CITY OF TOPEKA

AGENDA

LANDMARKS COMMISSION

Thursday, February 8, 2024
5:30 P.M.

Zoom Video Conference

MEMBERS OF THE LANDMARKS COMMISSION

Melina Stewart (2023 Chair)
Dave Frederick (2023 Vice Chair)
Donna Rae Pearson
Mark Burenheide
David Heit
Grant Sourk
Christine Steinkuehler
Cassandra Taylor
Nic Irick

- The Topeka Landmarks Commission holds a public meeting on the 2nd Thursday of each month.
- The following agenda identifies and describes each proposal to be considered by the Commission.
- Each item to be considered by the Commission will be introduced by the Planning Division Staff. The Commission will then hear and consider arguments both for and against each proposal.
- Individuals wishing to address the Commission are requested to state their name and address for the official record.
- Motions on all matters which require a decision by the Commission, are made in the affirmative. On a roll call vote, Commission members then vote yes, no, or abstain based on the affirmative motion.
- The owner of the local historic landmark or property owner within the local historic district may appeal the Commission's decision to the City Council by submitting a notice of appeal to the Planning Director within 10 calendar days of the decision.

ADA Notice: For special accommodations for this event, please contact the Planning Division at 785-368-3728 at least three working days in advance.

CITY OF TOPEKA

LANDMARKS COMMISSION

Agenda for Thursday February 8, 2024

A. Call to Order

B. Approval of Minutes from December 14, 2023

C. Announcement of Potential Conflicts

D. Action Items

1. **CLGR24/03 by Stephen Pease,** requesting a review under Kansas State Preservation Law Review [*K.S.A. 75-2724*] for the installation of solar panels at 1115 SW Western Ave.
2. **Election of 2024 Landmarks Commission Officers**
    i. Chair
    ii. Vice-Chair
    iii. Design Review Committee

E. Other Items

F. Adjournment

ADA Notice: For special accommodations for this event, please contact the Planning Division at 785-368-3728 at least three working days in advance.

CITY OF TOPEKA

MINUTES

Landmarks COMMISSION

Thursday, December 14, 2023

5:30PM

Zoom Video Conference

Members present:	Dave Frederick, David Heit, Donna Rae Pearson, Grant Sourk, Melina Stewart, Christine Steinkuehler, Cassandra Taylor (7)
Members Absent:	Mark Burenheide, Nic Irick
Staff Present:	Michael Hall, Landuse Planning Manager; William Sharp, Planner; Amanda Tituana-Feijoo, Administrative Officer

Roll Call – Commissioner Stewart called the meeting to order with 7 members present for a quorum.

Approval of Minutes from November 9, 2023 – Motion by Commissioner Sourk; **Second** by Commissioner Heit. Commissioner Stewart abstained. **APPROVED** (6-0-1)

Declaration of conflict of interest/ex parte communications –NA

1. CLGR 23/20 by 424 QOZB LLC, requesting a review under Kansas State Preservation Law Review [*K.S.A. 75-2724*] for the reuse and rehabilitation of the lower basement level of the U.S. Post Office and Federal Court House at 424 S Kansas Avenue.

Staff:
William Sharp presented the staff report and staff's recommendation for approval.

Owner's Representatives:

John Sampson, Falk Architects
Ken Schmanke, Owner
Pat Younkin, SEC
Bob Henthorne, SEC

Mr. Schmanke stated that nothing is being done that would affect the historical portions or integrity of the property.

There were no comments or questions by Commissioners.

Motion by Commissioner Sourk, second by Commissioner Heit: Concur with staff's findings that the proposed interior alterations to the building at 424 S Kansas Avenue is consistent with the recommendations outlined in the Downtown Topeka Design Guidelines, and will not damage or destroy the historical integrity of the structure. **Carried 7-0**

Other Non - Action Items- NA

With nothing more on the agenda, the meeting adjourned at 5:45pm.

February 1, 2024

CERTIFIED LOCAL GOVERNMENT
KANSAS HISTORIC PRESERVATION LAW
PROJECT REVIEW REPORT
TOPEKA LANDMARKS COMMISSION

CASE NO: CLGR24/03 **by:** Stephen Pease

Project Address: 1115 SW Western Ave
Property Classification: Contributing structure to the Holliday Park Historic District
Standards: Secretary of the Interior's Standards for Rehabilitation

Attachments: Site Plan [ ] **Elevations** [ ] **Arch./Const. Plans** [X] **Pictures** [X]

PROPOSAL:
This proposal is for the installation of roof-mounted solar panels on the north and south portions of the roof at 1115 SW Western Avenue. The property is a contributing structure to the Holliday Park Historic District.

The Design Review Committee reviewed the proposal on January 23rd and concluded with a recommendation of approval. The limited scope and minimal impact of this proposal suggests it be approved by the Design Review Committee or staff but, because the Landmarks Commission has seen few if any proposals for solar panels in the past, recommended the proposal be placed on the Commission's agenda.

1115 SW Western Ave view from sidewalk

BACKGROUND:

The Holliday Park Historic District was nominated to the National Register of Historic Places in 2002. According to the nomination listing, the district was "Nominated to the National Register under criteria A for association with the growth and development of Topeka and under criteria C for its architectural significance as a unique grouping of late nineteenth and early twentieth century residential architecture". The period of significance for the district was from 1885-1939. Tree lined streets with sidewalks and brick paved streets are common in the neighborhood with many original stone curbs lining the streets. The architectural styles of the houses range from Italianate and Queen Anne to Romanesque and Colonial Revival.

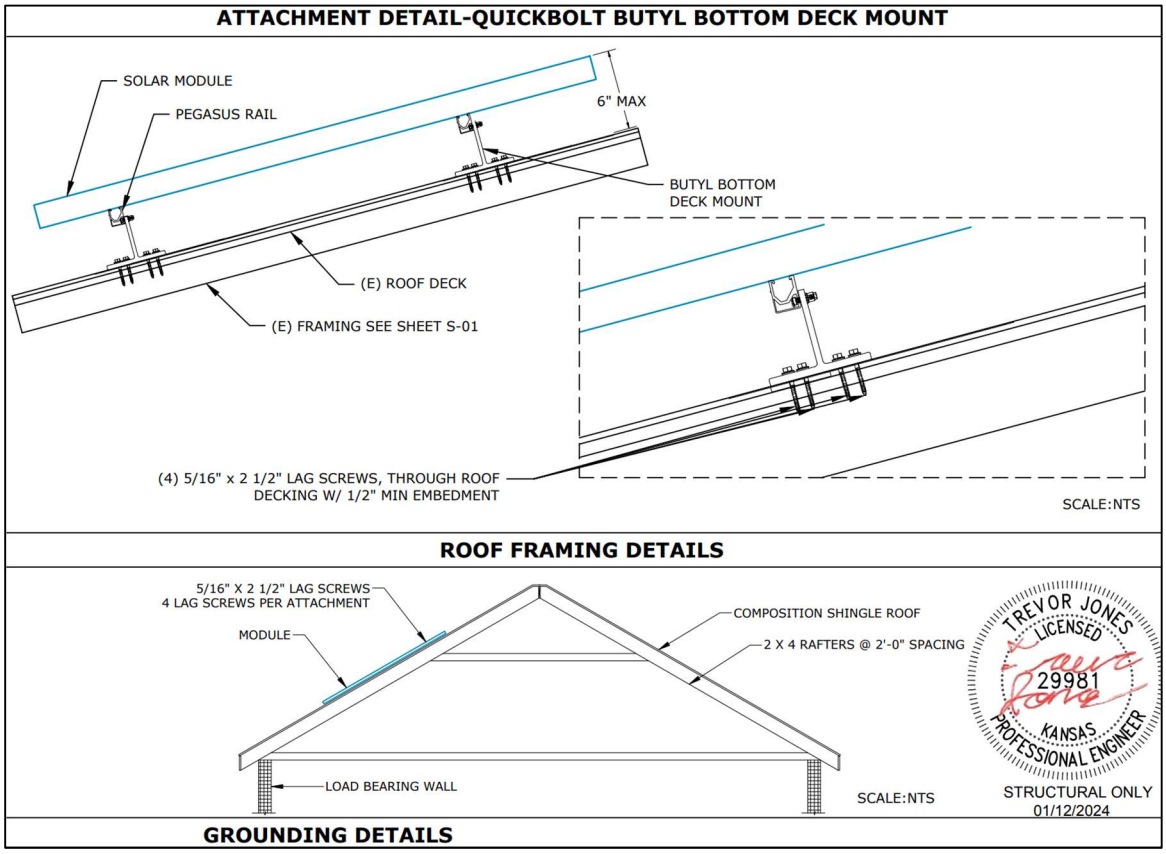
1115 SW Western Ave is a 2 story Queen Anne variant with a hip roof with an intersecting front gable. The structure maintains a high level of architectural integrity. The house was constructed between 1905-1907, which corresponded with the residential construction that was happening in the Holliday Park neighborhood at the time. The property also has a detached garage that is considered contributing to the district.

PROJECT DETAILS:

The project involves installation of solar panels on the north and south sides of the gable roof in a manner hardly visible from the street. A site plan of the location of the panels is provided.

