
Original SHEET NO. 46H
CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

- 5. Customer shall operate the generating facility in such a manner as not to cause undue fluctuations in voltage...
6. Customer shall be responsible for protecting, at Customer's sole cost and expense, the generating facility...
7. After initial installation, Kenergy shall have the right to inspect and/or witness commissioning tests...
8. For Level 1 and 2 generating facilities, where required by Kenergy, an eligible Customer shall furnish and install on Customer's side of the point of common coupling a safety disconnect switch...

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY [Signature]
TITLE President and CEO
BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

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SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

the meter, the Customer shall be responsible for ensuring that the location of the EDS is properly and legibly identified for so long as the generating facility is operational. The disconnect switch shall be accessible to Kenergy personnel at all times. Kenergy may waive the requirement for an EDS for a generating facility at its sole discretion, and on a case-by-case basis, upon review of the generating facility operating parameters and if permitted under Kenergy's safety and operating protocols.

Kenergy shall establish a training protocol for line workers on the location and use of the EDS, and shall require that the EDS be used when appropriate, and that the switch be turned back on once the disconnection is no longer necessary.

- 9. Kenergy shall have the right and authority at Kenergy's sole discretion to isolate the generating facility or require the Customer to discontinue operation of the generating facility if Kenergy believes that: (a) continued interconnection and parallel operation of the generating facility with Kenergy's electric system creates or contributes (or may create or contribute) to a system emergency on either Kenergy's or Customer's electric system; (b) the generating facility is not in compliance with the requirements of this tariff, and the noncompliance adversely affects the safety, reliability, or power quality of Kenergy's electric system; or (c) the generating facility interferes with the operation of Kenergy's electric system. In non-emergency situations, Kenergy shall give Customer notice of noncompliance including a description of the specific noncompliance condition and allow Customer a reasonable time to cure the noncompliance prior to isolating the generating facilities. In emergency situations, when Kenergy is unable to immediately isolate or cause the Customer to isolate only the generating facility, Kenergy may isolate the Customer's entire facility.
10. Customer shall agree that, without the prior written permission from Kenergy, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection and Net Metering" which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity is allowed without approval.

DATE OF ISSUE April 1, 2009

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ISSUED BY Sanford H. Hunk

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE

4/30/2009

PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

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CANCELLING PSC NO. 1

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CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

11. To the extent permitted by law, the Customer shall protect, indemnify, and hold harmless Kenergy and its directors, officers, employees, agents, representatives and contractors against and from all loss, claims, actions or suits, including costs and attorneys fees, for or on account of any injury or death of persons or damage to property caused by the Customer or the Customer's employees, agents, representatives and contractors in tampering with, repairing, maintaining, or operating the Customer's generating facility or any related equipment or any facilities owned by Kenergy except where such injury, death or damage was caused or contributed to by the fault or negligence of Kenergy or its employees, agents, representatives, or contractors.

The liability of Kenergy to the Customer for injury to person and property shall be governed by the tariff(s) for the class of service under which the Customer is taking service.

12. The Customer shall maintain general liability insurance coverage (through a standard homeowner's, commercial, or other policy) for both Level 1 and Level 2 generating facilities. Customer shall, upon request, provide Kenergy with proof of such insurance at the time that application is made for net metering.

13. By entering into an Interconnection Agreement, or by inspection, if any, or by non-rejection, or by approval, or in any other way, Kenergy does not give any warranty, express or implied, as to the adequacy, safety, compliance with applicable codes or requirements, or as to any other characteristics, of the generating facility equipment, controls, and protective relays and equipment.

14. A Customer's generating facility is transferable to other persons or service locations only after notification to Kenergy has been made and verification that the installation is in compliance with this tariff. Upon written notification that an approved generating facility is being transferred to another person, customer, or location, Kenergy will verify that the installation is in compliance with this tariff and provide written notification to the customer(s) within 20 business days. If the installation is no longer in compliance with this tariff, Kenergy will notify the Customer in writing and list what must be done to place the facility in compliance.

15. The Customer shall retain any and all Renewable Energy Credits (RECs) that may be generated by their generating facility.

DATE OF ISSUE April 1, 2009
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ISSUED BY [Signature]
(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director





Henderson, Kentucky

FOR ALL TERRITORY SERVED

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CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

LEVEL 1

Application for Interconnection and Net Metering

Use this application form only for a generating facility that is inverter based and certified by a nationally recognized testing laboratory to meet the requirements of UL 1741.

Submit this Application to: Kenergy Corp., P. O. Box 18, Henderson, KY 42419-0018

If you have questions regarding this Application or its status, contact Kenergy at: (270)826-3991

Customer Name: Account Number:

Customer Address:

Customer Phone No.: Customer E-Mail Address:

Project Contact Person:

Phone No.: E-mail Address (Optional):

Provide names and contact information for other contractors, installers, or engineering firms involved in the design and installation of the generating facilities:

Energy Source: Solar Wind Hydro Biogas Biomass

Inverter Manufacturer and Model #:

Inverter Power Rating: Inverter Voltage Rating:

Power Rating of Energy Source (i.e., solar panels, wind turbine):

Is Battery Storage Used: No Yes If Yes, Battery Power Rating:

Attach documentation showing that inverter is certified by a nationally recognized testing laboratory to meet the requirements of UL 1741.

Attach site drawing or sketch showing location of Kenergy's meter, energy source, Kenergy accessible disconnect switch, and inverter.

Attach single line drawing showing all electrical equipment from Kenergy's metering location to the energy source including switches, fuses, breakers, panels, transformers, inverters, energy source, wire size, equipment ratings, and transformer connections.

Expected Start-up Date:

DATE OF ISSUE April 1, 2009
Month / Date / Year

DATE EFFECTIVE April 30, 2009
Month / Date / Year

ISSUED BY [Signature]
(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
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CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

TERMS AND CONDITIONS:

- 1. Kenergy shall provide Customer net metering services, without charge for standard metering equipment, through a standard kilowatt-hour metering system capable of measuring the flow of electricity in two (2) directions.
2. Customer shall install, operate, and maintain, at Customer's sole cost and expense, any control, protective, or other equipment on the Customer's system required by Kenergy's technical interconnection requirements based on IEEE 1547, the NEC, accredited testing laboratories such as Underwriters Laboratories, and the manufacturer's suggested practices for safe, efficient, and reliable operation of the generating facility in parallel with Kenergy's electric system.
3. The generating facility shall comply with, and the Customer shall represent and warrant its compliance with: (a) any applicable safety and power quality standards established by the Institute of Electrical and Electronics Engineers (IEEE) and accredited testing laboratories such as Underwriters Laboratories (UL); (b) the National Electrical Code (NEC) as may be revised from time to time; (c) Kenergy's rules, regulations, and Kenergy's Service Regulations as contained in Kenergy's Retail Electric Tariff as may be revised from time to time with the approval of the Kentucky Public Service Commission (Commission); (d) the rules and regulations of the Commission, as such rules and regulations may be revised from time to time by the Commission; and (e) all other applicable local, state, and federal codes and laws, as the same may be in effect from time to time.

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY Sanford Nicks
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

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Original SHEET NO. 46M

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SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

- 4. Any changes or additions to Kenergy's system required to accommodate the generating facility shall be considered excess facilities. Customer shall agree to pay Kenergy for actual costs incurred for all such excess facilities prior to construction.
5. Customer shall operate the generating facility in such a manner as not to cause undue fluctuations in voltage, intermittent load characteristics, or otherwise interfere with the operation of Kenergy's electric system. At all times when the generating facility is being operated in parallel with Kenergy's electric system, Customer shall so operate the generating facility in such a manner that no adverse impacts will be produced thereby to the service quality rendered by Kenergy to any of its other customers or to any electric system interconnected with Kenergy's electric system. Customer shall agree that the interconnection and operation of the generating facility is secondary to, and shall not interfere with, Kenergy's ability to meet its primary responsibility of furnishing reasonably adequate service to its customers.
6. Customer shall be responsible for protecting, at Customer's sole cost and expense, the generating facility from any condition or disturbance on Kenergy's electric system, including, but not limited to, voltage sags or swells, system faults, outages, loss of a single phase of supply, equipment failures, and lightning or switching surges, except that Kenergy shall be responsible for repair of damage caused to the generating facility resulting solely from the negligence or willful misconduct on the part of Kenergy.
7. After initial installation, Kenergy shall have the right to inspect and/or witness commissioning tests, as specified in the Level 1 or Level 2 Application and approval process. Following the initial testing and inspection of the generating facility and upon reasonable advance notice to Customer, Kenergy shall have access at reasonable times to the generating facility to perform reasonable on-site inspections to verify that the installation, maintenance and operation of the generating facility comply with the requirements of this tariff.

DATE OF ISSUE April 1, 2009
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ISSUED BY [Signature]
(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

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CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

8. For Level 1 generating facilities, where required by Kenergy, an eligible Customer shall furnish and install on Customer's side of the point of common coupling a safety disconnect switch which shall be capable of fully disconnecting the Customer's energy generating equipment from Kenergy's electric service under the full rated conditions of the Customer's generating facility. The external disconnect switch (EDS) shall be located adjacent to Kenergy's meters or the location of the EDS shall be noted by placing a sticker on the meter, and shall be of the visible break type in a metal enclosure which can be secured by a padlock. If the EDS is not located directly adjacent to the meter, the Customer shall be responsible for ensuring the location of the EDS is properly and legibly identified for so long as the generating facility is operational. The disconnect switch shall be accessible to Kenergy personnel at all times. Kenergy may waive the requirement for an EDS for a generating facility at its sole discretion, and on a case-by-case basis, upon review of the generating facility operating parameters and if permitted under Kenergy's safety and operating protocols.

Kenergy shall establish a training protocol for line workers on the location and use of the EDS, and shall require that the EDS be used when appropriate, and that the switch be turned back on once the disconnection is no longer necessary.

9. Kenergy shall have the right and authority at Kenergy's sole discretion to isolate the generating facility or require the Customer to discontinue operation of the generating facility if Kenergy believes that: (a) continued interconnection and parallel operation of the generating facility with Kenergy's electric system creates or contributes (or may create or contribute) to a system emergency on either Kenergy's or Customer's electric system; (b) the generating facility is not in compliance with the requirements of this tariff, and the noncompliance adversely affects the safety, reliability or power quality of Kenergy's electric system; or (c) the generating facility interferes with the operation of Kenergy's electric system. In non-emergency situations, Kenergy shall give Customer notice of noncompliance including a description of the specific noncompliance condition and allow Customer a reasonable time to cure the noncompliance prior to isolating the generating facilities. In emergency situations, when Kenergy is unable to immediately isolate or cause the Customer to isolate only the generating facility, Kenergy may isolate the Customer's entire facility.

DATE OF ISSUE April 1, 2009

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ISSUED BY Sanford Morick

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

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Original SHEET NO. 460

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SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

- 10. Customer shall agree that, without the prior written permission from Kenergy, no changes shall be made to the generating facility as initially approved.
11. To the extent permitted by law, the Customer shall protect, indemnify, and hold harmless Kenergy and its directors, officers, employees, agents, representatives and contractors against and from all loss, claims, actions or suits, including costs and attorneys fees, for or on account of any injury or death of persons or damage to property caused by the Customer or the Customer's employees, agents, representatives and contractors in tampering with, repairing, maintaining or operating the Customer's generating facility or any related equipment or any facilities owned by Kenergy except where such injury, death or damage was caused or contributed to by the fault or negligence of Kenergy or its employees, agents, representatives, or contractors.
12. The Customer shall maintain general liability insurance coverage (through a standard homeowner's, commercial, or other policy) for Level 1 generating facilities. Customer shall, upon request, provide Kenergy with proof of such insurance at the time that application is made for net metering.
13. By entering into an Interconnection Agreement, or by inspection, if any, or by non-rejection, or by approval, or in any other way, Kenergy does not give any warranty, express or implied, as to the adequacy, safety, compliance with applicable codes or requirements, or as to any other characteristics, of the generating facility equipment, controls, and protective relays and equipment.

The liability of Kenergy to the Customer for injury to person and property shall be governed by the tariff(s) for the class of service under which the Customer is taking service.

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY [Signature]
TITLE President and CEO
BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1) By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
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CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

- 14. A Customer's generating facility is transferable to other persons or service locations only after notification to Kenergy has been made...
15. The Customer shall retain any and all Renewable Energy Credits (RECs) that may be generated by their generating facility.

Effective Term and Termination Rights

This Agreement becomes effective when executed by both parties and shall continue in effect until terminated. This Agreement may be terminated as follows: (a) Customer may terminate this Agreement at any time by giving Kenergy at least sixty (60) days' written notice; (b) Kenergy may terminate upon failure by the Customer to continue ongoing operation of the generating facility; (c) either party may terminate by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the terms and conditions of the Agreement or the Rules or any rate schedule, tariff, regulation, contract, or policy of Kenergy, so long as the notice specifies the basis for termination and there is opportunity to cure the default; (d) Kenergy may terminate by giving the Customer at least thirty (30) days notice in the event that there is a material change in an applicable law, regulation or statute affecting this Agreement or which renders the system out of compliance with the new law or statute.

DATE OF ISSUE April 1, 2009
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ISSUED BY [Signature]
(Signature of Officer)
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
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SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

I hereby certify that, to the best of my knowledge, all of the information provided in this Application is true, and I agree to abide by all the Terms and Conditions included in this Application for Interconnection and Net Metering and Kenergy's Net Metering Tariff.

Customer Signature Date

Title

KENERGY APPROVAL SECTION

When signed below by a Kenergy representative, Application for Interconnection and Net Metering is approved subject to the provisions contained in this Application and as indicated below.

Kenergy inspection and witness test: [ ] Required [ ] Waived

If Kenergy inspection and witness test is required, Customer shall notify Kenergy within 3 business days of completion of the generating facility installation and schedule an inspection and witness test with Kenergy to occur within 10 business days of completion of the generating facility installation or as otherwise agreed to by Kenergy and the Customer. Unless indicated below, the Customer may not operate the generating facility until such inspection and witness test is successfully completed. Additionally, the Customer may not operate the generating facility until all other terms and conditions in the Application have been met.

Call to schedule an inspection and witness test.

Pre-Inspection operational testing not to exceed two hours: [ ] Allowed [ ] Not Allowed

If Kenergy inspection and witness test is waived, operation of the generating facility may begin when installation is complete, and all other terms and conditions in the Application have been met.

Additions, Changes, or Clarifications to Application Information:

[ ] None [ ] As specified here:

Approved by: Date:

Printed Name: Title:

DATE OF ISSUE April 1, 2009
Month / Date / Year

DATE EFFECTIVE April 30, 2009
Month / Date / Year

ISSUED BY (Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1) By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
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CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

LEVEL 2
Application For Interconnection And Net Metering

Use this Application form when generating facility is not inverter-based or is not certified by a nationally recognized testing laboratory to meet the requirements of UL 1741 or does not meet any of the additional requirements under Level 1.

Submit this Application along with an application fee of \$100 to: Kenergy Corp., P. O. Box 18, Henderson, KY 42419-0018

If you have questions regarding this Application or its status, contact Kenergy at: (270)826-3991

Customer Name: Account Number:

Customer Address:

Project Contact Person:

Phone No.: Email Address (Optional):

Provide names and contact information for other contractors, installers, or engineering firms involved in the design and installation of the generating facilities:

[Blank lines for contractor information]

Total Generating Capacity of Generating Facility:

Type of Generator: [ ] Inverter-Based [ ] Synchronous [ ] Induction

Power Source: [ ] Solar [ ] Wind [ ] Hydro [ ] Biogas [ ] Biomass

Adequate documentation and information must be submitted with this application to be considered complete. Typically this should include the following:

DATE OF ISSUE April 1, 2009
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ISSUED BY [Signature]
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director





Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

Original SHEET NO. 46S

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SHEET NO.

CLASSIFICATION OF SERVICE

Schedule 46 - Net Metering Tariff

- 1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with Kenergy's distribution system, including generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, current transformers, wire sizes, equipment ratings, and transformer connections.
2. Control drawings for relays and breakers.
3. Site Plans showing the physical location of major equipment.
4. Relevant ratings of equipment. Transformer information should include capacity ratings, voltage ratings, winding arrangements, and impedance.
5. If protective relays are used, settings applicable to the interconnection protection. If programmable relays are used, a description of how the relay is programmed to operate as applicable to interconnection protection.
6. A description of how the generator system will be operated including all modes of operation.
7. For inverters, the manufacturer name, model number, and AC power rating. For certified inverters, attach documentation showing that inverter is certified by a nationally recognized testing laboratory to meet the requirements of UL 1741.
8. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X''d).
9. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

Customer Signature: Date:

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY Sanford Meuck
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1) By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED

Community, Town or City

PSC NO. 2

Original SHEET NO. 46T

CANCELLING PSC NO. 1

SHEET NO.

<b>CLASSIFICATION OF SERVICE</b>
Schedule 46 - Net Metering Tariff

**LEVEL 2**  
**INTERCONNECTION AGREEMENT**

**THIS INTERCONNECTION AGREEMENT** (Agreement) is made and entered into this \_\_\_ day of \_\_\_\_\_, 20\_\_\_, by and between \_\_\_\_\_ (Kenergy Corp.), and \_\_\_\_\_ (Customer). Kenergy and Customer are hereinafter sometimes referred to individually as "Party" or collectively as "Parties".

**WITNESSETH:**

**WHEREAS**, Customer is installing, or has installed, generating equipment, controls, and protective relays and equipment (Generating Facility) used to interconnect and operate in parallel with Kenergy's electric system, which Generating Facility is more fully described in Exhibit A, attached hereto and incorporated herein by this Agreement, and as follows:

Location: \_\_\_\_\_

Generator Size and Type: \_\_\_\_\_

**NOW, THEREFORE**, in consideration thereof, Customer and Kenergy agree as follows:

Kenergy agrees to allow Customer to interconnect and operate the Generating Facility in parallel with Kenergy's electric system and Customer agrees to abide by Kenergy's Net Metering Tariff and all the Terms and Conditions listed in this Agreement including any additional conditions listed in Exhibit A.

**Terms and Conditions:**

To interconnect to Kenergy's distribution system, the Customer's generating facility shall comply with the following terms and conditions:

1. Kenergy shall provide Customer net metering services, without charge for standard metering equipment, through a standard kilowatt-hour metering system capable of measuring the flow of electricity in two (2) directions. If the Customer requests any additional meter or meters or distribution upgrades are needed to monitor the flow in each direction, such installations shall be at the Customer's expense.

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ISSUED BY *Stanford Moudy*

(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2008-00169 DATED January 8, 2009

**PUBLIC SERVICE COMMISSION  
OF KENTUCKY  
EFFECTIVE  
4/30/2009  
PURSUANT TO 807 KAR 5:011  
SECTION 9 (1)**

By *J. D. Brown*  
Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
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SHEET NO.

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Schedule 46 - Net Metering Tariff

- 2. Customer shall install, operate, and maintain, at Customer's sole cost and expense, any control, protective, or other equipment on the Customer's system required by Kenergy's technical interconnection requirements based on IEEE 1547, the NEC, accredited testing laboratories such as Underwriters Laboratories, and the manufacturer's suggested practices for safe, efficient, and reliable operation of the generating facility in parallel with Kenergy's electric system.
3. The generating facility shall comply with, and Customer shall represent and warrant its compliance with: (a) any applicable safety and power quality standards established by the Institute of Electrical and Electronics Engineers (IEEE) and accredited testing laboratories such as Underwriters Laboratories (UL); (b) the National Electrical Code (NEC) as may be revised from time to time; (c) Kenergy's rules, regulations, and Kenergy's Service Regulations as contained in Kenergy's Retail Electric Tariff as may be revised from time to time with the approval of the Kentucky Public Service Commission (Commission); (d) the rules and regulations of the Commission, as such rules and regulations may be revised from time to time by the Commission; and (e) all other applicable local, state, and federal codes and laws, as the same may be in effect from time to time.
4. Any changes or additions to Kenergy's system required to accommodate the generating facility shall be considered excess facilities. Customer shall agree to pay Kenergy for actual costs incurred for all such excess facilities prior to construction.
5. Customer shall operate the generating facility in such a manner as not to cause undue fluctuations in voltage, intermittent load characteristics or otherwise interfere with the operation of Kenergy's electric system.

DATE OF ISSUE April 1, 2009
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ISSUED BY [Signature]
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
Original SHEET NO. 46V
CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

- 6. Customer shall be responsible for protecting, at Customer's sole cost and expense, the generating facility from any condition or disturbance on Kenergy's electric system, including, but not limited to, voltage sags or swells, system faults, outages, loss of a single phase of supply, equipment failures, and lightning or switching surges, except that Kenergy shall be responsible for repair of damage caused to the generating facility resulting solely from the negligence or willful misconduct on the part of Kenergy.
7. After initial installation, Kenergy shall have the right to inspect and/or witness commissioning tests, as specified in the Level 1 or Level 2 Application and approval process. Following the initial testing and inspection of the generating facility and upon reasonable advance notice to Customer, Kenergy shall have access at reasonable times to the generating facility to perform reasonable on-site inspections to verify that the installation, maintenance and operation of the generating facility comply with the requirements of this tariff.
8. For Level 2 generating facilities, where required by Kenergy, an eligible Customer shall furnish and install on Customer's side of the point of common coupling a safety disconnect switch which shall be capable of fully disconnecting the Customer's energy generating equipment from Kenergy's electric service under the full rated conditions of the Customer's generating facility. The external disconnect switch (EDS) shall be located adjacent to Kenergy's meters or the location of the EDS shall be noted by placing a sticker on the meter and shall be of the visible break type in a metal enclosure which can be secured by a padlock. If the EDS is not located directly adjacent to the meter, the Customer shall be responsible for ensuring the location of the EDS is properly and legibly identified for so long as the generating facility is operational. The disconnect switch shall be accessible to Kenergy personnel at all times. Kenergy may waive the requirement for an EDS for a generating facility at its sole discretion, and on a case-by-case basis, upon review of the generating facility operating parameters and if permitted under Kenergy's safety and operating protocols.

