HP PERMIT NUMBER: HP-0440-2023

PROPERTY ADDRESS: 1214 EAST 17TH PLACE

DISTRICT: NORTH MAPLE RIDGE

APPLICANT: ADAM DOVERSPIKE

REPRESENTATIVE: TODD SHUST

A. CASE ITEMS FOR CONSIDERATION
   1. Construction of addition on south side of residence
      *Historic Preservation Permit Subcommittee Review Date: March 21, 2023*

B. BACKGROUND
   DATE OF CONSTRUCTION: 1924
   ZONED HISTORIC PRESERVATION: 1993; ORDINANCE AMENDMENT 2005
   NATIONAL REGISTER LISTING: MAPLE RIDGE HISTORIC RESIDENTIAL DISTRICT: 1983
   CONTRIBUTING STRUCTURE: No, but identified as contributing structure in 2023 survey of the
      Maple Heights Addition

   PREVIOUS ACTIONS:
   COA – DECEMBER 10, 1998 – DEFAULT APPROVAL
   Removal of vinyl siding and underlying wood siding
   Installation of concrete fiber reinforced siding with wood texture
   Replacement of windows with aluminum-clad wood windows of same design
   Replacement of wood trim and shutters to original design
   Construction of wrought iron fence from northeast corner of house to east property line

   COA – MARCH 9, 2006 – TPC APPROVAL
   Installation of windows in the east and west gables with the conditions that the single west
   gable window be placed at the middle of the gable; and that the owner can use the existing
   window that they have or a new replacement window that meets the size requirement of the
   building code

   COA-11-003 – FEBRUARY 22, 2011 – TPC APPROVAL
   Replacement of three existing windows on east elevation with new 8/8 clad wood windows with
   exterior muntins

   HP-0235-2020 – DECEMBER 10, 2020 – TPC APPROVAL
   Replacement of the pathway in accordance with the documentation submitted
   (continued on next page)
Expansion of the width of the driveway in accordance with the documentation submitted with the condition that flagstone could be substituted for masonry, if construction with masonry were not feasible

Construction of a connection between the walkway and the driveway in accordance with the documentation submitted

C. ISSUES AND CONSIDERATIONS

1. Construction of addition on south side of residence

   Proposed is the construction of an addition on the south side of the residence to provide storage and utility space on the first floor and an additional bedroom and bathroom on the second floor. Although the addition is at the rear of the residence, a portion of it would be visible from the street on the west side and is therefore subject to the historic preservation permit requirement of Section 70.070 of the Tulsa Zoning Code. Hardie-Plank siding and an asphalt shingle roof are proposed to match elements on the house. During the review on March 21, the Historic Preservation Permit Subcommittee discussed the muntins on the windows and suggested that the applicant match the placement of muntins on the existing windows elsewhere on the residence. The subcommittee forwarded the application with a recommendation of approval with the condition that information about the existing windows be provided to the full commission. The applicant now proposes Andersen 100-series single-hung windows with simulated divided lites, which will match the existing windows.

2. Reference: Tulsa Zoning Code

   SECTION 70.070-F Standards and Review Criteria

   In its review of HP permit applications, the preservation commission must use the adopted design guidelines to evaluate the proposed work and must, to the greatest extent possible, strive to affect a fair balance between the purposes and intent of HP district regulations and the desires and need of the property owner. In addition, the preservation commission must consider the following specific factors:

   1. The degree to which the proposed work is consistent with the applicable design guidelines;
   2. The degree to which the proposed work would destroy or alter all or part of the historic resource;
   3. The degree to which the proposed work would serve to isolate the historic resource from its surroundings, or introduce visual elements that are out of character with the historic resource and its setting, or that would adversely affect the physical integrity of the resource;
   4. The degree to which the proposed work is compatible with the significant characteristics of the historic resource; and
   5. The purposes and intent of the HP district regulations and this zoning code.


   SECTION A – GUIDELINES FOR REHABILITATION OF EXISTING STRUCTURES

   A.1 General Requirements

   Use the following guidelines as the basis for all exterior work:

   A.1.1 Retain and preserve the existing historic architectural elements of your home.
   A.1.2 If replacement of historic architectural elements is necessary, match the size, shape, pattern, texture, and directional orientation of the original historic elements.
   A.1.3 Ensure that work is consistent with the architectural style and period details of your home.
   A.1.4 Return the structure to its original historic appearance using physical or pictorial evidence, rather than conjectural designs.
SECTION B – GUIDELINES FOR ADDITIONS TO EXISTING STRUCTURES

B.1 General Requirements
Use the following guidelines as the basis for all additions:

B.1.1 Locate additions on the side or rear of your home where the character-defining elements and visual appearance of the front façade will not be obscured, damaged, or destroyed.

B.1.2 Ensure that additions do not detract from the historic appearance, character-defining elements, historic patterns, scale and proportions of the existing structure.

B.1.3 Provide consistency and continuity between the addition and the historic portions of your home by using similar materials, style, forms, massing and scale.

B.1.4 Do not exceed the established height of structures along the same street.

B.2 Building Site
B.2.1 Match the front setback of the historic buildings along the same side of the street. When the front setback pattern of the historic structures on the same side of the street varies, locate the addition between the minimum and maximum of the prevailing front setbacks.

B.2.2 Maintain the pattern and rhythm of the side yard setbacks of the other historic structures on the same side of the street.

B.2.3 Limit paving within the street yard to primary driveways and sidewalks. Curb cuts and new driveways through the street yard are strongly discouraged for properties with alley access.

B.2.4 On interior lots, limit the surface area of driveways and sidewalks to no more than 50% of the street yard lot area.

.1 Elmwood – no more than 25% of street yard lot area

B.2.5 On corner lots, limit the surface area of driveways and sidewalks to no more than 30% of the street yard lot area.

B.3 Building Materials and Elements
B.3.1 Use building materials that are consistent with the historic materials found on the existing structure.

B.3.2 The use of building materials different from historic materials will be considered on a case-by-case basis, if the proposed materials maintain the character of the structure and the historic size, shape, pattern, texture and directional orientation. Unfinished or clear-finished metals are not allowed.

B.3.3 Create a visual consistency and continuity with the building elements of the existing structure by replicating the height of windows and doors, window glazing patterns, roof forms, eave lines and overhangs, and special detailing present on the existing structure.

B.4 Roofs
B.4.1 New roof features, such as dormers or cupolas, may be added to the existing roof, if the proposed elements maintain the scale, proportions, rhythms, and architectural character of the structure.

B.4.2 On additions, use roof forms, slope, detailing, and roofing materials that are consistent with the historic portions of the existing structure. Installation of metal roofs will be considered on a case-by-case basis.

.1 Yorktown – Metal roofing is not allowed.

B.7 Mechanical Systems, Etc.
B.7.1 Install engineering systems and their associated elements, such as, but not limited to, air conditioning and heating units, flues, conduits, cables, electrical boxes, ventilators, and louvers, on the side or rear façade of the structure.
B.7.2 Install utility meters on the side or rear façade of the house or underground in a subterranean vault.

B.7.3 Install systems requiring exterior components, such as solar panels or devices, where they will have minimal impact, preferably at the rear of your house or yard or on an outbuilding. Install exterior components on a historic building in a manner that does not damage the historic roofing material or negatively impact the building’s historic character and is reversible. These considerations will be made on a case-by-case basis.

B.7.4 Installation of radio or television antennas, including satellite dishes and similar devices, not visible from abutting streets, as determined by staff, is exempt from HP Permit review.

SECTION E – GUIDELINES FOR NON-CONTRIBUTING STRUCTURES

E.1 General Requirements

E.1.1 For the purposes of this chapter, non-contributing structures are those listed as not contributing to the historic character of the district due to age or architectural style in the National Register Nomination for the district.

E.1.2 Non-contributing structures will be considered products of their own time. Do not attempt to create a false appearance of the predominant character and architectural style of the rest of the district.

E.1.3 Follow Section A (Rehabilitation) and Section B (Additions) as they relate to the character-defining elements of the non-contributing structure.

E.1.4 Ensure that work on non-contributing structures does not detract from or diminish the historic character of the overall district.
1214 E. 17th Pl. - Present
HP-0440-2023 Proposed Materials

**MP Doors** 36 in. x 80 in. Smooth White Right-Hand Inswing Full-Lite Blinds Glass Finished Fiberglass Prehung Front Door

☆☆☆☆☆ (74)
HP-0440-2023 Proposed Materials

James Hardie
HardiePlank HZ10 5/16 in. x 8.25 in. x 144 in. Fiber Cement Primed Cedarmill Lap Siding

Dare to build your dream. Discover the world of exterior solutions by James Hardie.
Endless design, endless colors, endless textures. It’s Possible with James Hardie™

ArmorShield II Weathered Wood Impact-Resistant Architectural Shingles (33.3 sq. ft. per Bundle)
# 100 Series Single-Hung Window

## Summary

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<th>Product ID#</th>
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<td>Glass</td>
<td>Low-E Glass</td>
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<td>Hardware</td>
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**LOVE THE LIFE YOU SEE®**

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The Home Depot Special Order Quote
Customer Agreement #: H3915-153170
Printed Date: 3/23/2023

Customer: TODD VICTORY
Address: 407 N EMERSON ST
JENKS, OK  74037
Phone 1: 918-734-2857
Phone 2:
Email: TULSAREMODELER@VICTORY-REMODELING.COM

Store: 3915
Associate: JAMES
Address: 8880 S Delaware Ave
Tulsa, OK  74137
Phone: (918)299-3028

Pre-Savings Total: $4,069.01
Total Savings: ($0.00)
Pre-Tax Price: $4,069.01

All prices are subject to change. Customer is responsible for verifying product selections. The Home Depot will not accept returns for the below products.