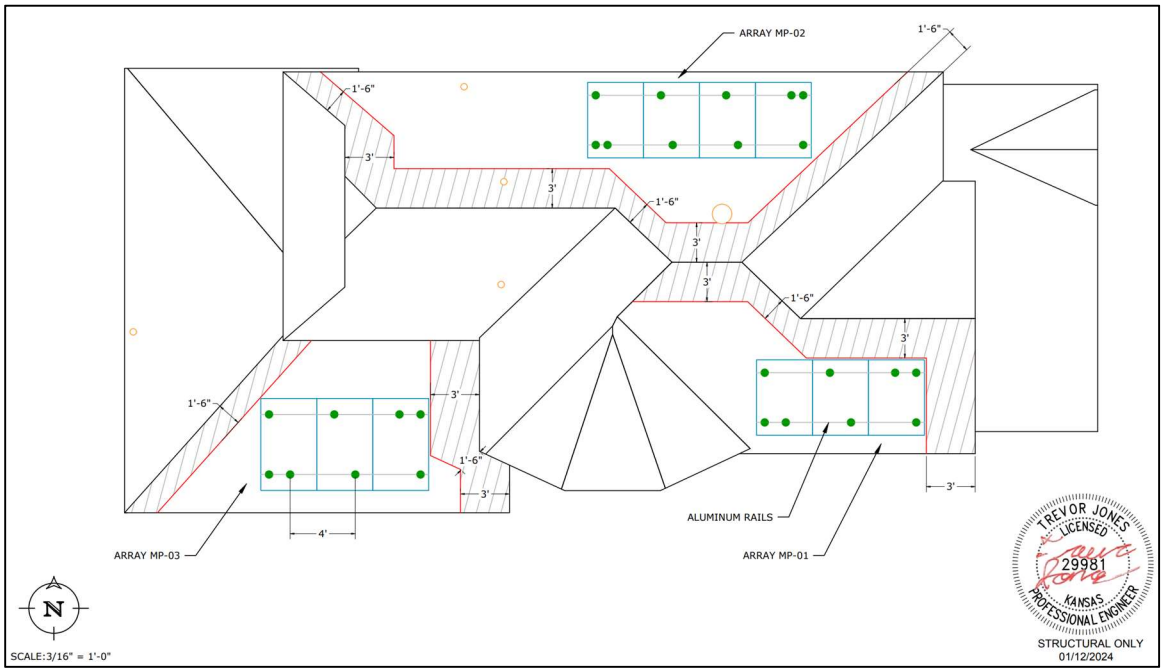
A total of ten solar panels will be attached to the roof with mounting brackets and screws. Four will be installed on the north side of the gable roof and six will be installed on the south side in two groups of three panels. The panels will not be installed on the front slope of the roof or front façade of the house. The panels will have a maximum extension of 6 inches from the roof. The solar panels will not project or extend out from the structure, leaving the profile of the panels partially visible but not obstructing any character defining architectural features of the house or altering the mass or scale of the structure.

View from street



Roof mounting details

The proposed installation has gone through the building permit application process and has been reviewed and approved by city staff for compliance.



Solar panel installation site plan

REVIEW SUMMARY: The Kansas State Historic Preservation Office requires that all projects occurring on any property listed on the Register of Historic Kansas Places be reviewed for their effect on the listed property and the surrounding district. State law (K.S.A. 75-2724) establishes that the Secretary of the Interior's Standards for Rehabilitation be used to evaluate changes proposed to any property that is individually listed, or is located within an historic district. The following is an analysis of the application of each Standard to the proposed project.

Standard 1. ***A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.***

Analysis: No change of use is expected with the property and it is anticipated that the property will continue on with its historic use as a residential dwelling. The property is zoned "R-2" Single-Family Dwelling District and the zoning district encompasses most of the Holiday Park neighborhood. The area went through a neighborhood-wide rezoning in 1998.

Standard 2. ***The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.***

Analysis: The scope of work for the project is taking place on the north and south sides of the gable roof. ITS Number 52, *Incorporating Solar Panels in a Rehabilitation Project*, states that solar panels may be "minimally visible, to avoid altering the historic character of the building". The placement of the panels could possibly be visible from the sidewalk or street. However, the view of the panels will be partially obstructed and will not alter any significant architectural feature of the structure.

Standard 3. ***Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.***

Analysis: From ITS Number 52, "Enhancing the energy efficiency of a historic building is important. To that end, it is often possible to install features such as solar panels and photovoltaic cells provided they are installed in a sensitive manner". The Secretary of the Interior and National Park Service both recognize that modernizing historic buildings to make them more energy efficient is important in the life-cycle of the structure. Placing solar panels on a structure away from the front elevation and towards the side and rear of the structure is compatible with rehabilitation standards.

Standard 4. ***Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.***

Analysis: Installation of the panels will only affect part of the gable roof on the north and south side. Roofing materials consist of composition shingles.

Standard 5. ***Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.***

Analysis: No architectural features are proposed to be removed or demolished with the installation of the panels.

Standard 6. ***Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.***

Analysis: N/A

Standard 7. ***Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.***

Analysis: N/A

Standard 8. ***Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.***

Analysis: N/A

Standard 9. ***New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.***

Analysis: The panels will be attached to the roof with mounts and screws. The panels will project out onto the roof with a separation of six inches between them and the roof. A total of ten panels will be installed. Four on the north side gable roof, three panels on the southeast portion of the roof, and three panels to be installed towards the rear on the southwest portion. The massing, size, and scale is not anticipated to change significantly with the solar panel installation.

Standard 10. ***New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.***

Analysis: Possible future removal of the solar panels will not impact the historic integrity of the house.

STAFF RECOMMENDATION: In the performance of this review under KSA 75-2724, Staff is recommending a finding that the proposed exterior alteration to the building at 1115 SW Western Avenue **IS CONSISTENT with Secretary of the Interior's Standards for Rehabilitation and will NOT damage or destroy the historical integrity of the structure.**

Prepared by: William Sharp, Planner II

APPEAL TO THE GOVERNING BODY: If the Landmarks Commission determines that the proposed treatment will damage or destroy the historic integrity of the property and/or the surrounding historic district, the applicant may appeal to the governing body. It will be incumbent upon the governing body to make a determination, after consideration of all relevant factors, that: (1) there are no feasible and prudent alternatives to the removal of interior features; and (2) that

alternatives to the project include all possible planning to minimize harm to the property that may result from those alternatives.

STEPHEN PEASE - 3.800kW DC, 2.900kW AC

SHEET CATALOG

INDEX NO.	DESCRIPTION
T-01	COVER PAGE
G-01	GENERAL NOTES
S-01	MOUNTING DETAIL
S-02	STRUCTURAL DETAIL
E-01	THREE LINE DIAGRAM
E-02	ELECTRICAL CALCULATIONS
PL-01	WARNING PLACARDS
SS	SPEC SHEET(S)

SCOPE OF WORK

GENERAL SYSTEM INFORMATION:
SYSTEM SIZE:
3.800kW DC, 2.900kW AC
MODULES:
(10)SILFAB SIL-380HC (380W)
INVERTER:
(10)ENPHASE IQ8PLUS-72-2-US (240V),
BRANCH DETAILS:
1X10 ENPHASE BRANCH

APPLICABLE CODES

- ELECTRIC CODE:NEC 2017
- FIRE CODE:IFC 2015
- BUILDING CODE:IBC 2015
- RESIDENTIAL CODE:IRC 2015

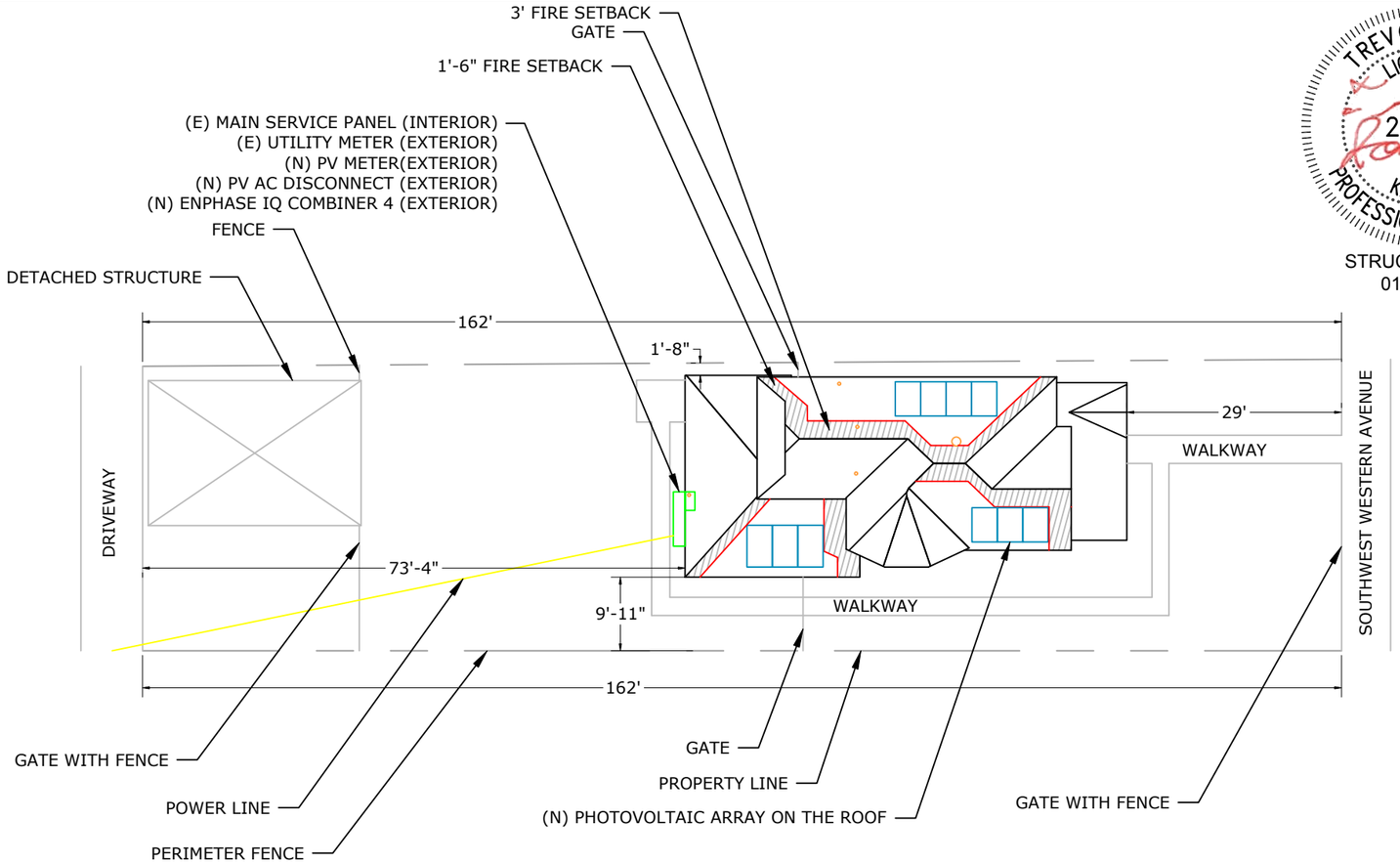
GENERAL NOTES

1.MODULES ARE LISTED UNDER UL 1703/61730 AND CONFORM TO THE STANDARDS.
2.INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
3.DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
4.WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26.
5.ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
6.ALL CONDUCTORS SHALL BE 600V, 90°C STANDARD COPPER UNLESS OTHERWISE NOTED.
7.WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
8.THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
9.ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
10.PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