Kenergy shall establish a training protocol for line workers on the location and use of the EDS, and shall require that the EDS be used when appropriate, and that the switch be turned back on once the disconnection is no longer necessary.

DATE OF ISSUE April 1, 2009
Month / Date / Year
DATE EFFECTIVE April 30, 2009
Month / Date / Year
ISSUED BY [Signature]
(Signature of Officer)
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
Original SHEET NO. 46W
CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

- 9. Kenergy shall have the right and authority at Kenergy's sole discretion to isolate the generating facility or require the Customer to discontinue operation of the generating facility if Kenergy believes that: (a) continued interconnection and parallel operation of the generating facility with Kenergy's electric system creates or contributes (or may create or contribute) to a system emergency on either Kenergy's or Customer's electric system; (b) the generating facility is not in compliance with the requirements of this tariff, and the noncompliance adversely affects the safety, reliability or power quality of Kenergy's electric system; or (c) the generating facility interferes with the operation of Kenergy's electric system. In non-emergency situations, Kenergy shall give Customer notice of noncompliance including a description of the specific noncompliance condition and allow Customer a reasonable time to cure the noncompliance prior to isolating the Generating Facilities. In emergency situations, where Kenergy is unable to immediately isolate or cause the Customer to isolate only the generating facility, Kenergy may isolate the Customer's entire facility.
10. Customer shall agree that, without the prior written permission from Kenergy, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection and Net Metering" which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components not resulting in increases in generating facility capacity is allowed without approval.
11. To the extent permitted by law, the Customer shall protect, indemnify, and hold harmless Kenergy and its directors, officers, employees, agents, representatives and contractors against and from all loss, claims, actions or suits, including costs and attorneys fees, for or on account of any injury or death of persons or damage to property caused by the Customer or the Customer's employees, agents, representatives and contractors in tampering with, repairing, maintaining, or operating the Customer's generating facility or any related equipment or any facilities owned by Kenergy except where such injury, death or damage was caused or contributed to by the fault or negligence of Kenergy or its employees, agents, representatives, or contractors.

The liability of Kenergy to the Customer for injury to person and property shall be governed by the tariff(s) for the class of service' under which the Customer is taking service.

DATE OF ISSUE April 1, 2009
Month / Date / Year
DATE EFFECTIVE April 30, 2009
Month / Date / Year
ISSUED BY [Signature]
(Signature of Officer)
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
Original SHEET NO. 46X
CANCELLING PSC NO. 1
SHEET NO.

CLASSIFICATION OF SERVICE
Schedule 46 - Net Metering Tariff

- 12. The Customer shall maintain general liability insurance coverage...
13. By entering into an Interconnection Agreement...
14. A Customer's generating facility is transferable...
15. The Customer shall retain any and all Renewable Energy Credits (RECs)...

DATE OF ISSUE April 1, 2009
DATE EFFECTIVE April 30, 2009
ISSUED BY [Signature]
TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE 4/30/2009
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)
By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED
Community, Town or City
PSC NO. 2
Original SHEET NO. 46Y
CANCELLING PSC NO. 1
SHEET NO.

Table with 1 row and 1 column: CLASSIFICATION OF SERVICE, Schedule 46 - Net Metering Tariff

Effective Term and Termination Rights

This Agreement becomes effective when executed by both parties and shall continue in effect until terminated. This Agreement may be terminated as follows: (a) Customer may terminate this Agreement at any time by giving Kenergy at least sixty (60) days' written notice; (b) Kenergy may terminate upon failure by the Customer to continue ongoing operation of the generating facility; (c) either party may terminate by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the terms and conditions of the Agreement or the Rules or any rate schedule, tariff, regulation, contract, or policy of Kenergy, so long as the notice specifies the basis for termination and there is opportunity to cure the default; (d) Kenergy may terminate by giving the Customer at least thirty (30) days notice in the event that there is a material change in an applicable law, regulation, or statute affecting this Agreement or which renders the system out of compliance with the new law or statute.

IN WITNESS WHEREOF, the Parties have executed this Agreement, effective as of the date first above written.

KENERGY CORP.

CUSTOMER

By: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name \_\_\_\_\_

Printed Name \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

DATE OF ISSUE April 1, 2009
Month / Date / Year

DATE EFFECTIVE April 30, 2009
Month / Date / Year

ISSUED BY [Signature]
(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. 2008-00169 DATED January 8, 2009

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE 4/30/2009 PURSUANT TO 807 KAR 5:011 SECTION 9 (1) By [Signature] Executive Director



Henderson, Kentucky

FOR ALL TERRITORY SERVED  
Community, Town or City  
PSC NO. 2  
Original SHEET NO. 46Z  
CANCELLING PSC NO. 1  
SHEET NO.

<b>CLASSIFICATION OF SERVICE</b>
Schedule 46 - Net Metering Tariff

**Exhibit A**

Exhibit A will contain additional detailed information about the Generating Facility such as a single line diagram, relay settings, and a description of operation.

When construction of Kenergy facilities is required, Exhibit A will also contain a description and associated cost.

Exhibit A will also specify requirements for a Kenergy inspection and witness test and when limited operation for testing or full operation may begin.

DATE OF ISSUE April 1, 2009  
Month / Date / Year

DATE EFFECTIVE April 30, 2009  
Month / Date / Year

ISSUED BY *Stanford Noveck*  
(Signature of Officer)

TITLE President and CEO

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION  
IN CASE NO. 2008-00169 DATED January 8, 2009

**PUBLIC SERVICE COMMISSION  
OF KENTUCKY  
EFFECTIVE  
4/30/2009  
PURSUANT TO 807 KAR 5:011  
SECTION 9 (1)**

By *[Signature]*  
Executive Director



## **Exhibit B**

## APPLICATION AND APPROVAL PROCESS

Applications will be submitted by the Member and reviewed and processed by Kenergy according to either Level 1 or Level 2 processes defined below.

Kenergy may reject an Application for violations of any applicable code, standard, or regulation related to reliability or safety; however, Kenergy will work with the Member to resolve those issues to the extent practicable. Members may contact Kenergy regarding status of an Application or with questions prior to submitting an Application.

An eligible Member-generator shall mean a retail electric Member of Kenergy with a generating facility that:

- (1) Has a rated capacity of not greater than (100) kilowatts;
- (2) Is located on the Member's premises;
- (3) Is owned and operated by the Member;
- (4) Is connected in parallel with Kenergy's electric distribution system; and
- (5) Has the primary purpose of supplying all or part of the Member's own electricity requirements.

Should Kenergy determine, in its sole discretion, that the proposed generating facility does not meet all the above criteria, the Kenergy reserves the right to reject the Application and deny service.

### LEVEL 1

A Level 1 Application shall be used if the generating facility is inverter-based and is certified by a nationally recognized testing laboratory to meet the requirements of Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources" (UL 1741). Kenergy will approve the Level 1 Application if the generating facility also meets all of the following conditions:

- (1) For interconnection to a radial distribution circuit, the aggregated generation on the circuit, including the proposed generating facility, will not exceed 15% of the Line Section's most recent annual one-hour peak load. A line section is the smallest part of the primary distribution system the generating facility could remain connected to after operation of any sectionalizing devices.

- (2) If the proposed generating facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed generating facility, will not exceed the smaller of 20 kVA or the nameplate rating of the transformer.
- (3) If the proposed generating facility is single-phase and is to be interconnected on a center tap neutral of a 240-volt service, its addition shall not create an imbalance between the two sides of the 240-volt service of more than 20% of the manufacturer's rating of the service transformer.
- (4) If the generating facility is to be connected to three-phase, three wire primary utility distribution lines, the generator shall appear as a phase-to-phase connection at the primary utility distribution line.
- (5) If the generating facility is to be connected to three-phase, four wire primary utility distribution lines, the generator shall appear to the primary utility distribution line as an effectively grounded source.
- (6) The interconnection will not be on an "area" or "spot network". "Area" and "spot networks" are systems in which multiple transformers are interconnected on the secondary side and multiple primary voltage circuits are used to feed the transformers. A "spot network" is typically used to serve a single building and all the transformers are in one location. An "area network" typically serves multiple members with secondary conductors covering multiple city blocks and with transformers at various locations.
- (7) Kenergy does not identify any violations of any applicable provisions of Institute of Electrical and Electronics Engineers Standard 1547(IEEE 1547), "Standard for Interconnecting Distributed Resources with Electric Power Systems."
- (8) No construction of facilities by Kenergy on its own system will be required to accommodate the generating facility.

If the generating facility does not meet all of the above listed criteria, Kenergy, in its sole discretion, may either: 1) approve the generating facility under the Level 1 Application if Kenergy determines that the generating facility can be safely and reliably connected to Kenergy's system; or 2) deny the Application as submitted under the Level 1 Application.

Kenergy shall notify the Member whether the Application is approved or denied, based on the criteria provided in this section.

If the Application lacks complete information, Kenergy shall notify the Member that additional information is required, including a list of such additional information. The time between notification and receipt of required additional information will add to the time to process the Application.

The approval will be subject to successful completion of an initial installation inspection and witness test. The Member shall notify Kenergy within 3 business days of completion of the

generating facility installation and schedule an inspection and witness test with Kenergy to occur within 10 business days of completion of the generator facility installation or as otherwise agreed to by Kenergy and the Member. The Member may not operate the generating facility until successful completion of such inspection and witness test, unless Kenergy expressly permits operational testing not to exceed two hours. If the installation fails the inspection or witness test due to noncompliance with any provision in the Application and Kenergy approval, the Member shall not operate the generating facility until any and all noncompliance is corrected and re-inspected by Kenergy.

If the Application is denied, Kenergy will supply the Member with reasons for denial. The Member may resubmit under Level 2 if appropriate

## LEVEL 2

A Level 2 Application is required under any of the following:

- (1) The generating facility is not inverter based;
- (2) The generating facility uses equipment that is not certified by a nationally recognized testing laboratory to meet the requirements of UL, 1741; or
- (3) The generating facility does not meet one or more of the additional conditions under Level 1. Kenergy will approve the Level 2 Application if the generating facility meets Kenergy's technical interconnection requirements, which are based on IEEE 1547.

Kenergy will process the Level 2 Application within 30 business days of receipt of a complete Application. Within that time Kenergy will respond in one of the following ways:

- (1) The Application is approved and Kenergy will provide the Member with an interconnection Agreement to sign.
- (2) If construction or other changes to Kenergy's distribution system are required, the cost will be the responsibility of the Member. Kenergy will give notice to the Member and offer to meet to discuss estimated costs and construction timeframe. Should the Member agree to pay for costs and proceed, Kenergy will provide the Member with an interconnection Agreement to sign within a reasonable time.
- (3) The Application is denied. Kenergy will supply the Member with reasons for denial and offer to meet to discuss possible changes that would result in Kenergy approval. Member may resubmit Application with changes.

If the Application lacks complete information, Kenergy shall notify the Member that additional information is required, including a list of such additional information.

The Member may not operate the generating facility until an Interconnection Agreement is signed by the Member and all necessary conditions stipulated in the agreement are met.

## TERMS AND CONDITIONS FOR INTERCONNECTION

### **To interconnect to Kenergy's distribution system, the Member's generating facility shall comply with the following terms and conditions:**

- (1) Kenergy shall provide the Member metering services, without charge for standard metering equipment, through a standard kilowatt-hour metering system capable of measuring the flow of electricity in two (2) directions. If the Member requests any additional meter or meters or distribution upgrades are needed to monitor the flow in each direction, such installations shall be at the Member's expense.
- (2) The Member shall install, operate, and maintain, at Member's sole cost and expense, any control, protective, or other equipment on the Member's system required by Kenergy's technical interconnection requirements based on IEEE 1547, the National Electric Code "NEC", accredited testing laboratories such as Underwriters Laboratories, and the manufacturer's suggested practices for safe, efficient and reliable operation of the generating facility is parallel with Kenergy's electric system. Member shall bear full responsibility for the installation, maintenance and safe operation of the generating facility. Upon reasonable request from Kenergy, the Member shall demonstrate generating facility compliance.
- (3) The generating facility shall comply with, and the Member shall represent and warrant its compliance with: (a) any applicable safety and power quality standards established by IEEE and accredited testing laboratories such as Underwriters Laboratories; (b) the NEC as may be revised from time to time; (c) Kenergy's rules, regulations, and Kenergy's Service Regulations as contained in Kenergy's Retail Electric Tariff as may be revised from time to time with the approval of the Kentucky Public Service Commission (Commission); (d) the rules and regulations of the Commission, as such rules and regulations may be revised from time to time by the Commission; and (e) all other applicable local, state, and federal codes and laws, as the same may be in effect from time to time. Where required by law, Member shall pass an electrical inspection of the generating facility by a local authority having jurisdiction over the installation.
- (4) Any changes or additions to Kenergy's system required to accommodate the generating facility shall be considered excess facilities. Member shall agree to pay Kenergy for actual costs incurred for all such excess facilities prior to construction.
- (5) Member shall operate the generating facility in such a manner as not to cause undue fluctuations in voltage, intermittent load characteristics or otherwise interfere with the operation of Kenergy's electric system. At all times when the generating facility is being operated in parallel with Kenergy's electric system, Member shall so operate the generating facility in such a manner that no adverse impacts will be produced thereby to the service quality rendered by Kenergy to any of its other Members or to any electric system

interconnected with Kenergy's electric system. Member shall agree that the interconnection and operation of the generating facility is secondary to, and shall not interfere with, Kenergy's ability to meet its primary responsibility of furnishing reasonably adequate service to its Members.

- (6) Member shall be responsible for protecting, at Member's sole cost and expense, the generating facility from any condition or disturbance on Kenergy's electric system, including, but not limited to, voltage sags or swells, system faults, outages, loss of a single phase of supply, equipment failures, and lightning or switching surges, except that Kenergy shall be responsible for repair of damage caused to the generating facility resulting solely from the negligence or willful misconduct on the part of Kenergy.
- (7) After initial installation, Kenergy shall have the right to inspect and/or witness commissioning tests, as specified in the Level 1 or Level 2 Application and approval process. Following the initial testing and inspection of the generating facility and upon reasonable advance notice to Member, Kenergy shall have access at reasonable times to the generating facility to perform reasonable onsite inspections to verify that the installation, maintenance, and operation of the generating facility comply with the requirements of this tariff.
- (8) For Level 1 and 2 generating facilities, where required by Kenergy, an eligible Member shall furnish and install on Member's side of the point of common coupling a safety disconnect switch which shall be capable of fully disconnecting the Member's energy generating equipment from Kenergy's electric service under the full rated conditions of the Member's generating facility. The external disconnect switch (EDS) shall be located adjacent to Kenergy's meters or the location of the EDS shall be noted by placing a sticker on the meter, and shall be of the visible break type in a metal enclosure which can be secured by a padlock. If the EDS is not located directly adjacent to the meter, the Member shall be responsible for ensuring that the location of the EDS is properly and legibly identified for so long as the generating facility is operational. The disconnect switch shall be accessible to Kenergy personnel at all times. Kenergy may waive the requirement for an EDS for a generating facility at its sole discretion, and on a case-by-case basis, upon review of the generating facility operating parameters and if permitted under Kenergy's safety and operating protocols. Kenergy shall establish a training protocol for line workers on the location and use of the EDS, and shall require that the EDS be used when appropriate, and that the switch be turned back on once the disconnection is no longer necessary.
- (9) Kenergy shall have the right and authority at Kenergy's sole discretion to isolate the generating facility or require the Member to discontinue operation of the generating facility if Kenergy believes that: (a) continued interconnection and parallel operation of the generating facility with Kenergy's electric system creates or contributes (or may create or contribute) to a system emergency on either Kenergy's or Member's electric system; (b) the generating facility is not in compliance with the requirements of this agreement, and the noncompliance adversely affects the safety, reliability, or power quality of Kenergy's electric system; or (c) the generating facility interferes with the operation of Kenergy's electric system. In non-

emergency situations, Kenergy shall give Member notice of noncompliance including a description of the specific noncompliance condition and allow Member a reasonable time to cure the noncompliance prior to isolating the generating facilities. In emergency situations, when Kenergy is unable to immediately isolate or cause the Member to isolate only the generating facility, Kenergy may isolate the Member's entire facility.

- (10) Member shall agree that, without the prior written permission from Kenergy, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection " which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity is allowed without approval.
- (11) To the extent permitted by law, the Member shall protect, indemnify, and hold harmless Kenergy and its directors, officers, employees, agents, representatives and contractors against and from all loss, claims, actions or suits, including costs and attorney's fees, for or on account of any injury or death of persons or damage to property caused by the Member or the Member's employees, agents, representatives and contractors in tampering with, repairing, maintaining, or operating the Member's generating facility or any related equipment or any facilities owned by Kenergy except where such injury, death or damage was caused or contributed to by the fault or negligence of Kenergy or its employees, agents, representatives, or contractors. The liability of Kenergy to the Member for injury to person and property shall be governed by the tariff(s) for the class of service under which the Member is taking service.
- (12) The Member shall maintain general liability insurance coverage (through a standard homeowner's, commercial, or other policy) for both Level 1 and Level 2 generating facilities. Member shall, upon request, provide Kenergy with proof of such insurance at the time that application is made.
- (13) By entering into an Interconnection Agreement, or by inspection, if any, or by non-rejection, or by approval, or in any other way, Kenergy does not give any warranty, express or implied, as to the adequacy, safety, compliance with applicable codes or requirements, or as to any other characteristics, of the generating facility equipment, controls, and protective relays and equipment.
- (14) A Member's generating facility is transferable to other persons or service locations only after notification to Kenergy has been made and verification that the installation is in compliance with this tariff. Upon written notification that an approved generating facility is being transferred to another person, Member, or location, Kenergy will verify that the installation is in compliance with this tariff and provide written notification to the Member(s) within 20 business days. If the installation is no longer in compliance with this tariff, Kenergy will notify the Member in writing and list what must be done to place the facility in compliance.
- (15) The Member shall retain any and all Renewable Energy Credits (RECs) that may be generated by their generating facility.

## Application for Interconnection

Use this application form only for a generating facility that is inverter based and certified by a nationally recognized testing Laboratory to meet the requirements of UL 1741.

Submit this Application to:

Kenergy Corp,  
P. O. Box 18,  
Henderson, KY 42419-0018

If you have questions regarding this Application or its status, contact Kenergy at: (800)844-4832

Member Name: ROGER D SHOCKLEE Account Number: [REDACTED]

Member Address: 666 BARRETT HILL RD. LIVERMORE, KY 42352

Member Phone No.: \_\_\_\_\_ Project Contact Person: Solar Energy Solutions

Phone No.: \_\_\_\_\_ E-mail Address (Optional): [REDACTED]

Provide names and contact information for other contractors, installers, or engineering firms involved in the design and installation of the generating Facilities: \_\_\_\_\_

Solar Energy Solutions

Member E-Mail Address: [REDACTED]

Energy Source: Solar Wind Hydro Biogas Biomass SOLAR

Inverter Manufacturer and Model #: Tesla, Tesla 7.6 kW Inverter, QTY:5

Inverter Power Rating: 7.6 kW, 38.00 kW AC TOTAL KW

Power Rating of Energy Source (ie., solar panels, wind turbine): 51.30 kW, (95) 540W Modules KW

Attach documentation showing that inverter is certified by a nationally recognized testing laboratory to meet the requirements of UL 1741.

Attach site drawing or sketch showing location of Kenergy's meter, energy source, Kenergy accessible disconnect switch, and inverter.

Attach single line drawing showing all electrical equipment from Kenergy's metering location to the energy source including switches, fuses, breakers, panels, transformers, inverters, energy source, wire size, equipment ratings, and transformer connections.

Expected Start-up Date: 12/4/23



# PHOTOVOLTAIC GROUND MOUNT SYSTEM

190 MODULES-SYSTEM SIZE STC (102.60 kW DC / 76.00 kW AC)  
 650 BARRETT HILL RD, LIVERMORE, KY, 42352 USA (37.53897, -87.09644)



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

## SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)

STC DC : (N) (190) 540 W = 102.60 kW

STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) NE SOLAR, NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR INVERTERS, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NE SOLAR NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NE SOLAR NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

## GOVERNING CODES

- [2017 NEC] 2017 NFPA 70 - NATIONAL ELECTRICAL CODE
- [2015 IMC] 2015 INTERNATIONAL MECHANICAL CODE
- [2015 IBC] 2015 INTERNATIONAL BUILDING CODE
- [2015 IPC] 2015 INTERNATIONAL PLUMBING CODE
- [2015 IECC] 2015 INTERNATIONAL ENERGY CONSERVATION CODE

## GENERAL NOTES

- 1) ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE WITH UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
- 2) THIS SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND UTILITY IS OBTAINED.
- 3) ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT SHALL BE WEATHERPROOF AND SHALL BE LISTED BY 'UL' FOR THE TYPE OF APPLICATION AND 'UL' LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- 4) WIRING METHOD SHALL BE EMT ABOVE GROUND MOUNTED IN CONCEALED SPACES (UNLESS APPROVED OTHERWISE) AND SCHEDULE-40 PVC FOR BELOW GROUND INSTALLATIONS UNLESS NOTED OTHERWISE.
- 5) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE CONDUCTOR IF NECESSARY.