--- Line 100-1 ---

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<th>Line Number</th>
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<th>Now Price</th>
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<td>100 Series Single-Hung Equal Sash, Fixed/Active, 35.5 x 59.5, White w/White Sash / White White, Auto Lock Hardware</td>
<td>$837.71</td>
<td>$837.71</td>
<td>4</td>
<td>$0.00</td>
<td>$3,350.84</td>
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</tbody>
</table>

Unit 100 Total: $837.71 $837.71 $0.00 $3,350.84

100 Series Single-Hung
Overall Rough Opening = 36" x 60"
Overall Unit = 35 1/2" x 59 1/2"
Installation Zip Code = 74137
U.S. ENERGY STAR® Climate Zone = South Central
Enhanced Performance = No
Search by Unit Code = No
Standard Width = 100S530XX - RO: 36" | UNIT: 35 1/2"
Standard Height = XX50 - RO: 60" | UNIT: 59 1/2"
Frame Width = 35 1/2
Frame Height = 59 1/2
Frame Code = 100S53050
Frame Option = 1 3/8" Setback
Venting / Handing = Fixed/Active
Drywall Access = No
Exterior Frame Color = White
Exterior Sash / Panel Color = White
Interior Frame Finish Color = White
Interior Sash / Panel Finish Color = White
Glass Construction Type = Dual Pane

Glass Option = Low-E
High Altitude Breather Tubes = No
Glass Strength = Standard
Glass Tint = No Tint
Specialty Glass = None
Gas Fill = Argon
Glass / Grille Spacer Color = Stainless
Simulated Divided Light (SDL)
Colonial
Grille Pattern = Colonial
Grille Bar Width = 3/4"
Exterior Grille Color = White
Interior Grille Color = White
3W2H
Grille Alignment Type = Standard Grille Alignment
Hardware Style = Auto Lock
Lock Hardware Style = Andersen 100 Series
Number of Sash Locks = 1
Lock Hardware Color/Finish = White

Window Opening Control Device = No
Insect Screen Type = Half Screen
Insect Screen Material = Fiberglass
Insect Screen Color = White
Installation Material Options = No
Re-Order Item = No
Room Location =
Unit U-Factor = 0.3
Unit Solar Heat Gain Coefficient (SHGC) = 0.28
Unit CPD Number = AND-N-80-02056-00002
U.S. ENERGY STAR Certified = No
Clear Opening Width = 32
Clear Opening Height = 26.0625
Clear Opening Area = 5.79
SKU = 1008729623
Vendor Name = S/O ANDERSEN LOGISTICS
Vendor Number = 60509030
Customer Service = (888) 888-7020
Catalog Version Date = 01/18/2023

End Line 100 Description
### Line 200-1

**Item Summary**

- **RO Size**: 36" x 36"
- **Unit Size**: 35 1/2" x 35 1/2"
- **100 Series Single-Hung Equal Sash, Fixed/Active, 35.5 x 35.5, White w/White Sash / White White, Auto Lock Hardware**

### Line 200 Description

- **Glass Option**: Low-E
- **High Altitude Breather Tubes**: No
- **Glass Strength**: Standard
- **Glass Tint**: No Tint
- **Specialty Glass**: None
- **Gas Fill**: Argon
- **Glass / Grille Spacer Color**: Stainless
- **Simulated Divided Light (SDL)**: Colonial
- **Grille Pattern**: Colonial
- **Grille Bar Width**: 3/4"
- **Exterior Grille Color**: White
- **Interior Grille Color**: White
- **3W2H Grille Alignment Type**: Standard Grille Alignment
- **Hardware Style**: Auto Lock
- **Lock Hardware Style**: Andersen 100 Series
- **Number of Sash Locks**: 1
- **Lock Hardware Color/Finish**: White
- **Window Opening Control Device**: No
- **Insect Screen Type**: Half Screen
- **Insect Screen Material**: Fiberglass
- **Insect Screen Color**: White
- **Installation Material Options**: No
- **Re-Order Item**: No
- **Room Location**: No
- **Unit U-Factor**: 0.3
- **Unit Solar Heat Gain Coefficient (SHGC)**: 0.28
- **Unit CPD Number**: AND-N-80-02056-00002
- **U.S. ENERGY STAR Certified**: No
- **Clear Opening Width**: 32
- **Clear Opening Height**: 14.0625
- **Clear Opening Area**: 3.12
- **SKU**: 1008729623
- **Vendor Name**: S/O ANDERSEN LOGISTICS
- **Vendor Number**: 60509030
- **Customer Service**: (888) 888-7020
- **Catalog Version Date**: 01/18/2023
Limited Warranty

100 SERIES
Units Manufactured After December 27, 2012

Glass
Twenty (20) Year Transferable Limited Warranty

The glass in Andersen® 100 Series factory glazed window and door units (including dual-pane glass, Low-E glass, SmartSun™ glass, patterned glass (including: obscure, fern, reed and cascade designs), Fiberglass™ grilles, and tempered versions of these glass options) is warranted to be free from defects in manufacturing, materials and workmanship for twenty (20) years from the date of purchase from the retailer/dealer. It is also warranted not to develop, under normal conditions, any material obstruction of vision resulting from manufacturing defects or as a result of premature failure of the glass or organic seal for twenty (20) years from the date of purchase from the retailer/dealer. Patterned glass (including: obscure, fern, reed and cascade designs) is warranted to be free from defects in manufacturing, materials and workmanship for twenty (20) years from the date of purchase from the retailer/dealer. This limited warranty on glass does not apply to special order glazings, impact-resistant glass or glass that is not factory installed by Andersen.

In the event a glass failure occurs as a result of a defect in manufacturing, materials or workmanship within the limited warranty period, Andersen, at its option, will (1) provide the appropriate replacement glass product to the Andersen retailer/dealer you specify — labor is not included; or (2) provide a factory-authorized repair to the existing glass at no cost to you; or (3) refund the purchase price or the retailer’s dealer’s price at the time of the original purchase, whichever is less. Such replacement or repair is warranted for the remainder of the original limited warranty period.

Components Other Than Glass
Ten (10) Year Transferable Limited Warranty

Non-glass portions of Andersen® 100 Series windows and doors (including non-electric operators, locks, latches, balances systems, hinges, handles, insect screens, weatherstripping, exterior trim, sash and frame members) are warranted to be free from defects in manufacturing, materials and workmanship for a period of ten (10) years from the date of purchase from the retailer/dealer. This limited warranty does not apply to finishes on bright brass and satin nickel hardware.

In the event a component other than glass fails as a result of a defect in manufacturing, materials or workmanship within the limited warranty period, Andersen, at its option, will (1) provide replacement parts to the Andersen retailer/dealer you specify — labor is not included; or (2) provide a factory-authorized repair to the existing component at no cost to you; or (3) refund the original purchase price or retailer’s dealer’s price at the time of the original purchase, whichever is less. Such replacement parts or repairs are warranted for the remainder of the original limited warranty period.

General Conditions and Exclusions

The limited warranty set forth in this document is the only express warranty (whether written or oral) applicable to Andersen 100 Series windows and doors, and no one is authorized to modify or expand this limited warranty. All warranty claims must be made during the applicable warranty period.

ALL IMPLIED WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED TO THE EXTENT PERMITTED BY LAW. IN NO EVENT WILL EXTEND BEYOND THE TERM OF THE LIMITED WARRANTIES SET FORTH ABOVE. ANDERSEN EXCLUDES AND WILL NOT PAY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER ARISING OUT OF CONTRACT, TORT OR OTHERWISE, AND ITS LIABILITY WILL IN ALL INSTANCES BE LIMITED TO REPAIR, REPLACEMENT OR REFUND OF THE ACTUAL PURCHASE PRICE OF THE DEFECTIVE PRODUCT.

Some states do not allow the exclusion of implied warranties or consequential damages or limitations of the duration of an implied warranty, so the above limitations or exclusions may not apply to you.