SITE PLAN LAYOUT

ENGINEERING SCOPE OF WORK

1. ILLUMINE INTERNATIONAL INC. HAS ONLY PROVIDED DRAFTING SERVICES FOR THE PERMIT DRAWINGS. NO ACTUAL ENGINEERING WORK, ENGINEERING REVIEW OR ENGINEERING APPROVAL HAS BEEN CONDUCTED BY ILLUMINE INDUSTRIES INC UNLESS NOTED OTHERWISE.
2. WHEN A PROFESSIONAL ENGINEER APPROVES AND SEALS THE DESIGN FOR COMPONENTS OF THEIR RESPECTIVE DISCIPLINE (STRUCTURAL/ELECTRICAL) SHOWN ON THESE PERMIT DRAWINGS, HE/SHE:
   a. TAKES FULL DIRECT CONTROL OF THE ENGINEERED DESIGN
   b. IS GIVEN ACCESS TO PERSONALLY SUPERVISE AND RECTIFY ANY ASPECT OF THE ENGINEERED DESIGN
   c. HAS FULLY ACCEPTED RESPONSIBILITY FOR THE ENGINEERED DESIGN



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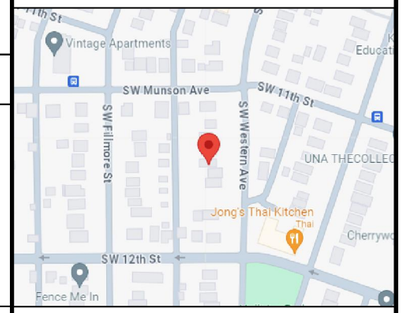
01/12/2024

VICINITY MAP



SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

NAME:STEPHEN PEASE

ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

COVER PAGE-1

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DATE:1/11/2024	T-01

GENERAL NOTES

ROOF ACCESS PATHWAYS AND SETBACKS:

- **IFC 605.11.1 ACCESS AND PATHWAYS.** ROOF ACCESS, PATHWAYS AND SPACING REQUIREMENTS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 605.11.1 THROUGH 605.11.1.3.3.
- **EXCEPTION:** 1. DETACHED. NON HABITABLE GROUP U STRUCTURES INCLUDING, BUT NOT LIMITED TO, PARKING SHADE STRUCTURES, CARPORTS, SOLAR TRELISES AND SIMILAR STRUCTURES. 2. ROOF ACCESS, PATHWAYS AND SPACING REQUIREMENTS NEED NOT BE PROVIDED WHERE THE FIRE CHIEF HAS DETERMINED THAT ROOFTOP OPERATIONS WILL NOT BE EMPLOYED.
- **IFC 605.11.1.2.3 SINGLE-RIDGE ROOFS** PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS WITH A SINGLE RIDGE SHALL BE LOCATED IN A MANNER THAT PROVIDES TWO, 3-FOOT WIDE(914 MM) ACCESS PATHWAYS FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS AND MODULES ARE LOCATED.
- **EXCEPTION:** THIS REQUIREMENTS SHALL NOT APPLY TO ROOFS WITH SLOPES OF TWO UNITS VERTICAL IN 12 UNITS HORIZONTAL(2:12)OR LESS.
- **IFC 605.11.1.2.4 ROOFS WITH HIPS AND VALLEYS:** PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS WITH ROOF HIPS AND VALLEYS SHALL NOT BE LOCATED CLOSER THAN 18 INCHES(457 MM) TO A HIP OR A VALLEY WHERE A PANELS/MODULES ARE TO BE PLACED ON BOTH SIDES OF A HIP OR VALLEY. WHERE PANELS ARE TO BE LOCATED ON ONLY ONE SIDE OF A HIP OR VALLEY THAT IS OF EQUAL LENGTH, THE PANELS SHALL BE PERMITTED TO BE PLACED DIRECTLY ADJACENT TO THE HIP OR VALLEY.
- **EXCEPTION:** THESE REQUIREMENTS SHALL NOT APPLY TO ROOFS WITH SLOPES OF TWO UNITS VERTICAL IN 12 UNITS HORIZONTAL(2:12)OR LESS.
- **IFC 605.11.1.3 OTHER GROUP R-3 BUILDINGS:** ACCESS TO SYSTEMS FOR BUILDINGS, OTHER THAN THOSE CONTAINING GROUP R-3 OCCUPANCIES, SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS605.11.1.3.1 THROUGH 605.11.1.3.3.
- **EXCEPTION:** WHERE IT IS DETERMINED BY THE FIRE CODE OFFICIAL THAT THE ROOF CONFIGURATION IS SIMILAR TO THAT OF A GROUP R-3 OCCUPANCY, THE RESIDENTIAL ACCESS AND VENTILATION REQUIREMENTS IN SECTIONS 605.11.1.2.1 THROUGH 605.11.1.2.5 SHALL BE PERMITTED TO BE USED.
- **IFC 605.11.1.3.1 ACCESS:** THERE SHALL BE A MINIMUM 6- FOOT WIDE(1829 MM) CLEAR PERIMETER AROUND THE EDGES OF THE ROOF.
- **EXCEPTION:** WHERE EITHER AXIS OF THE BUILDING IS 250 FEET(76 200MM)OR LESS, THE CLEAR PERIMETER AROUND THE EDGES OF THE ROOF SHALL BE PERMITTED TO BE REDUCED TO A MINIMUM 4 FOOT WIDE(1290MM).
- **IFC 605.11.1.3.2 PATHWAYS:** THE SOLAR INSTALLATION SHALL BE DESIGNED TO PROVIDE DESIGNATED PATHWAYS. THE PATHWAYS SHALL MEET THE FOLLOWING REQUIREMENTS: 1. THE PATHWAYS SHALL BE OVER AREAS CAPABLE OF SUPPORTING FIRE FIGHTERS ACCESSING THE ROOF. 2. THE CENTERLINE AXIS PATHWAYS SHALL BE PROVIDED IN BOTH AXES OF THE ROOF. CENTERLINE AXIS PATHWAYS SHALL RUN WHERE THE ROOF STRUCTURE IS CAPABLE OF SUPPORTING FIRE FIGHTERS ACCESSING THE ROOF. 3. PATHWAYS SHALL BE A STRAIGHT LINE NOT LESS THAN 4 FEET(1290 MM)CLEAR TO ROOF STANDPIPES OR VENTILATION HATCHES. 4. PATHWAYS SHALL PROVIDE NOT LESS THAN 4 FEET(1290 MM) CLEAR AROUND ROOF ACCESS HATCH WITH NOT LESS THAN ONE SINGULAR PATHWAY NOT LESS THAN 4 FEET(1290 MM) CLEAR TO A PARAPET OR ROOF EDGE.
- **IFC 605.11.3.2.1 RESIDENTIAL BUILDINGS WITH HIP ROOF LAYOUTS.** PANELS/MODULES INSTALLED ON RESIDENTIAL BUILDINGS WITH HIP ROOF LAYOUTS SHALL BE LOCATED IN A MANNER THAT PROVIDES A 3-FOOT-WIDE (914 MM) CLEAR ACCESS PATHWAY FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS/MODULES ARE LOCATED. THE ACCESS PATHWAY SHALL BE LOCATED AT A STRUCTURALLY STRONG LOCATION ON THE BUILDING CAPABLE OF SUPPORTING THE LIVE LOAD OF FIRE FIGHTERS ACCESSING THE ROOF.
- **IFC 605.11.3.2.2RESIDENTIAL BUILDINGS WITH A SINGLE RIDGE.** PANELS/MODULES INSTALLED ON RESIDENTIAL BUILDINGS WITH A SINGLE RIDGE SHALL BE LOCATED IN A MANNER THAT PROVIDES TWO, 3-FOOT-WIDE (914 MM) ACCESS PATHWAYS FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS/MODULES ARE LOCATED.
- **IFC 605.11.3.2.3 RESIDENTIAL BUILDINGS WITH ROOF HIPS AND VALLEYS.** PANELS/MODULES INSTALLED ON RESIDENTIAL BUILDINGS WITH ROOF HIPS AND VALLEYS SHALL BE LOCATED NO CLOSER THAN 18 INCHES (457 MM) TO A HIP OR A VALLEY WHERE PANELS/MODULES ARE TO BE PLACED ON BOTH SIDES OF A HIP OR VALLEY. WHERE PANELS ARE TO BE LOCATED ON ONLY ONE SIDE OF A HIP OR VALLEY THAT IS OF EQUAL LENGTH, THE PANELS SHALL BE PERMITTED TO BE PLACED DIRECTLY ADJACENT TO THE HIP OR VALLEY.
- **IFC 605.11.3.2.4 RESIDENTIAL BUILDING SMOKE VENTILATION.** PANELS/MODULES INSTALLED ON RESIDENTIAL BUILDINGS SHALL BE LOCATED NO HIGHER THAN 3 FEET (914 MM) BELOW THE RIDGE IN ORDER TO ALLOW FOR FIRE DEPARTMENT SMOKE VENTILATION OPERATIONS.