## SHEET INDEX

PV-0.0	COVER SHEET
PV-1.0	SITE PLAN WITH MODULES
PV-1.1	ELECTRICAL EQUIPMENT DETAIL
PV-2.0	STRING DETAIL
PV-3.0	RACKING PLAN VIEW
PV-3.1	RACKING SIDE ELEVATION
PV-4.0	ELECTRICAL THREE LINE DIAGRAM
PV-4.1	ELECTRICAL THREE LINE DIAGRAM
PV-4.2	WIRING CALCULATION
PV-5.0	VOLTAGE DROP CALCULATION
PV-6.0	PLACARDS
PV-7+	EQUIPMENT SPECIFICATION

AHJ: MCLEAN (COUNTY OF), KENTUCKY  
 UTILITY: KENERGY CORP

## REVISIONS

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

## SIGNATURE & SEAL

## BUILDING OWNER INFO

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

## SHEET NAME

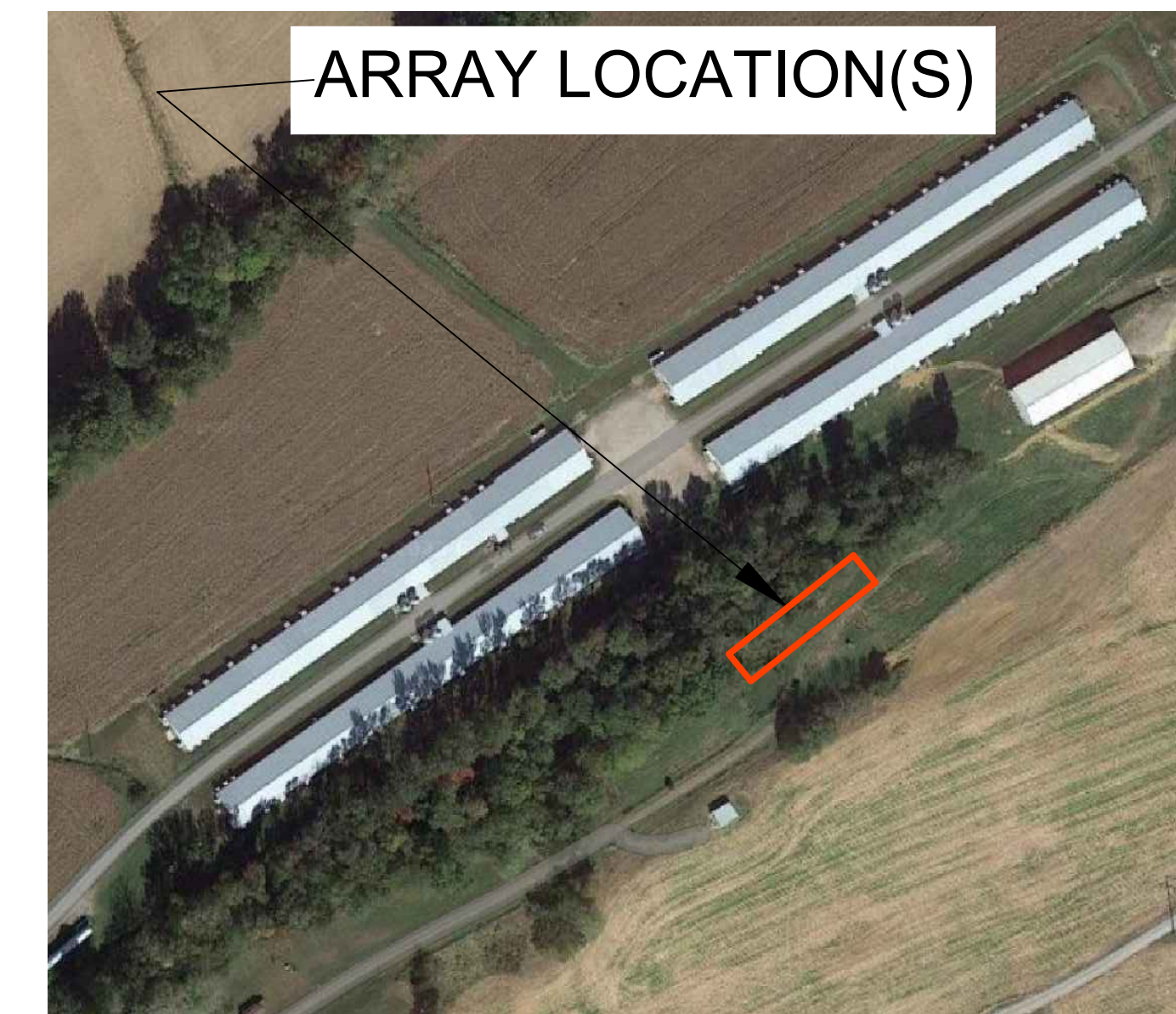
COVER SHEET

## SHEET SIZE

ANSI D  
 24" X 36"

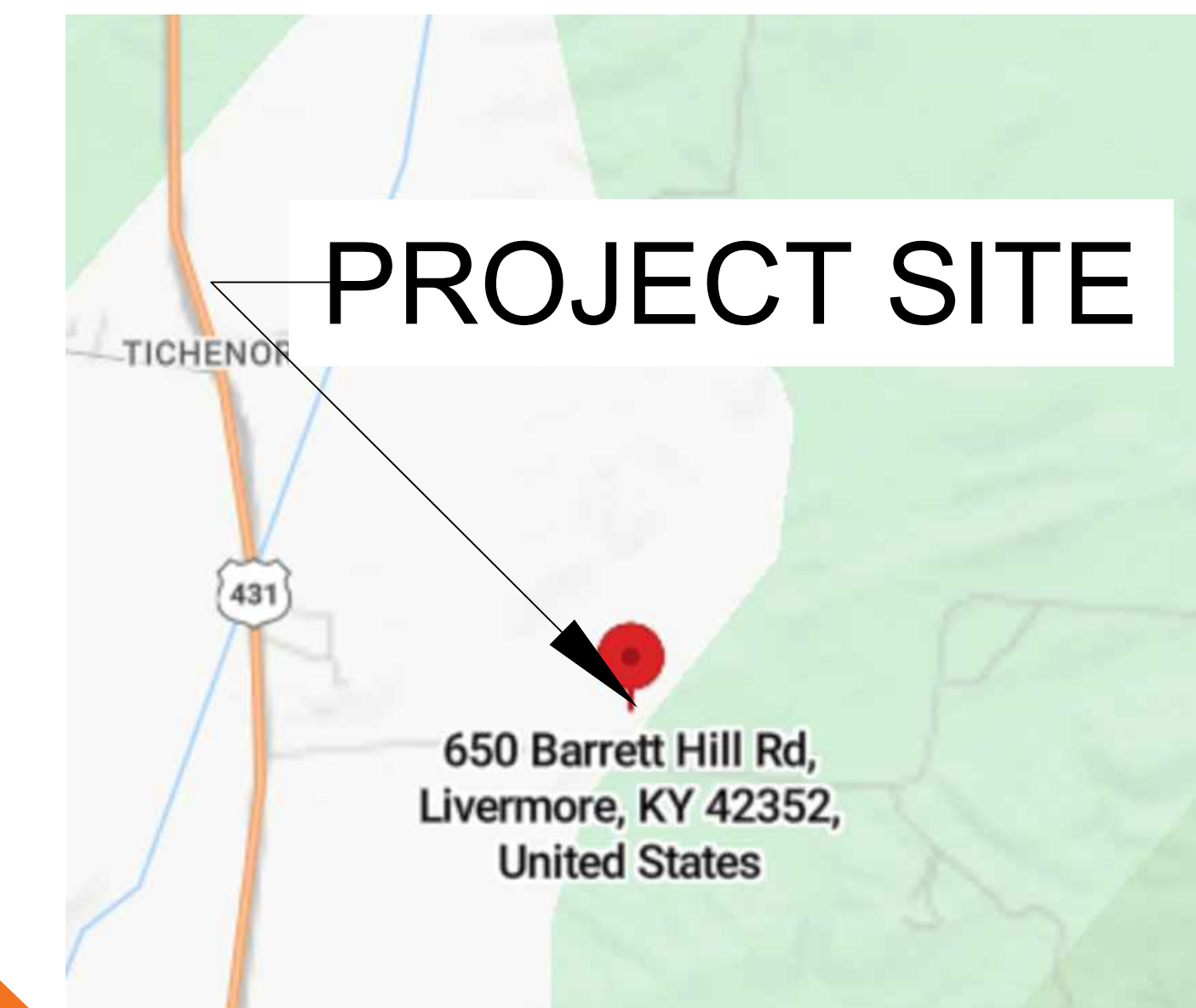
## SHEET NUMBER

PV-0.0



## BUILDING PHOTO

SCALE: NTS



## VICINITY MAP

SCALE: NTS





**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

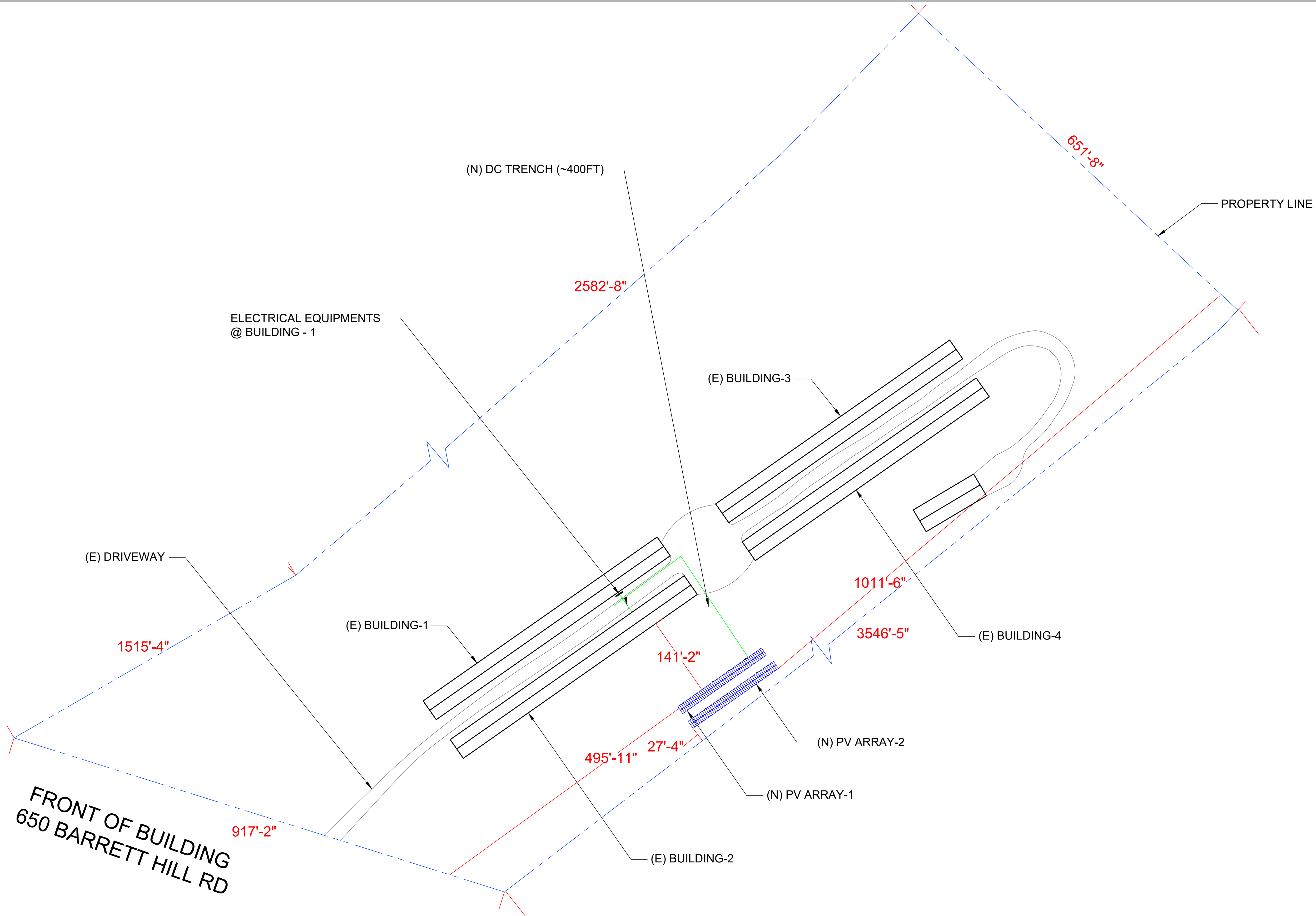
**SITE PLAN WITH  
MODULES**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-1.0**



**SITE PLAN  
WITH MODULES**  
SCALE: NTS

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**  
 STC DC : (N) (190) 540 W = 102.60 kW  
 STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) NE SOLAR NESE MODULES, NESE540-72MHB-M10
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

FIRE SETBACK	STRING DETAIL	<b>LEGEND</b>	CENTER TAP CONNECTOR (N/A)	TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN		INVERTER (NEW)	AC DISCONNECT UNFUSED (N/A)
OPTIMIZER	DIMENSIONS	MAIN SERVICE PANEL (EXISTING)	LOAD CENTER (NEW)	AC DISCONNECT FUSED (NEW)
MICRO-INVERTER	PROPERTY LINE	UTILITY METER (EXISTING)	SOLAREEDGE METER (N/A)	JUNCTION BOX (NEW)
ROOF ATTACHMENT	RAFTER/TRUSS	PRODUCTION METER (N/A)	BACKUP LOAD PANEL (N/A)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL	BATTERY (N/A)		
	FENCE			
	GATE			



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

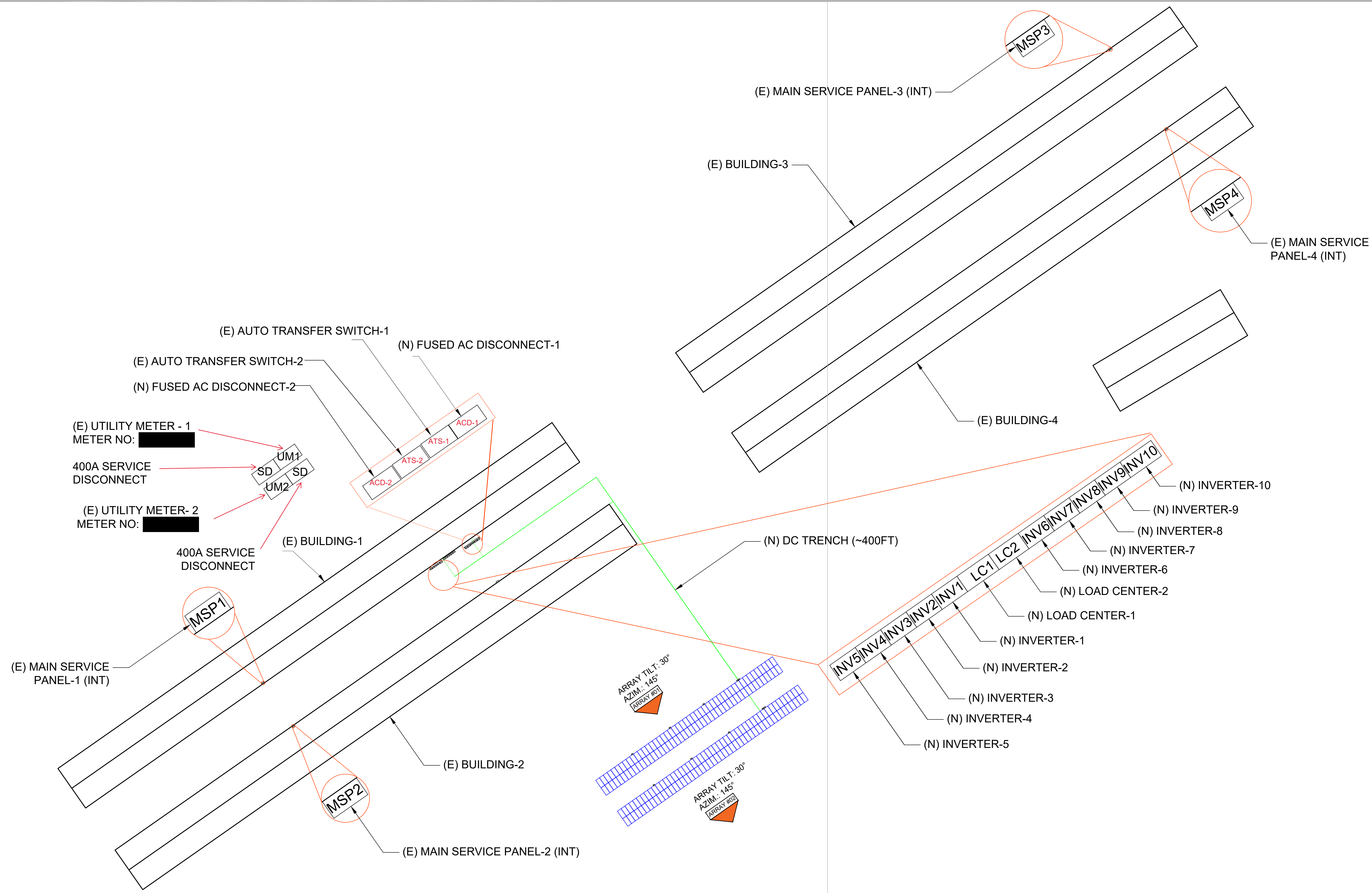
**ELECTRICAL EQUIPMENT DETAIL**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-1.1**



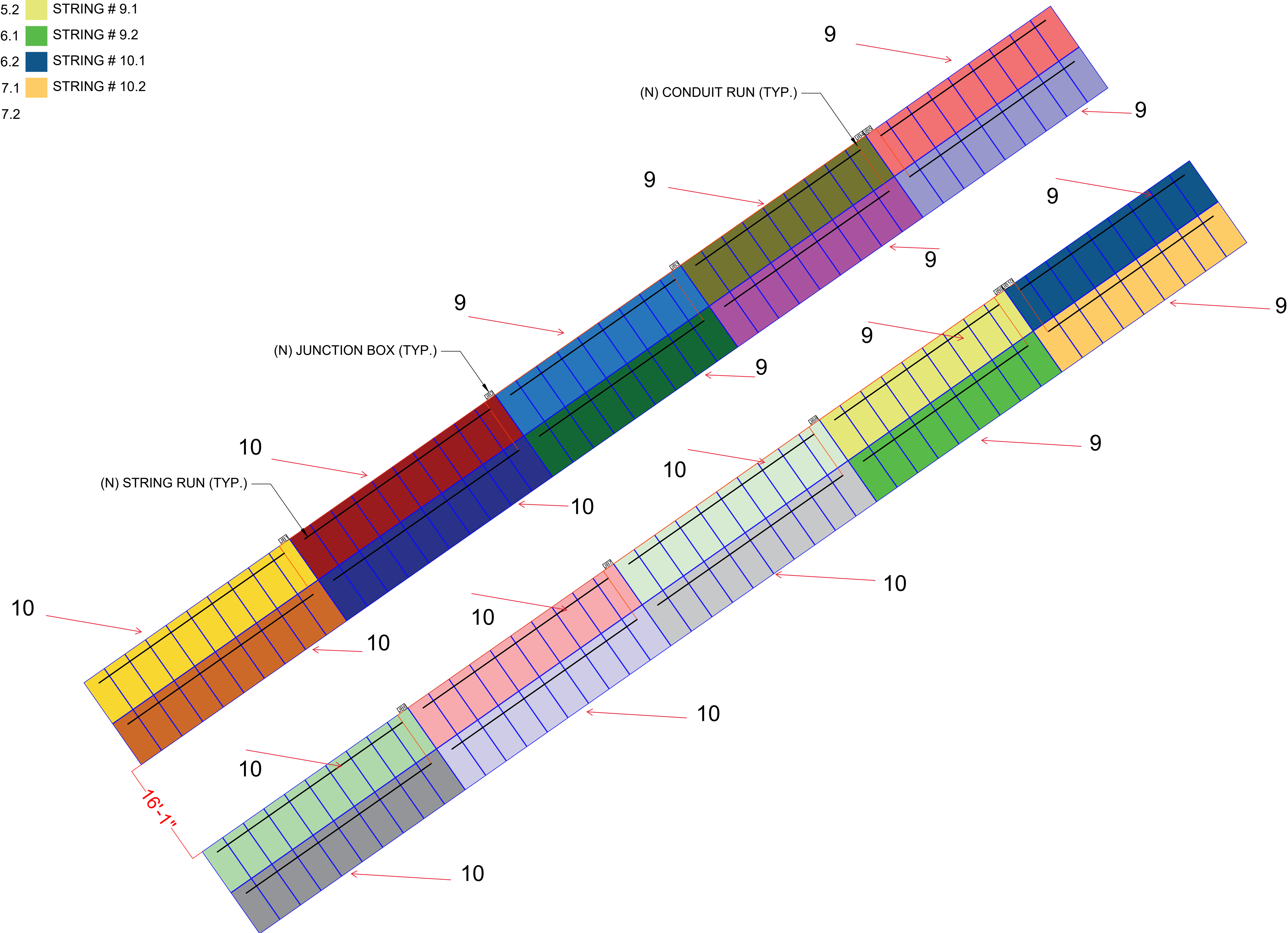
**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**

