REQUEST FOR PROPOSAL
for
GUARANTEED ENERGY SAVINGS CONTRACT

MSD of Wayne Township

REVISED TIMELINE

Date	Action Item
Jan. 3, 2022	On site visit
Jan. 12, 2022	Deadline for follow up questions from respondents to be received by MSD Wayne Township. Respondents are to email questions to Zach Dennis (zachary.dennis@wayne.k12.in.us) by 2 PM Eastern time
Jan. 19, 2022	MSD Wayne Township will respond publicly to all follow up questions via our public notification website (https://district.wayne.k12.in.us/public-notices/) by 2PM Eastern time
Feb. 1, 2022	Proposals are received by 2PM Eastern Time at the MSD Wayne Township Education Center (1220 S. High School Rd Indianapolis, IN 46142) or electronically at Barry.Gardner@wayne.k12.in.us. Due to the ongoing construction at the Education Center, electronic submission is preferred.
Feb. 3, 2022	In-person interviews for finalists
Feb. 7, 2022	Board selects the best Qualified Provider as recommended by the Administration
Week of 2/7/22	Notice to proceed offered

All questions received and the responses of MSD of Wayne Township.

1. The RFP is clear on which facilities are selected for solar installation and the bills have been properly provided. There is no supporting documentation in this RFP for what specifically the governance of the current facility needs are (outside of the solar application). This element will also impact the size of the solar system to be installed. There is a limit on how much electricity can be generated on site (1 MW AC for Net Meter per meter the system is connected too) as a direct reflection of how much electricity is being provided by the utility or consumed by the facility. Any Guaranteed Energy Saving Provider will need to identify and understand the lowering of demand either what is planned or needed for proper energy generation sizing. The way this section is worded the respondents are required to explain current facility needs and in the overall evaluation this section represents 40% of the overall assessment.

    a. If there are known ECM's then that should go into the solar design for proper sizing, if there are not known ECM's then we would suggest an audit application to identify and advance ECM integration. In the absence of the known ECM there is an inability to be accurate with the establishment of power supply and offset and holistic efficiency planning to maximize visual value proposition for the facility/district.

Answer: MSD Wayne is looking forward to the creativity offered by GES providers. No known ECM's at this time and leaning on respondents to offer ECMs in their proposal.

2. The listing of facilities being asked to deliver for July 1st COD regarding the solar projects has the potential for being all over the place from respondent to respondent regarding system size, savings, and accuracy. What is the School's overall goal for the solar projects? Will the School want respondents to design to get as close to 100% offset as possible as to maximize carbon offset? Or is there more of a financial focus of providing the best system size to maximize the return on investment and payback? Most of these facilities will have a reduced IRR if the solar is designed to 100% consumption offset, therefore, understanding a design goal is paramount in determining the best solution for the School's needs.

    a. If the School would like to target 100% offset for as many of the schools as possible and the IRR is not of focus, would the School consider solar PV carports in the parking areas? This type of system will be much more costly than a typical ground mount or rooftop application.

Answer: The overall goal of the energy savings process is to reduce the financial obligation of our energy usage in the long term. MSD Wayne understands that 100% offset is likely not possible at every site. The creativity of respondents for their proposal is welcomed at each site.

3. Regarding savings, there is the matter of SREC's and their value over time. So that the district isn't provided a savings value or project impact by an uncertain and certainly variable in its value SREC impact how is the district going to handle the environmental attributes? My suggestion would be to either leave out and say that environmental attributes are the district's property or have everyone use the same value which can be averaged over the last 3 years or something.

Answer: MSD Wayne will take this under consideration.

4. In the Addendum released following the initial RFP there are facilities that have completed interconnection agreements to be utilized by respondents. If the substance of the equipment or technology changes the interconnection Agreements will need to be modified or redone (this is the more realistic of the impacts). The question here is consistent with the overall theme, solar is not always the best Demand lowering impact so by evaluating the facilities we may suggest changes to these systems that are beneficial to the district. Another consideration is the supply chain itself. Required in the Interconnection Agreements are identified solar modules and inverters. They may or may not be available in the time frame we need to complete the project on time. We can use the facts as shared in the addendum to respond to the RFP, but they may not be utilized for the reasons listed above.

Answer: MSD Wayne is open to substitutions of components to maximize our savings.

5. Site Visit. Following a presentation or Q&A between the respondents and the district will the respondents be able to evaluate the facilities? If we are going to evaluate 25 facilities we are going to need several team members to be in attendance. Conversely, if there are already completed audits or evaluations the district has already completed will that data be share to limit the facility evaluations on the 3rd. If we have to evaluate 25 Facilities we may need to include 8-13 site evaluation teams in order to be complete and accurate in the data gathering. In order to properly prepare for the site visit can you please let us know how to prepare given the nature of the respondent being required to understand the needs of the facility?

Answer: January 3rd will be the date to visit our sites and respondents should prepare accordingly.

6. The addendum drawings that were sent for this RFP included floor plans and roof plans for each facility but there was no data included that shows existing electrical service location, type of electrical service (480V 3-phase, 208V 3-phase, etc.), or size of existing gear. Can the school provide existing as-built drawings for the electrical equipment feeding the building as this information will be needed to determine the type of interconnection for the solar projects. (We can also gather this detail on the site visits of the facilities).

Answer: Please plan to accomplish this during the January 3rd site visits. If possible, as-built drawings will be provided to attendees at the January 3rd meeting.

7. Can the existing Level 2 Interconnection Agreements that were provided with Addendum 1 that are already in possession of the owner be utilized/extended for addresses other than the addresses listed?

Answer: These agreements are site specific.

8. Currently Indianapolis has a backlog in solar projects and permitting has been delayed. Has the school district or any other entity submitted any portion of these projects for permitting to ensure it can be accelerated to make the July 1st, 2022 net metering date achievable?

Answer: No. MSD Wayne is expecting respondents to relay what they feel that they can accomplish by that date.

9. Have any additional agreements been started with the utilities companies?

Answer: No.

10. There have been two sites listed as potential options for ground mounted solar arrays. Are these sites sufficient to handle the entire solar demand from the district?

Answer: No.

11. Has any permitting or interconnection agreements been started for any of the above listed sites?

Answer: The interconnection agreements that have been shared are the only agreements in our possession. No permits for this process have been acquired.

12. The site visit is currently scheduled for the 3rd of January. This provides the teams with 15 days to develop guaranteed maximum pricing for all of the solar components and all of the upgrades associated with the guaranteed savings project. This is an extremely short amount of time to develop accurate competitive pricing. Will you provide an extension of 2 weeks to allow comprehensive pricing to be developed?

Answer: Refer to the updated timeline above.

13. Understanding that the RFP is being driven by the July 1st, 2022 net metering deadline, would the school District be open to splitting the Solar component out from the other scopes of work listed to provide firms more time to develop firm pricing for the energy savings measures at each building?

Answer: MSD Wayne plans to move forward with the RFP as is.

14. Do you have a list of specific equipment replacements or projects that you are expecting to see included as part of this project?

Answer: MSD Wayne has no expectations for specific replacements and is looking forward to any proposals that respondents may make.

18. When is the desired and completion date in order to receive the current Net Metering approval by July 1, 2022?

Answer: The construction must be substantially completed by this date so that they qualify for net metering.

19. Other than JA solar panels and Chint and Fronius inverters are there any other specific equipment requirements?

Answer: No.

20. Can we substitute other Tier 1 solar panels and or inverters for this project?

Answer: Yes, it will be considered.

21. Are there any specific requirements for the DAS?

Answer: No specific requirements and this is at the discretion of the contractor.

22. Can we have access to the interconnection agreements?

Answer: These are attached at the end of this document.

23. Are there 5 interconnection agreements for this project?

Answer: Currently there are five in the possession of the district. The district is open to securing agreements at additional locations.

24. Has any work for this project been completed by other contractors?

Answer: No.

25. From the Addendum dated December 17, all 5 interconnection agreements add up to 700 kW DC across 4 locations and suggest that these are roof mounts or parking awning installations. Please confirm this information.

Answer: The sum is correct. However, the agreements are for alternating current, not direct current.

EXHIBIT A

Generation Facilities Description

The generation facility for Commercial Customer Metropolitan School District of Wayne Township is located at 7202 West McCarty Street, Indianapolis, IN 46241. This level 2 solar distributed generation facility will have a nameplate output rating of 150.0 kW. Finalizing the interconnection agreement and Standard Contract Rider No. 9 (net metering) is dependent upon the Customer.

The site consists of four-hundred seventy-three (473) JA Solar JAM72S10-410MR solar panels connected with three (3) CHINT SCA5-KTL-DO-US-480 248V inverter(s) each rated 50,000 watts max AC inverter output; the inverters are rated at 240 VAC single-phase, 60 Hz. This accumulates for a total inverter output generator capacity of 150.0 kW as listed on the attached application. The inverter data sheet lists the UL 1741 and IEEE 1547 certificates and approvals.

Operating Conditions

The installation shall operate in the automatic mode as governed by the IEEE 1547 standard. The distributed resource (DR) shall operate the point of common coupling at power factor required by the Company for proper operation of the power system when the producer is connected. The distributed resource (DR) shall be notified of any changes needed to the power factor (PF) schedule based on testing and operating experience after commissioning. The primary voltage schedule based on DR operation at 1.0 PF is 480 VAC during all operating times.

The installation shall operate as governed by the IEEE 1547 standard.

The distributed resource (DR) shall operate the point of common coupling at 1.0 power factor (PF unity). The DR shall be notified of any changes needed to the power factor (PF) scheduled based on testing and operating experience after commissioning.

The Customer shall notify Company prior to operating the distributed generation and request a witnessing test as dictated by IEEE 1547 section 5.4 with procedures detailed in footnote 19 stating that the test procedures are commonly provided by the equipment manufacturer(s). The Customer should have a written test procedure prior to the test which should contain check-off boxes for all actions taken during the test. Customer shall provide Company a copy of the test procedure at the conclusion of the test

The Customer or Owner shall compensate Company for labor and materials needed for maintenance of equipment required after interconnection. Standard labor and overtime rates shall apply for work performed. Routine work shall be scheduled at least a month in advance or performed at emergency overtime rates pending availability of crews and equipment.

Network Upgrades Installed by COMPANY but reimbursed and maintained at Owner Expense

COMPANY shall provide and install the following revenue meter at customer expense.

One revenue meter to monitor the inverter and service.

The Customer shall be responsible for all metering and connection costs.

Attachments

Exhibit 1A Interconnection Application including submitted drawings

Exhibit 1B Single Line Drawing

Exhibit 1C Site Plan Drawing

Exhibit 1D Inverter Specifications

Exhibit 1E Certificate of Insurance

Exhibit 1F Miscellaneous Attachments

Exhibit 1A
Interconnection Application

Application For Interconnection

Level 2**- 2MW or Less

Application Date: 11/9/2021

Applicant Information *(Please use the tab key between fields.)*

Customer (Applicant) Name: Metropolitan School District of Wayne Township
Applicant Address: 1220 South High School Road
City/State/Zip Code: Indianapolis, Indiana 46241
Contact Person: [redacted]
Email Address: [redacted]@wayne.k12.in.us Phone: [redacted]

Generation Site Information

Service (Site) Address: Operations Center, 7202 West McCarty Street
City/State/Zip Code: Indianapolis, IN 46241
Phone Number: Lat/Long: 39.75502, -86.28713
Map-Pole Number: Meter No: IPL - 0023554
Map-Pole: 552-A/391

Developer Information

Project Developer Name: [redacted]@wayne.k12.in.u Email Address: [redacted]

Project Developer Address: [redacted]

Please provide names and contact information for other Contractor and Engineering firms involved in the design and installation of the general facilities:

[redacted]

Interconnection Information

Total Generating Capacity Output of Customer Facility (AC Power and Voltage): 150kW, 480V

Type of Generator: Inverter-Based ☐ Synchronous ☐ Induction

Power Source: ☐ Solar ☐ Wind ☐ Diesel-fueled Reciprocating Engine

☒ ☐

☐ Gas-Fueled Reciprocating Engine ☐ Gas Turbine ☐ Microturbine

☐ Other (Specify)

* Certified as defined in 170 IAC 4-4.3-5
** Level ☒ as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Application For Interconnection

Level 2**- 2MW or Less

Is the Equipment "Certified" * as defined by 170 Indiana Administrative Code ("IAC") 4-4.3-5

Yes ☐ No

Indicate all possible operating modes for this generator facility:

☐ Emergency / Standby – Operated when Indianapolis Power & Light Company service is not available. Paralleling is for short durations.

☐ Peak Shaving – Operated during peak demand periods. Paralleling is for extended times.

☐ Base Load Power – Operated continuously at a predetermined output. Paralleling is continuous.

☐ Cogeneration – Operated primarily to produce thermal energy. Paralleling is extended or continuous.

☒ Renewable non-dispatched – Operated in response to an available renewable resource such as solar or wind. Paralleling is for extended times.

☐ Other – Describe:

Indicate the intended use of power generated from the proposed facility, subject to all applicable regulatory approvals.

☐ Sale of power to IPL by Rate CGS.

☐ Sale of power to IPL by Rate REP.

☒ Net Metering

☐ Internal Usage only

☐ Demand Response Resource

☐ Other -

Explain

Level of Interconnection Review Requested:

☒ Level 2** for nameplate rating 2MW or less

For this application to be considered complete, adequate documentation and information must be submitted that will allow Indianapolis Power & Light Company ("IPL") to determine the impact of the generation facilities on IPL's electric system and to confirm compliance by Customer with the provisions of 170 IAC 4-4.3 and IPL's requirements. Typically this should include the following for Level 2 applications:

1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with IPL's distribution system, including

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, and current transformers.

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. For Certified* equipment, documentation confirming that a nationally recognized testing and certification laboratory has listed the equipment.

7. A description of how the generator system will be operated including all modes of operation.

8. For inverters, the manufacturer name, model number, and AC power rating, Operating manual or link to manufacture's web site containing such manual.

9. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X"d).

10. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

This application is subject to further consideration and study by IPL and the possible need for additional documentation and information from Customer.

Fees

Level 2	Initial Review	$50 plus, $1/kW of nameplate capacity.
	Additional Review[1]	Non-binding, good faith cost estimate provided to customer.

[1] Additional Review may be elected by the customer for the case where the facility failed to meet one or more of the applicable requirements and the Initial Review indicated that additional review may enable the Company to approve the application with minor modifications. The applicant cost to conduct the Additional Review is in addition to the initial Review Fee. Actual costs will be billed or credited to the applicant following completion of the Additional review and minor modifications.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Application For Interconnection

Level 2**- 2MW or Less

Insurance Requirements

The Applicant shall provide evidence of homeowners, commercial or other insurance that provides coverage in the amount of at least $2 million for Comprehensive General Liability and Contractual Liability.

☒ Evidence of Insurance coverage provided with Application

Reference Documents

170 IAC Customer generator interconnection standards are located at the following web site. http://www.in.gov/legislative/iac/T01700/A00040.PDF?

Submittal of Fees, Application and Documentation

Fees - Payment for the Initial Review shall be sent to IPL Distributed Generation Interconnections, Attn: Sonya Kunkel, 1230 W Morris St., Indianapolis, IN 46221. Please make checks payable to Indianapolis Power & Light Co. and include the customer's name and address on the check.

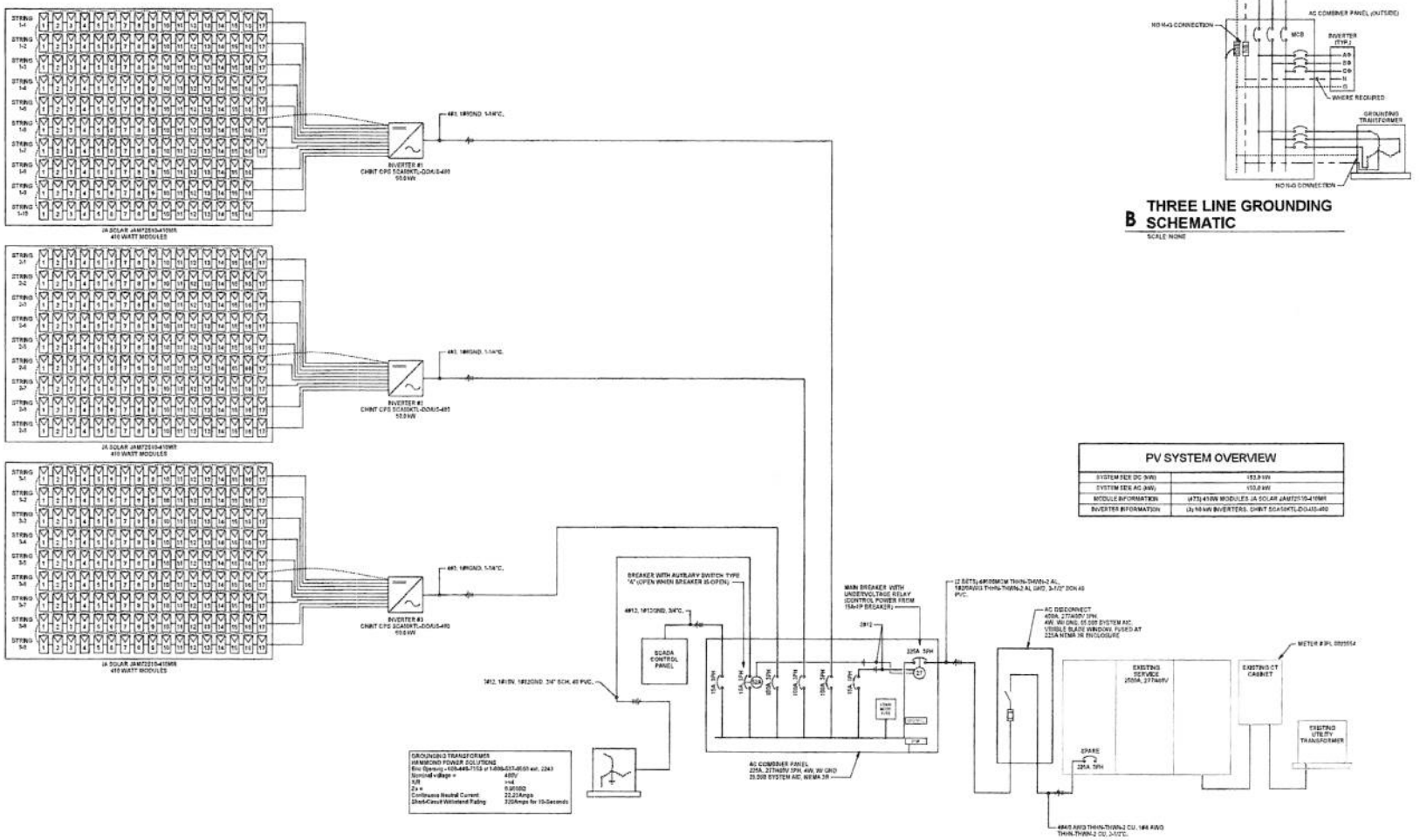
Application and Documentation - Please send the application and all documentation electronically to ipl.interconnection@aes.com using the standard e-mail formatting. All paper copies of documentation should be scanned electronically prior to submittal to IPL.