This limited warranty is only applicable in the U.S.A. (i.e. the fifty states and the District of Columbia). This limited warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

What is NOT covered by this limited warranty

Product failure or damage due to improper installation or modification including:

- Adjustments or corrections due to improper installation.
- Failures due to product modifications or glass slicing defects (e.g., glass tinting, security systems, improper painting or staining, insulated coverings, etc.).
- Units improperly assembled or improperly milled by others.
- Damage due to the application of non-Andersen hardware (e.g., locksets, trim sets, hinges, panic hardware, closers, etc.).
- Failure to properly install Andersen hardware.

What is NOT covered by this limited warranty, continued: Damage caused by the following:

- Improper installation or use, including use of a non-commercial door as a main entrance or exit door for a building other than a single-family residential unit or re-installing an Andersen window or door after it has been removed from a building and re-sold and/or re-installed in a different building.
- Exposure to conditions beyond published performance specifications.
- Water infiltration other than as a result of a defect in manufacturing, materials or workmanship.
- Condensation.
- Improper maintenance, such as use of brickwash, razor blades, sealants, sanding or improper washing.
- Chemicals or airborne pollutants, such as salt or acid rain.
- Delivery by others.
- Normal wear and tear.

Additional items excluded from this limited warranty:

- Labor to replace sash or door panels, glass or other components.
- Labor and other costs related to the removal and disposal of defective product.
- Labor and materials to paint or stain any repaired or replaced product, component, trim or other carpentry work that may be required.
- Products not manufactured by Andersen.
- Slight glass curvature, minor scratches or other imperfections in the glass that do not impair structural integrity or significantly obscure normal vision.
- Rattling of grille bars within an air space.
- Tamish or corrosion to hardware finishes.
- Special glazings. Contact us concerning the limited warranty on special glazings.
- Bright brass and satin nickel finishes on hardware.
- Service trips to provide instruction on product use.
- Andersen® A-Series, 400 Series, 200 Series and complementary windows and doors, 400 Series windows and doors manufactured on or before December 27, 2012, storm doors, Renewal by Andersen® products, E-Series/Eagle® windows and doors, Silver Line® windows and doors and American Craftsman® windows and doors have their own limited warranties and are not covered by this limited warranty. For information on warranty coverage for these products, please refer to the specific limited warranties for these products. They are available from your retailer or at www.andersenwindows.com.

How to register your Owner-To-Owner® limited warranty

Andersen offers quick, easy warranty registration on our web site. Just go to www.andersenwindows.com/warranty and submit your warranty information online. All warranty information is treated as highly confidential and will never be sold or traded to any person or organization outside of Andersen Corporation and the Andersen Dealer Network.

How to get help

For further information or to make a claim within this limited warranty period, please contact the Andersen retailer/dealer who supplied you with your Andersen® product. If unavailing or unknown to you, you may contact us at:

Andersen Windows, Inc. / Andersen Service Center
100 Fourth Avenue North
Bainport, MN 55003-1096

You may also contact us using the Service section of our web site at www.andersenwindows.com or reach us by phone at 1-888-688-7020.

You can help us serve you faster by collecting and including the following important information:

- Description of the product such as the exterior color, unit type and size and inside visible glass measurements.
- Product ID label information.
- Glass logo information etched in the inside corner of the glass.
- Description of product concerns.
- Documentation of the purchase date, if available.
- Your name, address (with zip code) where the product is installed and telephone numbers.
- If the limited warranty period has expired or for repairs not covered by warranty, any replacement parts are available for purchase. When warranty coverage is unclear, Andersen may charge an inspection fee for any on-site product inspection. If the inspector determines the Andersen® product has a defect covered by this limited warranty, the inspection fee will be waived.

For specific warranty information outside the United States, please contact your local distributor or write to:

Andersen Corporation / International Division
100 Fourth Avenue North
Bainport, MN 55003-1096
USA

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9070811 BA Revised 12/12/17
Garantía limitada

**Vidrio**
Garantía limitada transferible de veinte (20) años
El vidrio de las ventanas y puertas Andersen® de la Serie 100, gaseadas de fabricación (incluyendo vidrios de doble panel, vidrio Low-E, vidrio SmartSense™, vidrio decorado (incluyendo diseño de color oscuro, con helio, calefactor y cascada), rejillas FineScreen™ y las versiones templadas de estas opciones de vidrio), está garantizado contra defectos de fabricación, materiales y de mano de obra durante veinte (20) años a partir de la fecha de compra al distribuidor/concesionario. También garantizamos que, bajo condiciones normales, no presentará ninguna obstrucción material de la visibilidad a consecuencia de defectos de fabricación o como resultado de una falla prematura del vidrio o del sellado orgánico durante veinte (20) años a partir de la fecha de compra del distribuidor/concesionario. Esta garantía limitada sobre el vidrio no se aplica a los gaseados de orden especial, vidrio resistente a impactos o vidrio que no viene instalado de fábrica por Andersen.

En caso de que se produzca una falla en el vidrio como resultado de un defecto de fabricación, en los materiales o en la mano de obra dentro del periodo de la garantía limitada, Andersen podrá, a su criterio: (1) proporcionar un reemplazo de los productos de vidrio al distribuidor/vendedor de Andersen que usted indique (no se incluye el costo de mano de obra); o (2) suministrar una reparación autorizada de fábrica para el vidrio existente sin costo para usted; o (3) membersabilizar el precio de compra o el precio del distribuidor/vendedor al momento de la compra original, lo que resulte menor. Dichas piezas de reemplazo o las reparaciones están cubiertas por el resto del periodo de garantía limitada original.

**Otros componentes (que no sea vidrio)**
Garantía limitada transferible de diez (10) años
Las puertas y ventanas Andersen® de la Serie 100 que no son de vidrio (incluidos los dispositivos de seguridad, cerraduras, ventanas, sistemas de equilibrio, bisagras, manijas, pantallas contra insectos, burletas, molduras exteriores, marcos y aranceles) están garantizadas contra defectos de fabricación, materiales y de mano de obra durante diez (10) años a partir de la fecha de compra del distribuidor/concesionario. Esta garantía limitada no se aplica a los acabados de latón brillante y herrajes de níquel satinado.

En caso de que algún componente que no sea vidrio falle como resultado de un defecto de fabricación, en los materiales o en la mano de obra dentro del periodo de cobertura de la garantía limitada, Andersen podrá, a su criterio: (1) proporcionar un reemplazo de las piezas que se le indiquen a su distribuidor/vendedor de Andersen que usted indique (no se incluye el costo de mano de obra); o (2) suministrar una reparación autorizada de fábrica para el componente existente sin costo para usted; o (3) membersabilizar el precio de compra original o el precio del distribuidor/vendedor al momento de la compra original, lo que resulte menor. Dichas piezas de reemplazo o reparaciones tienen garantía por el resto del periodo de garantía limitada original.

**Condiciones generales y exclusiones**
Las garantías limitadas descritas en el presente son las únicas garantías expresas (escritas o orales) aplicables a las ventanas y puertas Andersen® de la Serie 100 y nadie está autorizado a añadir ni a extender estas garantías limitadas. Todas las reclamaciones de garantía deben gestionarse durante los periodos de garantía pertinentes.

**TODA GARANTÍA IMPLÍCITA, INCLUIDA LA DE COMERCIALIZABILIDAD Y APTITUD PARA UN FIN DETERMINADO, ESTÁN LIMITADAS A LOS RÉGIMENES DE PRESCRIPCIÓN APLICABLE. NO EN NINGÚN CASO SE EXTENDERÁN MÁS ALLÁ DEL PERIODO DE LAS GARANTÍAS LIMITADAS ESTATUTARIAS ANTERIORMENTE. Andersen EXCLUYE LOS DAÑOS INCIDENTALES O INDIRECTOS Y NO PAGARÁ POR ELLO.**

En el caso de que se presente un reclamo dentro del periodo de cobertura de la garantía limitada, Andersen podrá, a su criterio: (1) proporcionar un reemplazo de las piezas que se le indiquen a su distribuidor/vendedor de Andersen que usted indique (no se incluye el costo de mano de obra); o (2) suministrar una reparación autorizada de fábrica para el componente existente sin costo para usted; o (3) membersabilizar el precio de compra original o el precio del distribuidor/vendedor al momento de la compra original, lo que resulte menor. Dichas piezas de reemplazo o reparaciones tienen garantía por el resto del periodo de garantía limitada original.

**Lo que esta garantía limitada no cubre**

Fallas o daños del producto ocasionados por una instalación o una modificación incorrectas, incluidas:
- Ajustes o correcciones ocasionadas por una instalación incorrecta.
- Fallas ocasionadas por modificaciones del producto o por el tornado de vidrios (por ejemplo, paneles de vidrio, sistemas de seguridad, pintura o textura incorrectas, colores atenuados, etc.).
- Unidades ensambladas o unidas incorrectamente colocadas por terceros.
- Fallas ocasionadas por la aplicación de otros herrajes que no sean Andersen (por ejemplo, cerraduras, contramarco, bisagras, herrajes de emergencia, cierres, etc.).
- Fallas en la instalación correcta de los herrajes de Andersen.