STC DC : (N) (190) 540 W = 102.60 kW  
 STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) NE SOLAR NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 BOVIET NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

FIRE SETBACK	STRING DETAIL	<b>LEGEND</b>	CENTER TAP CONNECTOR (N/A)	TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN	MAIN SERVICE PANEL (EXISTING)	INVERTER (NEW)	AC DISCONNECT UNFUSED (N/A)
OPTIMIZER	DIMENSIONS	UTILITY METER (EXISTING)	LOAD CENTER (NEW)	AC DISCONNECT FUSED (NEW)
MICRO-INVERTER	PROPERTY LINE	PRODUCTION METER (N/A)	SOLAREEDGE METER (N/A)	JUNCTION BOX (NEW)
ROOF ATTACHMENT	RAFTER/TRUSS	BATTERY (N/A)	BACKUP LOAD PANEL (N/A)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL			
	FENCE			
	GATE			

- STRING # 1.1
- STRING # 1.2
- STRING # 2.1
- STRING # 2.2
- STRING # 3.1
- STRING # 3.2
- STRING # 4.1
- STRING # 4.2
- STRING # 5.1
- STRING # 5.2
- STRING # 6.1
- STRING # 6.2
- STRING # 7.1
- STRING # 7.2
- STRING # 8.1
- STRING # 8.2
- STRING # 9.1
- STRING # 9.2
- STRING # 10.1
- STRING # 10.2



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

STRING DETAIL

**SHEET SIZE**

ANSI D  
24" X 36"

**SHEET NUMBER**

PV-2.0

**STRING DETAIL**  
SCALE: 1/8" = 1'-0"

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**  
STC DC : (N) (190) 540 W = 102.60 kW  
STC AC : (N) (10) 7680 W = 76.00 kW  

- (N) (190) NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

**LEGEND**

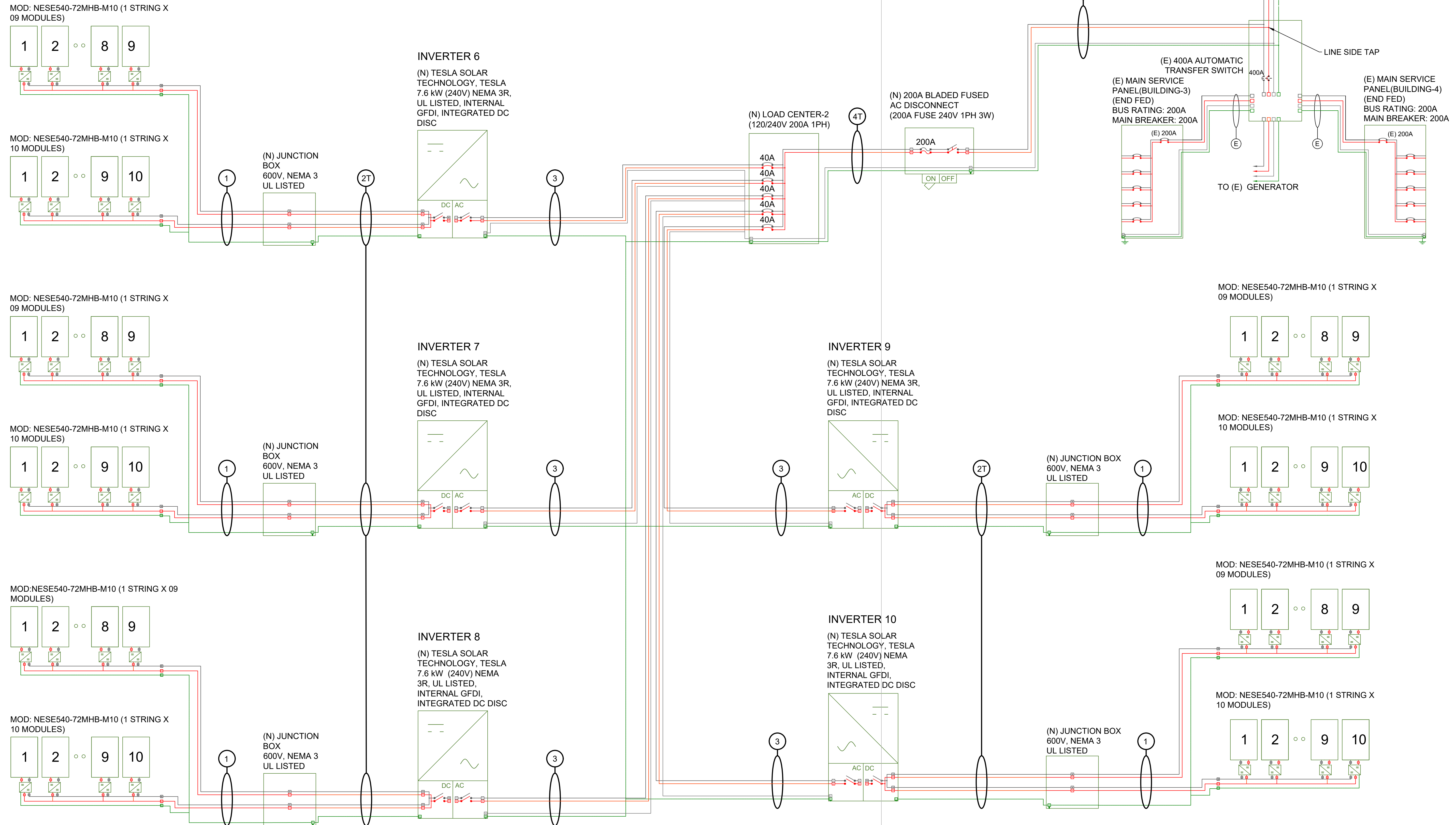
FIRE SETBACK	STRING DETAIL	CTC CENTER TAP CONNECTOR (N/A)	TFO TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN	INV INVERTER (NEW)	AC AC DISCONNECT UNFUSED (N/A)
OPTIMIZER	DIMENSIONS	MSP MAIN SERVICE PANEL (EXISTING)	ACD AC DISCONNECT FUSED (NEW)
MICRO-INVERTER	PROPERTY LINE	UM UTILITY METER (EXISTING)	JB JUNCTION BOX (NEW)
ROOF ATTACHMENT	RAFTER/TRUSS	PM PRODUCTION METER (N/A)	ATS AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL	SM SOLAREEDGE METER (N/A)	
	FENCE	BLP BACKUP LOAD PANEL (N/A)	
	GATE		

**SYSTEM SUMMARY STC (51.30 kW DC / 38.00 kW AC)**

STC DC : (N) (95) 540 W = 51.84 kW  
 STC AC : (N) (5) 7680 38.00 kW

- (N) (95) NESE540-72MHB-M10 MODULES
- (N) (5) TESLA 7.6 kW INVERTERS (240V) INVERTERS
- (N) 5 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 5 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

**METER 2**



CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

**SHEET NAME**  
 ELECTRICAL THREE LINE DIAGRAM

**SHEET SIZE**  
 ANSI D  
 24" X 36"

**SHEET NUMBER**  
 PV-4.1

**ELECTRICAL THREE LINE DIAGRAM**  
 SCALE: NTS

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**

STC DC : (N) (190) 540 W = 102.60 kW  
 STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) BOVIET BVM7612M-540-H-HC-BF-DG MODULES
- (N) (10) SMA SOLAR TECHNOLOGY, SB7.7-1TP-US-41 (240V) INVERTERS
- (N) 10 STRINGS OF 10 BOVIET BVM7612M-540-H-HC-BF-DG MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 BOVIET BVM7612M-540-H-HC-BF-DG MODULES CONNECTED IN SERIES

**METER 1 (145771356)**

WIRE DETAILS																
WIRE TAG #	WIRE FROM	CONDUIT	WIRE QTY	WIRE QTY/ CONDUIT	WIRE GAUGE	WIRE TYPE	TEMP RATING	WIRE AMP	TEMP DE-RATE	CONDUIT FILL	WIRE OCP	TERMINAL 75°C RATING	OUTPUT CURRENT	NEUTRAL SIZE	GRND SIZE	GRND WIRE TYPE
1	ARRAY TO JUNCTION BOX	AIR	4	-	10 AWG	PV WIRE	90°			40 x 0.96 x - = 38.40A		35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	6 AWG	BARE CU
2T	JUNCTION BOX TO INVERTER	2" SCH 40 PVC (BELOW GROUND)	20	20	10 AWG	THWN-2	75°			50 x 0.94 x 0.5 = 23.5A		35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	10 AWG	THWN-2
3	INVERTER TO LC	3/4" EMT	3	3	8 AWG	THWN-2	75°			50 x 0.94 x1 = 47A		50A	32 x 1.25 = 40A	8 AWG	10 AWG	THWN-2
4T	LC TO FUSED ACD	2" SCH 40 PVC (BELOW GROUND)	3	3	4/0 AWG ALUMINUM	THWN-2	75°			230 x 0.94 x1 = 216.20A		230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2
4	FUSED ACD TO POI	2" EMT	3	3	4/0 AWG	THWN-2	75°			230 x 0.94 x1 = 216.20A		230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2

AL

**METER 2 (131384931)**

WIRE DETAILS																
WIRE TAG #	WIRE FROM	CONDUIT	WIRE QTY	WIRE QTY/ CONDUIT	WIRE GAUGE	WIRE TYPE	TEMP RATING	WIRE AMP	TEMP DE-RATE	CONDUIT FILL	WIRE OCP	TERMINAL 75°C RATING	OUTPUT CURRENT	NEUTRAL SIZE	GRND SIZE	GRND WIRE TYPE
1	ARRAY TO JUNCTION BOX	AIR	4	-	10 AWG	PV WIRE	90°			40 x 0.96 x - = 38.40A		35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	6 AWG	BARE CU
2T	JUNCTION BOX TO INVERTER	2" SCH 40 PVC (BELOW GROUND)	20	20	10AWG	THWN-2	75°			50 x 0.94 x 0.5 = 23.5A		35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	10 AWG	THWN-2
3	INVERTER TO LC	3/4" EMT	3	3	8 AWG	THWN-2	75°			50 x 0.94 x1 = 47A		50A	32 x 1.25 = 40A	8 AWG	10 AWG	THWN-2
4T	LC TO FUSED ACD	2" SCH 40 PVC (BELOW GROUND)	3	3	4/0 AWG ALUMINUM	THWN-2	75°			230 x 0.94 x1 = 216.20A		230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2
4	FUSED ACD TO POI	2" EMT	3	3	4/0 AWG	THWN-2	75°			230 x 0.94 x1 = 216.20A		230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2

AL

**ELECTRICAL NOTES**

- 1) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- 2) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600V AND 90°C WET ENVIRONMENT.
- 3) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- 4) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- 5) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- 6) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- 7) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- 8) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- 9) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C.VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- 10) PV EQUIPMENT SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NEC 690.
- 11) EXACT LOCATION OF AUXILIARY GROUNDING TO BE DETERMINED AT TIME OF INSTALL.
- 12) EXISTING WIRES MUST BE REPLACED IF SMALLER THAN LISTED MINIMUM SIZES PER NEC 310.15(B)(16).

INTERCONNECTION 120% RULE (MAIN PANEL)

INTERCONNECTION 120% RULE NOT REQUIRED

EXTREME CASE MODULE OUTPUT (BOVIET BVM7612M-540-H-HC-BF-DG)

$I_{sc}(25^{\circ}C) = 13.55A, T_{isc} = 0.050\%/^{\circ}C$   
 $I_{sc}(T) = I_{sc}(25^{\circ}C) \times [1 + T_{isc} \times (T - 25^{\circ}C)]$   
 $I_{sc}(-19^{\circ}C) = 13.25A, I_{sc}(35^{\circ}C) = 13.61A$   
 $V_{oc}(25^{\circ}C) = 49.89V, T_{voc} = -0.285\%/^{\circ}C$   
 $V_{oc}(T) = V_{oc}(25^{\circ}C) \times [1 + T_{voc} \times (T - 25^{\circ}C)]$   
 $V_{oc}(-19^{\circ}C) = 56.14V, V_{oc}(35^{\circ}C) = 48.46V$

**WIRING CALCULATION**



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

**SHEET NAME**

**WIRING CALCULATION**

**SHEET SIZE**

**ANSI D  
 24" X 36"**

**SHEET NUMBER**

**PV-4.2**



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

**VOLTAGE DROP CALCULATION**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-5.0**

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	BOVIET BVM7612M-540-H-HC-BF-DG
MAX. POWER-POINT VOLTAGE (VMP)	42.40A
MAX. POWER-POINT CURRENT (IMP)	12.76A
OPEN-CIRCUIT VOLTAGE (VOC)	49.89V
SHORT-CIRCUIT CURRENT (ISC)	13.55A
MODULE DIMENSION	90.40"L x 44.65"W x 1.38"D

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SMA SOLAR TECHNOLOGY, SB7.7-1TP-US-41
MAX. INPUT DC VOLT	600VOLTS
MAX. CONTINUOUS OUTPUT POWER	7680W
NOMINAL AC VOLTAGE	240VOLTS
MAX. AC OUTPUT CURRENT	32AMPS
MAX. OCPD RATING	40AMPS
SHORT CIRCUIT CURRENT(DC)	18AMPS

RECORD LOW TEMP	-19°
AMBIENT TEMP (HIGH TEMP 2%)	35°
CONDUCTOR TEMPERATURE RATE	90°

Ground conductor ampacities designed in compliance with art. 690.8, Tables 310.15(B)(2)(a), 310.15(B)(3)(a), 310.15(B)(3)(c), 310.15(B)(16), Chapter 9 Table 4, 5, & 9. Location specific temperature obtained from ASHRAE 2020 data tables.

PERCENT OF VALUES	NUMBER OF CONDUCTORS
.80	4-6
.70	7-9
.50	10-20

TOTAL DC VOLTAGE RISE PERCENTAGE	
VOLTAGE DROP PERCENTAGE FROM STRING TERMINATION TO JUNCTION BOX	0.06 %
VOLTAGE DROP PERCENTAGE FROM JUNCTION BOX TO INVERTER	1.41 %
TOTAL DC SYSTEM VOLTAGE DROP	1.47 %

TOTAL AC VOLTAGE RISE PERCENTAGE	
AC VOLTAGE DROP PERCENTAGE FROM INVERTER TO LOAD CENTER	0.21 %
AC VOLTAGE DROP PERCENTAGE FROM LOAD CENTER TO FUSED ACD	0.41 %
AC VOLTAGE DROP PERCENTAGE FROM FUSED ACD TO POI	0.04 %
TOTAL AC SYSTEM VOLTAGE DROP	0.66 %

DC VOLTAGE DROP PERCENTAGE FROM STRING TERMINATION TO JUNCTION BOX						
10 AWG	VOLTAGE-240					
STRING TERMINATION TO JB	MODULE (Imp)	RESISTANCE IN ohm/ft	NO. OF MODULES IN A STRING	MODULE (Voc) AT MIN. TEMP.	1 WAY WIRE LENGTH(FT)	V RISE(%)
BRANCH # 1	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 2	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 3	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 4	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 5	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 6	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 7	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 8	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 9	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 10	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 11	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 12	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 13	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 14	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 15	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 16	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 17	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 18	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 19	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 20	12.76	0.00124	9	56.14	10	0.06 %
					MAX V DROP(%)	0.06 %

DC VOLTAGE DROP PERCENTAGE FROM JUNCTION BOX TO INVERTER						
8 AWG						
JB TO INVERTER	MODULE (Imp)	RESISTANCE IN ohm/ft	NO. OF MODULES IN A STRING	MODULE (Voc) AT MIN. TEMP.	1 WAY WIRE LENGTH(FT)	V DROP(%)
JB1 TO INV1	12.76	0.000778	10	56.14	400	1.41 %
JB2 TO INV2	12.76	0.000778	10	56.14	381	1.35 %
JB3 TO INV3	12.76	0.000778	10	56.14	357	1.26 %
JB4 TO INV4	12.76	0.000778	10	56.14	323	1.14 %
JB5 TO INV5	12.76	0.000778	10	56.14	323	1.14 %
JB6 TO INV6	12.76	0.000778	10	56.14	400	1.41 %
JB7 TO INV7	12.76	0.000778	10	56.14	381	1.35 %
JB8 TO INV8	12.76	0.000778	10	56.14	357	1.26 %
JB9 TO INV9	12.76	0.000778	10	56.14	323	1.14 %
JB10 TO INV10	12.76	0.000778	10	56.14	323	1.14 %
					MAX V DROP(%)	1.41 %

AC VOLTAGE DROP PERCENTAGE FROM INVERTER TO LOAD CENTER				
8 AWG	VOLTAGE-240			
INVERTER TO LOAD CENTER	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
INV1 TO LC1	32	0.000778	2	0.04 %
INV2 TO LC1	32	0.000778	4	0.08 %
INV3 TO LC1	32	0.000778	6	0.12 %
INV4 TO LC1	32	0.000778	8	0.17 %
INV5 TO LC1	32	0.000778	10	0.21 %
INV6 TO LC2	32	0.000778	2	0.04 %
INV7 TO LC2	32	0.000778	4	0.08 %
INV8 TO LC2	32	0.000778	6	0.12 %
INV9 TO LC2	32	0.000778	8	0.17 %
INV10 TO LC2	32	0.000778	10	0.21 %
			MAX V DROP(%)	0.21 %

AC VOLTAGE DROP PERCENTAGE FROM FUSED ACD TO POI				
4/0 AWG	VOLTAGE-240			
FUSED AC DISCONNECT TO POI	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
ACD1 TO POI	160	0.0000608	5	0.04 %
ACD2 TO POI	160	0.0000608	5	0.04 %
			MAX V DROP(%)	0.04 %

AC VOLTAGE DROP PERCENTAGE FROM LOAD CENTER TO FUSED ACD				
4/0 AWG	VOLTAGE-240			
LOAD CENTER TO FUSED ACD	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
LC1 TO ACD1	160	0.0000608	50	0.41 %
LC2 TO ACD2	160	0.0000608	50	0.41 %
			MAX V DROP(%)	0.41 %

**VOLTAGE DROP CALCULATION**

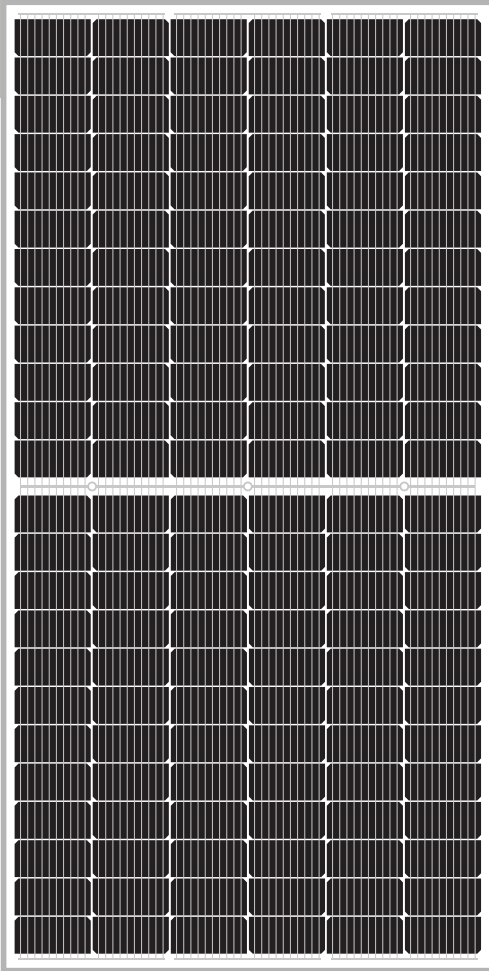


FROM STRENGTH TO STRENGTH IN NATURE

# NESE 545-72MHB-M10

MONO PERC HALF-CELL BIFACIAL SOLAR MOUDLE

FROM CAMBODIA



## KEY FEATURES



### High efficiency PERC

A high efficiency 182 (M10) PERC solar cell with 10 busbars technology to ensure the efficiency of the solar module up to 21.10% and stable operation.



### Bifacial power generation

Increases 10-30% power generation revenue.



### Excellent performance with weak light

More power output with a weak light condition-through advanced glass and solar cells.



### Wind/Snow load

Wind load 2400 pa, snow load 5400 pa.



PID

### Pid Free

Excellent Anti-PID performance, minimized the degradation of power.



### Resistance of extreme environment conditions

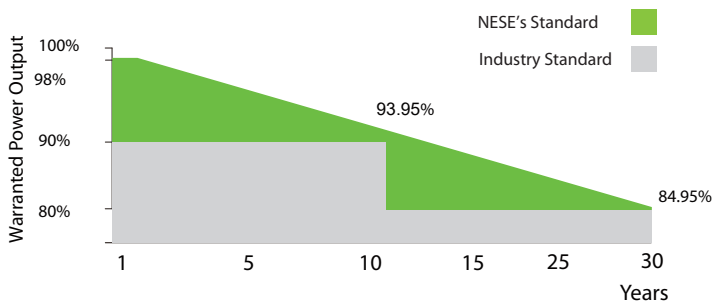
High Salt Mist and Ammonia resistance certified by TUV.