* Certified as defined in 170 IAC 4-4.3-5

** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Exhibit 1B
Single Line Drawing



PV SYSTEM OVERVIEW	
SYSTEM SIZE DC (kW)	183.9 kW
SYSTEM SIZE AC (kW)	150.0 kW
MODULE INFORMATION	(473) 410W MODULES JA SOLAR JAM72S10-410MR
INVERTER INFORMATION	(3) 50 kW INVERTERS, CHINT SCA50KTL-DO/US-480

A PV ONE-LINE DIAGRAM - ELECTRICAL
SCALE: NONE

B THREE LINE GROUNDING SCHEMATIC
SCALE: NONE

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

OPERATIONS CENTER
7202 WEST MCCARTY STREET
INDIANAPOLIS, INDIANA 46241

PROJECT DESCRIPTION

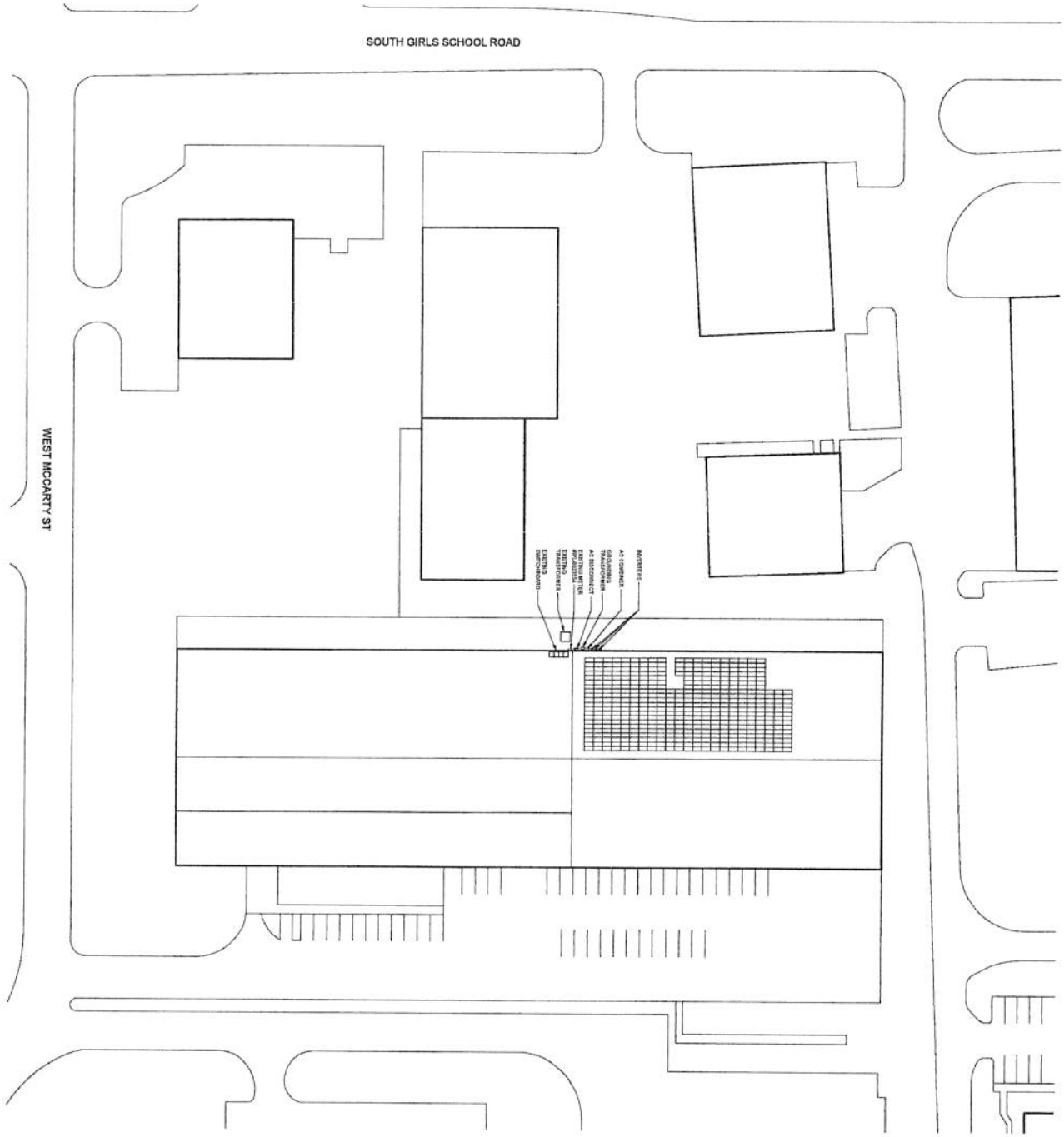
KEYPLAN

DRAWN BY: [redacted] DESIGNED BY:
SCALE: REFER TO DRAWING CHECKED BY:
DATE: NOV. 11, 2021 JOB NO.:

SHEET DESCRIPTION:
PV RISER DIAGRAM

SHEET NUMBER:
E-500

Exhibit 1C
Site Plan Drawing



PROJECT DESCRIPTION:

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

OPERATIONS CENTER
7202 WEST MCCARTY STREET
INDIANAPOLIS, INDIANA 46241

REVISIONS:

NO.	DESCRIPTION	DATE

CERTIFIED BY:

DRAWN BY:

SCALE:

REFER TO DRAWING:

DATE: NOV. 11, 2021

JOB NO.:

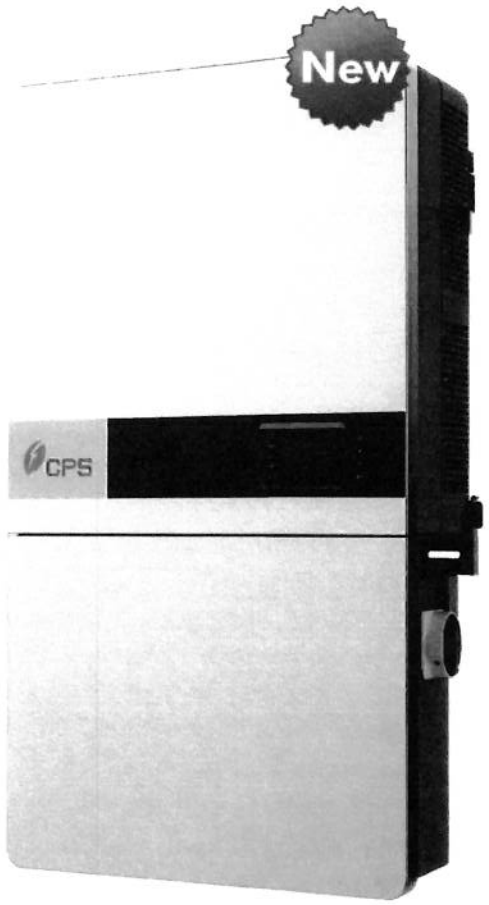
SHEET DESCRIPTION:
SITE PLAN - ELECTRICAL

SHEET NUMBER:
E-100

Exhibit 1D
Inverter Specifications

25kW 208V, 1000Vdc String Inverters for North America

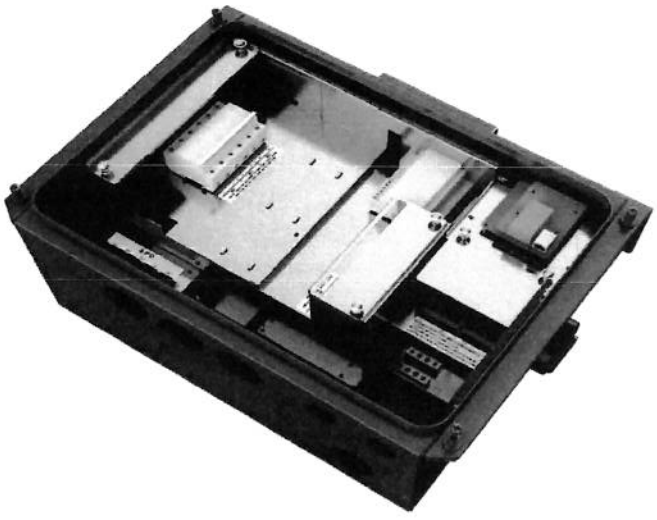
The 25kW (25kVA) CPS three phase string inverters are designed for rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 97.0% peak and 96.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 25KTL product ships with the Rapid Shutdown wire-box, fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the APS RSD-S-PLC-A products. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.



CPS SCA25KTL-DO/US-208

Key Features

- NEC 2017/2020 PVRSS Certified Rapid Shutdown
- NEC 2017 compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT's with 2 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21, including SA14 FW and SA15 VW
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.8 DC/AC Inverter Load Ratio



25KTL Rapid Shutdown Wire-box

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCA25KTL-DO/US-208
DC Input	
Max. PV Power	45kW (17kW per MPPT)
Max. DC Input Voltage	1000Vdc
Operating DC Input Voltage Range	200-950Vdc
Start-up DC Input Voltage / Power	330V / 80W
Number of MPP Trackers	3
MPPT Voltage Range @ PF>0.99	480-850Vdc
Max. PV Short-Circuit Current (Isc x 1.25)	135A (45A per MPPT)
Number of DC Inputs	6 inputs, 2 per MPPT
DC Disconnection Type	Load-rated DC switch
DC Surge Protection	Type II MOV, 2800V_C, 20kA I_{TM} (8/20..S)
AC Output	
Rated AC Output Power @ PF>0.99	25kW
Max. AC Apparent Power (Selectable)	25kVA
Rated Output Voltage	208Vac
Output Voltage Range[1]	183 - 228Vac
Grid Connection Type	3Φ / PE / N (Neutral optional)
Max. AC Output Current @208Vac	69.5A
Rated Output Frequency	60Hz
Output Frequency Range[1]	57 - 63Hz
Power Factor	>0.99 (±0.8 adjustable)
Current THD @ Rated Load	<3%
Max. Fault Current Contribution (1 Cycle RMS)	64.1A (0.92 PU)
Max. OCPD Rating	125A
AC Disconnection Type	Load-break rated AC switch
AC Surge Protection	Type II MOV, 1240V_C, 15kA I_{TM} (8/20..S)
System and Performance	
Topology	Transformerless
Max. Efficiency	97.0%
CEC Efficiency	96.5%
Stand-by / Night Consumption	<3W
Environment	
Enclosure Protection Degree	NEMA Type 4X
Cooling Method	Variable speed cooling fans
Operating Temperature Range[2]	-22°F to +140°F / - 30°C to +60°C
Non-Operating Temperature Range[3]	No low temp minimum to +158°F / +70°C maximum
Operating Humidity	0 to 100%
Operating Altitude	13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
Audible Noise	<60dBA @ 1m and 25°C
Display and Communication	
User Interface and Display	LCD+LED
Inverter Monitoring	SunSpec, Modbus RS485
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)
Modbus Data Mapping	CPS
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)
Mechanical	
Dimensions (HxWxD)	39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
Weight	Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
Mounting / Installation Angle[4]	15 to 90 degrees from horizontal (vertical or angled)
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL, Lugs not supplied)
DC Termination[5]	Screw Clamp, Neg. Busbar[5] Wire range: #14 - #6AWG CU
Fused String Inputs (2 per MPPT)[6]	20A fuses provided (Fuse values up to 30A acceptable)
Safety	
Certifications and Standards	UL1741SA-2016, UL1699B, UL1998, CSA-C22.2 NO.107.1-01, IEEE1547a-2014, FCC PART15
Selectable Grid Standard	IEEE 1547, CA Rule 21, ISO-NE, HECO
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt
Warranty	
Standard	10 years
Extended Terms	15 and 20 years

1) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
2) Active Power Derating begins; at 45°C when PF=1 and MPPT≥Vmin, and at 50°C when PF=1 and MPPT V ≥ 700Vdc.
3) See user manual for further requirements regarding non-operating conditions.
4) Shade Cover accessory required for installation angles of 75 degrees or less.
5) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017, 690.9 (C).
6) *Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.*

Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

Project: 80048389 **Date Issued:** 2020-08-19

Issued to: SHANGHAI CHINT POWER SYSTEMS CO.,LTD
3255 Si Xian Rd
Songjiang District,
Shanghai 201614
CHINA

Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: Jason Lei
Jason Lei

PRODUCTS

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive Inverter, Models CPS SCA50KTL-DO/US-480, CPS SCA60KTL-DO/US-480 and CPS SCA25KTL-DO/US-208, permanently connected.

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Certificate: 70128088 **Master Contract:** 255045
Project: 80048389 **Date Issued:** 2020-08-19

APPLICABLE REQUIREMENTS

CSA C22.2 No. 107.1-01 - General Use Power Supplies

*UL 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision September 7, 2016)

UL1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010)

UL1741 CRD - Grid Support Utility Interactive Interoperability Optional Functions: Prevent Enter Service and Limit Active Power (CA Rule 21, Phase 3, functions 2 and 3) (Dated October 22, 2019)

CSA TIL M-07 - Interim Certification Requirements for Photovoltaic (PV) DC Arc-Fault Protection (Issue Number 1, March 11, 2013)

UL 1699B - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018)

*Note: Conformity to UL 1741 (Second Edition, Revision September 7, 2016) includes compliance with applicable requirements of IEEE 1547-2003 (R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015, California Rule 21 and Supplement SA 8-18.

CSA GROUP™

Supplement to Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80048389	2020-08-19	Update report 70128088 to add new model CPS SCA25KTL-DO/US-208, change the Maximum continuous output current for CPS SCA50/60KTL-DO/US-480 and meet the requirement for Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018).
80046608	2020-06-17	Update to report 70128088 to include UL1741CRD SA17 - 18 requirements.
70218379	2019-03-15	Update report 70128088 to include alternate components, modification and the software version update.
70203151	2018-11-29	Update report 70128088 to include alternate components and modification to markings.
70128097	2017-07-06	Update report 70128088 to include grid support function to meet California Rule 21 requirements.
70128088	2017-07-06	Grid Support Utility Interactive Inverter, Model CPS SCA50KTL-DO/US-480 and CPS SCA60KTL-DO/US-480. (C/US)

Exhibit 1E
Certificate of Insurance

Client#: 35624 MSDWAYN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/16/2021

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

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

PRODUCER	CONTACT NAME: Jennifer Collins	
EPIC Insurance Midwest P.O. Box 80159 Indianapolis, IN 46280	PHONE (A/C, No, Ext): 317-706-9828	FAX (A/C, No):
	E-MAIL ADDRESS: jennifer.collins@epicbrokers.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : The Netherlands Insurance Company	24171
INSURED MSD of Wayne Township Marion County Indiana 1220 South High School Road Indianapolis, IN 46241	INSURER B : Indiana Insurance Company	22659
	INSURER C : Peerless Insurance Company	24198
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	X		CBP8488211	06/01/2021	06/01/2022	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
							MED EXP (Any one person)	$15,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$1,000,000
	POLICY PRO-JECT LOC						GENERAL AGGREGATE	$2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$2,000,000
								$
C	AUTOMOBILE LIABILITY			BA9853550	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CU8521081	06/01/2021	06/01/2022	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $10000							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Leased/Rented Eq.			CBP8488211	06/01/2021	06/01/2022	$25,000	

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

CERTIFICATE HOLDER

AES Indiana
2102 N. Illinois St.
Indianapolis, IN 46202

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

JMCC1

Exhibit 1F
Miscellaneous Attachments

EXHIBIT A

Generation Facilities Description

The generation facility for Commercial Customer Metropolitan School District of Wayne Township is located at 6301 W. Morris Street, Indianapolis, IN 46241 (Admin. Bldg. 1B). This level 2 solar distributed generation facility will have a nameplate output rating of 86.0 kW. Finalizing the interconnection agreement and Standard Contract Rider No. 9 (net metering) is dependent upon the Customer.

The site consists of two-hundred seventy (270) JA SOLAR JAM72S10-410MR solar panels connected with one (1) CHINT SCA36KTL-DO-US-480 480V inverter(s) each rated 36,000 watts and one (1) CHINT SCA50KTL-DO-US-480 each rated 50,000 watts max AC inverter output; the inverters are rated at 240 VAC single-phase, 60 Hz. This accumulates for a total inverter output generator capacity of 86.0 kW as listed on the attached application. The inverter data sheet lists the UL 1741 and IEEE 1547 certificates and approvals.

Operating Conditions

The installation shall operate in the automatic mode as governed by the IEEE 1547 standard. The distributed resource (DR) shall operate the point of common coupling at power factor required by the Company for proper operation of the power system when the producer is connected. The distributed resource (DR) shall be notified of any changes needed to the power factor (PF) schedule based on testing and operating experience after commissioning. The primary voltage schedule based on DR operation at 1.0 PF is 208 VAC during all operating times.

The installation shall operate as governed by the IEEE 1547 standard.