STRUCTURAL ONLY
01/12/2024

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

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APN :0973604024026000

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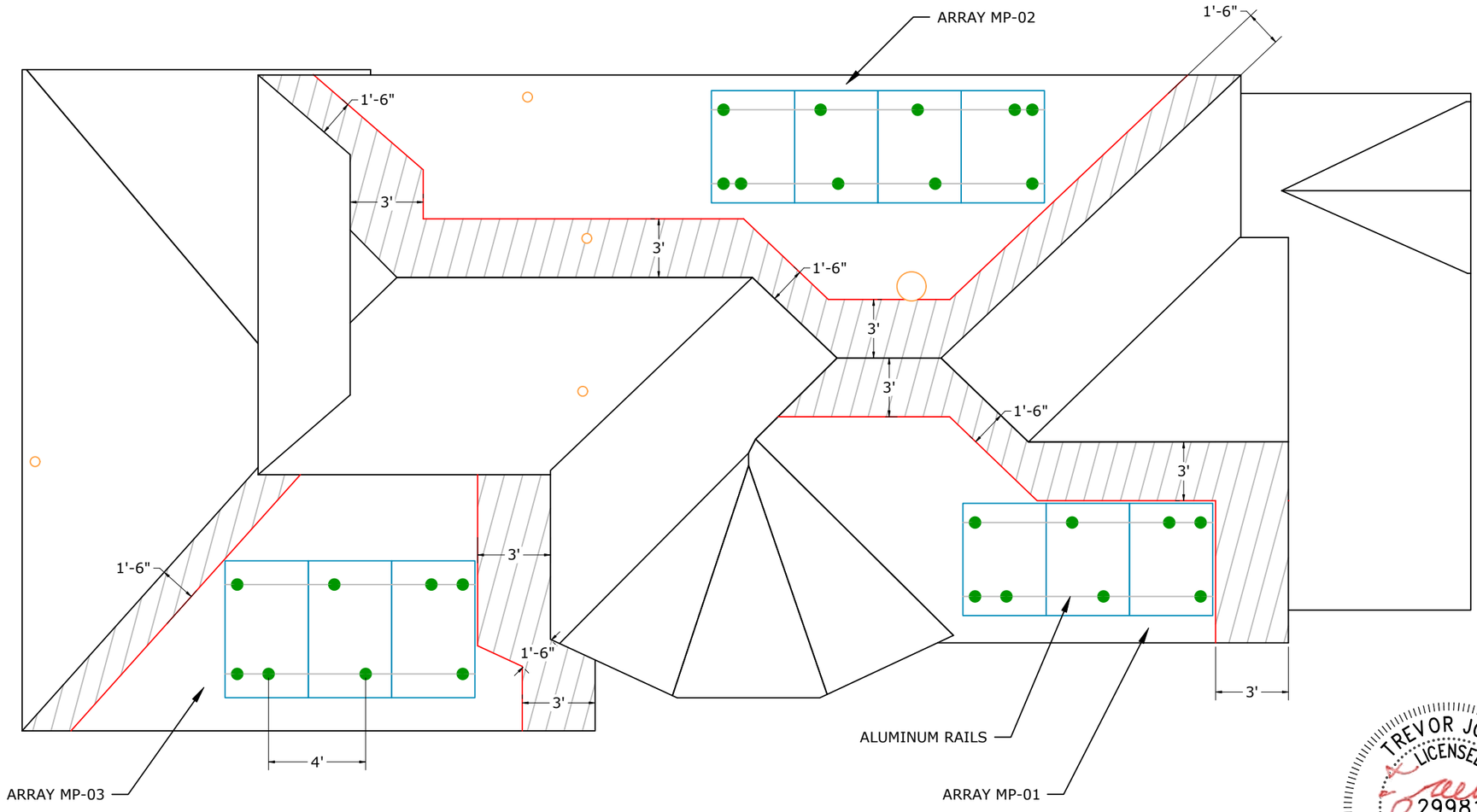
ILLUMINE i

GENERAL NOTES

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	G-01

SITE INFORMATION - WIND SPEED: 115 MPH AND SNOW LOAD: 20 PSF												
SR. NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	ROOF EXPOSURE	FRAME TYPE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	180°	36°	3	59.0	COMPOSITION SHINGLE	BUTYL BOTTOM DECK MOUNT	ATTIC	RAFTERS	2 X 4	2'-0"	4'-0"	1'-6"
MP-02	359°	36°	4	78.7	COMPOSITION SHINGLE	BUTYL BOTTOM DECK MOUNT	ATTIC	RAFTERS	2 X 4	2'-0"	4'-0"	1'-6"
MP-03	180°	12°	3	59.0	COMPOSITION SHINGLE	BUTYL BOTTOM DECK MOUNT	ATTIC	RAFTERS	2 X 4	2'-0"	4'-0"	1'-6"

NOTE(N):PENETRATIONS ARE STAGGERED



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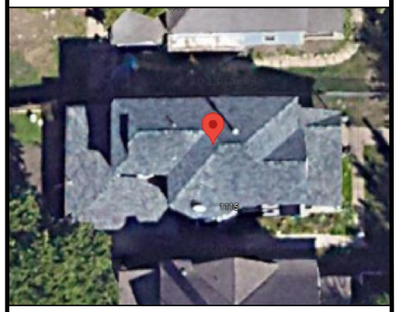
AERIAL VIEW



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MOUNTING DETAIL

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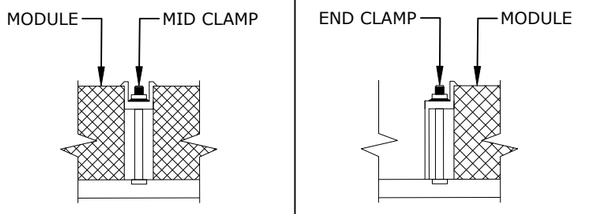
DEAD LOAD CALCULATIONS

BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT (LBS)
MODULES	10	43	430.00
MID-CLAMP	14	0.170	2.38
END-CLAMP	12	0.300	3.60
RAIL LENGTH	84	0.790	66.36
SPLICE BAR	0	0.650	0.00
BUTYL BOTTOM DECK MOUNT	26	0.55	14.30
MICROINVERTER	10	2.38	23.80
TOTAL WEIGHT OF THE SYSTEM (LBS)			540.44
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			196.63
WEIGHT PER SQ. FT.(LBS)			2.75
WEIGHT PER PENETRATION (LBS)			20.79

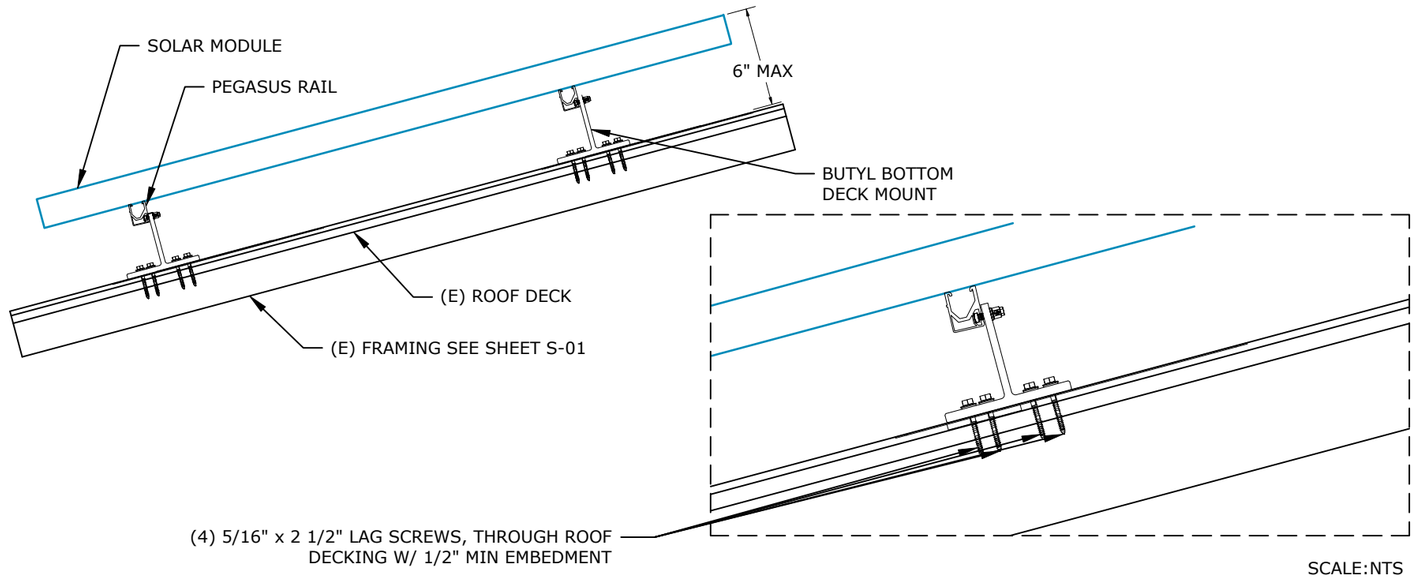
MODULES DATA

SILFAB SIL-380HC (380W)	
MODULE DIMS	69.4"x40.8"x1.38"
LAG SCREWS	5/16" X 2 1/2" : 1/2" MIN EMBEDMENT

MID-CLAMP AND END-CLAMP ANATOMY



ATTACHMENT DETAIL-QUICKBOLT BUTYL BOTTOM DECK MOUNT



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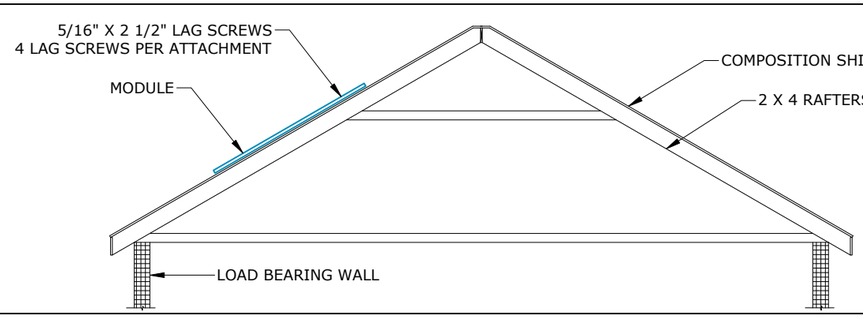
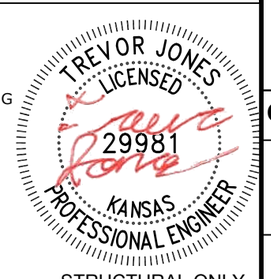
ROOF FRAMING DETAILS