Lo que esta garantía limitada NO cubre (continuación):

**Daños provocados por:**
- Instalación u uso incorrectos, incluido el uso de una puerta no comercial como entrada principal o salida de cualquier edificio que no sea una unidad residencial de una sola familia, o la reinstalación de una ventana o puerta Andersen después de que se haya retirado de un edificio y se haya revestido y/o niquelado en un edificio diferente.
- Fallas o daños a condiciones que suponen las especificaciones de rendimiento publicadas.
- Filtraciones de agua que no emanen de un defecto de fabricación, de los materiales o de la mano de obra.
- Asentar.
- Mantenimiento inadecuado, como el uso de lavado de ladrillos, paletas de metal, selladores, lijado o lavado incorrecto.
- Químicos o contaminantes aéreos, como la sal o la lluvia ácida.
- Enfrija a cargo de terceros.
- Accidentes.
- Casos de fuerza mayor.
- Uso y desgaste normal.

**Otros elementos que se excluyen de esta garantía limitada:**
- Mano de obra para reemplazar hoyos o paneles de la puerta, vidrios u otros componentes.
- Mano de obra y otros costos relacionados con la extracción y eliminación de un producto defectuoso.
- Mano de obra y materiales para pintar o teñir cualquier producto, componente, contramarcado u otro elemento de carpintería reparado o reemplazado que se pueda requerir.
- Productos no fabricados por Andersen.
- Ligera curvatura del vidrio, pequeños rayones u otras imperfecciones en el vidrio que no afecten la integridad estructural ni interfieran considerablemente la visión normal.
- Ruido de las barras de la rejilla en un espacio de aire.
- Decoloración o corrosión de las acabados de las herrajes.
- Vidrios especiales. Comuníquese con nosotros para obtener información sobre la garantía limitada de los vidrios especiales.
- Herrajes con acabados en latón brillante y níquel satinado.
- Viajes por mantenimiento para proporcionar instrucciones para el uso del producto.
- Puertas y ventanas complementarias Andersen® de la Serie A, Serie 400, Serie 700, ventanas con protección Stormwatch® y vidrio resistente a impactos, ventanas y puertas de la Serie 100 fabricadas antes de en el 27 de diciembre de 2012, contapuntas, productos renovados por Andersen, puertas y ventanas de la Serie E, fajas, puertas y ventanas Silver Linings® y puertas y ventanas American Craftsman® tienen su propia garantía limitada y no están cubiertos por esta garantía limitada. Para obtener información sobre la garantía de estos productos, por favor refiérase a las garantías específicas para estos productos. Las garantías están disponibles con su distribuidor o en www.andersenwindows.com.

CÓMO DEBE REGISTRAR SU GARANTÍA LIMITADA Owner-To-Owner®
Andersen ofrece un registro rápido y sencillo de su garantía a través de nuestro sitio web. Visit www.andersenwindows.com/warranty y envíe su información de garantía en línea. Toda la información de garantía se tratará de manera confidencial y jamás se venderá ni comercializará a ninguna persona o organización ajena a Andersen Corporation y a la red de distribuidores de Andersen.

CÓMO OBTENER AUXILIO
Para obtener más información o para realizar un reclamo dentro del plazo de cobertura de la garantía limitada, comuníquese con el distribuidor/vendedor de Andersen que le proporcionó su producto Andersen®, si no está disponible o si usted no lo conoce, puede comunicarse con nosotros:
Andersen Windows, Inc. / Andersen Service Center
100 Fourth Avenue North
Bayport, MN 55003-1096
También puede comunicarse con nosotros a través de la sección de atención (Servicio) de nuestra página web en www.andersenwindows.com o llamando al 1-888-888-7020.

usted puede ayudarnos a asistirlo más rápidamente si incluye la siguiente información:
- Una descripción del producto, incluido: el color, exterior, el tipo y tamaño de la unidad y las medidas del vidrio interior visible.
- Información de la etiqueta de identificación del producto.
- La información del lugar del vidrio que aparece grabado en la esquina inferior del vidrio.
- Una descripción de los problemas del producto.
- La documentación de la fecha de compra, si la tiene.
- Su nombre y dirección (con código postal) donde está instalado el producto y números de teléfono.
- Si el periodo de la garantía limitada ha vencido o en caso de reparaciones que la garantía no cubre, puede comprar las piezas de reemplazo. En caso de que la cobertura de la garantía no esté clara, Andersen podrá cobrar un gasto por inspección para cualquier inspección de producto en el lugar donde está instalado. Si el inspector determina que el producto Andersen® tiene un defecto que está cubierto por esta garantía limitada, se nos cobrará el gasto por inspección.

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HP PERMIT NUMBER: HP-0444-2023

PROPERTY ADDRESS: 1332 EAST 18TH STREET

DISTRICT: SWAN LAKE

APPLICANT: KEITH AND SASHA MARTIN

REPRESENTATIVE: NONE

A. CASE ITEM FOR CONSIDERATION
   1. Construction of fence
      Historic Preservation Permit Subcommittee review date: April 6, 2023

B. BACKGROUND
   DATE OF CONSTRUCTION: CA. 1931
   ZONED HISTORIC PRESERVATION: 1994
   NATIONAL REGISTER LISTING: SWAN LAKE 1998; ADDITIONAL DOCUMENTATION 2009
   CONTRIBUTING STRUCTURE: YES
   PREVIOUS ACTIONS:
   HP-0090-2019 – APRIL 9, 2019 – STAFF APPROVAL
   Repair of windows
   HP-0095-2019 – APRIL 29, 2019 – STAFF APPROVAL
   Removal of awnings
   Removal of nonhistorical material
   HP-0133-2019 – OCTOBER 10, 2019 – TPC APPROVAL
   Replacement of fascia with HardieTrim Boards
   Replacement of soffit with HardieSoffit Panels
   Replacement of siding with HardiePlank Smooth Lap Siding
   Removal of porch
   HP-0137-2019 – OCTOBER 22, 2019 – TPC APPROVAL
   Replacement of vents in soffit
   Application to amend previous approval of an application by Tulsa Preservation Commission on October 10, 2019
   HP-0273-2021 – AUGUST 12, 2021 – TPC APPROVAL
   Construction of wall
Replacement of retaining wall with stone #4 as the veneer and with the conditions that the wall have a stone cap that covers the concrete section, is four inches (0'-4") in height, and has a one-inch (0'-1") overhang.

Amendment of previous approval of HP-0273-2021 by Tulsa Preservation Commission on August 12, 2021.

C. ISSUES AND CONSIDERATIONS

1. Construction of fence
   i. Proposed is the construction of a three-foot (3'-0") tall fence within the street yard on the west side of the residence. The proposed fence would be an Ameristar Montage fence in the style Majestic. The applicants have provided an image of another fence nearby in the same style. The retaining wall shown in the renderings was approved by the Tulsa Preservation Commission in October 2022 and is currently under construction. During the review on April 6, 2023, the Historic Preservation Permit Subcommittee forwarded the application to the Tulsa Preservation Commission with a recommendation of approval.

   ii. Reference: Tulsa Zoning Code

SECTION 70.070-F Standards and Review Criteria
In its review of HP permit applications, the preservation commission must use the adopted design guidelines to evaluate the proposed work and must, to the greatest extent possible, strive to affect a fair balance between the purposes and intent of HP district regulations and the desires and need of the property owner. In addition, the preservation commission must consider the following specific factors:
1. The degree to which the proposed work is consistent with the applicable design guidelines;
2. The degree to which the proposed work would destroy or alter all or part of the historic resource;
3. The degree to which the proposed work would serve to isolate the historic resource from its surroundings, or introduce visual elements that are out of character with the historic resource and its setting, or that would adversely affect the physical integrity of the resource;
4. The degree to which the proposed work is compatible with the significant characteristics of the historic resource; and
5. The purposes and intent of the HP district regulations and this zoning code.

Reference: Unified Design Guidelines - Residential Structures

SECTION A – GUIDELINES FOR REHABILITATION OF EXISTING STRUCTURES

A.1 General Requirements
Use the following guidelines as the basis for all exterior work:
A.1.1 Retain and preserve the existing historic architectural elements of your home.
A.1.2 If replacement of historic architectural elements is necessary, match the size, shape, pattern, texture, and directional orientation of the original historic elements.
A.1.3 Ensure that work is consistent with the architectural style and period details of your home.
A.1.4 Return the structure to its original historic appearance using physical or pictorial evidence, rather than conjectural designs.

SECTION G – GUIDELINES FOR LANDSCAPE FEATURES, PAVING, AND SIGNAGE

G.1 Landscape Features
G.1.1 Retain and preserve original historic walls, fencing, lighting, planters, and other landscape features through repair.
G.1.2 Removal of historic landscape features will be considered on a case-by-case basis. Removal of non-historic landscape features can be staff-approved.

G.1.3 Ensure that new landscape features are appropriate to the style of your home and consistent with the historic elements found along the same street and within the district.