The distributed resource (DR) shall operate the point of common coupling at 1.0 power factor (PF unity). The DR shall be notified of any changes needed to the power factor (PF) scheduled based on testing and operating experience after commissioning.

The Customer shall notify Company prior to operating the distributed generation and request a witnessing test as dictated by IEEE 1547 section 5.4 with procedures detailed in footnote 19 stating that the test procedures are commonly provided by the equipment manufacturer(s). The Customer should have a written test procedure prior to the test which should contain check-off boxes for all actions taken during the test. Customer shall provide Company a copy of the test procedure at the conclusion of the test

The Customer or Owner shall compensate Company for labor and materials needed for maintenance of equipment required after interconnection. Standard labor and overtime rates shall apply for work performed. Routine work shall be scheduled at least a month in advance or performed at emergency overtime rates pending availability of crews and equipment.

Network Upgrades Installed by COMPANY but reimbursed and maintained at Owner Expense

COMPANY shall provide and install the following revenue meter at customer expense.

One revenue meter to monitor the inverter and service.

The Customer shall be responsible for all metering and connection costs.

Attachments

Exhibit 1A Interconnection Application including submitted drawings

Exhibit 1B Single Line Drawing

Exhibit 1C Site Plan Drawing

Exhibit 1D Inverter Specifications

Exhibit 1E Certificate of Insurance

Exhibit 1F Miscellaneous Attachments

Exhibit 1A
Interconnection Application

Application For Interconnection

Level 2**- 2MW or Less

Application Date: 11/16/2021

Applicant Information *(Please use the tab key between fields.)*

Customer (Applicant) Name: Metropolitan School District of Wayne Township

Applicant Address: 1220 South High School Road

City/State/Zip Code: Indianapolis, Indiana 46241

Contact Person: [redacted]

Email Address: [redacted]@wayne.k12.in.us Phone: [redacted]

Generation Site Information

Service (Site) Address: Administration Service 1B, 6301 W.Morris St.

City/State/Zip Code: Indianapolis, IN 46241

Phone Number: [redacted] Lat/Long: 39.74974, -86.27042

Map-Pole Number: [redacted] Meter No: IPL-0020560

Developer Information Map-Pole: 553-B/339 ; JLS, 11/29/2021

Project Developer Name: [redacted] Email Address: [redacted]

Project Developer Address: [redacted] Phone: [redacted]

Please provide names and contact information for other Contractor and Engineering firms involved in the design and installation of the general facilities:

[redacted]

Interconnection Information

Total Generating Capacity Output of Customer Facility (AC Power and Voltage): 86.0kW, 480V

Type of Generator: ☒ Inverter-Based ☐ Synchronous ☐ Induction

Power Source: ☒ Solar ☐ Wind ☐ Diesel-fueled Reciprocating Engine
☐ Gas-Fueled Reciprocating Engine ☐ Gas Turbine ☐ Microturbine
☐ Other (Specify)

Is the Equipment "Certified" * as defined by 170 Indiana Administrative Code ("IAC") 4-4.3-5
☒ Yes ☐ No

Indicate all possible operating modes for this generator facility:

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

- ☐ Emergency / Standby – Operated when Indianapolis Power & Light Company service is not available. Paralleling is for short durations.
- ☐ Peak Shaving – Operated during peak demand periods. Paralleling is for extended times.
- ☐ Base Load Power – Operated continuously at a predetermined output. Paralleling is continuous.
- ☐ Cogeneration – Operated primarily to produce thermal energy. Paralleling is extended or continuous.
- ☒ Renewable non-dispatched – Operated in response to an available renewable resource such as solar or wind. Paralleling is for extended times.
- ☐ Other – Describe:

Indicate the intended use of power generated from the proposed facility, subject to all applicable regulatory approvals.

- ☐ Sale of power to IPL by Rate CGS.
- ☐ Sale of power to IPL by Rate REP.
- ☒ Net Metering
- ☐ Internal Usage only
- ☐ Demand Response Resource
- ☐ Other - Explain

Level of Interconnection Review Requested:

- ☒ Level 2** for nameplate rating 2MW or less

For this application to be considered complete, adequate documentation and information must be submitted that will allow Indianapolis Power & Light Company ("IPL") to determine the impact of the generation facilities on IPL's electric system and to confirm compliance by Customer with the provisions of 170 IAC 4-4.3 and IPL's requirements. Typically this should include the following for Level 2 applications:

1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with IPL's distribution system, including generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, and current transformers.
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.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Application For Interconnection

Level 2**- 2MW or Less

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. For Certified* equipment, documentation confirming that a nationally recognized testing and certification laboratory has listed the equipment.
7. A description of how the generator system will be operated including all modes of operation.
8. For inverters, the manufacturer name, model number, and AC power rating, Operating manual or link to manufacture's web site containing such manual.
9. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X''d).
10. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

This application is subject to further consideration and study by IPL and the possible need for additional documentation and information from Customer.

Fees

Level 2	Initial Review	$50 plus, $1/kW of nameplate capacity.
	Additional Review[1]	Non-binding, good faith cost estimate provided to customer.

[1] Additional Review may be elected by the customer for the case where the facility failed to meet one or more of the applicable requirements and the Initial Review indicated that additional review may enable the Company to approve the application with minor modifications. The applicant cost to conduct the Additional Review is in addition to the initial Review Fee. Actual costs will be billed or credited to the applicant following completion of the Additional review and minor modifications.

Insurance Requirements

The Applicant shall provide evidence of homeowners, commercial or other insurance that provides coverage in the amount of at least $2 million for Comprehensive General Liability and Contractual Liability.

☒ Evidence of Insurance coverage provided with Application

Reference Documents

170 IAC Customer generator interconnection standards are located at the following web site. http://www.in.gov/legislative/iac/T01700/A00040.PDF?

Submittal of Fees, Application and Documentation

Fees - Payment for the Initial Review shall be sent to IPL Distributed Generation Interconnections, Attn: Sonya Kunkel, 1230 W Morris St., Indianapolis, IN 46221. Please make checks payable to Indianapolis Power & Light Co. and include the customer's name and address on the check.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

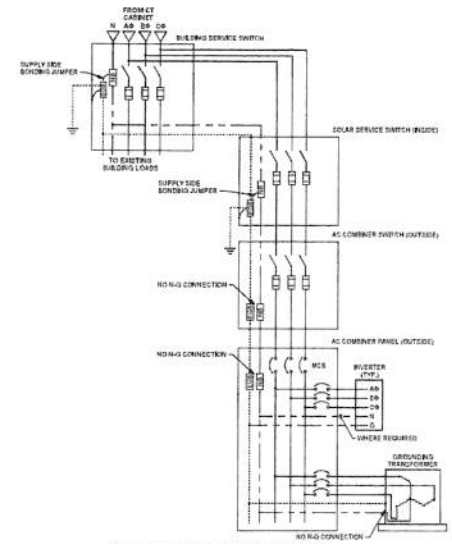
Level 2**- 2MW or Less

Application and Documentation - Please send the application and all documentation electronically to ipl.interconnection@aes.com using the standard e-mail formatting. All paper copies of documentation should be scanned electronically prior to submittal to IPL.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

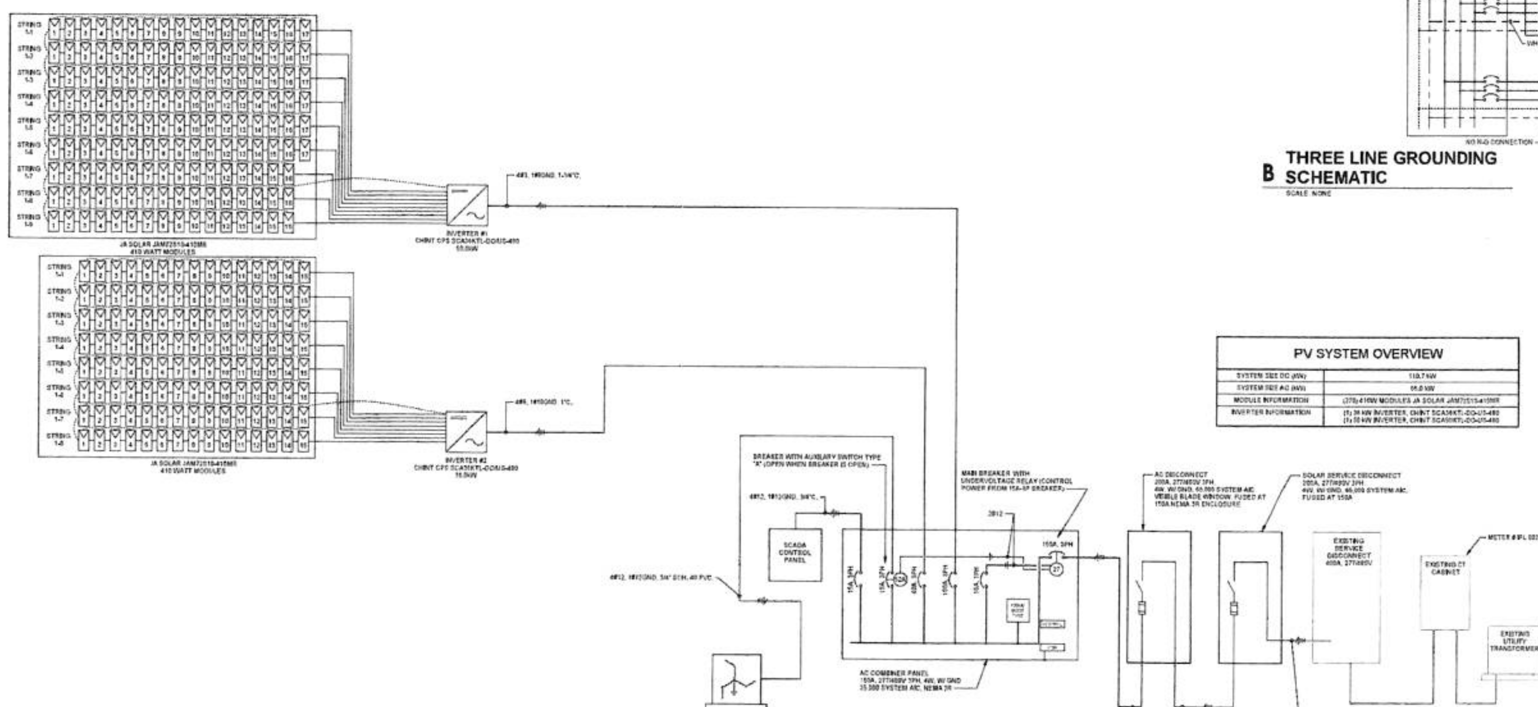
Exhibit 1B
Single Line Drawing



B THREE LINE GROUNDING SCHEMATIC

SCALE: NONE

PV SYSTEM OVERVIEW	
SYSTEM SIZE DC (kW)	110.7 kW
SYSTEM SIZE AC (kW)	66.0 kW
MODULE INFORMATION	(270) 410W MODULES JA SOLAR JAM72S15-410MR
INVERTER INFORMATION	(1) 36 kW INVERTER, CHINT SCA36KTL-DO-US-480 (1) 50 kW INVERTER, CHINT SCA50KTL-DO-US-480



GROUNDING TRANSFORMER
HAMMOND POWER SOLUTIONS
Eric Gjersvig - 608-448-7153 or 1-800-537-6508 ext. 2243

Nominal voltage =	480V
X/R	>=4
Zo =	1.6769Ω
Continuous Neutral Current:	12.75Amps
Short-Circuit Withstand Rating:	184Amps for 10-Seconds
NEMA 3R Enclosure	

A PV ONE-LINE DIAGRAM - ELECTRICAL

SCALE: NONE

[redacted]

DSA #21053

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

PROJECT DESCRIPTION:

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

ADMINISTRATION BUILDING SERVICE 1B
6301 WEST MORRIS STREET
INDIANAPOLIS, IN 46241

KEYPLAN

[redacted]

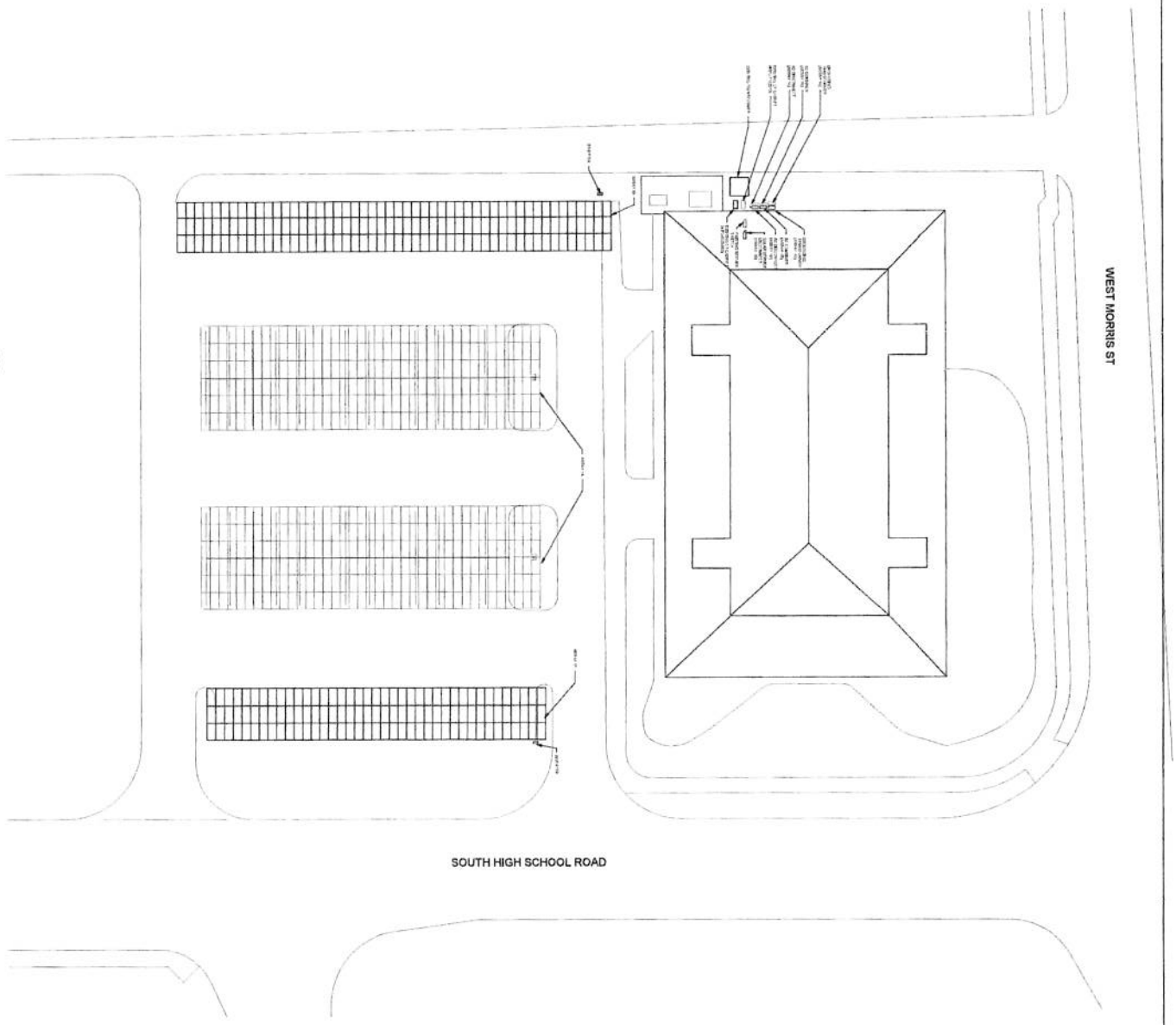
REFER TO DRAWING
DATE: NOV. 18, 20[redacted]

SHEET DESCRIPTION:
PV RISER DIAGRAM

SHEET NUMBER:
E-500

Exhibit 1C
Site Plan Drawing

PRINTED: 04/21/2021 4:38:24 PM



NORTH

SITE PLAN - ELECTRICAL

SCALE: 1/8" = 1'-0"

SHEET NUMBER:	E-100
SHEET DESCRIPTION:	SITE PLAN - ELECTRICAL
DRAWN BY:	[redacted]
CHECKED BY:	
SCALE:	REFER TO DRAWING
DATE:	NOV. 15, 2021
ISSUE:	
PROJECT DESCRIPTION:	KEYPLAN

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

ADMINISTRATION BUILDING SERVICE 1B
6301 WEST MORRIS STREET
INDIANAPOLIS, IN 46241

NO.	REVISIONS: DESCRIPTION	DATE

CERTIFIED BY:

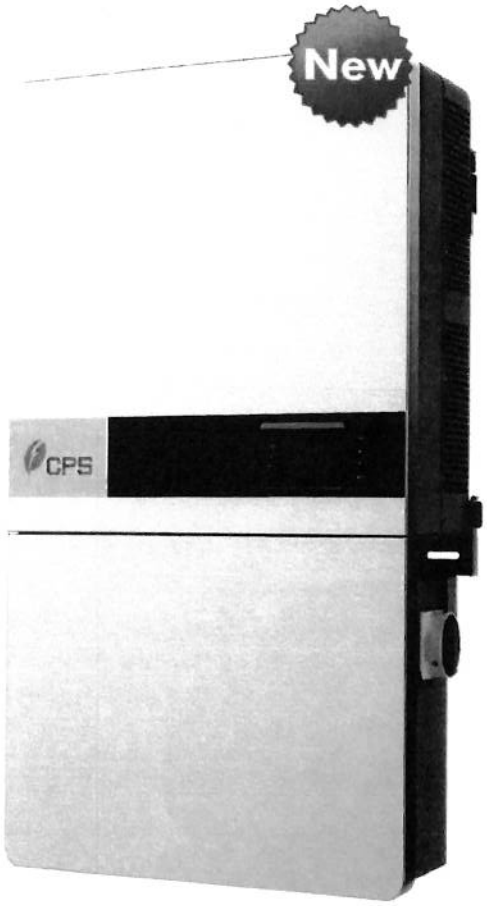
[redacted]

DEARBORN

Exhibit 1D
Inverter Specifications

25kW 208V, 1000Vdc String Inverters for North America

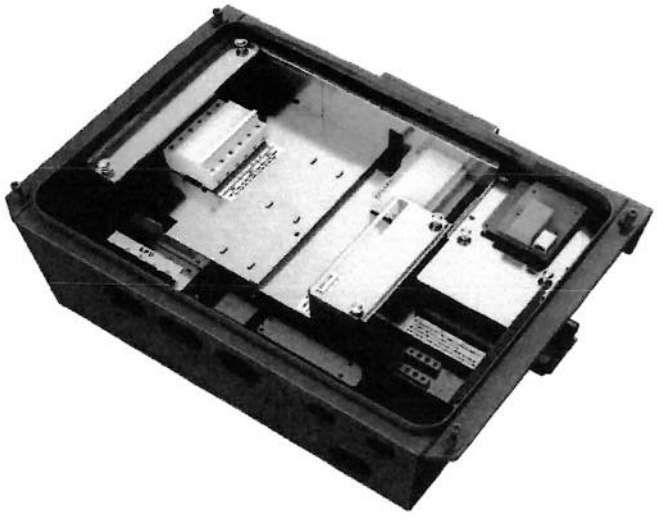
The 25kW (25kVA) CPS three phase string inverters are designed for rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 97.0% peak and 96.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 25KTL product ships with the Rapid Shutdown wire-box, fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the APS RSD-S-PLC-A products. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.