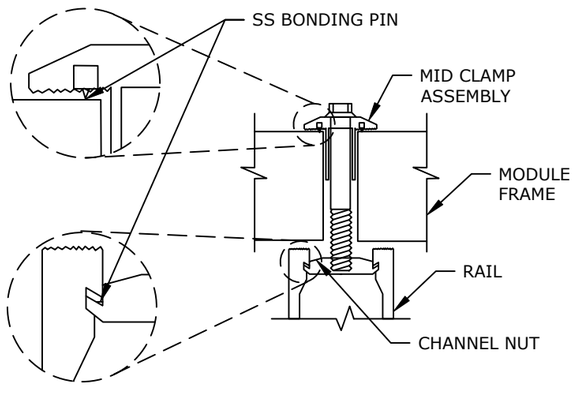
SCALE:NTS



STRUCTURAL ONLY
01/12/2024

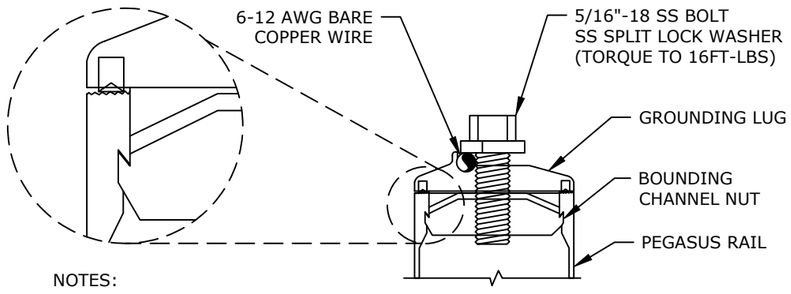
GROUNDING DETAILS

MODULE TO MODULE & MODULE TO RAIL



GROUNDING MID-CLAMP
SCALE: NTS

GROUNDING

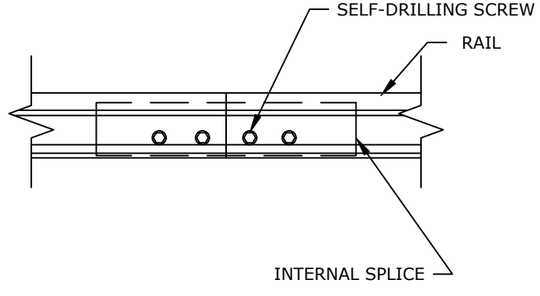


NOTES:

- ALL HARDWARE IS INCLUDED FROM MANUFACTURER
- A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
- GROUNDING LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
- GROUNDING LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
- ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE.

SCALE:NTS

RAIL TO RAIL



SCALE: NTS

INSTALLATION NOTES

1.STRUCTURAL ROOF MEMBER LOCATIONS ARE ESTIMATED AND SHOULD BE LOCATED AND VERIFIED BY THE CONTRACTOR WHEN LAG BOLT PENETRATION OR MECHANICAL ATTACHMENT TO THE STRUCTURE IS REQUIRED.
2.ROOFTOP PENETRATIONS FOR SOLAR RACKING WILL BE COMPLETED AND SEALED WITH APPROVED SEALANT PER CODE BY A LICENSED CONTRACTOR.
3.LAGS MUST HAVE A MINIMUM 1/2" THREAD EMBEDMENT INTO THE STRUCTURAL MEMBER.
4.ALL PV RACKING ATTACHMENTS SHALL BE STAGGERED BY ROW BETWEEN THE ROOF FRAMING MEMBERS AS NECESSARY.
5.ROOF MOUNTED STANDARD RAIL REQUIRES ONE THERMAL EXPANSION GAP FOR EVERY RUN OF RAIL GREATER THAN 40'.
6.ALL CONDUCTORS AND CONDUITS ON THE ROOF SHALL BE MINIMUM 1-1/2" ABOVE THE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING).
7.THE PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL OR BUILDING ROOF VENTS.

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

NAME:STEPHEN PEASE

ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

STRUCTURAL DETAIL

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	S-02

THREE LINE DIAGRAM: DC SYSTEM SIZE - 3.800kW, AC SYSTEM SIZE - 2.900kW

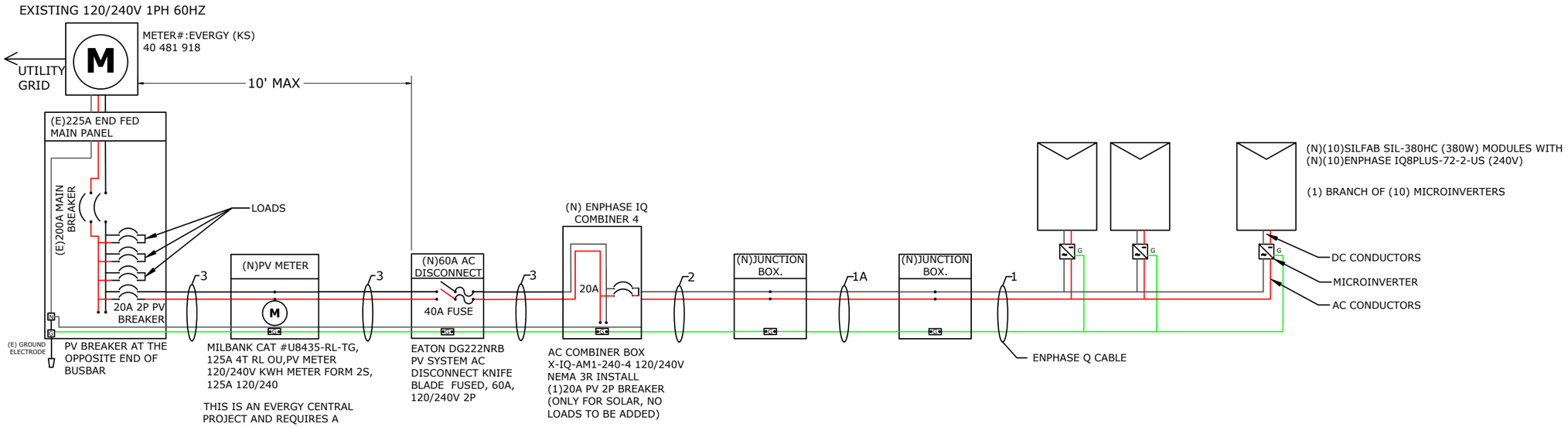
MICROINVERTER SPECIFICATIONS	
MODEL	ENPHASE IQ8PLUS-72-2-US (240V)
POWER RATING	290W
MAX OUTPUT CURRENT	1.21A
CEC WEIGHTED EFFICIENCY	97%
MAX NO OF MICROINVERTERS/BRANCH	10
MAX DC VOLTAGE	60V

MODULE SPECIFICATION	
MODEL	SILFAB SIL-380HC (380W)
MODULE POWER @ STC	380W
OPEN CIRCUIT VOLTAGE:**Voc**	42.17V
MAX POWER VOLTAGE:**Vmp**	35.32V
SHORT CIRCUIT CURRENT:**Isc**	11.36A
MAX POWER CURRENT:**Imp**	10.77A

NOTE(N): EACH MICROINVERTER IS RAPID SHUTDOWN COMPLIANT

NOTE(N):
*PV METER REQUIRED TO BE BETWEEN METER & DISCONNECT.
*BASIC LABELS
*DIRECTORY PLACARD REQUIRED FOR ALL PROJECTS.
*DISCONNECT NEEDS TO BE PLACED WITHIN 10FT OF THE METER FOR ACCESSIBILITY

NOTES APPENDIX (AS APPLICABLE FOR TO BE BUILT DRAWING SETS): (A) TOTAL AC VOLTAGE DROP NOT TO EXCEED 2% TO INTERCONNECTION, < 3% FROM INVERTER(S) TO UTILITY TRANSFORMER. (B) ALL CONNECTORS 75C RATED. (C) ALL CONDUCTORS COPPER, UNLESS OTHERWISE NOTED. (D) OUTDOOR EQUIPMENT NEMA3R. (E) ALL CONDUCTORS MUST BE PROTECTED FROM ACCESS BY A FENCE OR SUITABLE COVER, OR OUT OF REACH. (F) PROPERTY LINES, BOUNDARIES AND ALL OTHER EXTERIOR MEASUREMENTS ARE FOR REFERENCE ONLY, AND MUST BE VERIFIED BY A LICENSED SURVEYOR OR CIVIL ENGINEER. (G) NO PVC ALLOWED ON ROOF OR IN ATTIC. (H) MC4 CONNECTORS MAY NOT BE JOINED WITH 'MC4 COMPATIBLE' CONNECTORS. (I) TAP CONNECTIONS IN PANEL MUST NOT VIOLATE CONDITIONS OF ACCEPTABILITY FROM PANEL MANUFACTURER'S NRTL LISTING, OR FIELD LABEL REQUIRED. (J) PV WIRES MAY NOT BE LAID DIRECTLY ON ROOF. (K) TY WRAPS FOR WIRE MANAGEMENT MUST BE STRUCTURAL (S21) UL APPROVED, OR EQUAL. (L) DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING, WHEN INDICATED, DOES NOT SHOW ALL OFFSETS, DROPS, AND RISES OF RUNS. (M) BURIED CONDUITS UNDER AREAS SUBJECT TO VEHICLE TRAFFIC REQUIRE MIN 24" COVER. (N) NM-B OR PAPER INSULATED CONDUCTORS MAY NOT BE USED EXTERIOR. (O) THE DEVELOPER IS REQUIRED TO CONFIRM EXISTING ELECTRICAL SERVICE SIZE FROM THE UTILITY, AND MAY NOT RELY SOLELY ON EXISTING BREAKER SIZES. (P) CONNECTING TO UTILITY EQUIPMENT REQUIRES PRIOR UTILITY CONSENT. (Q) WHEN BUILDING PV SYSTEMS WITH POWER LINE COMMUNICATIONS FOR RSD SOLUTIONS, FOLLOWING MANUFACTURERS INSTRUCTIONS ON CONDUCTOR AND CONDUIT SPACING IS PARAMOUNT, OR HAZARD MAY RESULT. (R) NOTIFY ELECTRICAL ENGINEER WHO'S SEAL IS ON THIS DRAWING PRIOR TO ANY AND ALL CHANGES IN DESIGN.