G.1.4 Use fencing materials that are consistent with the historic fencing found along the same street and within the district. Chain-link fencing, wire fencing (12 gauge or less), vinyl fencing, or any fencing that blocks the view of structures is not allowed.

G.1.5 Use wall materials that are consistent with the historic walls found along the same street and within the district. Cinder block, segmental retaining wall systems, corrugated metal, and railroad ties are not allowed. Historically styled cast concrete block will be considered on a case-by-case basis.

1 Elmwood – dry-stack retaining walls are not allowed
Proposed fence

Montage

Leading Residential Steel Fence

Our Montage line of ornamental fences is the leader in residential steel fencing. The styles available with the Montage give a residence the elegant look of wrought-iron fencing without the expensive maintenance demanded by traditional wrought-iron.

Montage Pool, Pet & Play

Our Montage Pool, Pet and Play (PPP) is an ideal choice for a dog fence, pool fence or child safety fence. It was created to combat safety concerns in these applications. The primary difference in Montage PPP is the 3” airspace between pickets.

Watch the Montage Playlist

Colors

- Black

Styles

- Majestic
- Mainline
- Garden
- Home
- Classic

Proposed fence
Nearby fence at 1323 E. 19th St.

Example of fence at 1323 E 19th St

Applicant address at 1332 E 18th St
TULSA PRESERVATION COMMISSION

STAFF REPORT

Thursday, April 13, 2023
HP-0436-2023

HP PERMIT NUMBER:  HP-0436-2023

PROPERTY ADDRESS:  1127 SOUTH NORFOLK AVENUE

DISTRICT:  TRACY PARK

APPLICANT:  CAMARON BENJAMIN

REPRESENTATIVE:  NONE

A.  CASE ITEM FOR CONSIDERATION
   1.  Installation of solar panels on north, east, and south sides of residence

B.  BACKGROUND
   DATE OF CONSTRUCTION:  2021
   ZONED HISTORIC PRESERVATION:  2023
   NATIONAL REGISTER LISTING:  TRACY PARK HISTORIC DISTRICT: 1982
   CONTRIBUTING STRUCTURE:  NO
   PREVIOUS ACTIONS:  NONE

C.  ISSUES AND CONSIDERATIONS
   1.  Installation of solar panels
       Proposed is the installation of solar panels on the residence. The panels would be
       mounted parallel to the roof line and would extend no more than six inches (0’-6”) from
       the face of the roof. Previously proposed was the placement of panels on the north, east,
       and south sides of the main roof. However, during the review of the application on March
       9, 2023, the Tulsa Preservation Commission expressed concern about the placement of
       panels on the north and south sides of the house since they would be clearly visible from
       the street. The applicant has now revised the proposal to install solar panels only on the
       east side of the residence and on the detached accessory building in the rear yard.

   ii.  Reference:  Tulsa Zoning Code
            SECTION 70.070-F  Standards and Review Criteria
       In its review of HP permit applications, the preservation commission must use the
       adopted design guidelines to evaluate the proposed work and must, to the greatest
       extent possible, strive to affect a fair balance between the purposes and intent of HP
       district regulations and the desires and need of the property owner. In addition, the
       preservation commission must consider the following specific factors:
       1.  The degree to which the proposed work is consistent with the applicable design
           guidelines;
       2.  The degree to which the proposed work would destroy or alter all or part of the historic
           resource;
3. The degree to which the proposed work would serve to isolate the historic resource from its surroundings, or introduce visual elements that are out of character with the historic resource and its setting, or that would adversely affect the physical integrity of the resource;
4. The degree to which the proposed work is compatible with the significant characteristics of the historic resource; and
5. The purposes and intent of the HP district regulations and this zoning code.

Reference: Unified Design Guidelines - Residential Structures

SECTION A – GUIDELINES FOR REHABILITATION OF EXISTING STRUCTURES

A.1 General Requirements

Use the following guidelines as the basis for all exterior work:
A.1.1 Retain and preserve the existing historic architectural elements of your home.
A.1.2 If replacement of historic architectural elements is necessary, match the size, shape, pattern, texture, and directional orientation of the original historic elements.
A.1.3 Ensure that work is consistent with the architectural style and period details of your home.
A.1.4 Return the structure to its original historic appearance using physical or pictorial evidence, rather than conjectural designs.

A.7 Awnings, Shutters, Mailboxes, Mechanical Systems, Etc.

***

A.7.6 Install systems requiring exterior components, such as solar panels or devices, where they will have minimal impact, preferably at the rear of your house or yard or on an outbuilding. Install exterior components on a historic building in a manner that does not damage the historic roofing material or negatively impact the building’s historic character and is reversible. These considerations will be made on a case-by-case basis.

SECTION E – GUIDELINES FOR NON-CONTRIBUTING STRUCTURES

E.1 General Requirements

E.1.1 For the purposes of this chapter, non-contributing structures are those listed as not contributing to the historic character of the district due to age or architectural style in the National Register Nomination for the district.
E.1.2 Non-contributing structures will be considered products of their own time. Do not attempt to create a false appearance of the predominant character and architectural style of the rest of the district.
E.1.3 Follow Section A (Rehabilitation) and Section B (Additions) as they relate to the character-defining elements of the non-contributing structure.
E.1.4 Ensure that work on non-contributing structures does not detract from or diminish the historic character of the overall district.
**CAMARON BENJAMIN - 7.03kW DC, 5.51kW AC, 13.5kWh ENERGY STORAGE SYSTEM**

**SITE PLAN LAYOUT**

**SCOPE OF WORK**

1. **ENGINEERING SCOPE OF WORK**
   - ILLUMINE INDUSTRIES 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.
   - 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

**APPLICABLE CODES**

- ELECTRIC CODE: NEC 2017
- FIRE CODE: IFC 2018
- BUILDING CODE: IBC 2018
- RESIDENTIAL CODE: IRC 2015 W/ LOCAL AMENDMENTS

**GENERAL NOTES**

1. **GENERAL SYSTEM INFORMATION:**
   - SYSTEM SIZE: 7.03kW DC, 5.51kW AC, 13.5kWh ENERGY STORAGE

2. **APPLICATIONS:**
   - MODULES: (19) VSUN SOLAR VSUN370-120BMH (370W)
   - INVERTER: (19) ENPHASE IQ8PLUS-72-2-US (240V)
   - BRANCH DETAILS: 1X11, 1X8 ENPHASE BRANCHES
   - BATTERY: (N)(1) TESLA POWERWALL AC BATTERY SYSTEM - 2.0-2012170-00-K
   - (N)(1) TESLA ENERGY GATEWAY 2-1232100-00-Z

3. **DRIVEWAY:**
   - 23'-9" WALKWAY

4. **WALKWAY:**
   - 3'-8" WALKWAY

5. **PERIMETER FENCE:**
   - 5'-10" PERIMETER FENCE

6. **RESIDENCE:**
   - 137'-6" WALKWAY

7. **GATE:**
   - 23'-9" GATE

8. **PROPERTY LINE:**
   - 3'-8" PROPERTY LINE

9. **PHOTOVOLTAIC ARRAY ON THE ROOF:**
   - 137'-6" PHOTOVOLTAIC ARRAY ON THE ROOF

10. **PHOTOVOLTAIC ARRAY ON DETACHED NON-HABITABLE STRUCTURE:**
    - 21' ACTRNCHED CONDUIT RUN (DEPTH 20")

11. **TOTAL AREA OF ROOF (HOUSE):**
    - (SQ.FT) 2487

12. **TOTAL ARRAY AREA (SQ.FT):**
    - 218.59

13. **TOTAL AREA OF ARRAY COVERED IN THE ROOF (HOUSE):**
    - (%) 8.79

**CUSTOMER INFORMATION**

- **NAME:** CAMARON BENJAMIN
- **ADDRESS:** 1127 S NORFOLK AVE, TULSA, OK 74120
- **PHONE:** 36.146880, -95.978823
- **APN:** 353-009-21-213-640
- **AHD:** OK - CITY OF TULSA
- **UTILITY:** PSO

**PRN NUMBER:** SNS-70486

**COVER PAGE**

**VICTORIA MAP**

**LICENSE NUMBER:** 2020012960

**DRAFTED BY:** K. VINANTI
**QC'ED BY:** N. MAHALE
**PAPER SIZE:** 17"X11"
ROOF ACCESS PATHWAYS AND SETBACKS:

1204.1 GENERAL:
SOLAR PHOTOVOLTAIC SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS 1204.2 THROUGH 1204.5, AND THE INTERNATIONAL BUILDING CODE OR INTERNATIONAL RESIDENTIAL CODE. THE ELECTRICAL PORTION OF SOLAR PV SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70.