CPS SCA25KTL-DO/US-208

Key Features

- NEC 2017/2020 PVRSS Certified Rapid Shutdown
- NEC 2017 compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT's with 2 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21, including SA14 FW and SA15 VW
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.8 DC/AC Inverter Load Ratio



25KTL Rapid Shutdown Wire-box

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCA25KTL-DO/US-208
DC Input	
Max. PV Power	45kW (17kW per MPPT)
Max. DC Input Voltage	1000Vdc
Operating DC Input Voltage Range	200-950Vdc
Start-up DC Input Voltage / Power	330V / 80W
Number of MPP Trackers	3
MPPT Voltage Range @ PF>0.99	480-850Vdc
Max. PV Short-Circuit Current (Isc x 1.25)	135A (45A per MPPT)
Number of DC Inputs	6 inputs, 2 per MPPT
DC Disconnection Type	Load-rated DC switch
DC Surge Protection	Type II MOV, 2800V_C, 20kA I_{TM} (8/20..S)
AC Output	
Rated AC Output Power @ PF>0.99	25kW
Max. AC Apparent Power (Selectable)	25kVA
Rated Output Voltage	208Vac
Output Voltage Range[1]	183 - 228Vac
Grid Connection Type	3Φ / PE / N (Neutral optional)
Max. AC Output Current @208Vac	69.5A
Rated Output Frequency	60Hz
Output Frequency Range[1]	57 - 63Hz
Power Factor	>0.99 (±0.8 adjustable)
Current THD @ Rated Load	<3%
Max. Fault Current Contribution (1 Cycle RMS)	64.1A (0.92 PU)
Max. OCPD Rating	125A
AC Disconnection Type	Load-break rated AC switch
AC Surge Protection	Type II MOV, 1240V_C, 15kA I_{TM} (8/20..S)
System and Performance	
Topology	Transformerless
Max. Efficiency	97.0%
CEC Efficiency	96.5%
Stand-by / Night Consumption	<3W
Environment	
Enclosure Protection Degree	NEMA Type 4X
Cooling Method	Variable speed cooling fans
Operating Temperature Range[2]	-22°F to +140°F / - 30°C to +60°C
Non-Operating Temperature Range[3]	No low temp minimum to +158°F / +70°C maximum
Operating Humidity	0 to 100%
Operating Altitude	13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
Audible Noise	<60dBA @ 1m and 25°C
Display and Communication	
User Interface and Display	LCD+LED
Inverter Monitoring	SunSpec, Modbus RS485
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)
Modbus Data Mapping	CPS
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)
Mechanical	
Dimensions (HxWxD)	39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
Weight	Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
Mounting / Installation Angle[4]	15 to 90 degrees from horizontal (vertical or angled)
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL , Lugs not supplied)
DC Termination[5]	Screw Clamp, Neg. Busbar[5] Wire range: #14 - #6AWG CU
Fused String Inputs (2 per MPPT)[6]	20A fuses provided (Fuse values up to 30A acceptable)
Safety	
Certifications and Standards	UL1741SA-2016, UL1699B, UL1998, CSA-C22.2 NO.107.1-01, IEEE1547a-2014, FCC PART15
Selectable Grid Standard	IEEE 1547, CA Rule 21, ISO-NE, HECO
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt
Warranty	
Standard	10 years
Extended Terms	15 and 20 years

1) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
2) Active Power Derating begins; at 45°C when PF=1 and MPPT≥Vmin, and at 50°C when PF=1 and MPPT V ≥ 700Vdc.
3) See user manual for further requirements regarding non-operating conditions.
4) Shade Cover accessory required for installation angles of 75 degrees or less.
5) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017, 690.9 (C).
6) Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.

Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

Project: 80048389 **Date Issued:** 2020-08-19

Issued to: SHANGHAI CHINT POWER SYSTEMS CO.,LTD
3255 Si Xian Rd
Songjiang District,
Shanghai 201614
CHINA

Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: Jason Lei
Jason Lei

PRODUCTS

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive Inverter, Models CPS SCA50KTL-DO/US-480, CPS SCA60KTL-DO/US-480 and CPS SCA25KTL-DO/US-208, permanently connected.

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Certificate: 70128088 **Master Contract:** 255045

Project: 80048389 **Date Issued:** 2020-08-19

APPLICABLE REQUIREMENTS

CSA C22.2 No. 107.1-01 - General Use Power Supplies

*UL 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision September 7, 2016)

UL1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010)

UL1741 CRD - Grid Support Utility Interactive Interoperability Optional Functions: Prevent Enter Service and Limit Active Power (CA Rule 21, Phase 3, functions 2 and 3) (Dated October 22, 2019)

CSA TIL M-07 - Interim Certification Requirements for Photovoltaic (PV) DC Arc-Fault Protection (Issue Number 1, March 11, 2013)

UL 1699B - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018)

*Note: Conformity to UL 1741 (Second Edition, Revision September 7, 2016) includes compliance with applicable requirements of IEEE 1547-2003 (R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015, California Rule 21 and Supplement SA 8-18.

CSA GROUP™

Supplement to Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80048389	2020-08-19	Update report 70128088 to add new model CPS SCA25KTL-DO/US-208, change the Maximum continuous output current for CPS SCA50/60KTL-DO/US-480 and meet the requirement for Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018).
80046608	2020-06-17	Update to report 70128088 to include UL1741CRD SA17 - 18 requirements.
70218379	2019-03-15	Update report 70128088 to include alternate components, modification and the software version update.
70203151	2018-11-29	Update report 70128088 to include alternate components and modification to markings.
70128097	2017-07-06	Update report 70128088 to include grid support function to meet California Rule 21 requirements.
70128088	2017-07-06	Grid Support Utility Interactive Inverter, Model CPS SCA50KTL-DO/US-480 and CPS SCA60KTL-DO/US-480. (C/US)

Exhibit 1E
Certificate of Insurance

Client#: 35624 MSDWAYN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/16/2021

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

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

PRODUCER
EPIC Insurance Midwest
P.O. Box 80159
Indianapolis, IN 46280

CONTACT NAME: Jennifer Collins
PHONE (A/C, No, Ext): 317-706-9828 FAX (A/C, No):
E-MAIL ADDRESS: jennifer.collins@epicbrokers.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Netherlands Insurance Company	24171
INSURER B : Indiana Insurance Company	22659
INSURER C : Peerless Insurance Company	24198
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
MSD of Wayne Township
Marion County Indiana
1220 South High School Road
Indianapolis, IN 46241

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	X		CBP8488211	06/01/2021	06/01/2022	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						MED EXP (Any one person)	$15,000
	POLICY PRO-JECT LOC						PERSONAL & ADV INJURY	$1,000,000
	OTHER:						GENERAL AGGREGATE	$2,000,000
							PRODUCTS - COMP/OP AGG	$2,000,000
								$
C	AUTOMOBILE LIABILITY			BA9853550	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CU8521081	06/01/2021	06/01/2022	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $10000							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N/A	N/A					E.L. EACH ACCIDENT	$
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Leased/Rented Eq.			CBP8488211	06/01/2021	06/01/2022	$25,000	

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

CERTIFICATE HOLDER

AES Indiana
2102 N. Illinois St.
Indianapolis, IN 46202

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

JMCC1

Exhibit 1F
Miscellaneous Attachments

EXHIBIT A

Generation Facilities Description

The generation facility for Commercial Customer Metropolitan School District of Wayne Township is located at 6301 West Morris Street, Indianapolis, IN 46241 (Admin. Bldg. 1A). This level 2 solar distributed generation facility will have a nameplate output rating of 144.0 kW. Finalizing the interconnection agreement and Standard Contract Rider No. 9 (net metering) is dependent upon the Customer.

The site consists of four-hundred sixty-eight (468) JA SOLAR JAM72S10-410MR solar panels connected with four (4) CHINT SCA36kTL-DO-US-480 480V inverter(s) each rated 36,000 watts max AC inverter output; the inverters are rated at 480 VAC single-phase, 60 Hz. This accumulates for a total inverter output generator capacity of 144.0 kW as listed on the attached application. The inverter data sheet lists the UL 1741 and IEEE 1547 certificates and approvals.

Operating Conditions

The installation shall operate in the automatic mode as governed by the IEEE 1547 standard. The distributed resource (DR) shall operate the point of common coupling at power factor required by the Company for proper operation of the power system when the producer is connected. The distributed resource (DR) shall be notified of any changes needed to the power factor (PF) schedule based on testing and operating experience after commissioning. The primary voltage schedule based on DR operation at 1.0 PF is 480 VAC during all operating times.

The installation shall operate as governed by the IEEE 1547 standard.

The distributed resource (DR) shall operate the point of common coupling at 1.0 power factor (PF unity). The DR shall be notified of any changes needed to the power factor (PF) scheduled based on testing and operating experience after commissioning.

The Customer shall notify Company prior to operating the distributed generation and request a witnessing test as dictated by IEEE 1547 section 5.4 with procedures detailed in footnote 19 stating that the test procedures are commonly provided by the equipment manufacturer(s). The Customer should have a written test procedure prior to the test which should contain check-off boxes for all actions taken during the test. Customer shall provide Company a copy of the test procedure at the conclusion of the test

The Customer or Owner shall compensate Company for labor and materials needed for maintenance of equipment required after interconnection. Standard labor and overtime rates shall apply for work performed. Routine work shall be scheduled at least a month in advance or performed at emergency overtime rates pending availability of crews and equipment.

Network Upgrades Installed by COMPANY but reimbursed and maintained at Owner Expense

COMPANY shall provide and install the following revenue meter at customer expense.

One revenue meter to monitor the inverter and service.

The Customer shall be responsible for all metering and connection costs.

Attachments

Exhibit 1A Interconnection Application including submitted drawings

Exhibit 1B Single Line Drawing

Exhibit 1C Site Plan Drawing

Exhibit 1D Inverter Specifications

Exhibit 1E Certificate of Insurance

Exhibit 1F Miscellaneous Attachments

Exhibit 1A
Interconnection Application

Application For Interconnection

Level 2**- 2MW or Less

Application Date: 11/16/2021

Applicant Information *(Please use the tab key between fields.)*

Customer (Applicant) Name: Metropolitan School District of Wayne Township

Applicant Address: 1220 South High School Road

City/State/Zip Code: Indianapolis, Indiana 46241

Contact Person: [redacted]

Email Address: [redacted]wayne.k12.in.us Phone: [redacted]

Generation Site Information

Service (Site) Address: Administration Service 1A, 6301 W.Morris St.

City/State/Zip Code: Indianapolis, IN 46241

Phone Number: [redacted] Lat/Long: 39.74974, -86.27042

Map-Pole Number: [redacted] Meter No: IPL-1162913

Developer Information Map-Pole: 553-B/339 ; JLS, 11/29/2021

Project Developer Name: [redacted] Email Address: [redacted]

Project Developer Address: [redacted] Phone: [redacted]

Please provide names and contact information for other Contractor and Engineering firms involved in the design and installation of the general facilities:

[redacted]

Interconnection Information

Total Generating Capacity Output of Customer Facility (AC Power and Voltage): 144.0kW, 480V

Type of Generator: ☒ Inverter-Based ☐ Synchronous ☐ Induction

Power Source: ☒ Solar ☐ Wind ☐ Diesel-fueled Reciprocating Engine
☐ Gas-Fueled Reciprocating Engine ☐ Gas Turbine ☐ Microturbine
☐ Other (Specify) [redacted]

Is the Equipment "Certified" * as defined by 170 Indiana Administrative Code ("IAC") 4-4.3-5
☒ Yes ☐ No

Indicate all possible operating modes for this generator facility:

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

- ☐ Emergency / Standby – Operated when Indianapolis Power & Light Company service is not available. Paralleling is for short durations.
- ☐ Peak Shaving – Operated during peak demand periods. Paralleling is for extended times.
- ☐ Base Load Power – Operated continuously at a predetermined output. Paralleling is continuous.
- ☐ Cogeneration – Operated primarily to produce thermal energy. Paralleling is extended or continuous.
- ☒ Renewable non-dispatched – Operated in response to an available renewable resource such as solar or wind. Paralleling is for extended times.
- ☐ Other – Describe:

Indicate the intended use of power generated from the proposed facility, subject to all applicable regulatory approvals.

- ☐ Sale of power to IPL by Rate CGS.
- ☐ Sale of power to IPL by Rate REP.
- ☒ Net Metering
- ☐ Internal Usage only
- ☐ Demand Response Resource
- ☐ Other - Explain

Level of Interconnection Review Requested:

- ☒ Level 2** for nameplate rating 2MW or less

For this application to be considered complete, adequate documentation and information must be submitted that will allow Indianapolis Power & Light Company ("IPL") to determine the impact of the generation facilities on IPL's electric system and to confirm compliance by Customer with the provisions of 170 IAC 4-4.3 and IPL's requirements. Typically this should include the following for Level 2 applications:

1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with IPL's distribution system, including generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, and current transformers.
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.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

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. For Certified* equipment, documentation confirming that a nationally recognized testing and certification laboratory has listed the equipment.
7. A description of how the generator system will be operated including all modes of operation.
8. For inverters, the manufacturer name, model number, and AC power rating, Operating manual or link to manufacture's web site containing such manual.
9. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X"d).
10. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

This application is subject to further consideration and study by IPL and the possible need for additional documentation and information from Customer.

Fees

Level 2	Initial Review	$50 plus, $1/kW of nameplate capacity.
	Additional Review[1]	Non-binding, good faith cost estimate provided to customer.

[1] Additional Review may be elected by the customer for the case where the facility failed to meet one or more of the applicable requirements and the Initial Review indicated that additional review may enable the Company to approve the application with minor modifications. The applicant cost to conduct the Additional Review is in addition to the initial Review Fee. Actual costs will be billed or credited to the applicant following completion of the Additional review and minor modifications.

Insurance Requirements

The Applicant shall provide evidence of homeowners, commercial or other insurance that provides coverage in the amount of at least $2 million for Comprehensive General Liability and Contractual Liability.

☒ Evidence of Insurance coverage provided with Application

Reference Documents

170 IAC Customer generator interconnection standards are located at the following web site. http://www.in.gov/legislative/iac/T01700/A00040.PDF?

Submittal of Fees, Application and Documentation

Fees - Payment for the Initial Review shall be sent to IPL Distributed Generation Interconnections, Attn: Sonya Kunkel, 1230 W Morris St., Indianapolis, IN 46221. Please make checks payable to Indianapolis Power & Light Co. and include the customer's name and address on the check.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

Application and Documentation - Please send the application and all documentation electronically to ipl.interconnection@aes.com using the standard e-mail formatting. All paper copies of documentation should be scanned electronically prior to submittal to IPL.