INSURED BY

CHUBB® Munich RE 

## LINEAR PERFORMANCE WARRANTY

12 years product warranty. 30 years linear power warranty.



## MANAGEMENT SYSTEM CERTIFICATES

ISO 9001:2015/QUALITY MANAGEMENT SYSTEM  
ISO 14001:2015/STANDARDS FOR ENVIRONMENTAL MANAGEMENT SYSTEM

## PRODUCT CERTIFICATES

IEC 61215/IEC 61730:VDE/CE/CEC AU  
UL 61730: CSA



PHUM TANOUN, SANGKAT KOMBOUL, KHAN POSENCHAY, PHNOM PENH, KINGDOM OF CAMBODIA

WWW.NESOLAR.COM.KH



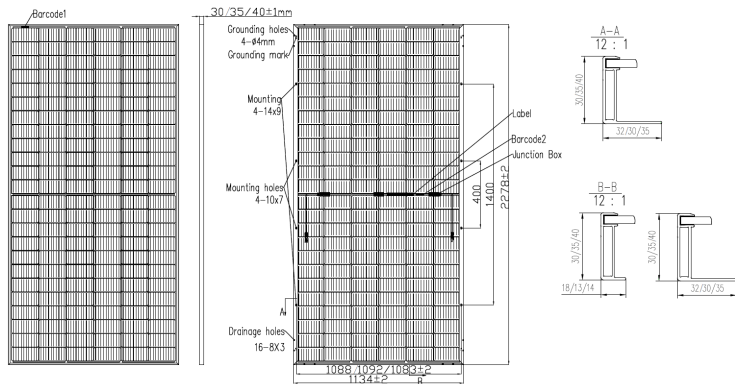
# SPECIFICATIONS

Module type	NESE 525-72MHB-M10		NESE530-72MHB-M10		NESE535-72MHB-M10		NESE540-72MHB-M10		NESE545-72MHB-M10	
	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)
Maximum power(Pmax)	525Wp	393Wp	530Wp	397Wp	535Wp	400Wp	540Wp	404Wp	545Wp	408Wp
Maximum power voltage(Vmp)	40.9V	37.8V	41.1V	38.0V	41.3V	38.1V	41.5V	38.3V	41.7V	38.5V
Maximum power current (Imp)	12.85A	10.40A	12.91A	10.45A	12.96A	10.50A	13.02A	10.55A	13.08A	10.60A
Open-circuit voltage( Voc)	49.2V	45.9V	49.4V	46.1V	49.6V	46.3V	49.8V	46.5V	51.0V	46.7V
Short-circuit current(Isc)	13.59A	10.98A	13.65A	11.02A	13.71A	11.07A	13.77A	11.12A	13.83A	11.17A
Module efficiency STC (%)	20.32%		20.52%		20.71%		20.90%		21.10%	
Operating temperature(°C)	-40°C ~ 85°C									

## ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN

Front power Pmax/W	525	530	535	540	545
Total power Pmax/W	656	663	669	675	681
Vmp/V(Total)	41.0	41.2	41.4	41.6	41.8
Imp/A(Total)	16.01	16.08	16.15	16.23	16.30
Voc/V(Total)	49.3	49.5	49.7	49.9	50.1
Isc/A(Total)	16.75	16.82	16.90	16.97	17.05

## ENGINEERING DRAWING



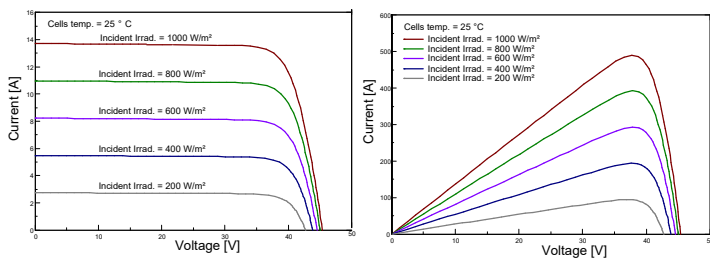
## TEMPERATURE RATINGS

NOCT	44 ± 2°C
Temperature coefficients of Pmax	-0.35%/°C
Temperature coefficients of Voc	-0.29%/°C
Temperature coefficients of Isc	+0.05%/°C
Refer. Bifacial Factor	70 ± 5%

## MATERIAL CHARACTERISTICS

Number of cell	144 (6 * 24)
Dimensions	2278*1134*30/35/40
Weight	33.5/34/34.5kg
Front glass	2.0mm+2.0mm heat strengthened glass
Frame	Anodized aluminium alloy

## IV CURVES OF THE PV MODULES



Electrical performance vs Incident Irradiance  
Current-voltage & power-voltage curves (545W)

## WORKING CONDITIONS

Maximum system voltage	1000/1500 VDC	Junction box	Ip68 , 3 diodes
Maximum series fuse rating	30A	Cables	12 AWG, length: 350 mm or Customized
		Connectors	MC4-Compatible

## PACKAGING CONFIGURATION

40HQ 720/620/540PCS



## SOLAR INVERTER

3.8 kW | 7.6 kW

Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

### KEY FEATURES

- Built on Powerwall 2 technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 3.8 kW and 7.6 kW models available

# SOLAR INVERTER

Tesla Solar Inverter provides DC to AC conversion and integrates with the Tesla ecosystem, including Solar Panels, Solar Roof, Powerwall, and vehicle charging, to provide a seamless sustainable energy experience.

## KEY FEATURES

- Integrated rapid shutdown, arc fault, and ground fault protection
- No neutral wire simplifies installation
- 2x the standard number of MPPTs for high production on complex roofs



## ELECTRICAL SPECIFICATIONS

OUTPUT (AC)	3.8 kW	7.6 kW
Nominal Power	3,800 W	7,600 W
Maximum Apparent Power	3,328 VA at 208 V 3,840 VA at 240 V	6,656 VA at 208 V 7,680 VA at 240 V
Maximum Continuous Current	16 A	32 A
Breaker (Overcurrent Protection)	20 A	40 A
Nominal Power Factor	1 - 0.85 (leading / lagging)	
THD (at Nominal Power)	<5%	
INPUT (DC)		
MPPT	2	4
Input Connectors per MPPT	1-2	1-2-1-2
Maximum Input Voltage	600 VDC	
DC Input Voltage Range	60 - 550 VDC	
DC MPPT Voltage Range <sup>1</sup>	60 - 480 VDC	
Maximum Current per MPPT ( $I_{mp}$ )	11 A	
Maximum Short Circuit Current per MPPT ( $I_{sc}$ )	15 A	

## PERFORMANCE SPECIFICATIONS

Peak Efficiency <sup>2</sup>	97.5%	98.0%
CEC Efficiency <sup>2</sup>	97.5%	
Allowable DC/AC Ratio	1.4	
Customer Interface	Tesla Mobile App	
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G) <sup>3</sup>	
AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n), RS-485	
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown	
Supported Grid Types	60 Hz, 240 V Split Phase 60 Hz, 208 V Wye	
Required Number of Tesla Solar Shutdown Devices per Solar Module	See <i>Solar Shutdown Device Requirements per Module</i> on page 3	
Warranty	12.5 years	

<sup>1</sup> Maximum current.

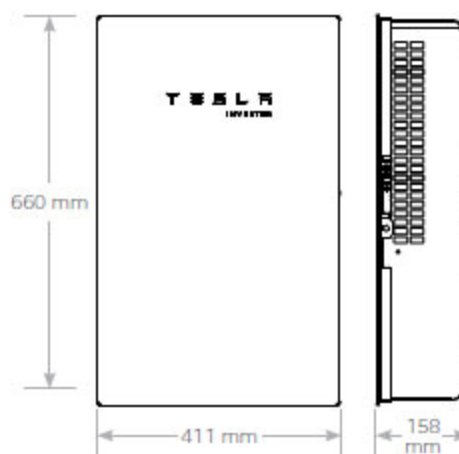
<sup>2</sup> Expected efficiency pending final CEC listing.

<sup>3</sup> Cellular connectivity subject to network operator service coverage and signal strength.

## MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)
Weight	52 lb <sup>4</sup>
Mounting options	Wall mount (bracket)

<sup>4</sup> Door and bracket can be removed for a mounting weight of 37 lb.



## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature <sup>5</sup>	-30°C to 45°C (-22°F to 113°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	Type 3R
Ingress Rating	IP55 (Wiring compartment)
Pollution Rating	PD2 for power electronics and terminal wiring compartment, PD3 for all other components
Operating Noise @ 1 m	< 40 db(A) nominal, < 50 db(A) maximum

<sup>5</sup> For the 7.6 kW Solar Inverter, performance may be de-rated to 6.2 kW at 240 V or 5.37 kW at 208 V when operating at temperatures greater than 45°C.

## COMPLIANCE INFORMATION

Grid Certifications	UL 1741, UL 1741 SA, IEEE 1547, IEEE 1547.1
Safety Certifications	UL 1699B, UL 1741, UL 1998 (US)
Emissions	EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

## SOLAR INVERTER

Tesla Solar Inverter provides DC to AC conversion and integrates with the Tesla ecosystem, including Solar Panels, Solar Roof, Powerwall, and vehicle charging, to provide a seamless sustainable energy experience.

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Nominal Power Factor	1 - 0.85 (leading / lagging)	
THD (at Nominal Power)	<5%	
INPUT (DC)		
MPPT	2	4
Input Connectors per MPPT	1-2	1-2-1-2
Maximum Input Voltage	600 VDC	
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DC MPPT Voltage Range <sup>1</sup>	60 - 480 VDC	
Maximum Current per MPPT ( $I_{mp}$ )	11 A	
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Peak Efficiency <sup>2</sup>	97.5%	98.0%
CEC Efficiency <sup>2</sup>	97.5%	
Allowable DC/AC Ratio	1.4	
Customer Interface	Tesla Mobile App	
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G) <sup>3</sup>	
AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n), RS-485	
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown	
Supported Grid Types	60 Hz, 240 V Split Phase 60 Hz, 208 V Wye	
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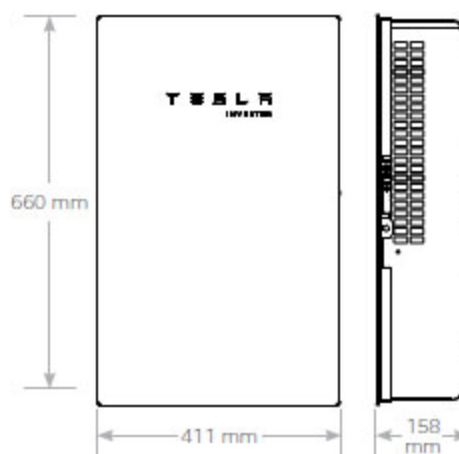
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Operating Noise @ 1 m	< 40 db(A) nominal, < 50 db(A) maximum

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## **Exhibit C**

## APPLICATION AND APPROVAL PROCESS

Applications will be submitted by the Member and reviewed and processed by Kenergy according to either Level 1 or Level 2 processes defined below.

Kenergy may reject an Application for violations of any applicable code, standard, or regulation related to reliability or safety; however, Kenergy will work with the Member to resolve those issues to the extent practicable. Members may contact Kenergy regarding status of an Application or with questions prior to submitting an Application.

An eligible Member-generator shall mean a retail electric Member of Kenergy with a generating facility that:

- (1) Has a rated capacity of not greater than (100) kilowatts;
- (2) Is located on the Member's premises;
- (3) Is owned and operated by the Member;
- (4) Is connected in parallel with Kenergy's electric distribution system; and
- (5) Has the primary purpose of supplying all or part of the Member's own electricity requirements.

Should Kenergy determine, in its sole discretion, that the proposed generating facility does not meet all the above criteria, the Kenergy reserves the right to reject the Application and deny service.

### LEVEL 1

A Level 1 Application shall be used if the generating facility is inverter-based and is certified by a nationally recognized testing laboratory to meet the requirements of Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources" (UL 1741). Kenergy will approve the Level 1 Application if the generating facility also meets all of the following conditions:

- (1) For interconnection to a radial distribution circuit, the aggregated generation on the circuit, including the proposed generating facility, will not exceed 15% of the Line Section's most recent annual one-hour peak load. A line section is the smallest part of the primary distribution system the generating facility could remain connected to after operation of any sectionalizing devices.

- (2) If the proposed generating facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed generating facility, will not exceed the smaller of 20 kVA or the nameplate rating of the transformer.
- (3) If the proposed generating facility is single-phase and is to be interconnected on a center tap neutral of a 240-volt service, its addition shall not create an imbalance between the two sides of the 240-volt service of more than 20% of the manufacturer's rating of the service transformer.
- (4) If the generating facility is to be connected to three-phase, three wire primary utility distribution lines, the generator shall appear as a phase-to-phase connection at the primary utility distribution line.
- (5) If the generating facility is to be connected to three-phase, four wire primary utility distribution lines, the generator shall appear to the primary utility distribution line as an effectively grounded source.
- (6) The interconnection will not be on an "area" or "spot network". "Area" and "spot networks" are systems in which multiple transformers are interconnected on the secondary side and multiple primary voltage circuits are used to feed the transformers. A "spot network" is typically used to serve a single building and all the transformers are in one location. An "area network" typically serves multiple members with secondary conductors covering multiple city blocks and with transformers at various locations.
- (7) Kenergy does not identify any violations of any applicable provisions of Institute of Electrical and Electronics Engineers Standard 1547(IEEE 1547), "Standard for Interconnecting Distributed Resources with Electric Power Systems."
- (8) No construction of facilities by Kenergy on its own system will be required to accommodate the generating facility.

If the generating facility does not meet all of the above listed criteria, Kenergy, in its sole discretion, may either: 1) approve the generating facility under the Level 1 Application if Kenergy determines that the generating facility can be safely and reliably connected to Kenergy's system; or 2) deny the Application as submitted under the Level 1 Application.

Kenergy shall notify the Member whether the Application is approved or denied, based on the criteria provided in this section.

If the Application lacks complete information, Kenergy shall notify the Member that additional information is required, including a list of such additional information. The time between notification and receipt of required additional information will add to the time to process the Application.

The approval will be subject to successful completion of an initial installation inspection and witness test. The Member shall notify Kenergy within 3 business days of completion of the

generating facility installation and schedule an inspection and witness test with Kenergy to occur within 10 business days of completion of the generator facility installation or as otherwise agreed to by Kenergy and the Member. The Member may not operate the generating facility until successful completion of such inspection and witness test, unless Kenergy expressly permits operational testing not to exceed two hours. If the installation fails the inspection or witness test due to noncompliance with any provision in the Application and Kenergy approval, the Member shall not operate the generating facility until any and all noncompliance is corrected and re-inspected by Kenergy.

If the Application is denied, Kenergy will supply the Member with reasons for denial. The Member may resubmit under Level 2 if appropriate

## LEVEL 2

A Level 2 Application is required under any of the following:

- (1) The generating facility is not inverter based;
- (2) The generating facility uses equipment that is not certified by a nationally recognized testing laboratory to meet the requirements of UL, 1741; or
- (3) The generating facility does not meet one or more of the additional conditions under Level 1. Kenergy will approve the Level 2 Application if the generating facility meets Kenergy's technical interconnection requirements, which are based on IEEE 1547.

Kenergy will process the Level 2 Application within 30 business days of receipt of a complete Application. Within that time Kenergy will respond in one of the following ways:

- (1) The Application is approved and Kenergy will provide the Member with an interconnection Agreement to sign.
- (2) If construction or other changes to Kenergy's distribution system are required, the cost will be the responsibility of the Member. Kenergy will give notice to the Member and offer to meet to discuss estimated costs and construction timeframe. Should the Member agree to pay for costs and proceed, Kenergy will provide the Member with an interconnection Agreement to sign within a reasonable time.
- (3) The Application is denied. Kenergy will supply the Member with reasons for denial and offer to meet to discuss possible changes that would result in Kenergy approval. Member may resubmit Application with changes.

If the Application lacks complete information, Kenergy shall notify the Member that additional information is required, including a list of such additional information.

The Member may not operate the generating facility until an Interconnection Agreement is signed by the Member and all necessary conditions stipulated in the agreement are met.



## TERMS AND CONDITIONS FOR INTERCONNECTION

### **To interconnect to Kenergy's distribution system, the Member's generating facility shall comply with the following terms and conditions:**

- (1) Kenergy shall provide the Member metering services, without charge for standard metering equipment, through a standard kilowatt-hour metering system capable of measuring the flow of electricity in two (2) directions. If the Member requests any additional meter or meters or distribution upgrades are needed to monitor the flow in each direction, such installations shall be at the Member's expense.
- (2) The Member shall install, operate, and maintain, at Member's sole cost and expense, any control, protective, or other equipment on the Member's system required by Kenergy's technical interconnection requirements based on IEEE 1547, the National Electric Code "NEC", accredited testing laboratories such as Underwriters Laboratories, and the manufacturer's suggested practices for safe, efficient and reliable operation of the generating facility is parallel with Kenergy's electric system. Member shall bear full responsibility for the installation, maintenance and safe operation of the generating facility. Upon reasonable request from Kenergy, the Member shall demonstrate generating facility compliance.
- (3) The generating facility shall comply with, and the Member shall represent and warrant its compliance with: (a) any applicable safety and power quality standards established by IEEE and accredited testing laboratories such as Underwriters Laboratories; (b) the NEC as may be revised from time to time; (c) Kenergy's rules, regulations, and Kenergy's Service Regulations as contained in Kenergy's Retail Electric Tariff as may be revised from time to time with the approval of the Kentucky Public Service Commission (Commission); (d) the rules and regulations of the Commission, as such rules and regulations may be revised from time to time by the Commission; and (e) all other applicable local, state, and federal codes and laws, as the same may be in effect from time to time. Where required by law, Member shall pass an electrical inspection of the generating facility by a local authority having jurisdiction over the installation.
- (4) Any changes or additions to Kenergy's system required to accommodate the generating facility shall be considered excess facilities. Member shall agree to pay Kenergy for actual costs incurred for all such excess facilities prior to construction.
- (5) Member shall operate the generating facility in such a manner as not to cause undue fluctuations in voltage, intermittent load characteristics or otherwise interfere with the operation of Kenergy's electric system. At all times when the generating facility is being operated in parallel with Kenergy's electric system, Member shall so operate the generating facility in such a manner that no adverse impacts will be produced thereby to the service quality rendered by Kenergy to any of its other Members or to any electric system

interconnected with Kenergy's electric system. Member shall agree that the interconnection and operation of the generating facility is secondary to, and shall not interfere with, Kenergy's ability to meet its primary responsibility of furnishing reasonably adequate service to its Members.

- (6) Member shall be responsible for protecting, at Member's sole cost and expense, the generating facility from any condition or disturbance on Kenergy's electric system, including, but not limited to, voltage sags or swells, system faults, outages, loss of a single phase of supply, equipment failures, and lightning or switching surges, except that Kenergy shall be responsible for repair of damage caused to the generating facility resulting solely from the negligence or willful misconduct on the part of Kenergy.
- (7) After initial installation, Kenergy shall have the right to inspect and/or witness commissioning tests, as specified in the Level 1 or Level 2 Application and approval process. Following the initial testing and inspection of the generating facility and upon reasonable advance notice to Member, Kenergy shall have access at reasonable times to the generating facility to perform reasonable onsite inspections to verify that the installation, maintenance, and operation of the generating facility comply with the requirements of this tariff.
- (8) For Level 1 and 2 generating facilities, where required by Kenergy, an eligible Member shall furnish and install on Member's side of the point of common coupling a safety disconnect switch which shall be capable of fully disconnecting the Member's energy generating equipment from Kenergy's electric service under the full rated conditions of the Member's generating facility. The external disconnect switch (EDS) shall be located adjacent to Kenergy's meters or the location of the EDS shall be noted by placing a sticker on the meter, and shall be of the visible break type in a metal enclosure which can be secured by a padlock. If the EDS is not located directly adjacent to the meter, the Member shall be responsible for ensuring that the location of the EDS is properly and legibly identified for so long as the generating facility is operational. The disconnect switch shall be accessible to Kenergy personnel at all times. Kenergy may waive the requirement for an EDS for a generating facility at its sole discretion, and on a case-by-case basis, upon review of the generating facility operating parameters and if permitted under Kenergy's safety and operating protocols. Kenergy shall establish a training protocol for line workers on the location and use of the EDS, and shall require that the EDS be used when appropriate, and that the switch be turned back on once the disconnection is no longer necessary.
- (9) Kenergy shall have the right and authority at Kenergy's sole discretion to isolate the generating facility or require the Member to discontinue operation of the generating facility if Kenergy believes that: (a) continued interconnection and parallel operation of the generating facility with Kenergy's electric system creates or contributes (or may create or contribute) to a system emergency on either Kenergy's or Member's electric system; (b) the generating facility is not in compliance with the requirements of this agreement, and the noncompliance adversely affects the safety, reliability, or power quality of Kenergy's electric system; or (c) the generating facility interferes with the operation of Kenergy's electric system. In non-

emergency situations, Kenergy shall give Member notice of noncompliance including a description of the specific noncompliance condition and allow Member a reasonable time to cure the noncompliance prior to isolating the generating facilities. In emergency situations, when Kenergy is unable to immediately isolate or cause the Member to isolate only the generating facility, Kenergy may isolate the Member's entire facility.