MICHAEL MCGUIRE LICENSED 27667 KANSAS PROFESSIONAL ENGINEER

sealed 12jan2024
ELECTRICAL ONLY
NOT AN AS BUILT DRAWING SET

ELECTRICAL NOTES

1.CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
2.CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
3.MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 3%.
4.ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5.BREAKER/FUSE SIZED ACCORDING PER NEC ARTICLE 240.
6.AC EQUIPMENT GROUNDING CONDUCTOR (GEC) SIZED PER NEC 250.66.
7.EQUIPMENT GROUNDING CONDUCTOR (EGC) SIZED PER NEC 250.122.
8.AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(1).
9.CURRENT CARRYING CONDUCTOR ADJUSTMENT FACTOR IS BASED ON NEC 310.15(C)(1).
10.MAX.SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
11.CONDUCTORS ARE SIZED PER NEC TABLE 310.16.

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

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ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

THREE LINE DIAGRAM

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	E-01

ELECTRICAL CALCULATIONS

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	FREE AIR	(2) 12 AWG ENPHASE Q CABLE PER BRANCH CIRCUIT	NONE	(1) 6 AWG BARE COPPER
1A	FREE AIR	(1) 12/2 ROMEX WIRE		
2	1"EMT	(2) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
3	1"EMT	(2) 6AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2

NOTE(N):
MAIN PANEL RATING:225A, MAIN BREAKER RATING:200A
120% RULE: (225A*1.2)-200A=70A =>ALLOWABLE BACKFEED IS 70A

OCPD CALCULATIONS:
INVERTER OVERCURRENT PROTECTION=
MICROINVERTER O/P I * CONTINUOUS LOAD(1.25) * #OF INVERTERS
=1.21*1.25*10=15.13 A =>PV BREAKER = 20A
ALLOWABLE BACKFEED 70A =>20A PV BREAKER
THE DESIGNED INTERCONNECTION MEETS THE 705.12(B)(2)(3)(b) REQUIREMENTS.

ROMEX ACCEPTABLE FOR INTERIOR ONLY

AC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS >>
REQUIRED CONDUCTOR AMPACITY:
INVERTER OUTPUT CURRENT * #OF INVERTERS = MAX CURRENT PER 690.8(A)(1)(e)
* 125%
= MAX CURRENT PER 690.8(B)(1)
CORRECTED AMPACITY CALCULATIONS:
DERATED CONDUCTOR AMPACITY PER 690.8(B)(2) = AMPACITY * TEMPERATURE DERATE FACTOR * CONDUIT FILL DERATE
DERATED CONDUCTOR AMPACITY CHECK : MAX CURRENT PER 690.8(B)(1) < DERATED CONDUCTOR AMPACITY

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK		
1	1.21	X	10	=	12.10	X	1.25	=	15.13A	30	X	0.87	X	1	=	26.10A	15.13A	<	26.10A
2	1.21	X	10	=	12.10	X	1.25	=	15.13A	40	X	0.87	X	1	=	34.80A	15.13A	<	34.80A
3	1.21	X	10	=	12.10	X	1.25	=	15.13A	75	X	0.87	X	1	=	65.25A	15.13A	<	65.25A

MICHAEL MCGUIRE LICENSED 27667 KANSAS PROFESSIONAL ENGINEER

sealed 12jan2024
ELECTRICAL ONLY
NOT AN AS BUILT DRAWING SET

ELECTRICAL NOTES

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10.MAX.SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
11.CONDUCTORS ARE SIZED PER NEC TABLE 310.16.

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

NAME:STEPHEN PEASE

ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE i

ELECTRICAL CALCULATIONS

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	E-02

WARNING PLACARD

⚠ WARNING

ELECTRIC SHOCK HAZARD
IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORSMAY BE UNGROUNDED AND MAY BE ENERGIZED

⚠ WARNING

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

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

⚠ WARNING

PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

LABEL LOCATION
COMBINER BOX
[PER CODE: NEC 690.4(B)]

⚠ WARNING

DUAL POWER SUPPLY
SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

LABEL LOCATION
[PER CODE: NEC 705.12(B)(3)]

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH

RATED AC OPERATING CURRENT 12.10 AMPS AC
AC NOMINAL OPERATING VOLTAGE 240 VAC

LABEL LOCATION
AC DISCONNECT , POINT OF INTERCONNECTION
[PER CODE: NEC 690.54]

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

LABEL LOCATION
WEATHER RESISTANT MATERIAL, DURABLE ADHESIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN ⅜ " LETTER HEIGHT AERIAL OR SIMILAR FONT NON-BOLD,PLACED WITHIN THE MAIN SERVICE DISCONNECT,PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERATED WITH THE SERVICE PANEL CLOSED.

⚠ WARNING

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE & LOAD SIDES MAY BE ENERGIZED IN OPEN POSITION
DO NOT DISCONNECT FUSES UNDER LOAD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED
PHOTOVOLTAIC SYSTEM DC DISCONNECT
AUTHORIZED PERSONNEL ONLY

Note: WARNING labels must resemble format in example above with over-sized WARNING, exclamation point in triangle, colors, etc.

INVERTER OUTPUT CIRCUIT

PHOTOVOLTAIC SOLAR BREAKER

⚠ WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

AC JUNCTION BOX FOR PHOTOVOLTAIC CIRCUIT

⚠ WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION
ADJACENT TO PV BREAKER
[PER CODE: 705.12(B)(2)(3)(b)]

⚠ WARNING

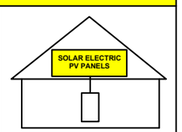
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL LOCATION:
MAIN SERVICE PANEL
[PER CODE: NEC 110.27(C)]

CAUTION
SOLAR POINT OF CONNECTION

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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



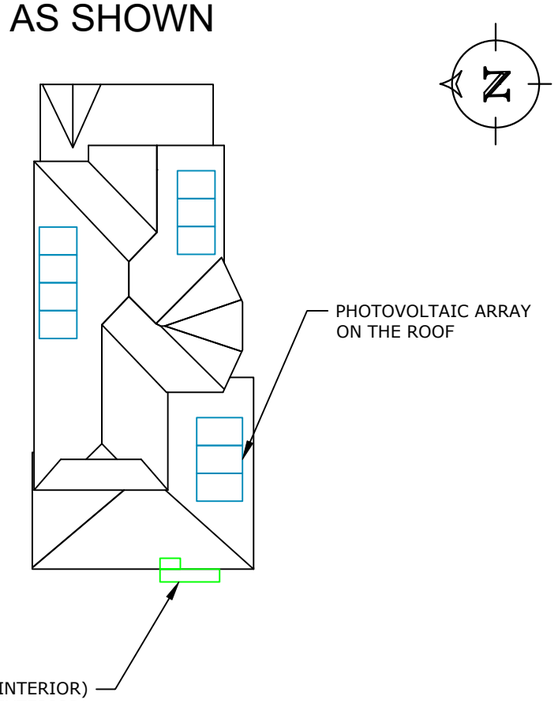
INSTALLED ON: WITHIN 3 FT OF SERVICE DISCONNECTING MEANS. MIN 3/8" BLACK TEXT ON YELLOW BACKGROUND & 3/16" BLACK TEXT ON WHITE BACKGROUND.
APPLICABLE CODE(S): NEC 690.56(C)(1)(a)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

INSTALLED ON:RAPID SHUTDOWN SWITCH
APPLICABLE CODE(S): NEC 690.56(C)(3)

CAUTION:MULTIPLE SOURCES OF POWER ⚠

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

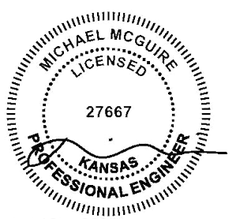


SYSTEM UTILIZES MICROINVERTERS LOCATED UNDER EACH SOLAR MODULE
1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

NOTES(N):

1.PLACARDS SHALL MEET THE REQUIREMENTS OF ARTICLES 690 AND 705, UNLESS OTHERWISE SPECIFIED PER LOCAL AHJ REQUIREMENTS.
2.PLACARDS SHALL MEET THE REQUIREMENTS OF SECTION 110.21(B) AS REQUIRED AND SHALL COMPLY WITH ANSI Z535.4-2011, PRODUCT SAFETY SIGNS AND LABELS.
3.PLACARDS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD.
4.PLACARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED AND SHALL BE HANDWRITTEN.
5.PLACARDS SHALL NOT COVER EXISTING MANUFACTURER LABELS.