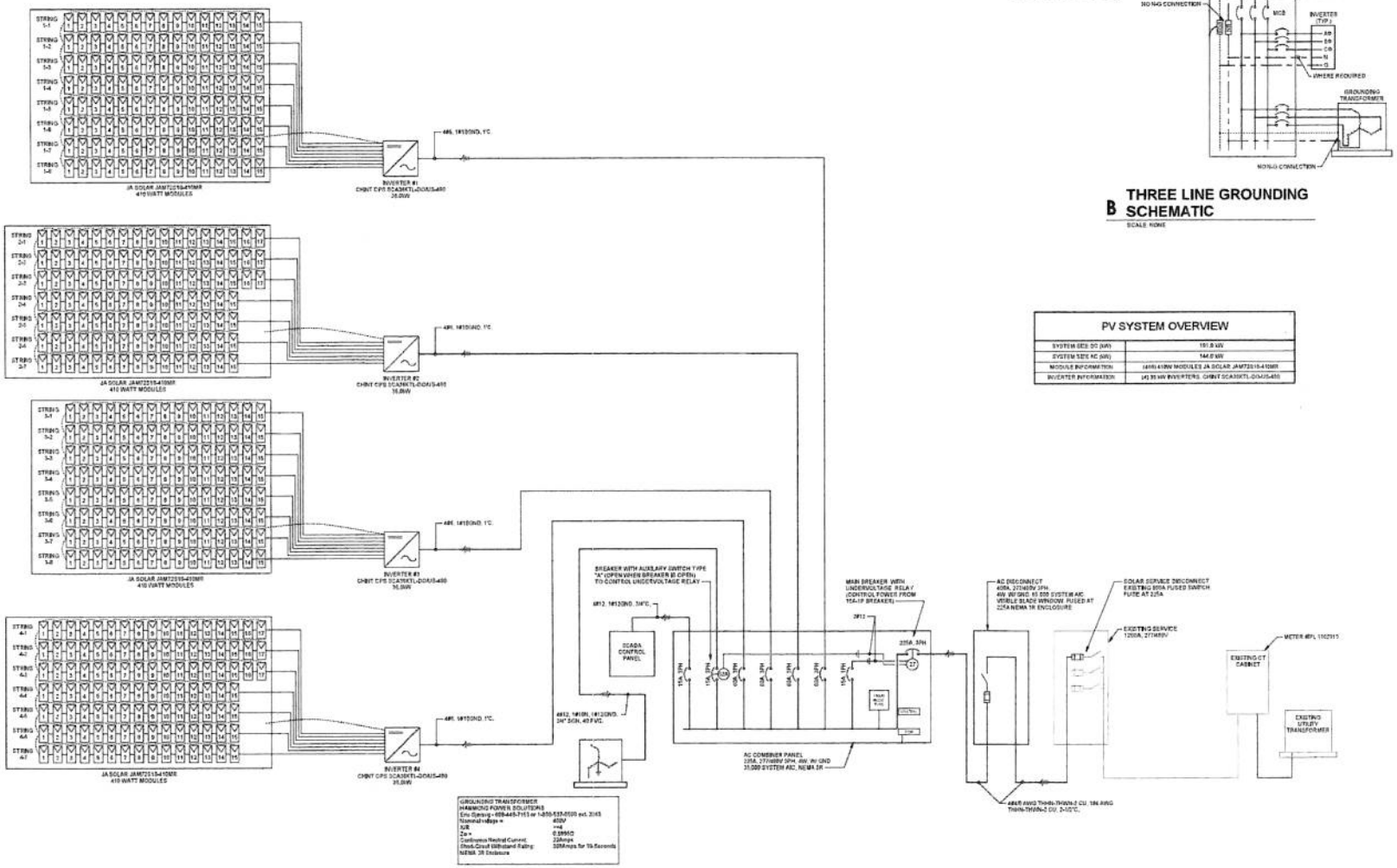
* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Exhibit 1B
Single Line Drawing

B THREE LINE GROUNDING SCHEMATIC

SCALE: NONE



A PV ONE-LINE DIAGRAM - ELECTRICAL

SCALE: NONE

PV SYSTEM OVERVIEW	
SYSTEM SIZE DC (kW)	191.8 kW
SYSTEM SIZE AC (kW)	144.0 kW
MODULE INFORMATION	(469) 410W MODULES JA SOLAR JAM72S10-410MR
INVERTER INFORMATION	(4) 36 kW INVERTERS, CHINT SCA36KTL-DO/US-480

[redacted]

DSA #21005

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

ADMINISTRATION BUILDING SERVICE 1A
6301 WEST MORRIS STREET
INDIANAPOLIS, IN 46241

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY: [redacted] CHECKED BY: [redacted]

SCALE: REFER TO DRAWING CHECKED BY: [redacted]

DATE: NOV. 16, 2021 JOB NO.: [redacted]

SHEET DESCRIPTION:

PV RISER DIAGRAM

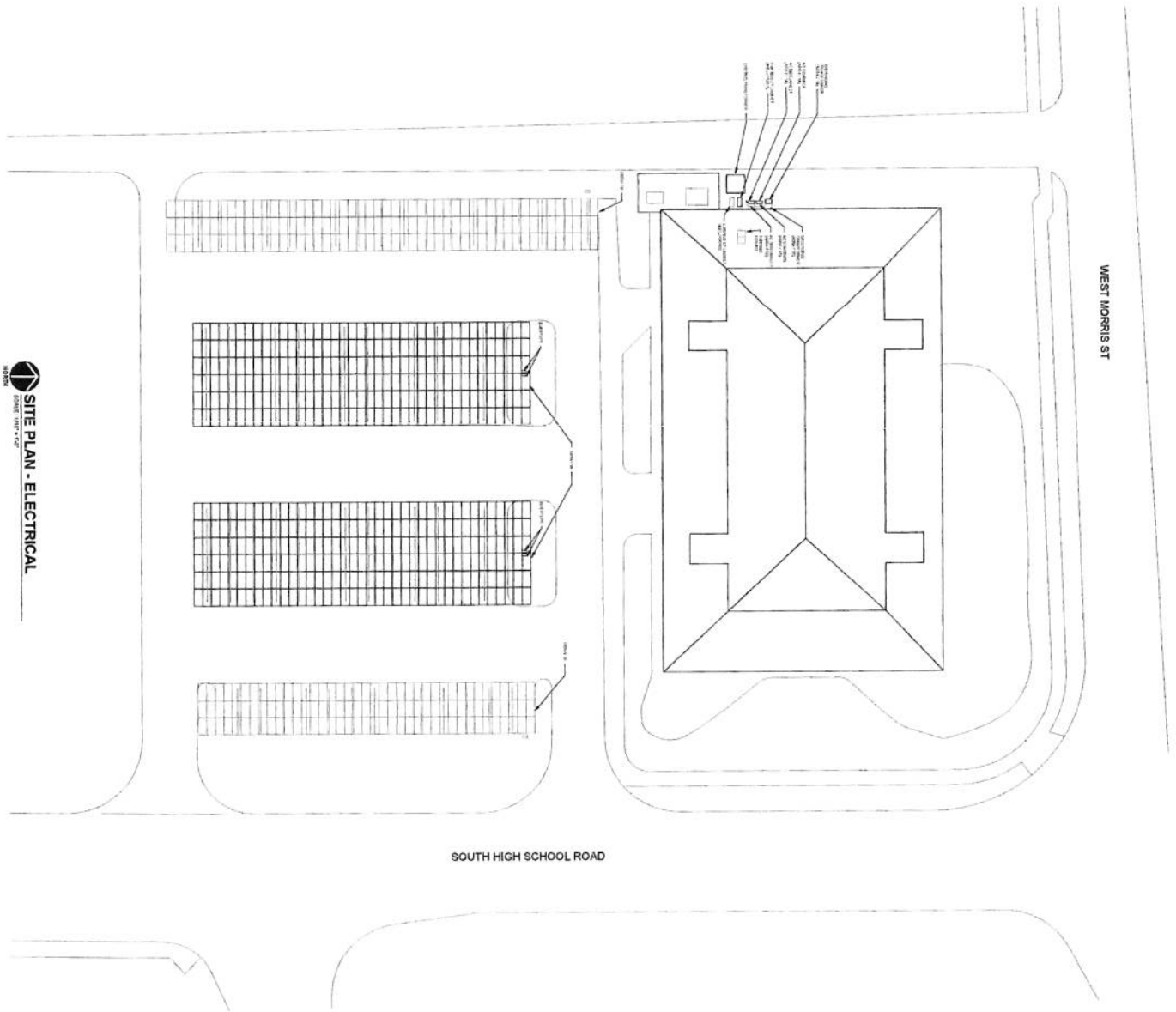
SHEET NUMBER:

E-500

PRINTED ON: 11/16/2021 4:36:39 PM

Exhibit 1C
Site Plan Drawing

PRINTED GMT/1/02021 4:39:39 PM



SITE PLAN - ELECTRICAL

SCALE: 1/16" = 1'-0"

SHEET NUMBER: E-100

SHEET DESCRIPTION: SITE PLAN - ELECTRICAL

DRAWN BY:

CHECKED BY:

DATE: NOV. 15, 2021

REFER TO DRAWING

PROJECT DESCRIPTION:

REVISIONS:

NO. DESCRIPTION DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

ADMINISTRATION BUILDING SERVICE 1A
6301 WEST MORRIS STREET
INDIANAPOLIS, IN 46241

CERTIFIED BY:

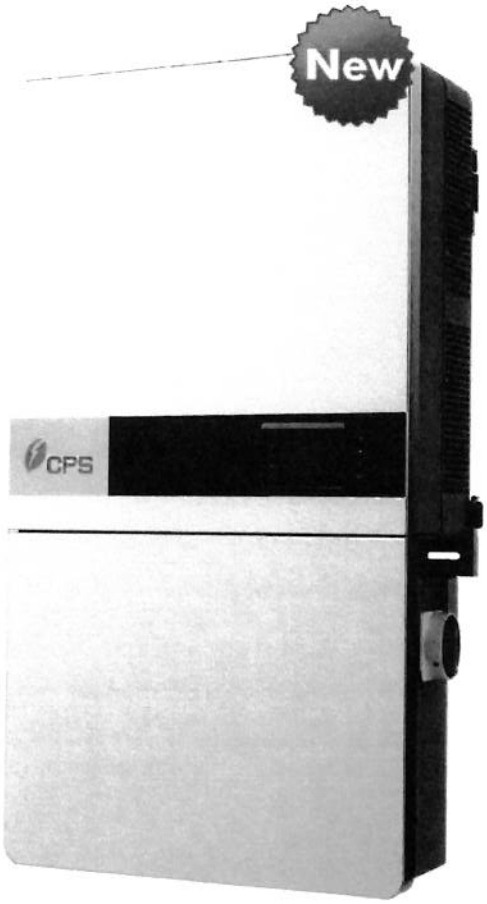
[redacted]

[redacted]

Exhibit 1D
Inverter Specifications

25kW 208V, 1000Vdc String Inverters for North America

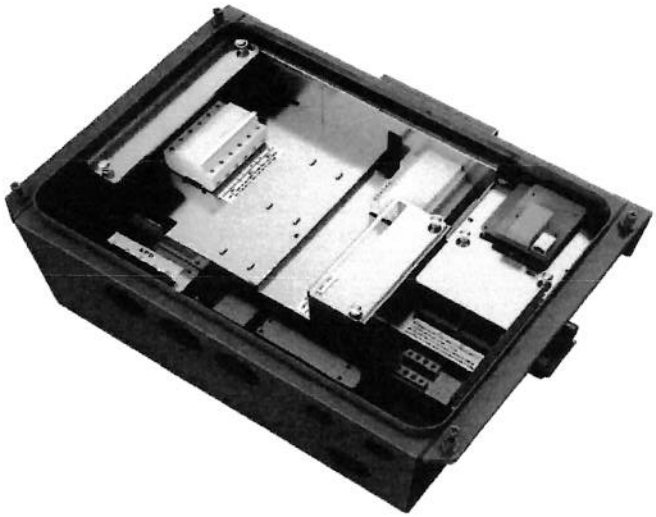
The 25kW (25kVA) CPS three phase string inverters are designed for rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 97.0% peak and 96.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 25KTL product ships with the Rapid Shutdown wire-box, fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the APS RSD-S-PLC-A products. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.



CPS SCA25KTL-DO/US-208

Key Features

- NEC 2017/2020 PVRSS Certified Rapid Shutdown
- NEC 2017 compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT's with 2 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21, including SA14 FW and SA15 VW
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.8 DC/AC Inverter Load Ratio



25KTL Rapid Shutdown Wire-box

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCA25KTL-DO/US-208
DC Input	
Max. PV Power	45kW (17kW per MPPT)
Max. DC Input Voltage	1000Vdc
Operating DC Input Voltage Range	200-950Vdc
Start-up DC Input Voltage / Power	330V / 80W
Number of MPP Trackers	3
MPPT Voltage Range @ PF>0.99	480-850Vdc
Max. PV Short-Circuit Current (Isc x 1.25)	135A (45A per MPPT)
Number of DC Inputs	6 inputs, 2 per MPPT
DC Disconnection Type	Load-rated DC switch
DC Surge Protection	Type II MOV, 2800V_C, 20kA I_{TM} (8/20...S)
AC Output	
Rated AC Output Power @ PF>0.99	25kW
Max. AC Apparent Power (Selectable)	25kVA
Rated Output Voltage	208Vac
Output Voltage Range[1]	183 - 228Vac
Grid Connection Type	3Φ / PE / N (Neutral optional)
Max. AC Output Current @208Vac	69.5A
Rated Output Frequency	60Hz
Output Frequency Range[1]	57 - 63Hz
Power Factor	>0.99 (±0.8 adjustable)
Current THD @ Rated Load	<3%
Max. Fault Current Contribution (1 Cycle RMS)	64.1A (0.92 PU)
Max. OCPD Rating	125A
AC Disconnection Type	Load-break rated AC switch
AC Surge Protection	Type II MOV, 1240V_C, 15kA I_{TM} (8/20...S)
System and Performance	
Topology	Transformerless
Max. Efficiency	97.0%
CEC Efficiency	96.5%
Stand-by / Night Consumption	<3W
Environment	
Enclosure Protection Degree	NEMA Type 4X
Cooling Method	Variable speed cooling fans
Operating Temperature Range[2]	-22°F to +140°F / - 30°C to +60°C
Non-Operating Temperature Range[3]	No low temp minimum to +158°F / +70°C maximum
Operating Humidity	0 to 100%
Operating Altitude	13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
Audible Noise	<60dBA @ 1m and 25°C
Display and Communication	
User Interface and Display	LCD+LED
Inverter Monitoring	SunSpec, Modbus RS485
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)
Modbus Data Mapping	CPS
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)
Mechanical	
Dimensions (HxWxD)	39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
Weight	Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
Mounting / Installation Angle[4]	15 to 90 degrees from horizontal (vertical or angled)
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL , Lugs not supplied)
DC Termination[5]	Screw Clamp, Neg. Busbar[5] Wire range: #14 - #6AWG CU
Fused String Inputs (2 per MPPT)[6]	20A fuses provided (Fuse values up to 30A acceptable)
Safety	
Certifications and Standards	UL1741SA-2016, UL1699B, UL1998, CSA-C22.2 NO.107.1-01, IEEE1547a-2014, FCC PART15
Selectable Grid Standard	IEEE 1547, CA Rule 21, ISO-NE, HECO
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt
Warranty	
Standard	10 years
Extended Terms	15 and 20 years

1) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
2) Active Power Derating begins; at 45°C when PF=1 and MPPT≥Vmin, and at 50°C when PF=1 and MPPT V ≥ 700Vdc.
3) See user manual for further requirements regarding non-operating conditions.
4) Shade Cover accessory required for installation angles of 75 degrees or less.
5) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017, 690.9 (C).
6) Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.

Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

Project: 80048389 **Date Issued:** 2020-08-19

Issued to: SHANGHAI CHINT POWER SYSTEMS CO.,LTD
3255 Si Xian Rd
Songjiang District,
Shanghai 201614
CHINA
Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: Jason Lei
Jason Lei

PRODUCTS

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive Inverter, Models CPS SCA50KTL-DO/US-480, CPS SCA60KTL-DO/US-480 and CPS SCA25KTL-DO/US-208, permanently connected.

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Certificate: 70128088 **Master Contract:** 255045
Project: 80048389 **Date Issued:** 2020-08-19

APPLICABLE REQUIREMENTS

CSA C22.2 No. 107.1-01 - General Use Power Supplies

*UL 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision September 7, 2016)

UL1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010)

UL1741 CRD - Grid Support Utility Interactive Interoperability Optional Functions: Prevent Enter Service and Limit Active Power (CA Rule 21, Phase 3, functions 2 and 3) (Dated October 22, 2019)

CSA TIL M-07 - Interim Certification Requirements for Photovoltaic (PV) DC Arc-Fault Protection (Issue Number 1, March 11, 2013)

UL 1699B - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018)

*Note: Conformity to UL 1741 (Second Edition, Revision September 7, 2016) includes compliance with applicable requirements of IEEE 1547-2003 (R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015, California Rule 21 and Supplement SA 8-18.

CSA GROUP™

Supplement to Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80048389	2020-08-19	Update report 70128088 to add new model CPS SCA25KTL-DO/US-208, change the Maximum continuous output current for CPS SCA50/60KTL-DO/US-480 and meet the requirement for Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018).
80046608	2020-06-17	Update to report 70128088 to include UL1741CRD SA17 - 18 requirements.
70218379	2019-03-15	Update report 70128088 to include alternate components, modification and the software version update.
70203151	2018-11-29	Update report 70128088 to include alternate components and modification to markings.
70128097	2017-07-06	Update report 70128088 to include grid support function to meet California Rule 21 requirements.
70128088	2017-07-06	Grid Support Utility Interactive Inverter, Model CPS SCA50KTL-DO/US-480 and CPS SCA60KTL-DO/US-480. (C/US)

Exhibit 1E
Certificate of Insurance

Client#: 35624 MSDWAYN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/16/2021

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

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

PRODUCER	CONTACT NAME: Jennifer Collins
EPIC Insurance Midwest P.O. Box 80159 Indianapolis, IN 46280	PHONE (A/C, No, Ext): 317-706-9828 FAX (A/C, No): E-MAIL ADDRESS: jennifer.collins@epicbrokers.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Netherlands Insurance Company	24171
INSURER B : Indiana Insurance Company	22659
INSURER C : Peerless Insurance Company	24198
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
MSD of Wayne Township
Marion County Indiana
1220 South High School Road
Indianapolis, IN 46241

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	X		CBP8488211	06/01/2021	06/01/2022	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
							MED EXP (Any one person)	$15,000
							PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$2,000,000
	OTHER:							$
C	AUTOMOBILE LIABILITY			BA9853550	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CU8521081	06/01/2021	06/01/2022	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $10000							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	N / A					E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$
A	Leased/Rented Eq.			CBP8488211	06/01/2021	06/01/2022	$25,000	

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

CERTIFICATE HOLDER

AES Indiana
2102 N. Illinois St.
Indianapolis, IN 46202

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

JMCC1

Exhibit 1F
Miscellaneous Attachments

EXHIBIT A

Generation Facilities Description

The generation facility for Commercial Customer Metropolitan School District of Wayne Township is located at 5248 West Raymond Street, Indianapolis, IN 46241. This level 2 solar distributed generation facility will have a nameplate output rating of 150.0 kW. Finalizing the interconnection agreement and Standard Contract Rider No. 9 (net metering) is dependent upon the Customer.