- (10) Member shall agree that, without the prior written permission from Kenergy, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection " which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity is allowed without approval.
- (11) To the extent permitted by law, the Member shall protect, indemnify, and hold harmless Kenergy and its directors, officers, employees, agents, representatives and contractors against and from all loss, claims, actions or suits, including costs and attorney's fees, for or on account of any injury or death of persons or damage to property caused by the Member or the Member's employees, agents, representatives and contractors in tampering with, repairing, maintaining, or operating the Member's generating facility or any related equipment or any facilities owned by Kenergy except where such injury, death or damage was caused or contributed to by the fault or negligence of Kenergy or its employees, agents, representatives, or contractors. The liability of Kenergy to the Member for injury to person and property shall be governed by the tariff(s) for the class of service under which the Member is taking service.
- (12) The Member shall maintain general liability insurance coverage (through a standard homeowner's, commercial, or other policy) for both Level 1 and Level 2 generating facilities. Member shall, upon request, provide Kenergy with proof of such insurance at the time that application is made.
- (13) By entering into an Interconnection Agreement, or by inspection, if any, or by non-rejection, or by approval, or in any other way, Kenergy does not give any warranty, express or implied, as to the adequacy, safety, compliance with applicable codes or requirements, or as to any other characteristics, of the generating facility equipment, controls, and protective relays and equipment.
- (14) A Member's generating facility is transferable to other persons or service locations only after notification to Kenergy has been made and verification that the installation is in compliance with this tariff. Upon written notification that an approved generating facility is being transferred to another person, Member, or location, Kenergy will verify that the installation is in compliance with this tariff and provide written notification to the Member(s) within 20 business days. If the installation is no longer in compliance with this tariff, Kenergy will notify the Member in writing and list what must be done to place the facility in compliance.
- (15) The Member shall retain any and all Renewable Energy Credits (RECs) that may be generated by their generating facility.

## Application for Interconnection

Use this application form only for a generating facility that is inverter based and certified by a nationally recognized testing Laboratory to meet the requirements of UL 1741.

Submit this Application to:

Kenergy Corp,  
P. O. Box 18,  
Henderson, KY 42419-0018

If you have questions regarding this Application or its status, contact Kenergy at: (800)844-4832

Member Name: ROGER D SHOCKLEE Account Number: [REDACTED]

Member Address: 666 BARRETT HILL RD. LIVERMORE, KY 42352

Member Phone No.: \_\_\_\_\_ Project Contact Person: Solar Energy Solutions

Phone No.: \_\_\_\_\_ E-mail Address (Optional): [REDACTED]

Provide names and contact information for other contractors, installers, or engineering firms involved in the design and installation of the generating Facilities: \_\_\_\_\_

SOLAR ENERGY SOLUTIONS

Member E-Mail Address: [REDACTED]

Energy Source: Solar Wind Hydro Biogas Biomass SOLAR

Inverter Manufacturer and Model #: Tesla, Tesla 7.6 kW Inverter, QTY:5

Inverter Power Rating: 7.6 kW, 38.00 kW AC TOTAL KW

Power Rating of Energy Source (ie., solar panels, wind turbine): 51.30, (95) 540W Modules KW

Attach documentation showing that inverter is certified by a nationally recognized testing laboratory to meet the requirements of UL 1741.

Attach site drawing or sketch showing location of Kenergy's meter, energy source, Kenergy accessible disconnect switch, and inverter.

Attach single line drawing showing all electrical equipment from Kenergy's metering location to the energy source including switches, fuses, breakers, panels, transformers, inverters, energy source, wire size, equipment ratings, and transformer connections.

Expected Start-up Date: 12/4/23

# PHOTOVOLTAIC GROUND MOUNT SYSTEM

190 MODULES-SYSTEM SIZE STC (102.60 kW DC / 76.00 kW AC)  
 650 BARRETT HILL RD, LIVERMORE, KY, 42352 USA (37.53897, -87.09644)



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

## SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)

STC DC : (N) (190) 540 W = 102.60 kW

STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) NE SOLAR, NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR INVERTERS, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NE SOLAR NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NE SOLAR NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

## GOVERNING CODES

- [2017 NEC] 2017 NFPA 70 - NATIONAL ELECTRICAL CODE
- [2015 IMC] 2015 INTERNATIONAL MECHANICAL CODE
- [2015 IBC] 2015 INTERNATIONAL BUILDING CODE
- [2015 IPC] 2015 INTERNATIONAL PLUMBING CODE
- [2015 IECC] 2015 INTERNATIONAL ENERGY CONSERVATION CODE

## GENERAL NOTES

- 1) ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE WITH UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
- 2) THIS SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND UTILITY IS OBTAINED.
- 3) ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT SHALL BE WEATHERPROOF AND SHALL BE LISTED BY 'UL' FOR THE TYPE OF APPLICATION AND 'UL' LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- 4) WIRING METHOD SHALL BE EMT ABOVE GROUND MOUNTED IN CONCEALED SPACES (UNLESS APPROVED OTHERWISE) AND SCHEDULE-40 PVC FOR BELOW GROUND INSTALLATIONS UNLESS NOTED OTHERWISE.
- 5) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE CONDUCTOR IF NECESSARY.

## SHEET INDEX

PV-0.0	COVER SHEET
PV-1.0	SITE PLAN WITH MODULES
PV-1.1	ELECTRICAL EQUIPMENT DETAIL
PV-2.0	STRING DETAIL
PV-3.0	RACKING PLAN VIEW
PV-3.1	RACKING SIDE ELEVATION
PV-4.0	ELECTRICAL THREE LINE DIAGRAM
PV-4.1	ELECTRICAL THREE LINE DIAGRAM
PV-4.2	WIRING CALCULATION
PV-5.0	VOLTAGE DROP CALCULATION
PV-6.0	PLACARDS
PV-7+	EQUIPMENT SPECIFICATION

AHJ: MCLEAN (COUNTY OF), KENTUCKY  
 UTILITY: KENERGY CORP

## REVISIONS

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

## SIGNATURE & SEAL

## BUILDING OWNER INFO

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

## SHEET NAME

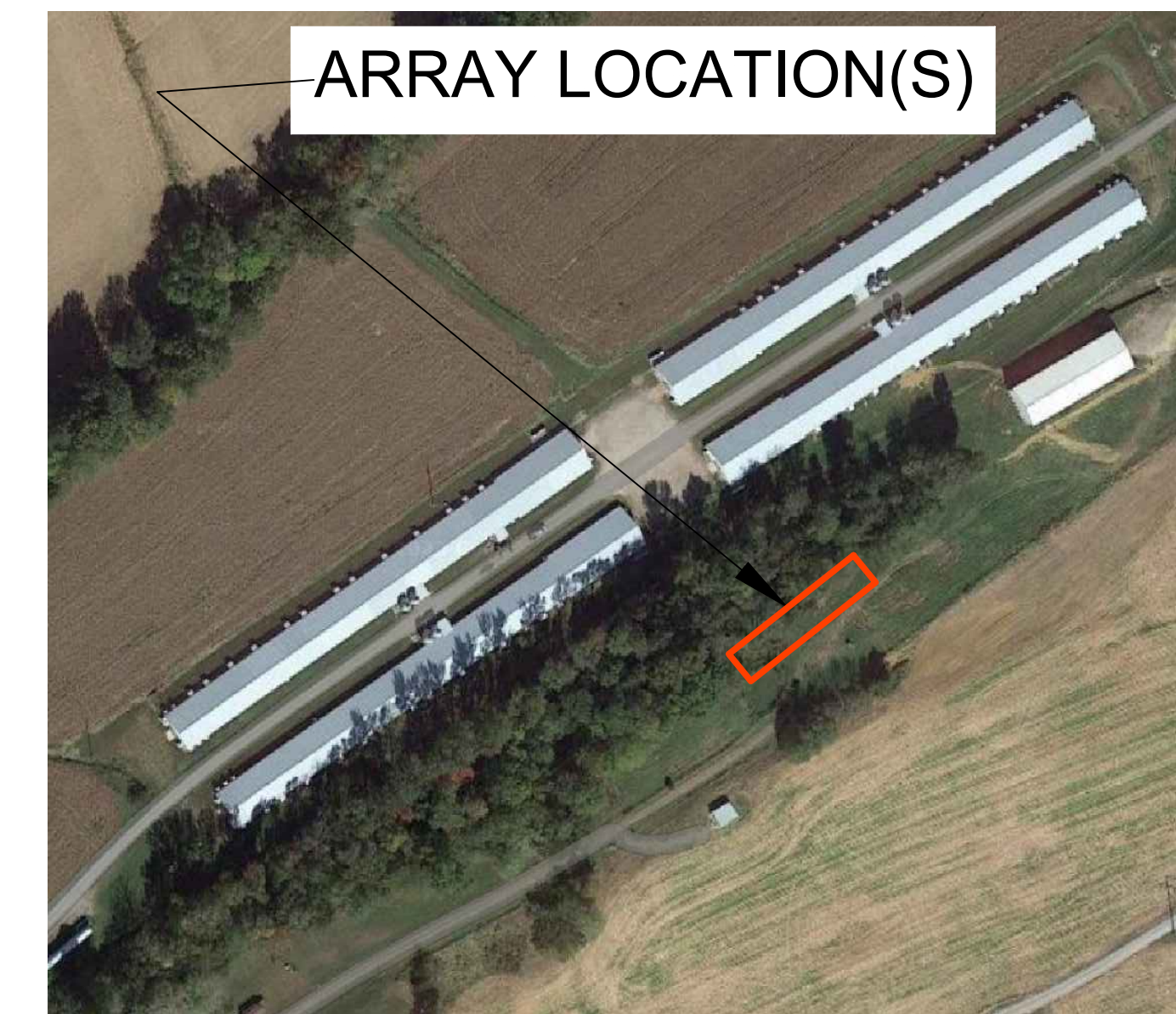
COVER SHEET

## SHEET SIZE

ANSI D  
 24" X 36"

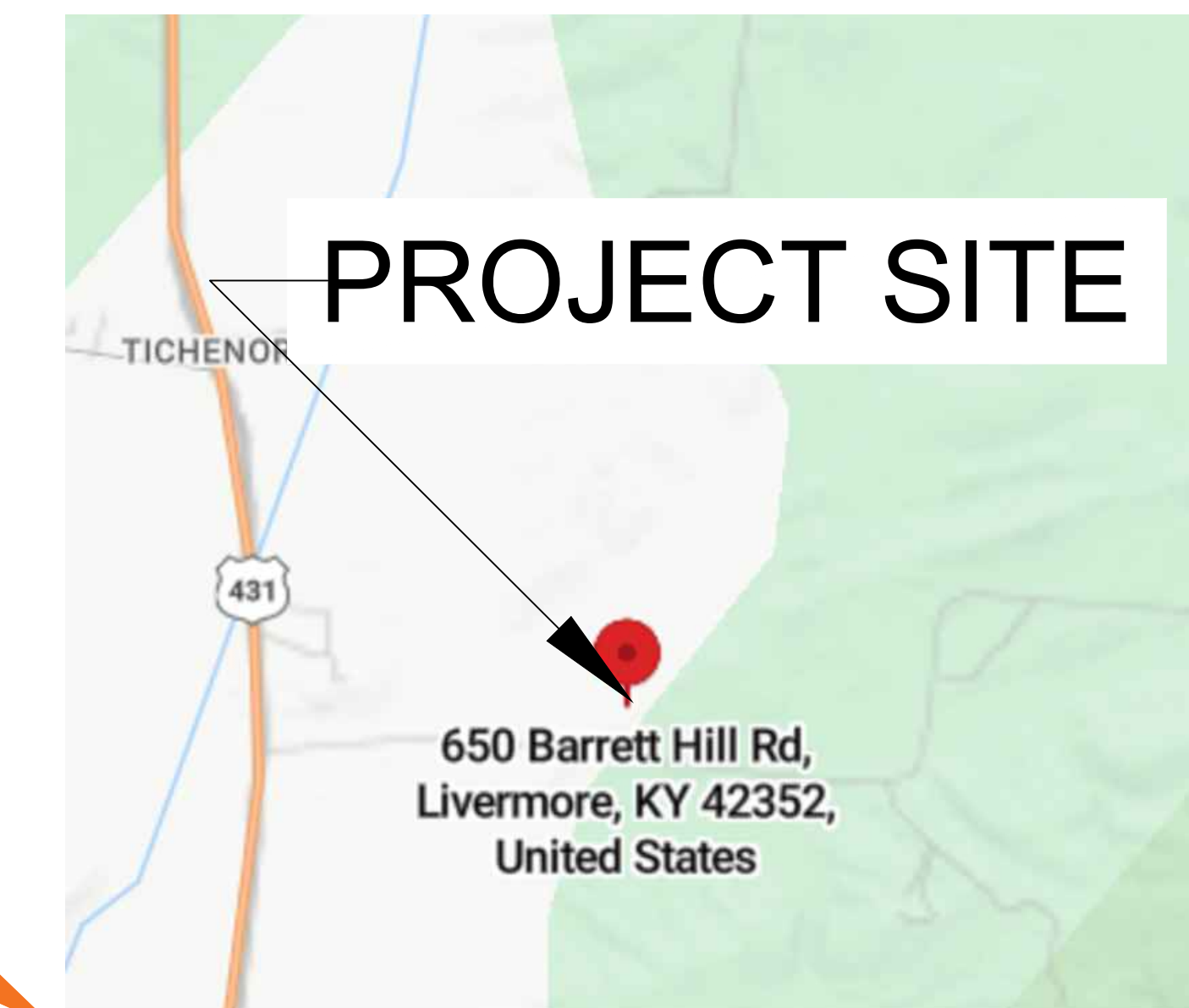
## SHEET NUMBER

PV-0.0



## BUILDING PHOTO

SCALE: NTS



## VICINITY MAP

SCALE: NTS





**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

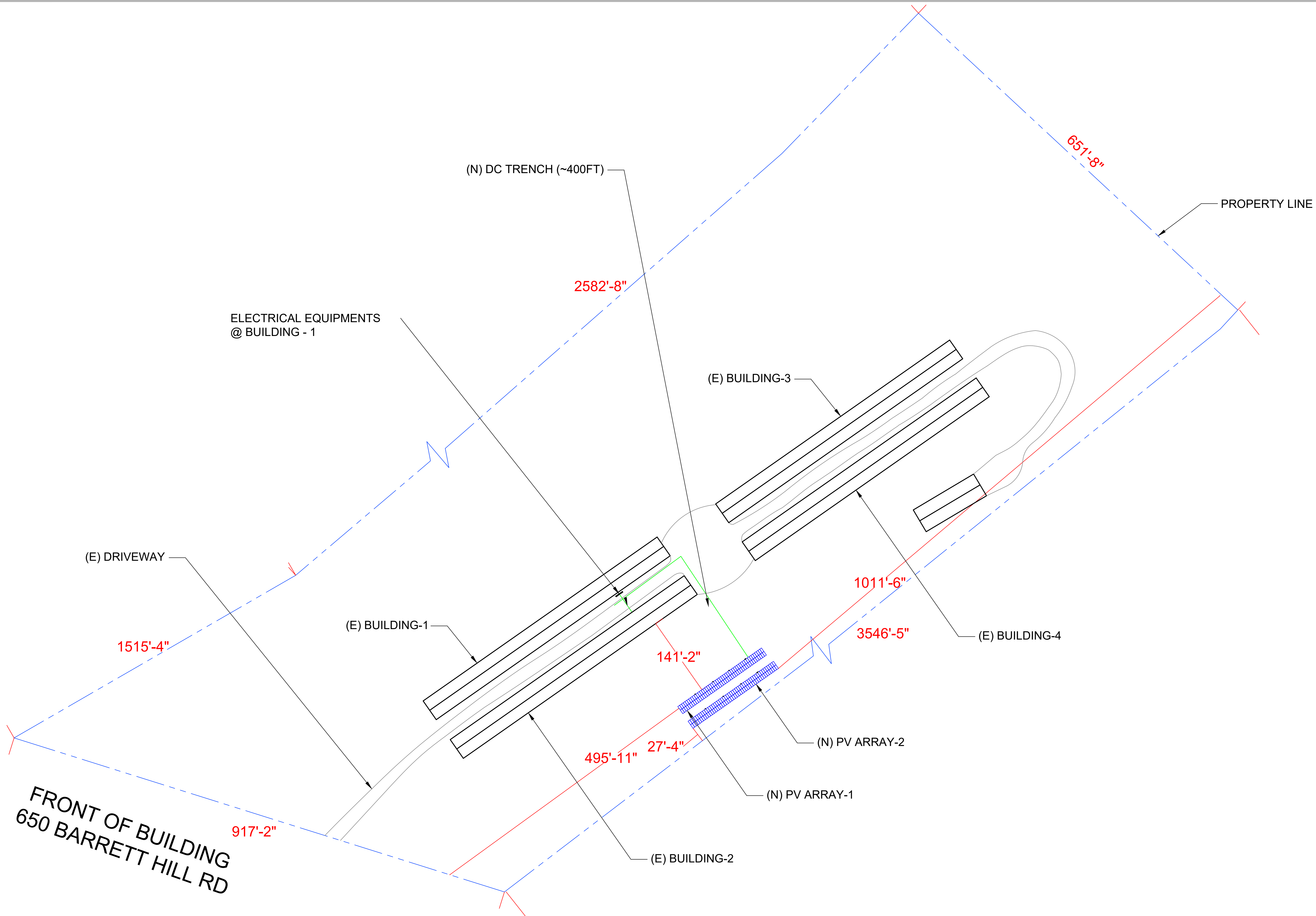
**SITE PLAN WITH  
MODULES**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-1.0**



**SITE PLAN WITH MODULES**  
SCALE: NTS

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**

- STC DC : (N) (190) 540 W = 102.60 kW
- STC AC : (N) (10) 7600 W = 76.00 kW
- (N) (190) NE SOLAR NESE MODULES, NESE540-72MHB-M10
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

FIRE SETBACK	STRING DETAIL	<b>LEGEND</b>	CENTER TAP CONNECTOR (N/A)	TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN		INVERTER (NEW)	AC DISCONNECT UNFUSED (N/A)
OPTIMIZER	DIMENSIONS	MAIN SERVICE PANEL (EXISTING)	LOAD CENTER (NEW)	AC DISCONNECT FUSED (NEW)
MICRO-INVERTER	PROPERTY LINE	UTILITY METER (EXISTING)	SOLAREEDGE METER (N/A)	JUNCTION BOX (NEW)
ROOF ATTACHMENT	RAFTER/TRUSS	PRODUCTION METER (N/A)	BACKUP LOAD PANEL (N/A)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL	BATTERY (N/A)		
	FENCE			
	GATE			



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

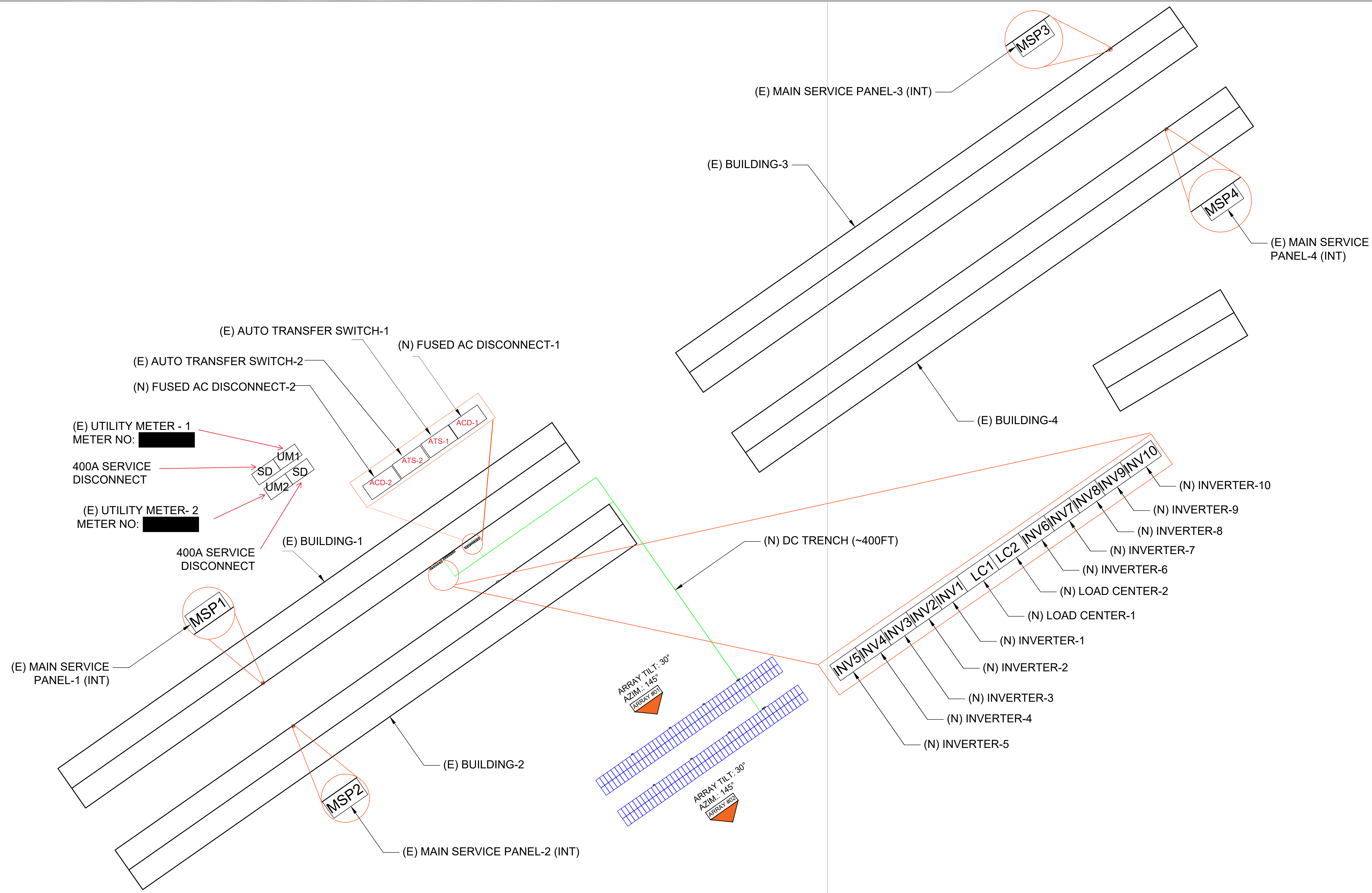
**ELECTRICAL EQUIPMENT DETAIL**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-1.1**