LABEL LOCATION
SERVICE PANEL
PER CODE: NEC 705.10



sealed 12jan2024
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SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

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APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

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ILLUMINE

WARNING PLACARDS

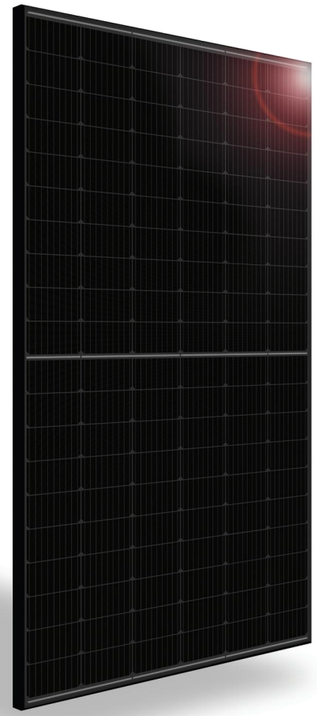
DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	PL-01

SPEC SHEET

SILFAB PRIME

SIL-380 HC

SILFAB SOLAR™



RELIABLE ENERGY.
DIRECT FROM THE SOURCE.

Introducing Silfab Prime.

Designed to outperform.

Dependable, durable, high-performance solar panels engineered for North American homeowners.

SILFABSOLAR.COM

Intertek Intertek IEC Fraunhofer ISE

CHUBB
* Chubb provides error and omission insurance to Silfab Solar Inc.

ELECTRICAL SPECIFICATIONS		380	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	380	284
Maximum power voltage (Vpmax)	V	35.32	32.83
Maximum power current (Ipmax)	A	10.77	8.64
Open circuit voltage (Voc)	V	42.17	39.55
Short circuit current (Isc)	A	11.36	9.16
Module efficiency	%	20.8%	19.4%
Maximum system voltage (VDC)	V	1000	
Series fuse rating	A	20	
Power Tolerance	Wp	0 to +10	

Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	19.5kg ±0.2kg	43lbs ±0.4lbs
Dimensions (H x L x D)	1762 mm x 1037 mm x 35 mm	69.4 in x 40.8 in x 1.37 in
Maximum surface load (wind/snow)*	5400 Pa rear load / 5400 Pa front load	112.8 lb/ft² rear load / 112.8 lb/ft² front load
Hail impact resistance	ø 25 mm at 83 km/h	ø 1 in at 51.6 mph
Cells	120 Half cells - Si mono PERC 9 busbar - 83 x 166 mm	120 Half cells- Si mono PERC 9 busbar - 3.26 x 6.53 in
Glass	3.2 mm high transmittance, tempered, DSM antireflective coating	0.126 in high transmittance, tempered, DSM antireflective coating
Cables and connectors (refer to installation manual)	1350 mm, ø 5.7 mm, MC4 from Staubli	53.15 in, ø 0.22 in (12AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	
Frame	Anodized Aluminum (Black)	
Bypass diodes	3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated	

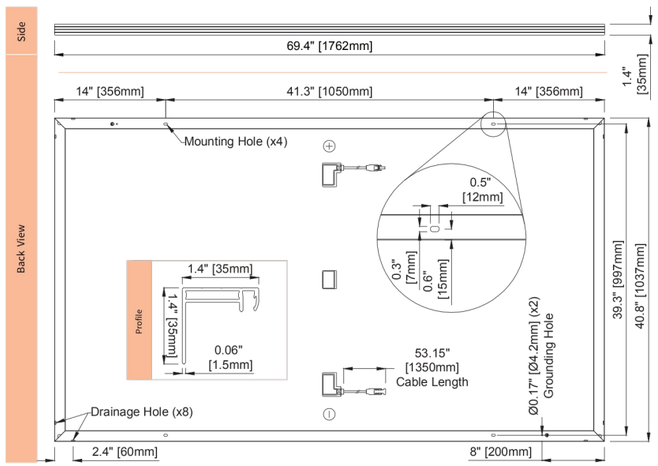
TEMPERATURE RATINGS	
Temperature Coefficient Isc	+0.064 %/°C
Temperature Coefficient Voc	-0.28 %/°C
Temperature Coefficient Pmax	-0.36 %/°C
NOCT (± 2°C)	45 °C
Operating temperature	-40/+85 °C

WARRANTIES	
Module product workmanship warranty	25 years**
Linear power performance guarantee	30 years ≥ 97.1% end 1st yr ≥ 91.6% end 12th yr ≥ 85.1% end 25th yr ≥ 82.6% end 30th yr

CERTIFICATIONS	
Product	ULC ORD C1703, UL1703, CEC listed, UL 61215-1/-2, UL 61730-1/-2, IEC 61215-1/-2. IEC 61730-1/-2, CSA C22.2#61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2
Factory	ISO9001:2015

SHIPPING SPECS	
Modules Per Pallet:	26 or 26 (California)
Pallets Per Truck	34 or 32 (California)
Modules Per Truck	884 or 832 (California)

* ⚠ Warning. Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.
** 12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at silfabsolar.com
PAN files generated from 3rd party performance data are available for download at: silfabsolar.com/downloads



SILFAB SOLAR INC.

800 Cornwall Ave
Bellingham WA 98225 USA
T +1 360.569.4733
info@silfabsolar.com
SILFABSOLAR.COM

1770 Port Drive
Burlington WA 98233 USA
T +1 360.569.4733

240 Courtneypark Drive East
Mississauga ON L5T 2Y3 Canada
T +1 905.255.2501
F +1 905.696.0267

SHINESOLAR

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ILLUMINE

MODULE SPEC SHEET

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DATE:1/11/2024	SS-01

SPEC SHEET

ENPHASE.

DATA SHEET

IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

* Only when installed with IQ System Controller 2, meets UL 1741.
** IQ8 and IQ8Plus supports split phase, 240V installations only.

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings[1]	W	235 – 350	235 – 440
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell
MPPT voltage range	V	27 – 37	29 – 45
Operating range	V	25 – 48	25 – 58
Min/max start voltage	V	30 / 48	30 / 58
Max input DC voltage	V	50	60
Max DC current[2] [module Isc]	A	15	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		**IQ8-60-2-US**	**IQ8PLUS-72-2-US**
Peak output power	VA	245	300
Max continuous output power	VA	240	290
Nominal (L-L) voltage/range[3]	V	240 / 211 – 264	
Max continuous output current	A	1.0	1.21
Nominal frequency	Hz	60	
Extended frequency range	Hz	50 – 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max units per 20 A (L-L) branch circuit[4]		16	13
Total harmonic distortion		<5%	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging	
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night-time power consumption	mW	60	
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (condensing)	
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")	
Weight		1.08 kg (2.38 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations		Yes	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure	
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	
COMPLIANCE			
Certifications		CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.	

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility
(2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

NAME:STEPHEN PEASE

ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

INVERTER SPEC SHEET

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	SS-02

SPEC SHEET

Data Sheet
Enphase Networking

Enphase IQ Combiner 4/4C

X-IQ-AM1-240-4
X-IQ-AM1-240-4C

X-IQ-AM1-240-4C

X-IQ-AM1-240-4

The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

Enphase IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.
ACCESSORIES AND REPLACEMENT PARTS	(not included, order separately)
Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers
MECHANICAL DATA	
Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6,560 feet)
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
COMPLIANCE	
Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

SHINESOLAR

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

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ADDRESS:1115 SOUTHWEST WESTERN AVENUE, TOPEKA, KS 66604

39.046714, -95.688090
APN :0973604024026000

AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

COMBINER SPEC SHEET

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	SS-03

SPEC SHEET

Product specifications

Eaton DG222NRB

Catalog Number: DG222NRB

Eaton General duty cartridge fuse safety switch, 60 A, NEMA 3R, Painted galvanized steel, Class H fuses, Fusible with neutral, Two-pole, Three-wire, Category: general duty safety switch, 240 V

General specifications

Product Name	Catalog Number
Eaton general duty cartridge fuse safety switch	DG222NRB
	UPC
	782113144221
Product Length/Depth	**Product Height**
7.35 in	14.37 in
Product Width	**Product Weight**
8.4 in	10 lb
Warranty	**Compliances**
Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.	NEC 230.62 (C) Compliant Barrier
	Certifications
	UL Listed
	Catalog Notes
	Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

Physical Attributes

Enclosure
NEMA 3R

Enclosure material
Painted galvanized steel

Fuse configuration
Fusible with neutral

Number Of Poles
Two-pole

Number of wires
3

Type
General duty, cartridge fused

Performance Ratings

Amperage Rating
60A

Fuse class provision
Class H fuses

Voltage rating
240V

Miscellaneous

Product Category
General duty safety switch

Resources

Catalogs
Eaton's Volume 2—Commercial Distribution

Multimedia
Switching Devices Flex Center

Double Up on Safety

Specifications and datasheets
Eaton Specification Sheet - DG222NRB

Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

Eaton.com/socialmedia

SHINESOLAR

LICENSE NUMBER: 2020012960

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UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE

AC DISCONNECT SPEC SHEET

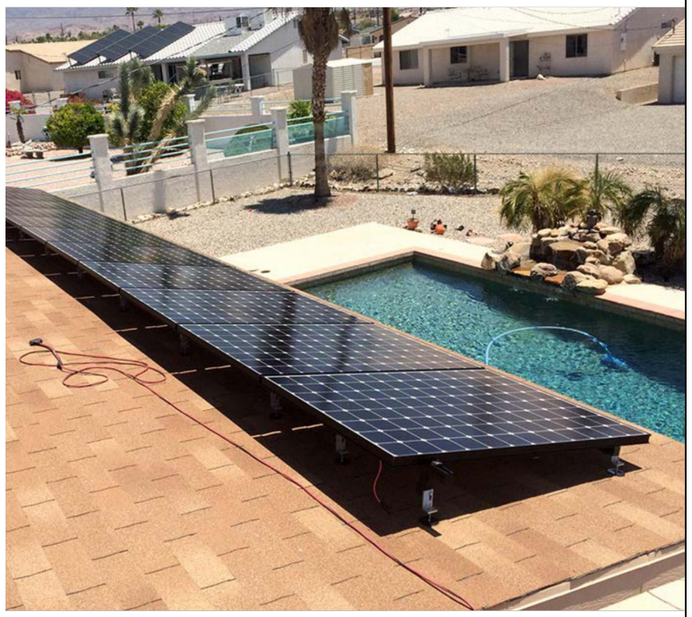
DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	SS-04

AHJ CONDENSED PERMIT PACKAGE
2023

Version 2

16319

BUTYL BOTTOM DECK MOUNT
FOR ASPHALT, EPDM, & TPO ROOFS



QuickBOLT
A DIVISION OF QUICKSCREWS INTERNATIONAL CORP

SPEC SHEET

Part #	Box Quantity
16319	36 Mounts + 144 Screws w/ EPDM Washers

5830 Las Positas Road, Livermore CA 94551 | 3948 Airway Drive, Rock Hill SC 29732
Phone: (844) 671-6045 | Fax: (800) 689-7975 | www.quickbolt.com
QuickBOLT is a division of Quickscrews International Corp.