The site consists of four-hundred fifty-seven (457) JA Solar JAM72S10-410MR solar panels connected with six (6) CHINT SCA25KTL-DO-US-208 208V inverter(s) each rated 25,000 watts max AC inverter output; the inverters are rated at 208 VAC single-phase, 60 Hz. This accumulates for a total inverter output generator capacity of 150.0 kW as listed on the attached application. The inverter data sheet lists the UL 1741 and IEEE 1547 certificates and approvals.

Operating Conditions

The installation shall operate in the automatic mode as governed by the IEEE 1547 standard. The distributed resource (DR) shall operate the point of common coupling at power factor required by the Company for proper operation of the power system when the producer is connected. The distributed resource (DR) shall be notified of any changes needed to the power factor (PF) schedule based on testing and operating experience after commissioning. The primary voltage schedule based on DR operation at 1.0 PF is 208 VAC during all operating times.

The installation shall operate as governed by the IEEE 1547 standard.

The distributed resource (DR) shall operate the point of common coupling at 1.0 power factor (PF unity). The DR shall be notified of any changes needed to the power factor (PF) scheduled based on testing and operating experience after commissioning.

The Customer shall notify Company prior to operating the distributed generation and request a witnessing test as dictated by IEEE 1547 section 5.4 with procedures detailed in footnote 19 stating that the test procedures are commonly provided by the equipment manufacturer(s). The Customer should have a written test procedure prior to the test which should contain check-off boxes for all actions taken during the test. Customer shall provide Company a copy of the test procedure at the conclusion of the test

The Customer or Owner shall compensate Company for labor and materials needed for maintenance of equipment required after interconnection. Standard labor and overtime rates shall apply for work performed. Routine work shall be scheduled at least a month in advance or performed at emergency overtime rates pending availability of crews and equipment.

Network Upgrades Installed by COMPANY but reimbursed and maintained at Owner Expense

COMPANY shall provide and install the following revenue meter at customer expense.

One revenue meter to monitor the inverter and service.

The Customer shall be responsible for all metering and connection costs.

Attachments

Exhibit 1A Interconnection Application including submitted drawings

Exhibit 1B Single Line Drawing

Exhibit 1C Site Plan Drawing

Exhibit 1D Inverter Specifications

Exhibit 1E Certificate of Insurance

Exhibit 1F Miscellaneous Attachments

Exhibit 1A
Interconnection Application

Application For Interconnection

Level 2**- 2MW or Less

Application Date: 11/9/2021

Applicant Information *(Please use the tab key between fields.)*

Customer (Applicant) Name: Metropolitan School District of Wayne Township

Applicant Address: 1220 South High School Road

City/State/Zip Code: Indianapolis, Indiana 46241

Contact Person: [redacted]

Email Address: [redacted]yne.k12.in.us Phone: [redacted]

Generation Site Information

Service (Site) Address: Wayne Enrichment Center, 5248 West Raymond St.

City/State/Zip Code: Indianapolis, IN 46241

Phone Number: [redacted] Lat/Long: 39.73626, -86.24992

Map-Pole Number: [redacted] Meter No: IPL-0020921

Map-Pole: 596-A/459 ; JLS, 11/29/2021

Developer Information

Project Developer Name: [redacted] Email Address: [redacted]

Project Developer Address: [redacted] Phone: [redacted]

Please provide names and contact information for other Contractor and Engineering firms involved in the design and installation of the general facilities:

[redacted]

Interconnection Information

Total Generating Capacity Output of Customer Facility (AC Power and Voltage): 150.0kW, 208V

Type of Generator: ☒ Inverter-Based ☐ Synchronous ☐ Induction

Power Source: ☒ Solar ☐ Wind ☐ Diesel-fueled Reciprocating Engine
☐ Gas-Fueled Reciprocating Engine ☐ Gas Turbine ☐ Microturbine
☐ Other (Specify) [redacted]

Is the Equipment "Certified" * as defined by 170 Indiana Administrative Code ("IAC") 4-4.3-5
☒ Yes ☐ No

Indicate all possible operating modes for this generator facility:

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

- ☐ Emergency / Standby – Operated when Indianapolis Power & Light Company service is not available. Paralleling is for short durations.
- ☐ Peak Shaving – Operated during peak demand periods. Paralleling is for extended times.
- ☐ Base Load Power – Operated continuously at a predetermined output. Paralleling is continuous.
- ☐ Cogeneration – Operated primarily to produce thermal energy. Paralleling is extended or continuous.
- ☒ Renewable non-dispatched – Operated in response to an available renewable resource such as solar or wind. Paralleling is for extended times.
- ☐ Other – Describe:

Indicate the intended use of power generated from the proposed facility, subject to all applicable regulatory approvals.

- ☐ Sale of power to IPL by Rate CGS.
- ☐ Sale of power to IPL by Rate REP.
- ☒ Net Metering
- ☐ Internal Usage only
- ☐ Demand Response Resource
- ☐ Other - Explain

Level of Interconnection Review Requested:

- ☒ Level 2** for nameplate rating 2MW or less

For this application to be considered complete, adequate documentation and information must be submitted that will allow Indianapolis Power & Light Company ("IPL") to determine the impact of the generation facilities on IPL's electric system and to confirm compliance by Customer with the provisions of 170 IAC 4-4.3 and IPL's requirements. Typically this should include the following for Level 2 applications:

1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with IPL's distribution system, including generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, and current transformers.
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.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

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. For Certified* equipment, documentation confirming that a nationally recognized testing and certification laboratory has listed the equipment.
7. A description of how the generator system will be operated including all modes of operation.
8. For inverters, the manufacturer name, model number, and AC power rating, Operating manual or link to manufacture's web site containing such manual.
9. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X"d).
10. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

This application is subject to further consideration and study by IPL and the possible need for additional documentation and information from Customer.

Fees

Level 2	Initial Review	$50 plus, $1/kW of nameplate capacity.
	Additional Review[1]	Non-binding, good faith cost estimate provided to customer.

[1] Additional Review may be elected by the customer for the case where the facility failed to meet one or more of the applicable requirements and the Initial Review indicated that additional review may enable the Company to approve the application with minor modifications. The applicant cost to conduct the Additional Review is in addition to the initial Review Fee. Actual costs will be billed or credited to the applicant following completion of the Additional review and minor modifications.

Insurance Requirements

The Applicant shall provide evidence of homeowners, commercial or other insurance that provides coverage in the amount of at least $2 million for Comprehensive General Liability and Contractual Liability.

☒ Evidence of Insurance coverage provided with Application

Reference Documents

170 IAC Customer generator interconnection standards are located at the following web site. http://www.in.gov/legislative/iac/T01700/A00040.PDF?

Submittal of Fees, Application and Documentation

Fees - Payment for the Initial Review shall be sent to IPL Distributed Generation Interconnections, Attn: Sonya Kunkel, 1230 W Morris St., Indianapolis, IN 46221. Please make checks payable to Indianapolis Power & Light Co. and include the customer's name and address on the check.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

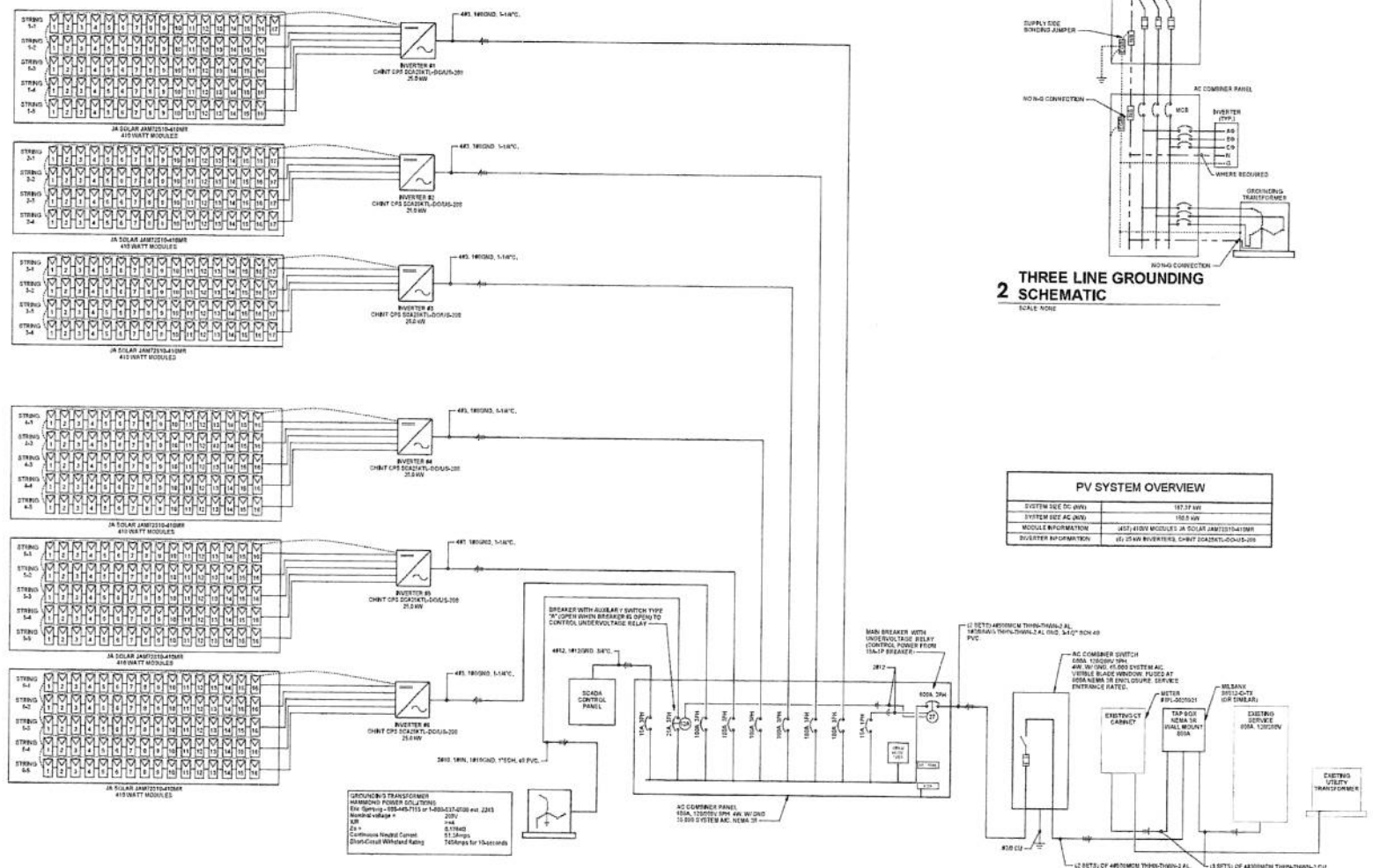
Level 2**- 2MW or Less

Application and Documentation - Please send the application and all documentation electronically to ipl.interconnection@aes.com using the standard e-mail formatting. All paper copies of documentation should be scanned electronically prior to submittal to IPL.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

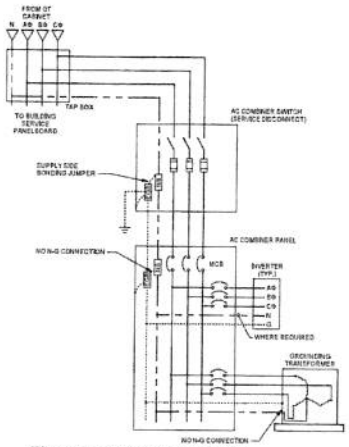
07-08-2011

Exhibit 1B
Single Line Drawing



1 PV ONE-LINE DIAGRAM - ELECTRICAL

SCALE: NONE



2 THREE LINE GROUNDING SCHEMATIC

SCALE: NONE

PV SYSTEM OVERVIEW	
SYSTEM SIZE DC (kW)	167.37 kW
SYSTEM SIZE AC (kW)	150.0 kW
MODULE INFORMATION	(407) 410W MODULES JA SOLAR JAM72S10-410/MR
INVERTER INFORMATION	(6) 25 kW INVERTERS, CHINT SCA25KTL-DO/US-208

[redacted]

DBA #21025

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

WAYNE ENRICHMENT CENTER
5248 WEST RAYMOND STREET
INDIANAPOLIS, INDIANA 46241

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY:	DESIGNED BY: [redacted]
SCALE: REFER TO DRAWING	CHECKED BY: [redacted]
DATE: NOV. 11, 2021	JOB NO: [redacted]

SHEET DESCRIPTION:

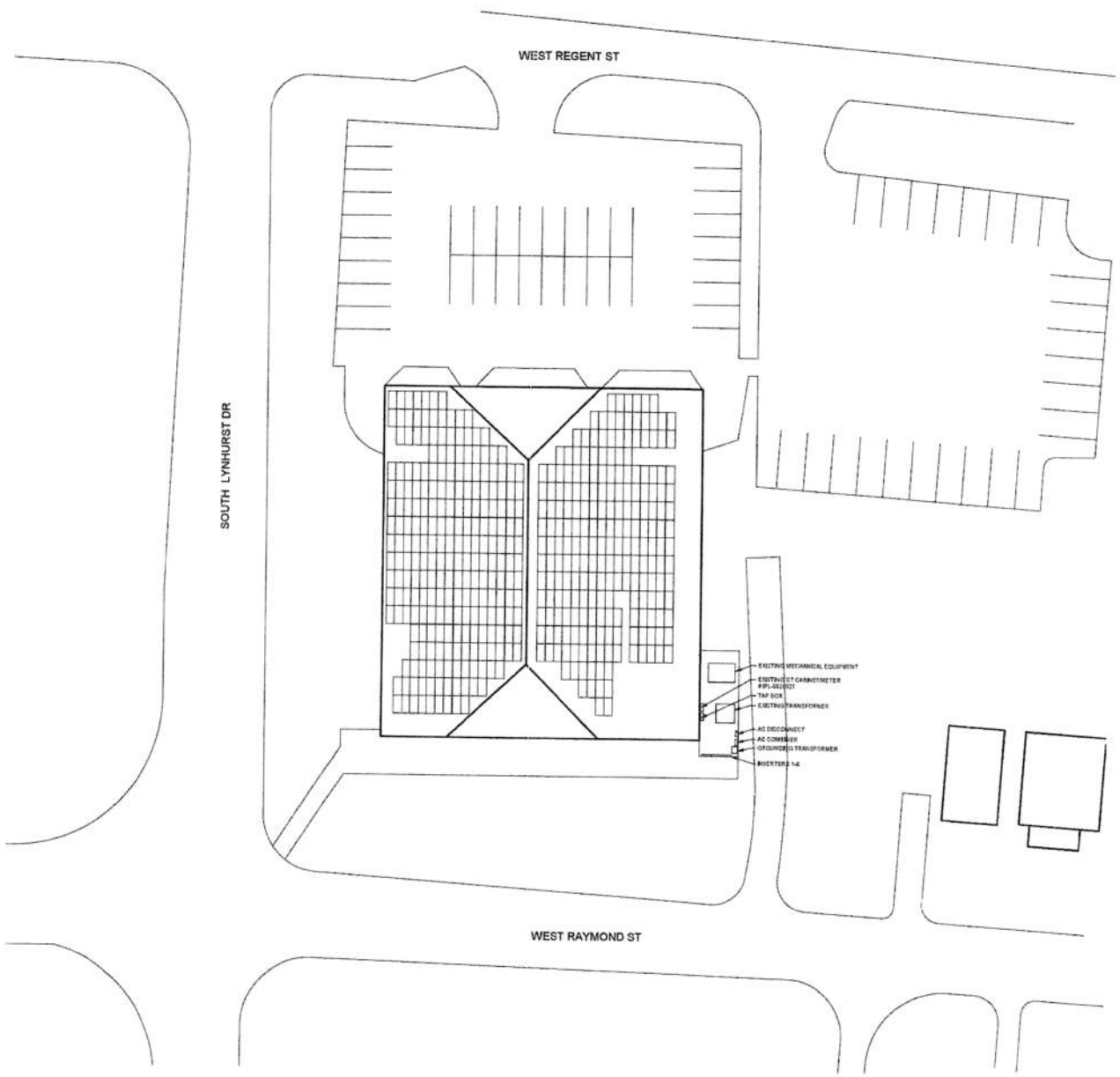
PV RISER DIAGRAM

SHEET NUMBER:

E-500

PRINTED 09/17/2021 4:10:32 PM

Exhibit 1C
Site Plan Drawing



SITE PLAN - ELECTRICAL
SCALE: 1/16" = 1'-0"

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE T-1 FOR GENERAL NOTES.

PLAN NOTES:

1. PLAN NOTE #1.

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

WAYNE ENRICHMENT CENTER
5248 WEST RAYMOND STREET
INDIANAPOLIS, INDIANA 46241

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY: [redacted] CHECKED BY: [redacted]

SCALE: REFER TO DRAWING

CHECKED BY: [redacted]

DATE: NOV. 11, 2021

JOB #:

SHEET DESCRIPTION:

SITE PLAN - ELECTRICAL

SHEET NUMBER:

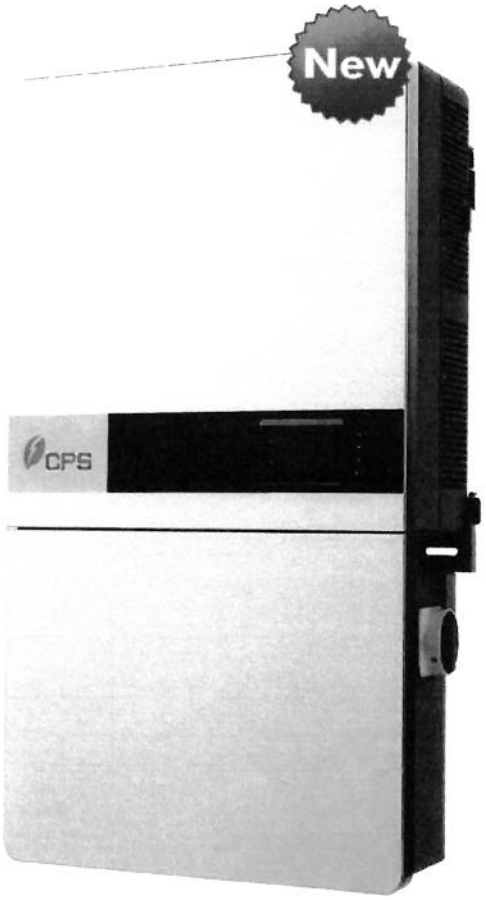
E-100

PRINTED ON: 11/10/2021 9:51:43 AM

Exhibit 1D
Inverter Specifications

25kW 208V, 1000Vdc String Inverters for North America

The 25kW (25kVA) CPS three phase string inverters are designed for rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 97.0% peak and 96.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 25KTL product ships with the Rapid Shutdown wire-box, fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the APS RSD-S-PLC-A products. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.