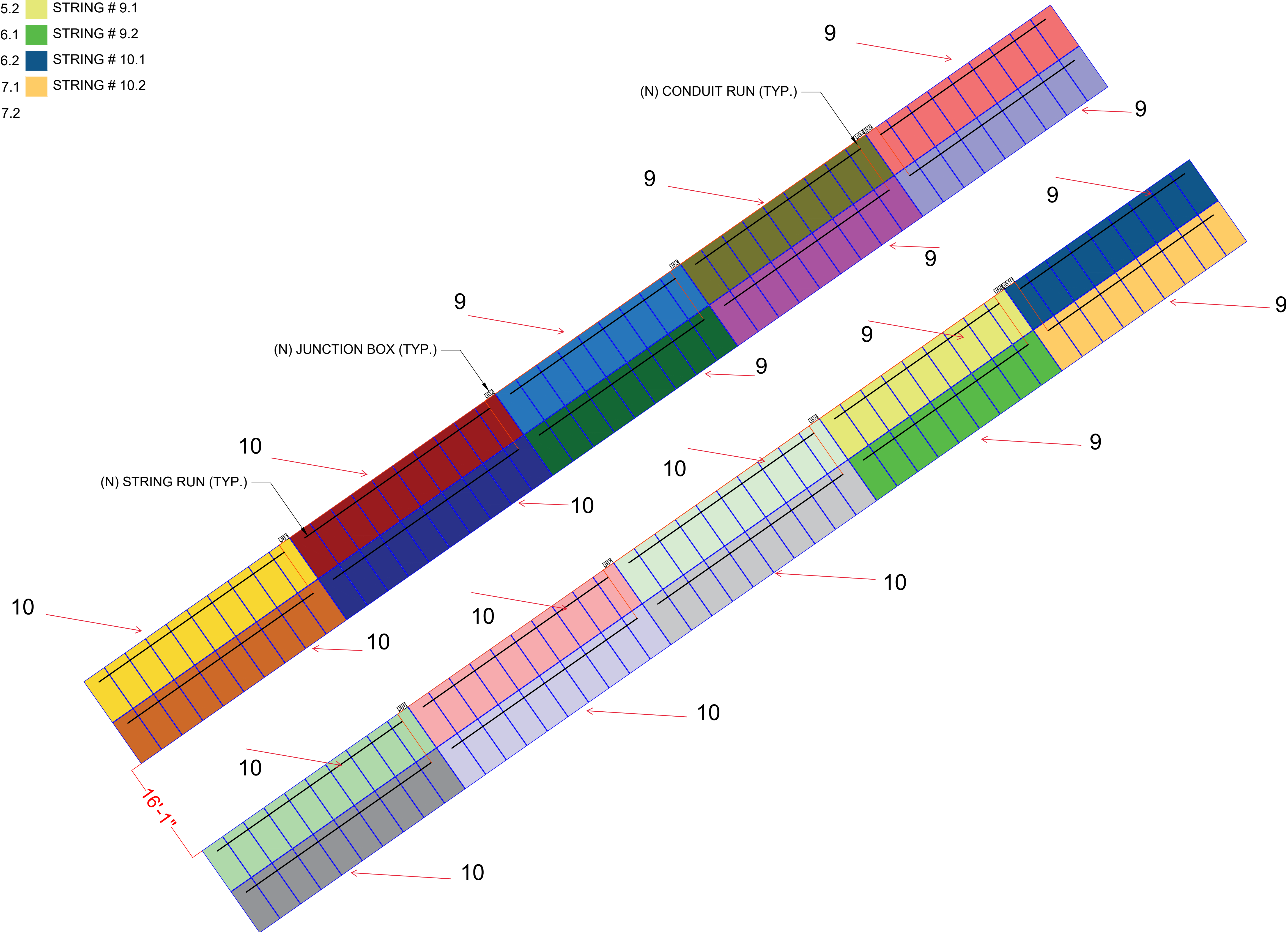
**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**  
 STC DC : (N) (190) 540 W = 102.60 kW  
 STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) NE SOLAR NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 BOVIET NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

FIRE SETBACK	STRING DETAIL	<b>LEGEND</b>	CENTER TAP CONNECTOR (N/A)	TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN		INVERTER (NEW)	AC DISCONNECT UNFUSED (N/A)
OPTIMIZER	DIMENSIONS	MAIN SERVICE PANEL (EXISTING)	LOAD CENTER (NEW)	AC DISCONNECT FUSED (NEW)
MICRO-INVERTER	PROPERTY LINE	UTILITY METER (EXISTING)	SOLAREEDGE METER (N/A)	JUNCTION BOX (NEW)
ROOF ATTACHMENT	RAFTER/TRUSS	PRODUCTION METER (N/A)	BACKUP LOAD PANEL (N/A)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL	BATTERY (N/A)		
	FENCE			
	GATE			

**ELECTRICAL EQUIPMENT DETAIL**  
SCALE: NTS

- STRING # 1.1
- STRING # 1.2
- STRING # 2.1
- STRING # 2.2
- STRING # 3.1
- STRING # 3.2
- STRING # 4.1
- STRING # 4.2
- STRING # 5.1
- STRING # 5.2
- STRING # 6.1
- STRING # 6.2
- STRING # 7.1
- STRING # 7.2
- STRING # 8.1
- STRING # 8.2
- STRING # 9.1
- STRING # 9.2
- STRING # 10.1
- STRING # 10.2



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

STRING DETAIL

**SHEET SIZE**

ANSI D  
24" X 36"

**SHEET NUMBER**

PV-2.0

**STRING DETAIL**  
SCALE: 1/8" = 1'-0"

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**

- STC DC : (N) (190) 540 W = 102.60 kW
- STC AC : (N) (10) 7680 W = 76.00 kW
- (N) (190) NESE540-72MHB-M10 MODULES
- (N) (10) TESLA SOLAR TECHNOLOGY, TESLA 7.6 kW (240V) INVERTERS
- (N) 10 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES

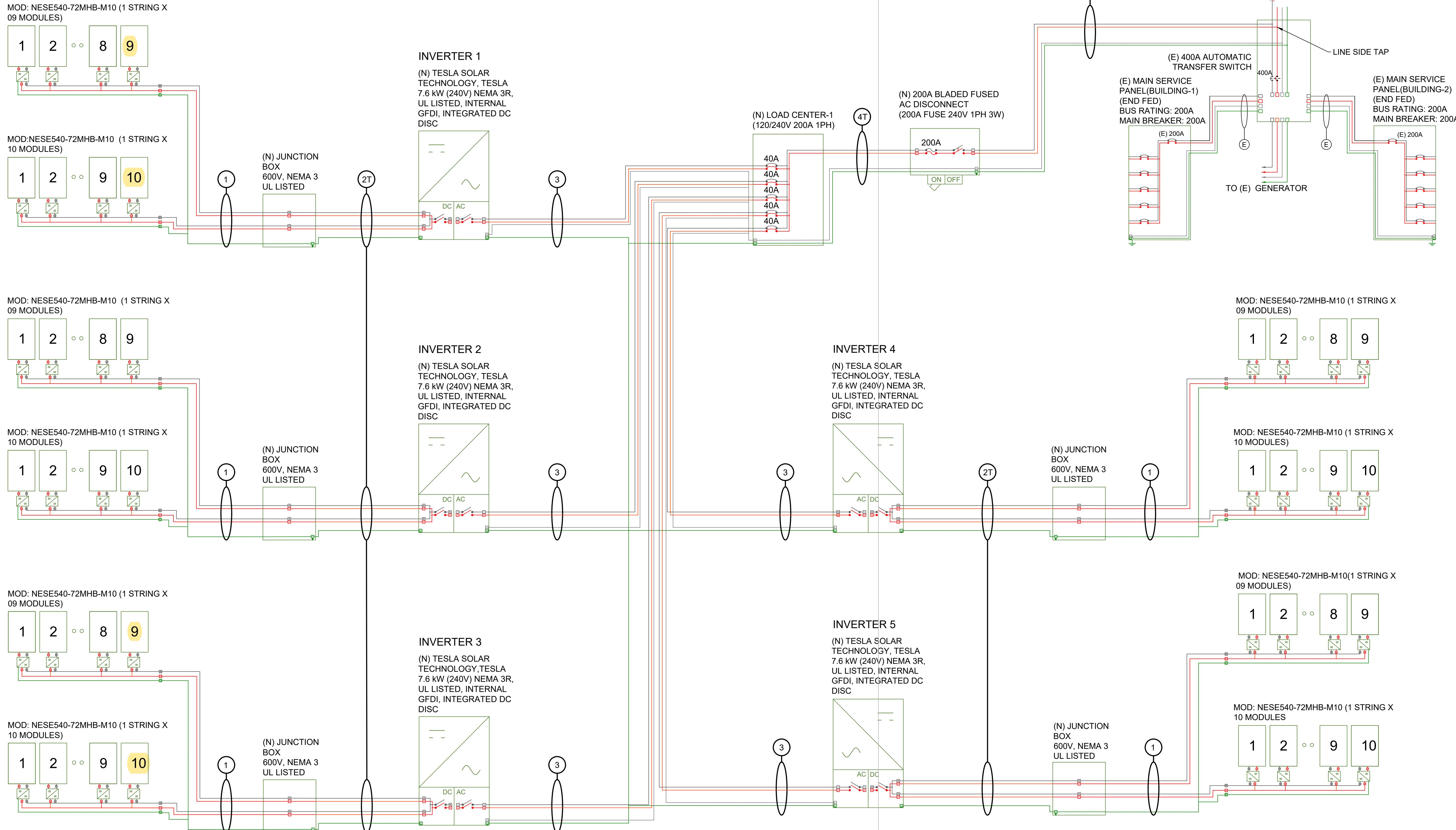
FIRE SETBACK	STRING DETAIL	<b>LEGEND</b>		CENTER TAP CONNECTOR (N/A)	TRANSFORMER (N/A)
NEW PV MODULE	CONDUIT RUN	MAIN SERVICE PANEL (EXISTING)	INVERTER (NEW)	AC DISCONNECT UNFUSED (N/A)	AC DISCONNECT FUSED (NEW)
OPTIMIZER	DIMENSIONS	UTILITY METER (EXISTING)	LOAD CENTER (NEW)	AC DISCONNECT FUSED (NEW)	JUNCTION BOX (NEW)
MICRO-INVERTER	PROPERTY LINE	PRODUCTION METER (N/A)	SOLAREEDGE METER (N/A)	JUNCTION BOX (NEW)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ATTACHMENT	RAFTER/TRUSS	BATTERY (N/A)	BACKUP LOAD PANEL (N/A)	JUNCTION BOX (NEW)	AUTO TRANSFER SWITCH (EXISTING)
ROOF ACCESS POINT	RAIL			JUNCTION BOX (NEW)	AUTO TRANSFER SWITCH (EXISTING)
	FENCE			JUNCTION BOX (NEW)	AUTO TRANSFER SWITCH (EXISTING)
	GATE			JUNCTION BOX (NEW)	AUTO TRANSFER SWITCH (EXISTING)



**SYSTEM SUMMARY STC (51.30 kW DC / 38.00 kW AC)**

STC DC : (N) (95) 540 W = 51.30 kW  
 STC AC : (N) (5) 7600 W = 38.00 kW

- (N) (95) NESE540-72MHB-M10 MODULES
- (N) (5) TESLA 7.6 kW INVERTERS (240V) INVERTERS
- (N) 5 STRINGS OF 10 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES
- (N) 5 STRINGS OF 09 NESE540-72MHB-M10 MODULES CONNECTED IN SERIES



**METER 1** [REDACTED]

BI-DIRECTIONAL  
 UTILITY METER  
 METER NO: [REDACTED]  
 UTILITY: KENERGY CORP  
 SERVICE: 1PH 3W 120/240V



CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

**SHEET NAME**  
 ELECTRICAL  
 THREE LINE  
 DIAGRAM

**SHEET SIZE**  
 ANSI D  
 24" X 36"

**SHEET NUMBER**  
 PV-4.0

**ELECTRICAL THREE LINE DIAGRAM**  
 SCALE: NTS

**SYSTEM SUMMARY STC (102.60 kW DC / 76.00 kW AC)**

STC DC : (N) (190) 540 W = 102.60 kW  
 STC AC : (N) (10) 7600 W = 76.00 kW

- (N) (190) BOVIET BVM7612M-540-H-HC-BF-DG MODULES
- (N) (10) SMA SOLAR TECHNOLOGY, SB7.7-1TP-US-41 (240V) INVERTERS
- (N) 10 STRINGS OF 10 BOVIET BVM7612M-540-H-HC-BF-DG MODULES CONNECTED IN SERIES
- (N) 10 STRINGS OF 09 BOVIET BVM7612M-540-H-HC-BF-DG MODULES CONNECTED IN SERIES

**METER 1 (145771356)**

WIRE DETAILS																
WIRE TAG #	WIRE FROM	CONDUIT	WIRE QTY	WIRE QTY/ CONDUIT	WIRE GAUGE	WIRE TYPE	TEMP RATING	WIRE AMP	TEMP DE-RATE	CONDUIT FILL	WIRE OCP	TERMINAL 75°C RATING	OUTPUT CURRENT	NEUTRAL SIZE	GRND SIZE	GRND WIRE TYPE
1	ARRAY TO JUNCTION BOX	AIR	4	-	10 AWG	PV WIRE	90°	40 x 0.96 x - = 38.40A				35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	6 AWG	BARE CU
2T	JUNCTION BOX TO INVERTER	2" SCH 40 PVC (BELOW GROUND)	20	20	10 AWG	THWN-2	75°	50 x 0.94 x 0.5 = 23.5A				35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	10 AWG	THWN-2
3	INVERTER TO LC	3/4" EMT	3	3	8 AWG	THWN-2	75°	50 x 0.94 x1 = 47A				50A	32 x 1.25 = 40A	8 AWG	10 AWG	THWN-2
4T	LC TO FUSED ACD	2" SCH 40 PVC (BELOW GROUND)	3	3	4/0 AWG ALUMINUM	THWN-2	75°	230 x 0.94 x1 = 216.20A				230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2
4	FUSED ACD TO POI	2" EMT	3	3	4/0 AWG	THWN-2	75°	230 x 0.94 x1 = 216.20A				230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2

AL

**METER 2 (131384931)**

WIRE DETAILS																
WIRE TAG #	WIRE FROM	CONDUIT	WIRE QTY	WIRE QTY/ CONDUIT	WIRE GAUGE	WIRE TYPE	TEMP RATING	WIRE AMP	TEMP DE-RATE	CONDUIT FILL	WIRE OCP	TERMINAL 75°C RATING	OUTPUT CURRENT	NEUTRAL SIZE	GRND SIZE	GRND WIRE TYPE
1	ARRAY TO JUNCTION BOX	AIR	4	-	10 AWG	PV WIRE	90°	40 x 0.96 x - = 38.40A				35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	6 AWG	BARE CU
2T	JUNCTION BOX TO INVERTER	2" SCH 40 PVC (BELOW GROUND)	20	20	10AWG	THWN-2	75°	50 x 0.94 x 0.5 = 23.5A				35A	13.55 x 1.25 x 1.25 = 21.17A	NONE	10 AWG	THWN-2
3	INVERTER TO LC	3/4" EMT	3	3	8 AWG	THWN-2	75°	50 x 0.94 x1 = 47A				50A	32 x 1.25 = 40A	8 AWG	10 AWG	THWN-2
4T	LC TO FUSED ACD	2" SCH 40 PVC (BELOW GROUND)	3	3	4/0 AWG ALUMINUM	THWN-2	75°	230 x 0.94 x1 = 216.20A				230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2
4	FUSED ACD TO POI	2" EMT	3	3	4/0 AWG	THWN-2	75°	230 x 0.94 x1 = 216.20A				230A	5 x 32 x 1.25 = 200A	4/0 AWG	4 AWG	THWN-2

AL

**ELECTRICAL NOTES**

- 1) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- 2) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600V AND 90°C WET ENVIRONMENT.
- 3) WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- 4) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- 5) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- 6) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- 7) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- 8) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- 9) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C.VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- 10) PV EQUIPMENT SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NEC 690.
- 11) EXACT LOCATION OF AUXILIARY GROUNDING TO BE DETERMINED AT TIME OF INSTALL.
- 12) EXISTING WIRES MUST BE REPLACED IF SMALLER THAN LISTED MINIMUM SIZES PER NEC 310.15(B)(16).

INTERCONNECTION 120% RULE (MAIN PANEL)

INTERCONNECTION 120% RULE NOT REQUIRED

EXTREME CASE MODULE OUTPUT (BOVIET BVM7612M-540-H-HC-BF-DG)

$I_{sc}(25^{\circ}C) = 13.55A, T_{isc} = 0.050\%/^{\circ}C$   
 $I_{sc}(T) = I_{sc}(25^{\circ}C) \times [1 + T_{isc} \times (T - 25^{\circ}C)]$   
 $I_{sc}(-19^{\circ}C) = 13.25A, I_{sc}(35^{\circ}C) = 13.61A$   
 $V_{oc}(25^{\circ}C) = 49.89V, T_{voc} = -0.285\%/^{\circ}C$   
 $V_{oc}(T) = V_{oc}(25^{\circ}C) \times [1 + T_{voc} \times (T - 25^{\circ}C)]$   
 $V_{oc}(-19^{\circ}C) = 56.14V, V_{oc}(35^{\circ}C) = 48.46V$

**WIRING CALCULATION**



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
 SOLAR ENERGY SOLUTIONS  
 ADDRESS:  
 1038 BRENTWOOD COURT STE B  
 LEXINGTON KY US 40511  
 PHONE: N/A  
 LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
 650 BARRETT HILL RD  
 LIVERMORE, KY, 42352, USA

APN: 68-27B  
 EMAIL: N/A  
 PHONE: N/A

**SHEET NAME**

**WIRING CALCULATION**

**SHEET SIZE**

**ANSI D  
 24" X 36"**

**SHEET NUMBER**

**PV-4.2**



**SOLAR ENERGY SOLUTIONS**

CONTRACTOR:  
SOLAR ENERGY SOLUTIONS  
ADDRESS:  
1038 BRENTWOOD COURT STE B  
LEXINGTON KY US 40511  
PHONE: N/A  
LICENSE #: N/A

**REVISIONS**

DESCRIPTION	DATE	REV
INITIAL	10/17/2023	0

**SIGNATURE & SEAL**

**BUILDING OWNER INFO**

**ROGER SHOCKLEE**  
650 BARRETT HILL RD  
LIVERMORE, KY, 42352, USA

APN: 68-27B  
EMAIL: N/A  
PHONE: N/A

**SHEET NAME**

**VOLTAGE DROP CALCULATION**

**SHEET SIZE**

**ANSI D  
24" X 36"**

**SHEET NUMBER**

**PV-5.0**

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	BOVIET BVM7612M-540-H-HC-BF-DG
MAX. POWER-POINT VOLTAGE (VMP)	42.40A
MAX. POWER-POINT CURRENT (IMP)	12.76A
OPEN-CIRCUIT VOLTAGE (VOC)	49.89V
SHORT-CIRCUIT CURRENT (ISC)	13.55A
MODULE DIMENSION	90.40"L x 44.65"W x 1.38"D

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SMA SOLAR TECHNOLOGY, SB7.7-1TP-US-41
MAX. INPUT DC VOLT	600VOLTS
MAX. CONTINUOUS OUTPUT POWER	7680W
NOMINAL AC VOLTAGE	240VOLTS
MAX. AC OUTPUT CURRENT	32AMPS
MAX. OCPD RATING	40AMPS
SHORT CIRCUIT CURRENT(DC)	18AMPS

RECORD LOW TEMP	-19°
AMBIENT TEMP (HIGH TEMP 2%)	35°
CONDUCTOR TEMPERATURE RATE	90°

Ground conductor ampacities designed in compliance with art. 690.8, Tables 310.15(B)(2)(a), 310.15(B)(3)(a), 310.15(B)(3)(c), 310.15(B)(16), Chapter 9 Table 4, 5, & 9. Location specific temperature obtained from ASHRAE 2020 data tables.