1204.2 ACCESS AND PATHWAYS
ROOF ACCESS, PATHWAYS, AND SPACING REQUIREMENTS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 1204.2.1 THROUGH 1204.3.3. PATHWAYS SHALL BE OVER AREAS CAPABLE OF SUPPORTING FIRE FIGHTERS ACCESSING THE ROOF. PATHWAYS SHALL BE LOCATED IN AREAS WITH MINIMAL OBSTRUCTIONS, SUCH AS VENT PIPE, CONDUIT OR MECHANICAL EQUIPMENT.

EXCEPTIONS:
1. DETACHED, NONHABITABLE GROUP U STRUCTURES INCLUDING, BUT NOT LIMITED TO, DETACHED GARAGES SERVING GROUP R-3 BUILDINGS, PARKING SHADE STRUCTURES, CARPORTS, SOLAR TRELLISES AND SIMILAR STRUCTURES.
2. ROOF ACCESS, PATHWAYS AND SPACING REQUIREMENTS NEED NOT BE PROVIDED WHERE THE FIRE CODE OFFICIAL HAS DETERMINED THAT ROOFTOP OPERATIONS WILL NOT BE EMPLOYED.

1204.2.1 SOLAR PHOTOVOLTAIC SYSTEMS FOR GROUP R-3 BUILDINGS:
SOLAR PHOTOVOLTAIC SYSTEMS FOR GROUP R-3 BUILDINGS SHALL COMPLY WITH SECTIONS 1204.2.1.1 THROUGH 1204.2.1.3.

EXCEPTIONS:
1. THESE REQUIREMENTS SHALL NOT APPLY TO STRUCTURES DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL RESIDENTIAL CODE.
2. THESE REQUIREMENTS SHALL NOT APPLY TO ROOFS WITH SLOPES OF 2 UNITS VERTICAL IN 12 UNITS HORIZONTAL OR LESS.

1204.2.1.1 PATHWAYS TO RIDGE:
NOT FEWER THAN TWO 36-INCH-WIDE (914 MM) PATHWAYS ON SEPARATE ROOF PLANES, FROM LOWEST ROOF EDGE TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS. NOT FEWER THAN ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF. FOR EACH ROOF PLANE WITH A PHOTOVOLTAIC ARRAY, NOT FEWER THAN ONE 36-INCH-WIDE (914 MM) PATHWAY FROM LOWEST ROOF EDGE TO RIDGE SHALL BE PROVIDED ON THE SAME ROOF PLANE AS THE PHOTOVOLTAIC ARRAY, ON AN ADJACENT ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF PLANES.

1204.2.1.2 SETBACKS AT RIDGE:
FOR PHOTOVOLTAIC ARRAYS OCCUPYING 33 PERCENT OR LESS OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 18 INCHES (457 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE. FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 36 INCHES (914 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.

1204.2.1.3 ALTERNATIVE SETBACKS AT RIDGE:
WHERE AN AUTOMATIC SPRINKLER SYSTEM IS INSTALLED WITHIN THE DWELLING IN ACCORDANCE WITH SECTION 903.3.1.3, SETBACKS AT THE RIDGE SHALL CONFORM TO ONE OF THE FOLLOWING:
1. FOR PHOTOVOLTAIC ARRAYS OCCUPYING 66 PERCENT OR LESS OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 18 INCHES (457 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.
2. FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 66 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 36 INCHES (914 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.

1204.2.2 EMERGENCY ESCAPE AND RESCUE OPENINGS:
PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS SHALL NOT BE PLACED ON THE PORTION OF A ROOF THAT IS BELOW AN EMERGENCY ESCAPE AND RESCUE OPENING. A PATHWAY OF NOT LESS THAN 36 INCHES (914 MM) WIDE SHALL BE PROVIDED TO THE EMERGENCY ESCAPE AND RESCUE OPENING.

1204.3 OTHER THAN GROUP R-3 BUILDINGS:
ACCESS TO SYSTEMS FOR BUILDINGS, OTHER THAN THOSE CONTAINING GROUP R-3 OCCUPANCIES, SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 1204.3.1 THROUGH 1204.3.3.

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 1204.2.1.1 THROUGH 1204.2.1.3 ARE A SUITABLE ALTERNATIVE.

1204.3.1 PERIMETER PATHWAYS:
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 (76 200 MM) OR LESS, THE CLEAR PERIMETER AROUND THE EDGES OF THE ROOF SHALL BE PERMITTED TO BE REDUCED TO A MINIMUM WIDTH OF 4 FEET (1219 MM).

1204.3.2 INTERIOR PATHWAYS
INTERIOR PATHWAYS SHALL BE PROVIDED BETWEEN ARRAY SECTIONS TO MEET THE FOLLOWING REQUIREMENTS:
1. PATHWAYS SHALL BE PROVIDED AT INTERVALS NOT GREATER THAN 150 FEET (45 720 MM) THROUGHOUT THE LENGTH AND WIDTH OF THE ROOF.
2. A PATHWAY NOT LESS THAN 4 FEET (1219 MM) WIDE IN A STRAIGHT LINE TO ROOF STANDPIPES OR VENTILATION MACHINES.
3. A PATHWAY NOT LESS THAN 4 FEET (1219 MM) WIDE AROUND ROOF ACCESS MACHINES, WITH NOT FEWER THAN ONE SUCH PATHWAY TO A PARAPET OR ROOF EDGE.

1204.3.3 SMOKE VENTILATION:
The solar installation shall be designed to meet the following requirements:
1. Where non-gravity-operated smoke and heat vents occur, a pathway not less than 6 FEET (2438 MM) WIDE SHALL BE PROVIDED BORDERING ALL SIDES.
2. SMOK VENTILATION OPTIONS BETWEEN ARRAY SECTIONS SHALL BE ONE OF THE FOLLOWING:
   2.1 A PATHWAY NOT LESS THAN 8 FEET (2438 MM) WIDE.
   2.2 WHERE GRAVITY-OPERATED DROPOUT SMOKE AND HEAT VENTS OCCUR, A PATHWAY NOT LESS THAN 4 FEET (1219 MM) WIDE ON NOT FEWER THAN ONE SIDE.
   2.3 A PATHWAY NOT LESS THAN 4 FEET (1219 MM) WIDE BORDERING 4-FOOT BY 8-FOOT (1219 MM BY 2438 MM) VENTING CUTOUTS EVERY 20 FEET (6096 MM) ON ALTERNATING SIDES OF THE PATHWAY.
## SITE INFORMATION - WIND SPEED: 115 MPH AND SNOW LOAD: 10 PSF

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<th>AZIMUTH</th>
<th>PITCH</th>
<th>NO. OF MODULES</th>
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<th>ATTACHMENT</th>
<th>ROOF EXPOSURE</th>
<th>FRAME TYPE</th>
<th>FRAME SIZE</th>
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### NOTE(N): PENETRATIONS ARE STAGGERED

### NOTE(N): PV SYSTEM TO BE INSTALLED ON DETACHED NON-HABITABLE STRUCTURE.

### MOUNTING DETAIL

**ARRAY MP-01**
- 3'-6"

**ARRAY MP-02**
- 3'-6"

**ARRAY MP-03**
- 3'-6"

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**TOTAL AREA OF ROOF (HOUSE) (SQ.FT)**
- 2487

**TOTAL ARRAY AREA (SQ.FT)**
- 218.59

**TOTAL AREA OF ARRAY COVERED IN THE ROOF (HOUSE) (%)**
- 8.79
### MID-CLAMP AND END-CLAMP ANATOMY

**MP-01, 02**

| Module | MID CLAMP | END CLAMP | Module

---

**MP-03**

**MODULE TO MODULE & MODULE TO RAIL**

- **SS BONDING PIN**
- **MID CLAMP ASSEMBLY**
- **MODULE FRAME**
- **RAIL**
- **CHANNEL NUT**

**SNAPRACK GROUNDING**

- **6-12 AWG BARE COPPER WIRE**
- **MID CLAMP AND END CLAMP ANATOMY**

**SNAPRACK GROUNDING MID-CLAMP**

**SCALE: NTS**

**DEAD LOAD CALCULATIONS**

<table>
<thead>
<tr>
<th>BOM</th>
<th>QUANTITY</th>
<th>LBS/UNIT</th>
<th>TOTAL WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODULES</td>
<td>19</td>
<td>42.76</td>
<td>812.44</td>
</tr>
<tr>
<td>MID-CLAMP</td>
<td>28</td>
<td>0.170</td>
<td>4.76</td>
</tr>
<tr>
<td>END-CLAMP</td>
<td>20</td>
<td>0.300</td>
<td>6.00</td>
</tr>
<tr>
<td>RAIL LENGTH</td>
<td>154</td>
<td>0.790</td>
<td>121.66</td>
</tr>
<tr>
<td>SPLICE BAR</td>
<td>6</td>
<td>0.650</td>
<td>3.90</td>
</tr>
<tr>
<td>K2 SPICE FOOT X (DECK MOUNT)</td>
<td>51</td>
<td>1.45</td>
<td>73.05</td>
</tr>
<tr>
<td>MICRO-INVERTER</td>
<td>19</td>
<td>2.38</td>
<td>45.22</td>
</tr>
</tbody>
</table>