CPS SCA25KTL-DO/US-208

Key Features

- NEC 2017/2020 PVRSS Certified Rapid Shutdown
- NEC 2017 compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT's with 2 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21, including SA14 FW and SA15 VW
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.8 DC/AC Inverter Load Ratio

25KTL Rapid Shutdown Wire-box

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCA25KTL-DO/US-208
DC Input	
Max. PV Power	45kW (17kW per MPPT)
Max. DC Input Voltage	1000Vdc
Operating DC Input Voltage Range	200-950Vdc
Start-up DC Input Voltage / Power	330V / 80W
Number of MPP Trackers	3
MPPT Voltage Range @ PF>0.99	480-850Vdc
Max. PV Short-Circuit Current (Isc x 1.25)	135A (45A per MPPT)
Number of DC Inputs	6 inputs, 2 per MPPT
DC Disconnection Type	Load-rated DC switch
DC Surge Protection	Type II MOV, 2800V_C, 20kA I_{TM} (8/20...S)
AC Output	
Rated AC Output Power @ PF>0.99	25kW
Max. AC Apparent Power (Selectable)	25kVA
Rated Output Voltage	208Vac
Output Voltage Range[1]	183 - 228Vac
Grid Connection Type	3Φ / PE / N (Neutral optional)
Max. AC Output Current @208Vac	69.5A
Rated Output Frequency	60Hz
Output Frequency Range[1]	57 - 63Hz
Power Factor	>0.99 (±0.8 adjustable)
Current THD @ Rated Load	<3%
Max. Fault Current Contribution (1 Cycle RMS)	64.1A (0.92 PU)
Max. OCPD Rating	125A
AC Disconnection Type	Load-break rated AC switch
AC Surge Protection	Type II MOV, 1240V_C, 15kA I_{TM} (8/20...S)
System and Performance	
Topology	Transformerless
Max. Efficiency	97.0%
CEC Efficiency	96.5%
Stand-by / Night Consumption	<3W
Environment	
Enclosure Protection Degree	NEMA Type 4X
Cooling Method	Variable speed cooling fans
Operating Temperature Range[2]	-22°F to +140°F / - 30°C to +60°C
Non-Operating Temperature Range[3]	No low temp minimum to +158°F / +70°C maximum
Operating Humidity	0 to 100%
Operating Altitude	13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
Audible Noise	<60dBA @ 1m and 25°C
Display and Communication	
User Interface and Display	LCD+LED
Inverter Monitoring	SunSpec, Modbus RS485
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)
Modbus Data Mapping	CPS
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)
Mechanical	
Dimensions (HxWxD)	39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
Weight	Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
Mounting / Installation Angle[4]	15 to 90 degrees from horizontal (vertical or angled)
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL, Lugs not supplied)
DC Termination[5]	Screw Clamp, Neg. Busbar[5] Wire range: #14 - #6AWG CU
Fused String Inputs (2 per MPPT)[6]	20A fuses provided (Fuse values up to 30A acceptable)
Safety	
Certifications and Standards	UL1741SA-2016, UL1699B, UL1998, CSA-C22.2 NO.107.1-01, IEEE1547a-2014, FCC PART15
Selectable Grid Standard	IEEE 1547, CA Rule 21, ISO-NE, HECO
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt
Warranty	
Standard	10 years
Extended Terms	15 and 20 years

1) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.
2) Active Power Derating begins; at 45°C when PF=1 and MPPT≥Vmin, and at 50°C when PF=1 and MPPT V ≥ 700Vdc.
3) See user manual for further requirements regarding non-operating conditions.
4) Shade Cover accessory required for installation angles of 75 degrees or less.
5) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017, 690.9 (C).
6) Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.

Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

Project: 80048389 **Date Issued:** 2020-08-19

Issued to: SHANGHAI CHINT POWER SYSTEMS CO.,LTD
3255 Si Xian Rd
Songjiang District,
Shanghai 201614
CHINA

Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: Jason Lei
Jason Lei

PRODUCTS

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive Inverter, Models CPS SCA50KTL-DO/US-480, CPS SCA60KTL-DO/US-480 and CPS SCA25KTL-DO/US-208, permanently connected.

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Certificate: 70128088
Project: 80048389

Master Contract: 255045
Date Issued: 2020-08-19

APPLICABLE REQUIREMENTS

CSA C22.2 No. 107.1-01 - General Use Power Supplies

*UL 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision September 7, 2016)

UL1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010)

UL1741 CRD - Grid Support Utility Interactive Interoperability Optional Functions: Prevent Enter Service and Limit Active Power (CA Rule 21, Phase 3, functions 2 and 3) (Dated October 22, 2019)

CSA TIL M-07 - Interim Certification Requirements for Photovoltaic (PV) DC Arc-Fault Protection (Issue Number 1, March 11, 2013)

UL 1699B - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018)

*Note: Conformity to UL 1741 (Second Edition, Revision September 7, 2016) includes compliance with applicable requirements of IEEE 1547-2003 (R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015, California Rule 21 and Supplement SA 8-18.

CSA GROUP™

Supplement to Certificate of Compliance

Certificate: 70128088 **Master Contract:** 255045

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80048389	2020-08-19	Update report 70128088 to add new model CPS SCA25KTL-DO/US-208, change the Maximum continuous output current for CPS SCA50/60KTL-DO/US-480 and meet the requirement for Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018).
80046608	2020-06-17	Update to report 70128088 to include UL1741CRD SA17 - 18 requirements.
70218379	2019-03-15	Update report 70128088 to include alternate components, modification and the software version update.
70203151	2018-11-29	Update report 70128088 to include alternate components and modification to markings.
70128097	2017-07-06	Update report 70128088 to include grid support function to meet California Rule 21 requirements.
70128088	2017-07-06	Grid Support Utility Interactive Inverter, Model CPS SCA50KTL-DO/US-480 and CPS SCA60KTL-DO/US-480. (C/US)

Exhibit 1E
Certificate of Insurance

Client#: 35624 MSDWAYN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 11/16/2021

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

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

PRODUCER	CONTACT NAME: Jennifer Collins
EPIC Insurance Midwest P.O. Box 80159 Indianapolis, IN 46280	PHONE (A/C, No, Ext): 317-706-9828 FAX (A/C, No): E-MAIL ADDRESS: jennifer.collins@epicbrokers.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Netherlands Insurance Company	24171
INSURER B : Indiana Insurance Company	22659
INSURER C : Peerless Insurance Company	24198
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
MSD of Wayne Township
Marion County Indiana
1220 South High School Road
Indianapolis, IN 46241

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	X		CBP8488211	06/01/2021	06/01/2022	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						MED EXP (Any one person)	$15,000
	POLICY PRO-JECT LOC						PERSONAL & ADV INJURY	$1,000,000
	OTHER:						GENERAL AGGREGATE	$2,000,000
							PRODUCTS - COMP/OP AGG	$2,000,000
								$
C	AUTOMOBILE LIABILITY			BA9853550	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CU8521081	06/01/2021	06/01/2022	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $10000							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Leased/Rented Eq.			CBP8488211	06/01/2021	06/01/2022	$25,000	

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

CERTIFICATE HOLDER

AES Indiana
2102 N. Illinois St.
Indianapolis, IN 46202

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

JMCC1

Exhibit 1F
Miscellaneous Attachments

EXHIBIT A

Generation Facilities Description

The generation facility for customer Metropolitan School District of Wayne Township is located at 242 N High School Rd, Indianapolis, IN 46241. This level 2 solar distributed generation facility will have a nameplate output rating of 15.0 kW. Finalizing the interconnection agreement and Standard Contract Rider No. 9 (net metering) is dependent upon the Customer.

The site consists of forty-four (44) JA Solar Jam72S10-410MR solar panels connected with one (1) Fronius Primo 15.0-1 240V inverter(s) each rated 15,000 watts max AC inverter output; the inverters are rated at 240 VAC single-phase, 60 Hz. This accumulates for a total inverter output generator capacity of 15.0 kW as listed on the attached application. The inverter data sheet lists the UL 1741 and IEEE 1547 certificates and approvals.

Operating Conditions

The installation shall operate in the automatic mode as governed by the IEEE 1547 standard. The distributed resource (DR) shall operate the point of common coupling at power factor required by the Company for proper operation of the power system when the producer is connected. The distributed resource (DR) shall be notified of any changes needed to the power factor (PF) schedule based on testing and operating experience after commissioning. The primary voltage schedule based on DR operation at 1.0 PF is 220 VAC during all operating times.

The installation shall operate as governed by the IEEE 1547 standard.

The distributed resource (DR) shall operate the point of common coupling at 1.0 power factor (PF unity). The DR shall be notified of any changes needed to the power factor (PF) scheduled based on testing and operating experience after commissioning.

The Customer shall notify Company prior to operating the distributed generation and request a witnessing test as dictated by IEEE 1547 section 5.4 with procedures detailed in footnote 19 stating that the test procedures are commonly provided by the equipment manufacturer(s). The Customer should have a written test procedure prior to the test which should contain check-off boxes for all actions taken during the test. Customer shall provide Company a copy of the test procedure at the conclusion of the test

The Customer or Owner shall compensate Company for labor and materials needed for maintenance of equipment required after interconnection. Standard labor and overtime rates shall apply for work performed. Routine work shall be scheduled at least a month in advance or performed at emergency overtime rates pending availability of crews and equipment.

Network Upgrades Installed by COMPANY but reimbursed and maintained at Owner Expense

COMPANY shall provide and install the following revenue meter at customer expense.

One revenue meter to monitor the inverter and service.

The Customer shall be responsible for all metering and connection costs.

Attachments

Exhibit 1A Interconnection Application including submitted drawings

Exhibit 1B Single Line Drawing

Exhibit 1C Site Plan Drawing

Exhibit 1D Inverter Specifications

Exhibit 1E Certificate of Insurance

Exhibit 1F Miscellaneous Attachments

Exhibit 1A
Interconnection Application

Application For Interconnection

Level 2**- 2MW or Less

Application Date: 11/9/2021

Applicant Information *(Please use the tab key between fields.)*

Customer (Applicant) Name: Metropolitan School District of Wayne Township

Applicant Address: 1220 South High School Road

City/State/Zip Code: Indianapolis, Indiana 46241

Contact Person: [redacted]

Email Address: [redacted]@wayne.k12.in.us Phone: [redacted]

Generation Site Information

Service (Site) Address: EmergencyServicesEducationCenter, 242N.HighSchoolRoad,

City/State/Zip Code: Indianapolis, IN 46214

Phone Number: [redacted] Lat/Long: 39.769327, -86.270883

Map-Pole Number: [redacted] Meter No: IPL-0226301

Developer Information

Project Developer Name: [redacted] Email Address: [redacted]

Project Developer Address: [redacted] Phone: [redacted]

Please provide names and contact information for other Contractor and Engineering firms involved in the design and installation of the general facilities:

[redacted]

Interconnection Information

Total Generating Capacity Output of Customer Facility (AC Power and Voltage): 15kW, 240V

Type of Generator: ☒ Inverter-Based ☐ Synchronous ☐ Induction

Power Source: ☒ Solar ☐ Wind ☐ Diesel-fueled Reciprocating Engine
☐ Gas-Fueled Reciprocating Engine ☐ Gas Turbine ☐ Microturbine
☐ Other (Specify) [redacted]

Is the Equipment "Certified" * as defined by 170 Indiana Administrative Code ("IAC") 4-4.3-5
☒ Yes ☐ No

Indicate all possible operating modes for this generator facility:

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

- ☐ Emergency / Standby – Operated when Indianapolis Power & Light Company service is not available. Paralleling is for short durations.
- ☐ Peak Shaving – Operated during peak demand periods. Paralleling is for extended times.
- ☐ Base Load Power – Operated continuously at a predetermined output. Paralleling is continuous.
- ☐ Cogeneration – Operated primarily to produce thermal energy. Paralleling is extended or continuous.
- ☒ Renewable non-dispatched – Operated in response to an available renewable resource such as solar or wind. Paralleling is for extended times.
- ☐ Other – Describe:

Indicate the intended use of power generated from the proposed facility, subject to all applicable regulatory approvals.

- ☐ Sale of power to IPL by Rate CGS.
- ☐ Sale of power to IPL by Rate REP.
- ☒ Net Metering
- ☐ Internal Usage only
- ☐ Demand Response Resource
- ☐ Other - Explain

Level of Interconnection Review Requested:

- ☒ Level 2** for nameplate rating 2MW or less

For this application to be considered complete, adequate documentation and information must be submitted that will allow Indianapolis Power & Light Company ("IPL") to determine the impact of the generation facilities on IPL's electric system and to confirm compliance by Customer with the provisions of 170 IAC 4-4.3 and IPL's requirements. Typically this should include the following for Level 2 applications:

1. Single-line diagram of the customer's system showing all electrical equipment from the generator to the point of interconnection with IPL's distribution system, including generators, transformers, switchgear, switches, breakers, fuses, voltage transformers, and current transformers.
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.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

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. For Certified* equipment, documentation confirming that a nationally recognized testing and certification laboratory has listed the equipment.
7. A description of how the generator system will be operated including all modes of operation.
8. For inverters, the manufacturer name, model number, and AC power rating, Operating manual or link to manufacture's web site containing such manual.
9. For synchronous generators, manufacturer and model number, nameplate ratings, and impedance data (Xd, X'd, & X"d).
10. For induction generators, manufacturer and model number, nameplate ratings, and locked rotor current.

This application is subject to further consideration and study by IPL and the possible need for additional documentation and information from Customer.

Fees

Level 2	Initial Review	$50 plus, $1/kW of nameplate capacity.
	Additional Review[1]	Non-binding, good faith cost estimate provided to customer.

[1] Additional Review may be elected by the customer for the case where the facility failed to meet one or more of the applicable requirements and the Initial Review indicated that additional review may enable the Company to approve the application with minor modifications. The applicant cost to conduct the Additional Review is in addition to the initial Review Fee. Actual costs will be billed or credited to the applicant following completion of the Additional review and minor modifications.

Insurance Requirements

The Applicant shall provide evidence of homeowners, commercial or other insurance that provides coverage in the amount of at least $2 million for Comprehensive General Liability and Contractual Liability.

☒ Evidence of Insurance coverage provided with Application

Reference Documents

170 IAC Customer generator interconnection standards are located at the following web site. http://www.in.gov/legislative/iac/T01700/A00040.PDF?

Submittal of Fees, Application and Documentation

Fees - Payment for the Initial Review shall be sent to IPL Distributed Generation Interconnections, Attn: Sonya Kunkel, 1230 W Morris St., Indianapolis, IN 46221. Please make checks payable to Indianapolis Power & Light Co. and include the customer's name and address on the check.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

Application For Interconnection

Level 2**- 2MW or Less

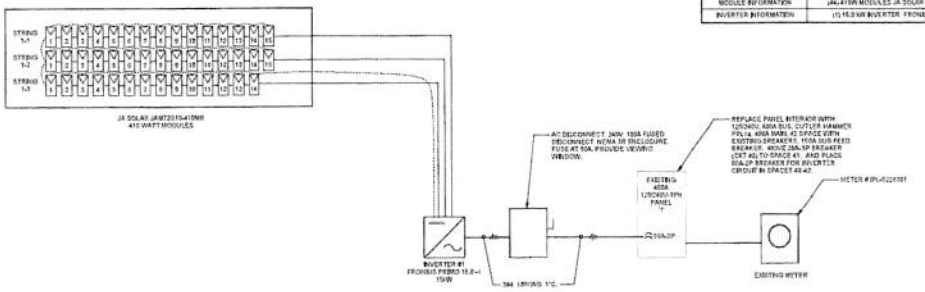
Application and Documentation - Please send the application and all documentation electronically to ipl.interconnection@aes.com using the standard e-mail formatting. All paper copies of documentation should be scanned electronically prior to submittal to IPL.