PERCENT OF VALUES	NUMBER OF CONDUCTORS
.80	4-6
.70	7-9
.50	10-20

TOTAL DC VOLTAGE RISE PERCENTAGE	
VOLTAGE DROP PERCENTAGE FROM STRING TERMINATION TO JUNCTION BOX	0.06 %
VOLTAGE DROP PERCENTAGE FROM JUNCTION BOX TO INVERTER	1.41 %
TOTAL DC SYSTEM VOLTAGE DROP	1.47 %

TOTAL AC VOLTAGE RISE PERCENTAGE	
AC VOLTAGE DROP PERCENTAGE FROM INVERTER TO LOAD CENTER	0.21 %
AC VOLTAGE DROP PERCENTAGE FROM LOAD CENTER TO FUSED ACD	0.41 %
AC VOLTAGE DROP PERCENTAGE FROM FUSED ACD TO POI	0.04 %
TOTAL AC SYSTEM VOLTAGE DROP	0.66 %

DC VOLTAGE DROP PERCENTAGE FROM STRING TERMINATION TO JUNCTION BOX						
10 AWG	VOLTAGE-240					
STRING TERMINATION TO JB	MODULE (Imp)	RESISTANCE IN ohm/ft	NO. OF MODULES IN A STRING	MODULE (Voc) AT MIN. TEMP.	1 WAY WIRE LENGTH(FT)	V RISE(%)
BRANCH # 1	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 2	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 3	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 4	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 5	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 6	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 7	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 8	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 9	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 10	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 11	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 12	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 13	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 14	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 15	12.76	0.00124	10	56.14	3	0.02 %
BRANCH # 16	12.76	0.00124	10	56.14	10	0.06 %
BRANCH # 17	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 18	12.76	0.00124	9	56.14	10	0.06 %
BRANCH # 19	12.76	0.00124	9	56.14	3	0.02 %
BRANCH # 20	12.76	0.00124	9	56.14	10	0.06 %
					MAX V DROP(%)	0.06 %

DC VOLTAGE DROP PERCENTAGE FROM JUNCTION BOX TO INVERTER						
8 AWG						
JB TO INVERTER	MODULE (Imp)	RESISTANCE IN ohm/ft	NO. OF MODULES IN A STRING	MODULE (Voc) AT MIN. TEMP.	1 WAY WIRE LENGTH(FT)	V DROP(%)
JB1 TO INV1	12.76	0.000778	10	56.14	400	1.41 %
JB2 TO INV2	12.76	0.000778	10	56.14	381	1.35 %
JB3 TO INV3	12.76	0.000778	10	56.14	357	1.26 %
JB4 TO INV4	12.76	0.000778	10	56.14	323	1.14 %
JB5 TO INV5	12.76	0.000778	10	56.14	323	1.14 %
JB6 TO INV6	12.76	0.000778	10	56.14	400	1.41 %
JB7 TO INV7	12.76	0.000778	10	56.14	381	1.35 %
JB8 TO INV8	12.76	0.000778	10	56.14	357	1.26 %
JB9 TO INV9	12.76	0.000778	10	56.14	323	1.14 %
JB10 TO INV10	12.76	0.000778	10	56.14	323	1.14 %
					MAX V DROP(%)	1.41 %

AC VOLTAGE DROP PERCENTAGE FROM INVERTER TO LOAD CENTER				
8 AWG	VOLTAGE-240			
INVERTER TO LOAD CENTER	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
INV1 TO LC1	32	0.000778	2	0.04 %
INV2 TO LC1	32	0.000778	4	0.08 %
INV3 TO LC1	32	0.000778	6	0.12 %
INV4 TO LC1	32	0.000778	8	0.17 %
INV5 TO LC1	32	0.000778	10	0.21 %
INV6 TO LC2	32	0.000778	2	0.04 %
INV7 TO LC2	32	0.000778	4	0.08 %
INV8 TO LC2	32	0.000778	6	0.12 %
INV9 TO LC2	32	0.000778	8	0.17 %
INV10 TO LC2	32	0.000778	10	0.21 %
			MAX V DROP(%)	0.21 %

AC VOLTAGE DROP PERCENTAGE FROM FUSED ACD TO POI				
4/0 AWG	VOLTAGE-240			
FUSED AC DISCONNECT TO POI	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
ACD1 TO POI	160	0.0000608	5	0.04 %
ACD2 TO POI	160	0.0000608	5	0.04 %
			MAX V DROP(%)	0.04 %

AC VOLTAGE DROP PERCENTAGE FROM LOAD CENTER TO FUSED ACD				
4/0 AWG	VOLTAGE-240			
LOAD CENTER TO FUSED ACD	INVERTER OUTPUT CURRENT	RESISTANCE IN OHM/FT	1 WAY WIRE LENGTH(FT)	V DROP(%)
LC1 TO ACD1	160	0.0000608	50	0.41 %
LC2 TO ACD2	160	0.0000608	50	0.41 %
			MAX V DROP(%)	0.41 %

**VOLTAGE DROP CALCULATION**

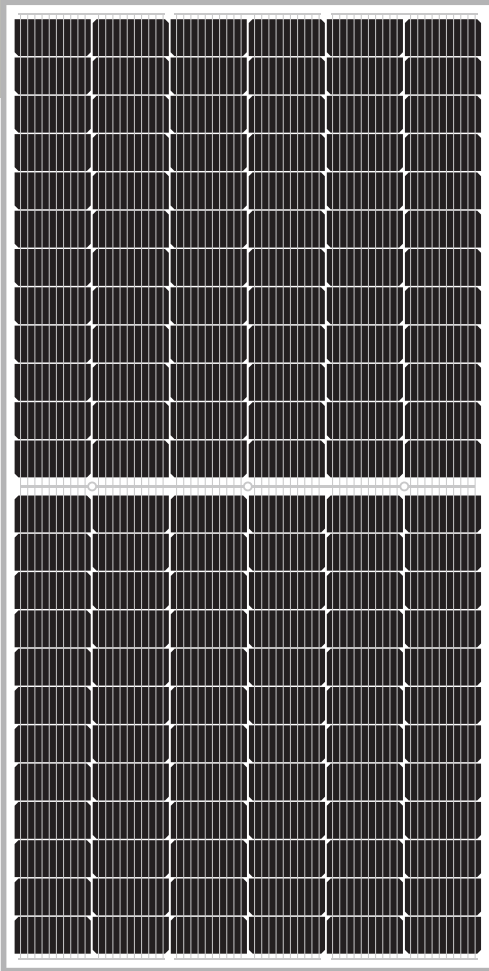


FROM STRENGTH TO STRENGTH IN NATURE

# NESE 545-72MHB-M10

MONO PERC HALF-CELL BIFACIAL SOLAR MOUDLE

FROM CAMBODIA



## KEY FEATURES



### High efficiency PERC

A high efficiency 182 (M10) PERC solar cell with 10 busbars technology to ensure the efficiency of the solar module up to 21.10% and stable operation.



### Bifacial power generation

Increases 10-30% power generation revenue.



### Excellent performance with weak light

More power output with a weak light condition-through advanced glass and solar cells.



### Wind/Snow load

Wind load 2400 pa, snow load 5400 pa.



PID

### Pid Free

Excellent Anti-PID performance, minimized the degradation of power.



### Resistance of extreme environment conditions

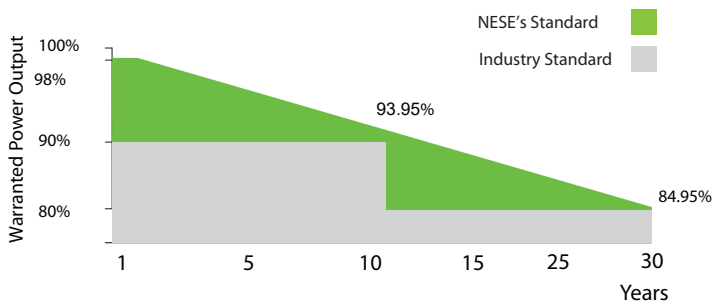
High Salt Mist and Ammonia resistance certified by TUV.

INSURED BY

CHUBB® Munich RE 

## LINEAR PERFORMANCE WARRANTY

12 years product warranty. 30 years linear power warranty.



## MANAGEMENT SYSTEM CERTIFICATES

ISO 9001:2015/QUALITY MANAGEMENT SYSTEM  
ISO 14001:2015/STANDARDS FOR ENVIRONMENTAL MANAGEMENT SYSTEM

## PRODUCT CERTIFICATES

IEC 61215/IEC 61730:VDE/CE/CEC AU  
UL 61730: CSA



PHUM TANOUN, SANGKAT KOMBOUL, KHAN POSENCHAY, PHNOM PENH, KINGDOM OF CAMBODIA

WWW.NESOLAR.COM.KH

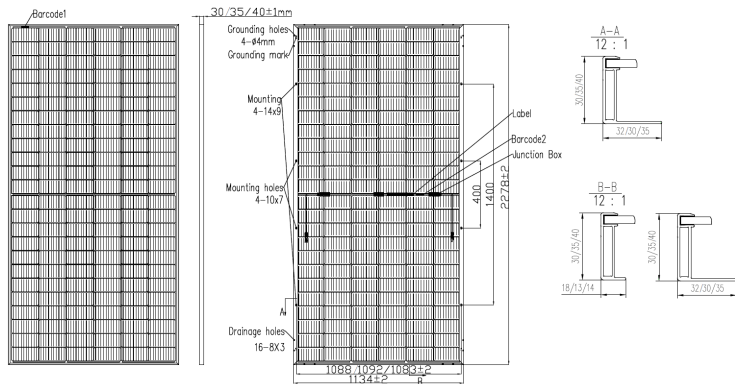
# SPECIFICATIONS

Module type	NESE 525-72MHB-M10		NESE530-72MHB-M10		NESE535-72MHB-M10		NESE540-72MHB-M10		NESE545-72MHB-M10	
	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)	STC	(NOCT)
Maximum power(Pmax)	525Wp	393Wp	530Wp	397Wp	535Wp	400Wp	540Wp	404Wp	545Wp	408Wp
Maximum power voltage(Vmp)	40.9V	37.8V	41.1V	38.0V	41.3V	38.1V	41.5V	38.3V	41.7V	38.5V
Maximum power current (Imp)	12.85A	10.40A	12.91A	10.45A	12.96A	10.50A	13.02A	10.55A	13.08A	10.60A
Open-circuit voltage( Voc)	49.2V	45.9V	49.4V	46.1V	49.6V	46.3V	49.8V	46.5V	51.0V	46.7V
Short-circuit current(Isc)	13.59A	10.98A	13.65A	11.02A	13.71A	11.07A	13.77A	11.12A	13.83A	11.17A
Module efficiency STC (%)	20.32%		20.52%		20.71%		20.90%		21.10%	
Operating temperature(°C)	-40°C ~ 85°C									

## ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN

Front power Pmax/W	525	530	535	540	545
Total power Pmax/W	656	663	669	675	681
Vmp/V(Total)	41.0	41.2	41.4	41.6	41.8
Imp/A(Total)	16.01	16.08	16.15	16.23	16.30
Voc/V(Total)	49.3	49.5	49.7	49.9	50.1
Isc/A(Total)	16.75	16.82	16.90	16.97	17.05

## ENGINEERING DRAWING



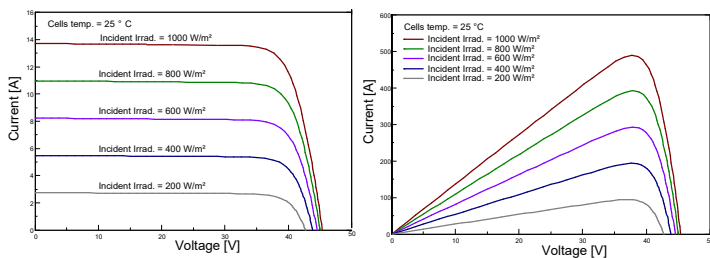
## TEMPERATURE RATINGS

NOCT	44 ± 2°C
Temperature coefficients of Pmax	-0.35%/°C
Temperature coefficients of Voc	-0.29%/°C
Temperature coefficients of Isc	+0.05%/°C
Refer. Bifacial Factor	70 ± 5%

## MATERIAL CHARACTERISTICS

Number of cell	144 (6 * 24)
Dimensions	2278*1134*30/35/40
Weight	33.5/34/34.5kg
Front glass	2.0mm+2.0mm heat strengthened glass
Frame	Anodized aluminium alloy

## IV CURVES OF THE PV MODULES



Electrical performance vs Incident Irradiance  
Current-voltage & power-voltage curves (545W)

## WORKING CONDITIONS

Maximum system voltage	1000/1500 VDC	Junction box	Ip68 , 3 diodes
Maximum series fuse rating	30A	Cables	12 AWG, length: 350 mm or Customized
		Connectors	MC4-Compatible

## PACKAGING CONFIGURATION

40HQ 720/620/540PCS



TESLA

## SOLAR INVERTER

3.8 kW | 7.6 kW

Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

### KEY FEATURES

- Built on Powerwall 2 technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 3.8 kW and 7.6 kW models available

## SOLAR INVERTER

Tesla Solar Inverter provides DC to AC conversion and integrates with the Tesla ecosystem, including Solar Panels, Solar Roof, Powerwall, and vehicle charging, to provide a seamless sustainable energy experience.

### KEY FEATURES

- Integrated rapid shutdown, arc fault, and ground fault protection
- No neutral wire simplifies installation
- 2x the standard number of MPPTs for high production on complex roofs



### ELECTRICAL SPECIFICATIONS

OUTPUT (AC)	3.8 kW	7.6 kW
Nominal Power	3,800 W	7,600 W
Maximum Apparent Power	3,328 VA at 208 V 3,840 VA at 240 V	6,656 VA at 208 V 7,680 VA at 240 V
Maximum Continuous Current	16 A	32 A
Breaker (Overcurrent Protection)	20 A	40 A
Nominal Power Factor	1 - 0.85 (leading / lagging)	
THD (at Nominal Power)	<5%	
INPUT (DC)		
MPPT	2	4
Input Connectors per MPPT	1-2	1-2-1-2
Maximum Input Voltage	600 VDC	
DC Input Voltage Range	60 - 550 VDC	
DC MPPT Voltage Range <sup>1</sup>	60 - 480 VDC	
Maximum Current per MPPT ( $I_{mp}$ )	11 A	
Maximum Short Circuit Current per MPPT ( $I_{sc}$ )	15 A	

### PERFORMANCE SPECIFICATIONS

Peak Efficiency <sup>2</sup>	97.5%	98.0%
CEC Efficiency <sup>2</sup>	97.5%	
Allowable DC/AC Ratio	1.4	
Customer Interface	Tesla Mobile App	
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G) <sup>3</sup>	
AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n), RS-485	
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown	
Supported Grid Types	60 Hz, 240 V Split Phase 60 Hz, 208 V Wye	
Required Number of Tesla Solar Shutdown Devices per Solar Module	See <i>Solar Shutdown Device Requirements per Module</i> on page 3	
Warranty	12.5 years	

<sup>1</sup> Maximum current.

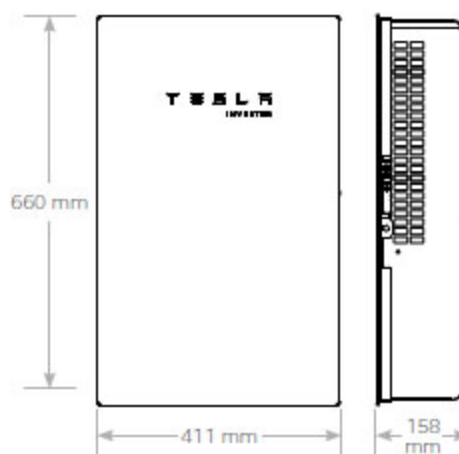
<sup>2</sup> Expected efficiency pending final CEC listing.

<sup>3</sup> Cellular connectivity subject to network operator service coverage and signal strength.

### MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)
Weight	52 lb <sup>4</sup>
Mounting options	Wall mount (bracket)

<sup>4</sup> Door and bracket can be removed for a mounting weight of 37 lb.



### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature <sup>5</sup>	-30°C to 45°C (-22°F to 113°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	Type 3R
Ingress Rating	IP55 (Wiring compartment)
Pollution Rating	PD2 for power electronics and terminal wiring compartment, PD3 for all other components
Operating Noise @ 1 m	< 40 db(A) nominal, < 50 db(A) maximum

<sup>5</sup> For the 7.6 kW Solar Inverter, performance may be de-rated to 6.2 kW at 240 V or 5.37 kW at 208 V when operating at temperatures greater than 45°C.

### COMPLIANCE INFORMATION

Grid Certifications	UL 1741, UL 1741 SA, IEEE 1547, IEEE 1547.1
Safety Certifications	UL 1699B, UL 1741, UL 1998 (US)
Emissions	EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

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Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G) <sup>3</sup>	
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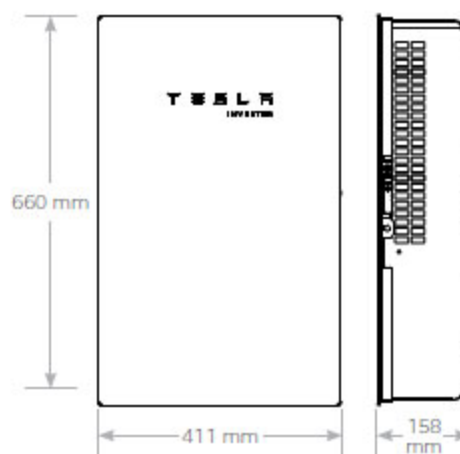
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## Exhibit D



P.O. Box 18 ♦ 6402 Old Corydon Road  
Henderson, Kentucky 42419-0018  
(270) 826-3991 ♦ FAX (270) 826-3999  
(800) 844-4832

November 30, 2023

Mr. David Spenard  
Strobo Barkley  
730 W. Main Street  
Suite 202  
Louisville, KY 40202

Re: Kenergy/Roger Shocklee

Dear Mr. Spenard:

I am in receipt of your November 27, 2023, letter addressed to our counsel. Mr. Shocklee's application was rejected because he is not the owner of the property where the proposed solar facility was to be installed. KRS 278.465 defines an "eligible customer-generator" as one who owns and operates an electric generating facility. . . located on the customer's premises.

Sincerely,

A handwritten signature in black ink that reads "Rob Stumph". The signature is fluid and cursive, with the first name "Rob" and last name "Stumph" clearly legible.

Rob Stumph, PE  
Vice President, Eng./Ops.

## **Exhibit E**



MEMBERSHIP FEE 200.1

APPLICATION FOR MEMBERSHIP
MEMBERSHIP/SECURITY DEPOSIT CERTIFICATE
EASEMENT

Date

SECURITY DEPOSIT 235

ACCOUNT NAME ACCOUNT #

ADDRESS

APPLICANT FEDERAL ID OR DRIVERS LICENSE & SOCIAL SECURITY

EMPLOYER PHONE

SPOUSE'S NAME FEDERAL ID OR DRIVERS LICENSE & SOCIAL SECURITY

JOINT APPLICANT FEDERAL ID OR DRIVERS LICENSE & SOCIAL SECURITY

EMPLOYER PHONE

CO-SIGNER CO-SIGNER CAPITAL CREDIT #

OFFICE USE ONLY
DATE
APPLIED TO FINAL BILL
CASH REFUND or CHECK
INTEREST AMOUNT
MASS REFUND/DATE

WHITE - CUSTOMER COPY YELLOW CARD - OFFICE COPY

AT-44 Revised 01/2006

(1) I apply for membership in Kenergy Corp.(hereinafter referred to as "cooperative") and attach to this application the membership fee of FIVE DOLLARS (\$5.00).

(2) I agree that as a member of the cooperative:

(a) I will pay the cooperative's tariff rates as approved from time to time for all electric energy charged to my account.

(b) I grant the cooperative the permanent right to construct, operate, remove, replace and perpetually maintain its electric power lines (whether overhead or underground) and all associated equipment on the property owned or occupied by me, and in or upon all roads, streets or highways abutting that property, and will execute and deliver to the cooperative any conveyance, grant or instrument which the cooperative shall request for said purpose or any of them. I agree that all wires, meters, poles, transformers and other equipment which the cooperative constructs or installs on that property will, at all times, be owned by the cooperative, and the cooperative shall have the right to come on that land to exercise the rights granted it by me herein, which include the right to cut, trim and control the growth of trees, shrubbery and other vegetation, by any reasonable means, that may interfere with or threaten to endanger the operation or maintenance of lines or other equipment.

(c) I understand that as a member of the cooperative I will have the rights and privileges of a member under the Articles of Consolidation and Bylaws of the cooperative and will be bound by the responsibilities, rules and regulations imposed on a member by those documents and any amendments to those documents that may from time to time be adopted by the Board of Directors or membership of the cooperative.

(3) I further understand that acceptance of my application for membership by the Board of Directors of the cooperative will constitute an agreement between the cooperative and me upon the terms set forth herein.

(4) Applicant agrees that this membership shall be

[ ] a) Individual Membership [ ] b) Joint Membership (both parties must sign certificate) [ ] c) Business, Church or Organization

(5) The undersigned Member(s) agrees to deposit with the cooperative such security deposit as is required by the rules and regulations of the cooperative and hereby grants cooperative a security interest in that deposit as collateral for service to be supplied by cooperative. If service to Member is terminated, cooperative shall apply that deposit and any assigned assets held by the cooperative to any bills due the cooperative and any portion of said deposit not so applied shall be refunded to undersigned upon termination of service.

APPLICANT (Signature) JOINT APPLICANT (Signature) EMPLOYEE INITIALS