**TOTAL WEIGHT OF THE SYSTEM (LBS)**

1067.93

**TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)**

377.56

**WEIGHT PER SQ. FT. (LBS)**

2.83

**WEIGHT PER PENETRATION (LBS)**

20.94

---

**GROUNDING DETAILS**

**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**

---

**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 7/16" 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.**

---

**DETAILED ENGINEERING ENTERPRISE INC.**

**ILLUMINE INDUSTRIES INC.**

**LICENCE #: 8770**

**CSNOOK@ILLUMINEI.COM**

---

**CUSTOMER INFORMATION**

**NAME:** CAMARON BENJAMIN

**ADDRESS:** 1127 S NORFOLK AVE, TULSA, OK 74120

**PHONE:** 36.146880, 95.078823

**APN:** 353-009-21-213-640

**PRN NUMBER:** SNS-70486

** Utility:** PSO

** DRAFTED BY:** K. VINANTI

** QC'ED BY:** N. MAHALE

** PAPERSIZE:** 17" X 11"
SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 7.03kW, AC SYSTEM SIZE - 5.51kW AC, 13.5kWh ENERGY STORAGE SYSTEM

SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>POWER RATING</th>
<th>MAX OUTPUT CURRENT</th>
<th>CEC WEIGHTED EFFICIENCY</th>
<th>MAX NO OF MICROINVERTERS / BRANCH</th>
<th>MAX DC VOLTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENPHASE IQ8PLUS-72-2-US(240V)</td>
<td>290W</td>
<td>1.21A</td>
<td>97%</td>
<td>13</td>
<td>60V</td>
</tr>
</tbody>
</table>

MODULE SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MODULE POWER @ STC</th>
<th>OPEN CIRCUIT VOLTAGE (Voc)</th>
<th>MAX POWER VOLTAGE (Vmp)</th>
<th>MAX POWER CURRENT (Imp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSUN SOLAR VSUN370-120BMH (370W)</td>
<td>370W</td>
<td>41.4V</td>
<td>34.5V</td>
<td>11.26A</td>
</tr>
</tbody>
</table>

NOTE(N): EACH MICRO INVERTERS ARE RAPID SHUTDOWN COMPLIANT

NOTE(N):
* DISCONNECT TO BE PLACED WITHIN 10' OF PRODUCTION (PV) METER
* DO NOT COMMISSION SYSTEM UNTIL UTILITY APPROVES
* KEEP SOLAR BREAKERS OFF (FOR INSTALLERS)
* REQUIRES REVENUE METER

CUSTOMER INFORMATION

NAME: CAMARON BENJAMIN

ADDRESS: 1127 S NORFOLK AVE, TULSA, OK 74120

36.146880, -95.978823

APN: 353-009-21-213-640

UTILITY: PSO

PRN NUMBER: SNS-70486

DATE: 3/25/2023

ELECTRICAL NOTES

1. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
2. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
3. MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
4. ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5. BREAKER/FUSE SIZES PER NEC 240.
6. AC EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC 260.122.
7. AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
8. AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
9. MAX. SYSTEM VOLTAGE CORRECTION IS PER NEC 310.15(B)(16).
10. CONDUCTORS ARE SIZED PER NEC TABLE 310.15(B)(16).
**THREE LINE DIAGRAM: DC SYSTEM SIZE - 7.03kW, AC SYSTEM SIZE - 5.51kW AC, 13.5kWh ENERGY STORAGE SYSTEM**

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Inverter-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>ENPHASE IQ8PLUS-72-2-US(240V)</td>
</tr>
<tr>
<td>Power Rating</td>
<td>290W</td>
</tr>
<tr>
<td>Maximum Output Current (A)</td>
<td>1.21A</td>
</tr>
<tr>
<td>CEC Weighted Efficiency (%)</td>
<td>97%</td>
</tr>
<tr>
<td>Maximum DC Voltage (V)</td>
<td>60V</td>
</tr>
<tr>
<td>Maximum No. of Microinverters/Branch</td>
<td>13</td>
</tr>
</tbody>
</table>

### Module Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Power (W)</td>
<td>370W</td>
</tr>
<tr>
<td>Open Circuit Voltage (V)</td>
<td>41.4V</td>
</tr>
<tr>
<td>Maximum Power Voltage (V)</td>
<td>34.5V</td>
</tr>
<tr>
<td>Short Circuit Current (A)</td>
<td>11.26A</td>
</tr>
<tr>
<td>Maximum Power Current (A)</td>
<td>10.72A</td>
</tr>
</tbody>
</table>

**NOTE(N):** Each micro inverter is rapid shutdown compliant.

**NOTE(N):**
- Disconnect to be placed within 10' of production (PV) meter.
- Do not commission system until utility approves.
- Keep solar breakers off (for installers).
- Requires revenue meter.

**Electrical Notes**

1. Conductors exposed to sunlight shall be listed as sunlight resistant per NEC 310.10(D).
2. Conductors exposed to wet locations shall be suitable for use in wet locations per NEC 310.10(C).
3. Maximum DC/AC voltage drop shall be no more than 2%.
4. All conductors shall be in conduit unless otherwise noted.
5. Breaker/fuse sizes per NEC 240.
6. AC equipment grounding conductor sized per NEC 250.122.
7. Ambient temperature correction factor is based on NEC 690.31(A).
8. Ambient temperature adjustment factor is based on NEC 310.15(B)(2).
9. MAX. System voltage correction 10% per NEC 690.7.
10. Conductors are sized per NEC Table 310.15(B)(16).

**Customer Information**

- **Name:** CAMARON BENJAMIN
- **Address:** 1127 S NORFOLK AVE, TULSA, OK 74120
- **APN:** 353-009-21-213-640
- **Utility:** PSO
- **PRN Number:** SNS-70486

**Threeline Diagram:** DC System size - 7.03kW, AC System size - 5.51kW AC, 13.5kWh Energy Storage System

**Diagram Notes:**
- **Note(N):** Each micro inverter is rapid shutdown compliant.
- **Note(N):** Disconnect to be placed within 10' of production (PV) meter.
- **Note(N):** Do not commission system until utility approves.
- **Note(N):** Keep solar breakers off (for installers).
- **Note(N):** Requires revenue meter.

**Additional Notes:**
- Disconnect to be placed within 10' of production (PV) meter.
- Do not commission system until utility approves.
- Keep solar breakers off (for installers).
- Requires revenue meter.

**Utility:** PSO

**Address:** 36.146880, -95.978823

**APN:** 353-009-21-213-640

**Utility:** PSO

**PRN Number:** SNS-70486

**Scale:** AS NOTED

**Date:** 3/25/2023
**ELECTRICAL CALCULATIONS**

### CONDUIT SCHEDULE

<table>
<thead>
<tr>
<th>TAG ID</th>
<th>CONDUIT SIZE</th>
<th>CONDUCTOR</th>
<th>NEUTRAL</th>
<th>GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREE AIR</td>
<td>(2) 12AWG ENPHASE Q CABLE PER BRANCH CIRCUIT</td>
<td>NONE</td>
<td>(1) 12AWG BARE COPPER</td>
</tr>
<tr>
<td>1A</td>
<td>FREE AIR</td>
<td>(4) 12/2 ROMEX WIRE</td>
<td>NONE</td>
<td>(1) 12/2 ROMEX WIRE</td>
</tr>
<tr>
<td>2</td>
<td>1&quot; EMT</td>
<td>(2) 10AWG THHN/THHN-2</td>
<td>NONE</td>
<td>(1) 10AWG THHN/THHN-2</td>
</tr>
<tr>
<td>2A</td>
<td>1&quot; SCH 40 PVC (BELOW GROUND)</td>
<td>(2) 10AWG THHN/THHN-2</td>
<td>NONE</td>
<td>(1) 10AWG THHN/THHN-2</td>
</tr>
<tr>
<td>3</td>
<td>1&quot; EMT</td>
<td>(2) 6AWG THHN/THHN-2</td>
<td>(1) 6AWG THHN/THHN-2</td>
<td>(1) 6AWG THHN/THHN-2</td>
</tr>
<tr>
<td>4</td>
<td>1&quot; EMT</td>
<td>(2) 10AWG THHN/THHN-2</td>
<td>(1) 10AWG THHN/THHN-2</td>
<td>(1) 10AWG THHN/THHN-2</td>
</tr>
</tbody>
</table>

### ELECTRICAL NOTES

1. Conductors exposed to sunlight shall be listed as sunlight resistant per NEC 310.10(D).
2. Conductors exposed to wet locations shall be suitable for use in wet locations per NEC 310.10(C).
3. Maximum DC/AC voltage drop shall be no more than 2%.
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5. Breaker/Fuse sizes per NEC 240.
6. AC equipment grounding conductor sized per NEC 250.122.
7. Ambient temperature correction factor is based on NEC 690.31(A).
8. Ambient temperature adjustment factor is based on NEC 310.15(B)(2).
9. Maximum system voltage correction is per NEC 690.7.
10. Conductors are sized per NEC Table 310.15(B)(16).