* Certified as defined in 170 IAC 4-4.3-5
** Level 2 as defined in 170 IAC 4-4.3-4(a)

07-08-2011

Exhibit 1B
Single Line Drawing

PV SYSTEM OVERVIEW	
SYSTEM SIZE DC (kW)	15.0 kW
SYSTEM SIZE AC (kW)	15 kW
MODULE INFORMATION	(44) 410W MODULES JA SOLAR JAM72S10-410MR
INVERTER INFORMATION	(1) 15.0 kW INVERTER FRONIUS PRIMO 15.0-1



A PV ONE-LINE DIAGRAM - ELECTRICAL

SCALE: NONE

[redacted]

DSA #31055

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

EMERGENCY SERVICES EDUCATION CENTER
242 NORTH HIGH SCHOOL ROAD
INDIANAPOLIS, INDIANA 46214

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY: [redacted] DESIGNED BY: [redacted]

SCALE: REFER TO DRAWING CHECKED BY: [redacted]

DATE: NOV. 11, 2021 JOB NO. [redacted]

SHEET DESCRIPTION:

PV RISER DIAGRAM

SHEET NUMBER:

E-500

PRINTED: 11/11/2021 3:57:49 PM

Exhibit 1C
Site Plan Drawing

RENOVATION LEGEND:

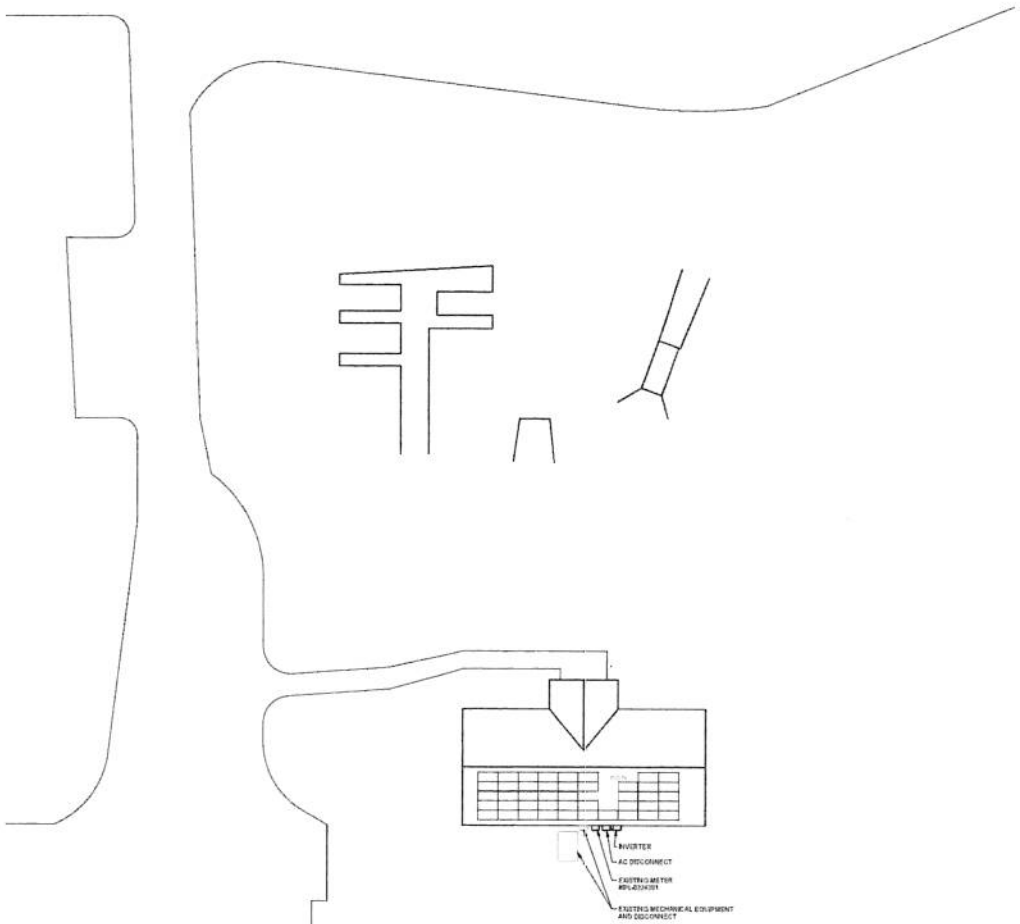
- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE T-1 FOR GENERAL NOTES.

PLAN NOTES:

1. PLAN NOTE #1.



SITE PLAN - ELECTRICAL

SCALE: 1/16" = 1'-0"

NORTH

[redacted]

DAA #21005

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

EMERGENCY SERVICES EDUCATION CENTER
242 NORTH HIGH SCHOOL ROAD
INDIANAPOLIS, INDIANA 46214

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY: [redacted] CHECKED BY: [redacted]

SCALE: REFER TO DRAWING

DATE: NOV. 01, 2021

SHEET DESCRIPTION:

SITE PLAN - ELECTRICAL

SHEET NUMBER:

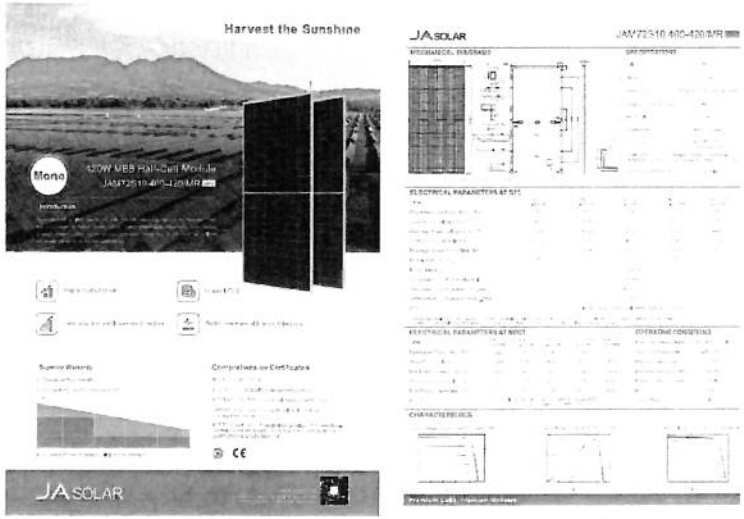
E-100

PRINTED ON: 11/1/2021 9:57:47 AM

Exhibit 1D
Inverter Specifications

A 15kW INVERTER 240V

SCALE: NONE



B PHOTOVOLTAIC MODULE

SCALE: NONE

[redacted]

DSA #21015

[redacted]

CERTIFIED BY:

REVISIONS:

NO.	DESCRIPTION	DATE

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS

EMERGENCY SERVICES EDUCATION CENTER
242 NORTH HIGH SCHOOL ROAD
INDIANAPOLIS, INDIANA 46214

PROJECT DESCRIPTION:

KEYPLAN

DRAWN BY: [redacted] DESIGNED BY:

SCALE: REFER TO DRAWINGS

DATE: NOV. 11 [redacted]

SHEET DESCRIPTION:
EQUIPMENT CUTSHEETS

SHEET NUMBER:
E-700

Exhibit 1E
Certificate of Insurance

Client#: 35624 MSDWAYN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 11/16/2021

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

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

PRODUCER	CONTACT NAME: Jennifer Collins	
EPIC Insurance Midwest P.O. Box 80159 Indianapolis, IN 46280	PHONE (A/C, No, Ext): 317-706-9828	FAX (A/C, No):
	E-MAIL ADDRESS: jennifer.collins@epicbrokers.com	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Netherlands Insurance Company	24171
INSURER B : Indiana Insurance Company	22659
INSURER C : Peerless Insurance Company	24198
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
MSD of Wayne Township
Marion County Indiana
1220 South High School Road
Indianapolis, IN 46241

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	X		CBP8488211	06/01/2021	06/01/2022	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
							MED EXP (Any one person)	$15,000
							PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$2,000,000
	OTHER:							$
C	AUTOMOBILE LIABILITY			BA9853550	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CU8521081	06/01/2021	06/01/2022	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $10000							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Leased/Rented Eq.			CBP8488211	06/01/2021	06/01/2022	$25,000	

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

CERTIFICATE HOLDER

AES Indiana
2102 N. Illinois St.
Indianapolis, IN 46202

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

JMCC1

Exhibit 1F
Miscellaneous Attachments

MSD WAYNE TOWNSHIP SCHOOLS
ENERGY REDUCTION PROJECTS
EMERGENCY SERVICES EDUCATION CENTER
242 NORTH HIGH SCHOOL ROAD
INDIANAPOLIS, INDIANA 46214
AES INDIANA INTERCONNECTION SET
NOV. 11, 2021

GENERAL NOTES

1. ALL EQUIPMENT SHALL BE UL LISTED AS REQUIRED.
2. ALL INVERTER WIRING AND GROUNDING METHODS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDED PRACTICES.
3. ALL DC DISCONNECT SWITCHES SHALL BE LABELED "WARNING - ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS" AND "TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION" PER NEC 690.17.
4. EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).
5. PV SYSTEM MUST BE MARKED WITH WORDING AND LOCATION AS DESCRIBED. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. IT IS RECOMMENDED THAT UL 969 BE USED AS STANDARD TO DETERMINE WEATHER RATING. UL LISTING OF MARKING IS NOT REQUIRED.
6. UNLESS OTHERWISE NOTED, MARKING FORMAT SHOULD BE: WHITE LETTERING ON RED BACKGROUND; MINIMUM 3/8" LETTER HEIGHT; CAPITAL LETTERS IN ARIAL OR SIMILAR FONT, NON-BOLD; REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT).
7. MARKING SHOULD BE PLACED ON ALL DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES, EVERY TEN (10) FEET, AT TURNS AND ABOVE AND/OR BELOW PENETRATIONS AND ALL DC COMBINER AND JUNCTION BOXES WITH THE FOLLOWING OR EQUAL MARKING: "PHOTOVOLTAIC POWER SOURCE".
8. LABEL EACH INVERTER WITH AC PANEL BOARD NUMBER AND BRANCH CIRCUIT NUMBER.
9. ALL CONDUCTORS ARE COPPER UNLESS OTHERWISE NOTED.
10. ALL ENTRANCES TO ENCLOSURES SHALL HAVE A SIGN READING "DANGER - HIGH VOLTAGE - KEEP OUT".
11. ALL ENCLOSURES THAT CONTAIN PV POWER SOURCE CONDUCTORS SHALL BE LABELED "PHOTOVOLTAIC POWER SOURCE".
12. AT EACH PULL BOX, COMBINER BOX, DISCONNECT, AND DEVICE WHERE ENERGIZED, UNGROUNDED CIRCUITS MAY BE EXPOSED DURING SERVICE SHALL BE LABELED "WARNING - ELECTRIC SHOCK HAZARD. THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED".
13. ACCESSIBLE EQUIPMENT WITH A DOOR OR HINGED COVER SHALL BE LOCATED OR BEHIND A LOCKED GATE IF MOUNTED LESS THAN 8 FEET ABOVE GRADE, PER 110.31(C).
14. EQUIPMENT CLEARANCE SHALL NOT BE LESS THAN 4 FEET BETWEEN EXPOSED LIVE PARTS AND GROUNDED PARTS, INCLUDING WALLS, CONCRETE AND BRICK STRUCTURES, PER 110.34 (A).
15. CONDUCTORS OF CIRCUITS RATED OVER 600 VOLTS, NOMINAL, SHALL NOT OCCUPY THE SAME EQUIPMENT WIRING ENCLOSURE, CABLE OR RACEWAY WITH CONDUCTORS OF CIRCUITS RATED 600 VOLTS, NOMINAL OR LESS, PER 300.3(C)(2).
16. CONDUCTORS RATED [illegible]VDC SHALL NOT BE BENT TO A RADIUS LESS THAN 8 TIMES THE OVERALL DIAMETER FOR NON-SHIELDED CONDUCTORS, AND NOT LESS THAN 12 TIMES THE DIAMETER FOR SHIELDED CONDUCTORS.
17. UNLESS NOTED OTHERWISE DIRECT BURIED CABLES SHALL BE MIN. 24" DEPTH, CABLES IN RMC OR IMC SHALL BE MIN. 6" DEPTH, CABLES IN PVC CONDUIT SHALL BE MIN 18" DEPTH OR 24" DEPTH IN TRAFFIC AREAS. PER TABLE 300.5.
18. CONDUCTORS USED FOR DIRECT-BURIAL APPLICATIONS SHALL BE OF TYPE IDENTIFIED FOR SUCH USE.
19. METALLIC CABLE SHIELDS SHALL BE CONNECTED TO A GROUNDING ELECTRODE CONDUCTOR, GROUNDING BUSBAR, OR A GROUNDING ELECTRODE.
20. ALL STRUT AND HARDWARE SHALL BE GALVANIZED STEEL. WHERE HARDWARE CONTACTS ALUMINUM COMPONENTS, HARDWARE SHALL BE STAINLESS STEEL A316.
21. PHOTOVOLTAIC MODULES SHALL BE GROUNDED USING UL LISTED GROUNDING METHODS, AND CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
22. DIRECT BURIED CABLES AND CONDUCTORS SHALL BE PROTECTED WITH PVC CONDUIT WHERE TRANSITIONING TO ABOVE GROUND.
23. USE SCHEDULE 40 PVC ABOVE GROUND WHERE SECURED TO BUILDINGS, CANOPIES OR RACKS, WHERE NOT SUBJECT TO DAMAGE.
24. USE PVC-SCH 80 ABOVE GROUND AT ACCESSIBLE AREA OPEN TO TRAFFIC UNLESS WHERE NOTED.
25. USE PVC-SCH 40 FOR UNDER GROUND UNLESS WHERE NOTED.
26. TRANSITION TO PVC-SCH 40 OR PVC-SCH 80 BELOW GROUND.
27. USE LFNC FOR STRING WIRES, BETWEEN RACKS AND TO STRING INVERTERS.
28. USE ONLY STAINLESS STEEL TIE WRAPS - P.N. HEYCO SS10 OR EQUAL. PLASTIC TIE WRAPS ARE NOT ALLOWED.
29. EACH EXTERIOR ELECTRICAL EQUIPMENT DEVICE SHALL BE UL OR NEMA RATED FOR EXTERIOR USE.
30. INVERTER UL1741 LISTED WITH INTEGRAL ANTI-ISLANDING PROTECTION PER IEEE1547. UL1741 LISTING INCLUDES COMPLIANCE WITH IEEE519 FOR POWER QUALITY, IEEE929 FOR INTERCONNECTION SAFETY AND NEC REQUIREMENTS. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR DETAILS.
31. ANY NEUTRAL WIRE #4 AWG OR SMALLER MUST BE GRAY OR WHITE, THE ENTIRE LENGTH. ANY GROUND WIRE #4 AWG OR SMALLER MUST BE GREEN OR BARE, THE ENTIRE LENGTH.
32. AC-DISCONNECT SWITCH SHALL BE USED AS A LOCKABLE UTILITY REQUIRED DISCONNECTING MEANS IN ACCORDANCE WITH NEC 690.14(C)(1) THROUGH (C)(5).
33. PROVIDE AND INSTALL NEW AC DISCONNECT SWITCH AS REQUIRED BY NEC 690 PART III. THE DISCONNECTING MEANS SHALL MATCH DEVICE TYPE REQUIRED BY LOCAL UTILITY COMPANY.
34. BONDING JUMPER SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.64 AND 250.70.
35. SAFETY PROCEDURES MUST BE FOLLOWED FOR A FUSE REPLACEMENT AND EQUIPMENT ISOLATION.
36. APPLY A PERMANENT WARNING LABEL TO EACH AC-DISCONNECT WITH THE FOLLOWING MARKING: CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED
37. APPLY PERMANENT WARNING LABEL WITH THE FOLLOWING MARKING TO THE SOLAR DISCONNECT SWITCH: UTILITY PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH
38. STRING GROUND WIRES ARE ATTACHED DIRECTLY TO THE RAILS OF THE RACKING STRUCTURE USING BURNDY EQUAL-4 GROUND LUGS OR EQUAL. INDIVIDUAL MODULES ARE GROUNDED TO THE RAILS USING GROUNDING CLAMPS. ALL RAILS ARE GROUNDED TO THE RACKING POSTS.
39. INSTALL A #6 GROUND FROM EACH INVERTER TO THE RACKING STRUCTURE AND RAILS.
40. WHERE STRING LENGTH, TILT, AZIMUTH AND SHADING ARE IDENTICAL, THE ELECTRICIAN SHALL CONFIGURE THE INVERTER'S MPPT FOR PARALLEL MODE. SEE OPERATION MANUAL FOR INSTRUCTION. OTHERWISE CONFIGURE THE INVERTER FOR INDEPENDENT MODE.
41. PROVIDE SUPPLEMENTAL GROUNDING OF RACKING STRUCTURES PER NEC 690.47 (D). USE #6 BARE COPPER DIRECT BURIED AND BOND TOGETHER AT LEAST ON POST OF ADJACENT RACK STRUCTURES STAND. AND PROVIDE FENCE GROUNDING, PER SITE PLANS AND DETAILS.
42. PROVIDE AC SYSTEM NEUTRAL BONDING AND GROUND ELECTRODE SYSTEM PER NEC 250.

DRAWING INDEX

GENERAL	
T-1	TITLE SHEET
ELECTRICAL	
E-100	SITE PLAN - ELECTRICAL
E-200	PV RISER DIAGRAM
E-300	EQUIPMENT CUTSHEETS

PV SYSTEM DATA

DC SYSTEM SIZE IN kW	18.0 kW
TOTAL MODULE COUNT	44 - 410W MODULES
MODULE MANUFACTURER	JA SOLAR JAM72S10-410MR
AC SYSTEM SIZE IN kW	15.0 kW
TOTAL INVERTER COUNT	1
INVERTER SIZE IN kW	15kW (FRONIUS PRIMO 15.0-1)

ABBREVIATIONS

kW	KILOWATTS (1000 WATTS)
MW	MEGAWATTS (1,000,000 WATTS)
AC	ALTERNATING CURRENT
AIC	AMPS INTERRUPTING CURRENT
A	AMPS
CB	COMBINER BOX
COM BOX	COMMUNICATIONS BOX
DAS	DATA ACQUISITION SYSTEM
DC	DIRECT CURRENT
EMT	ELECTRIC METAL TUBING
(E)	EXISTING SYSTEM
GND	GROUND
GRN	GREEN
IG	ISOLATED GROUND
JB	JUNCTION BOX
LFNC	LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT
MPB	MAIN PANELBOARD OR PANEL
MSB	MAIN SWITCHBOARD
MET STATION	METEOROLOGICAL STATION (AN ENCLOSURE WHICH HOLDS SENSORS TO MEASURE TEMPERATURE, IRRADIANCE, WIND SPEED)
SM, TC	METER
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
(N)	NEW
VOC	OPEN CIRCUIT VOLTAGE
PVC	POLYVINYL CHLORIDE
(R)	RELOCATED
RGS	RIGID GALVANIZED STEEL
ISC	SHORT CIRCUIT CURRENT
SB	SWITCHBOARD
SF	SQUARE FEET
SG	SWITCHGEAR
XFMR	TRANSFORMER
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
USE	UNDERGROUND SERVICE ENTRANCE
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTAGE
VA	VOLT-AMPS
W	WATTS
WP	WEATHERPROOF

TYPICAL WIRING DESIGNATIONS