SHINESOLAR

LICENSE NUMBER: 2020012960

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AHJ:KS-CITY OF TOPEKA

UTILITY:EVERGY (KS)

PRN NUMBER:SNS-91335

ILLUMINE i

MOUNT SPEC SHEET

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	SS-05

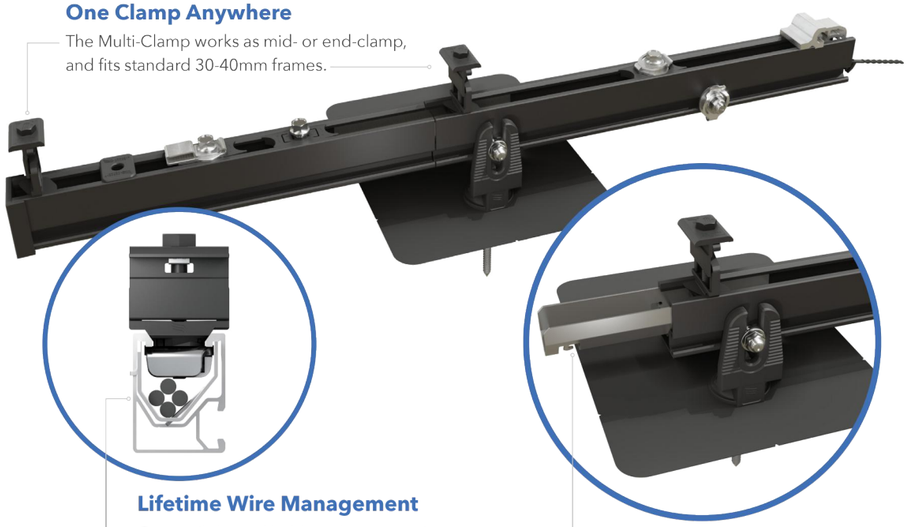
SPEC SHEET

PEGASUS SOLAR™
A Better Day on the Job

RAIL SYSTEM

Instant Bonding
The N-S Bonding Jumper bonds row to row with no tools.

One Clamp Anywhere
The Multi-Clamp works as mid- or end-clamp, and fits standard 30-40mm frames.



Lifetime Wire Management
Open rail channel holds and protects wires. Clamps won't pinch wires after tightening.

Bonding Structural Splice
Connect rails instantly, without tools, interference or limitations.

Next-Level Solar Mounting

A complete system for hassle-free rooftop installation, from watertight mounts to lifetime wire management.

Simplicity
1/2"socket for everything.
One clamp for mid or end.
No tool splicing and bonding.
Easy wire management.

Code Compliant
UL 2703 listed
LTR-AE-001-2012 listed
Class A fire rating for any slope
ASCE 7-16 PE Certified

Premium Aesthetics
The narrowest panel gap available. Optional Hidden End Clamps and End Caps provide a flush look on the edge of the array.

Watertight for Life
Secured on industry-leading Pegasus Mounts, for composite shingle and tile roofs. Backed by a 25-year warranty.

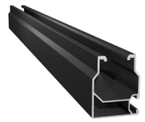
Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

PEGASUS SOLAR

RAIL SYSTEM

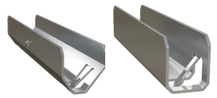
Pegasus Rail

Available in 14' and 7' lengths for easy layout and shipping.
Open-channel design holds MC4 connectors, PV wire and trunk cables.
Black and Mill finish



Pegasus Max Rail

Maximum-strength design.
Meets specifications for high snow-load and hurricane zones.
Black and Mill finish



Splice and Max Splice

Installs by hand.
Works over mounts.
Structurally connects and bonds rails automatically; UL2703 listed as reusable.

Dovetail T-bolt

Dovetail shape for extra strength.
Uses ½" socket.

Multi-Clamp

Fits 30-40mm PV frames, as mid- or end-clamp.
Twist-locks into position; doesn't pinch wires in rail.
Bonds modules to rail; UL2703 listed as reusable

Hidden End Clamp

Offers premium edge appearance.
Preinstalled pull-tab grips rail edge, allowing easy, one-hand installation.
Tucks away for reuse.

Ground Lug

Holds 6 or 8 AWG wire.
Mounts on top or side of rail.
Assembled on MLPE Mount.
UL2703 listed as reusable.

N-S Bonding Jumper

Installs by hand, eliminates row-to-row copper wire.
UL2703 listed as reusable only with Pegasus Rail.

MLPE Mount

Secures and bonds most micro-inverters and optimizers to rail.
Connectors and wires easily route underneath after installation.
UL2703 listed as reusable.

Cable Grip

Secures four PV wires or two trunk cables.
Stainless-steel backing provides durable grip.
Eliminates sagging wires.

Wire Clip

Hand operable.
Holds wires in channel.
Won't slip.

End Cap and Max End Cap

Fits flush to PV module and hides raw or angled cuts.
Hidden drain quickly clears water from rail.

Certifications:
- UL 2703, Edition 1
- LTR-AE-001-2012
- ASCE 7-16 PE certified
- Class A fire rating for any slope roof

C SA® US

FREE
PEGASUS SOLAR
Design Tool

Quickly calculate the most efficient layout, spans and materials needed to suit your job. Visit the Pegasus Customer Portal. **pegasussolar.com/portal**

LOAD		SPAN			
SNOW (PSF)	WIND (MPH)	32"	4'	6'	8'
0	120	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	PEGASUS MAX RAIL
	160	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	PEGASUS MAX RAIL
	190	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
15	140	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
	160	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
	190	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
30	160	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
	190	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
45	190	PEGASUS RAIL	PEGASUS RAIL	PEGASUS RAIL	
70	190	PEGASUS RAIL	PEGASUS MAX RAIL		
110	190	PEGASUS RAIL			

For reference only. Spans above are calculated using ASCE 7-16 for a Gable Roof, Exposure Category B, 7-20deg roof angle, 30ft mean roof height with non-exposed modules. For PE certified span tables, visit www.pegasussolar.com/spans.

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

SHINESOLAR

LICENSE NUMBER: 2020012960

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ILLUMINE i

RAIL SPEC SHEET

DRAFTED BY: P.ABHISHEAK QC'ED BY:DOMINIC.X	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:1/11/2024	SS-06


1115

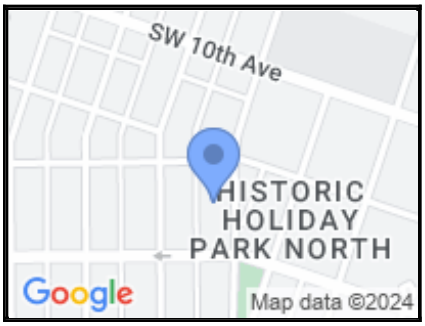

1115
Beware Of The Dog
HARSHAW FENCE & DECK


1115

Kansas Historic Resources Inventory

Printed: 01/23/2024

177-5400-00473
Sherburne House
1115 SW WESTERN AVE
Topeka



LOCATION:

County: Shawnee

Address: 1115 SW WESTERN AVE

Address Remarks:

City: Topeka

Zip: 66604

Parcel ID: 097-36-0-40-24-026.00-0

Legal Description:

Legal Description Remarks: POB 247FT N OF NW COR 12TH & WESTER N W 162 N 37.5 E 162 TO ST S 37.5 A LG ST TO POB

Latitude, Longitude 1:

Latitude, Longitude 2:

Latitude, Longitude 3:

Latitude, Longitude 4:

Datum: WGS84

DESCRIPTION:

Historic Name: Sherburne House

Alternate Name:

Historic Function: Domestic

Subcategory: Single Dwelling

Historic Function Remarks: The 1913 Sanborn Map lists the residence with first directory information found in 1907.

Present Function: Domestic

Subcategory: Single Dwelling

Present Function Remarks:

Residential/Commercial/Religious Style: Queen Anne

Secondary Style:

Barn Type: Not Applicable

Bridge Type: Not Applicable

Landscape Type:

Physical Description/Remarks: 4 bays. Asymmetrical.

Plan Form: Irregular

Commercial Building Type: Not Applicable

Roof Form: Hip with lower cross gable(s)

Stories:	2
Condition:	Good
Principal Material:	Wood
Condition Remarks:	Clapboard siding. Composition shingles. Stone foundation.
Architect/Designer/Builder:	Unknown
Year of Construction:	1907
Certainty:	Estimated
Date Notes:	Site analysis indicates structure was built between 1905-1913.
General Remarks:	
Ancillary Structures:	Garage/Carriage House
Ancillary Structure Remarks:	

REGISTER STATUS:

Listed in State Register:	Contributing
Date of State Listing:	
Listed in National Register:	Contributing
Date of National Listing:	11/17/2002
Historic District:	Holliday Park Historic District I
Demolished:	
Date Demolished (if applicable):	
Potentially Eligible for National Register:	
Register Status Remarks:	
Thematic Nomination (MPDF):	
National Historic Landmark:	

SURVEY INFORMATION:

There is no survey information for this record.

IMAGES & DOCUMENTS

1115 SW Western. East elevation. n.d.

1115 SW Western. East elevation. 03/28/2013. KSHS.