### ELECTRICAL CALCULATIONS

#### AC WIRE SIZING CALCULATIONS BASED OF FOLLOWING EQUATIONS >>

Required conductor ampacity: Inverter output current x # of inverters = Max current per 690.8(A)(3) x 125% = Max current per 690.8(B)(1)

Corrected ampacity calculations: Ampacity x temperature derate factor x conduit fill derate = Derated conductor ampacity per 690.8(B)(2)

Derated conductor ampacity check: Max current per 690.8(A)(3) < Derated conductor ampacity

#### AC WIRE CALCULATIONS:

- **MATERIAL:** COPPER & TEMPERATURE RATING: 90°C

<table>
<thead>
<tr>
<th>TAG ID</th>
<th>REQUIRED CONDUCTOR AMPACITY</th>
<th>CORRECTED AMPACITY CALCULATION</th>
<th>DERATED CONDUCTOR AMPACITY CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13.11 X 1.25 = 16.64A</td>
<td>26.10A</td>
<td>&lt; 26.10A</td>
</tr>
<tr>
<td>2</td>
<td>13.11 X 1.25 = 16.64A</td>
<td>34.80A</td>
<td>&lt; 34.80A</td>
</tr>
<tr>
<td>2A</td>
<td>9.68 X 1.25 = 12.10A</td>
<td>34.80A</td>
<td>&lt; 34.80A</td>
</tr>
<tr>
<td>3</td>
<td>19.99 X 1.25 = 28.74A</td>
<td>65.25A</td>
<td>&lt; 65.25A</td>
</tr>
</tbody>
</table>
WARNING: MULTIPLE SOURCES OF POWER

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

PHOTOVOLTAIC ARRAY ON THE ROOF

PHOTOVOLTAIC ARRAY ON DETACHED NON-HABITABLE STRUCTURE

CAUTION: SOLAR POINT OF CONNECTION

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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

LABEL LOCATION

INVERTER

[PER CODE: NEC 690.56(C)(3)]

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

WEATHER RESISTANT MATERIAL, DURABLE ADHESIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED). MIN ¼" 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.

LABEL LOCATION

INVERTER

[PER CODE: NEC 690.56(C)(3)]

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION

BREAKER

[PER CODE: 705.12(B)(3)(b)]

WARNING

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

LABEL LOCATION

[PER CODE: NEC 705.12(C)]

NOTE:

ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N. PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE. FASTENERS APPROVED BY THE LOCAL JURISDICTION

ILLUMINE I

LICENSE NUMBER: 2020012960

CUSTOMER INFORMATION

NAME: CAMARON BENJAMIN

ADDRESS: 1127 S NORFOLK AVE, TULSA, OK 74120

36.146880, -95.978823

APN: 353-009-21-213-640

AH: OK - CITY OF TULSA

UTILITY: PSO

PRN NUMBER: SNS-70486

PL-01

WARNING PLACARDS

DRAFTED BY: K. VINANTI

QC'ED BY: N. MAHALE

PAPER SIZE: 17"X11"

SCALE: AS NOTED

REV: F

DATE: 3/25/2023

SYSTEM UTILIZES MICRO-INVERTERS LOCATED UNDER SOLAR MODULE

1127 S NORFOLK AVE, TULSA, OK 74120

LABEL LOCATION

SERVICE PANEL

PER CODE: NEC 705.10

WARNING PLACARD

INVERTER OUTPUT CIRCUIT

PHOTOVOLTAIC SOLAR BREAKER

AC JUNCTION BOX FOR PHOTOVOLTAIC CIRCUIT

PHOTOVOLTAIC ARRAY ON THE ROOF

PHOTOVOLTAIC ARRAY ON THE ROOF

CAUTION: PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

LABEL LOCATION

COMBINER BOX

[PER CODE: NEC 690.4(B)]

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH

RATED AC OPERATING CURRENT: 72.99 MPPS AC

RATED AC NORMAL OPERATING VOLTAGE: 240 VAC

LABEL LOCATION

AC DISCONNECT, POINT OF INTERCONNECTION

[PER CODE: NEC 690.54]

CAUTION: PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

LABEL LOCATION

COMBINER BOX

[PER CODE: NEC 690.4(B)]

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH

RATED AC OPERATING CURRENT: 72.99 MPPS AC

RATED AC NORMAL OPERATING VOLTAGE: 240 VAC

LABEL LOCATION

AC DISCONNECT, POINT OF INTERCONNECTION

[PER CODE: NEC 690.54]
**VSUN370-120BMH**

**370W**  
Highest power output

20.04%  
Module efficiency

12 years  
material & workmanship warranty

30 years  
Linear power output warranty

---

**Licence Number:** 2020012960

**Customer Information**

**Name:** Camaron Benjamin

**Address:** 1127 Snorfolk Ave, Tulsa, OK 74120  
36.146880, -95.978823

**APN:** 353-009-21-213-640

**Utility:** PSO

**PRN Number:** SNS-70486

**Scale:** AS NOTED

**Date:** 3/25/2023

---

**Electrical Characteristics at Standard Test Conditions (STC)**

<table>
<thead>
<tr>
<th>Module Type</th>
<th>VSUN370-120BMH</th>
<th>VSUN365-120BMH</th>
<th>VSUN360-120BMH</th>
<th>VSUN355-120BMH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Power - Pmax (W)</td>
<td>370</td>
<td>365</td>
<td>360</td>
<td>355</td>
</tr>
<tr>
<td>Open Circuit Voltage - Voc (V)</td>
<td>41.4</td>
<td>41.1</td>
<td>40.9</td>
<td>40.4</td>
</tr>
<tr>
<td>Short Circuit Current - Isc (A)</td>
<td>11.29</td>
<td>11.19</td>
<td>11.12</td>
<td>11.08</td>
</tr>
<tr>
<td>Maximum Power Voltage - Vmp (V)</td>
<td>34.5</td>
<td>34.3</td>
<td>34.1</td>
<td>33.7</td>
</tr>
<tr>
<td>Maximum Power Current - Imp (A)</td>
<td>10.73</td>
<td>10.59</td>
<td>10.50</td>
<td>10.33</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>19.05%</td>
<td>19.15%</td>
<td>19.20%</td>
<td>19.22%</td>
</tr>
</tbody>
</table>

*Standard Test Conditions (STC): Insulation 1,000 W/m², AM 1.5, module temperature 25°C, Pene Salinity: 0-5%, Measuring Tolerance: ±3%.

**Electrical Characteristics with different rear side power gain (reference to 365 front)**

<table>
<thead>
<tr>
<th>Power Gain</th>
<th>Prise (W)</th>
<th>Voc (V)</th>
<th>Isc (A)</th>
<th>Vmp (V)</th>
<th>Imp (A)</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.15%</td>
<td>388</td>
<td>41.40</td>
<td>11.82</td>
<td>34.50</td>
<td>10.98</td>
<td>19.15%</td>
</tr>
<tr>
<td>0.20%</td>
<td>406</td>
<td>41.40</td>
<td>12.39</td>
<td>34.50</td>
<td>10.88</td>
<td>19.20%</td>
</tr>
<tr>
<td>0.30%</td>
<td>443</td>
<td>41.50</td>
<td>13.51</td>
<td>34.40</td>
<td>11.87</td>
<td>20.00%</td>
</tr>
<tr>
<td>0.40%</td>
<td>461</td>
<td>41.50</td>
<td>14.08</td>
<td>34.40</td>
<td>12.36</td>
<td>24.50%</td>
</tr>
</tbody>
</table>

**Temperature Characteristics**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Maximum System Voltage (V)</th>
<th>Minimum System Voltage (V)</th>
<th>Series-Case Rating (A)</th>
<th>Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>-25°C</td>
<td>40.4°C</td>
<td>37.5°C</td>
<td>20</td>
<td>30°C</td>
</tr>
<tr>
<td>25°C</td>
<td>41.4°C</td>
<td>38.5°C</td>
<td>20</td>
<td>30°C</td>
</tr>
<tr>
<td>40°C</td>
<td>42.4°C</td>
<td>39.5°C</td>
<td>20</td>
<td>30°C</td>
</tr>
</tbody>
</table>

**Material Characteristics**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>1700 x 1040 x 30mm (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Black anodized aluminium profile</td>
</tr>
<tr>
<td>Front Glass</td>
<td>White toughened safety glass, 3.2 mm</td>
</tr>
<tr>
<td>Cell Encapsulation</td>
<td>EVA (Ethylene Vinyl Acetate) or P2U</td>
</tr>
<tr>
<td>Back Sheet</td>
<td>Transparent black microporous film</td>
</tr>
<tr>
<td>Cells</td>
<td>12 x 10 pieces bifacial monocrystalline solar cells string</td>
</tr>
</tbody>
</table>

**Packaging**

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>1800 x 1125 x 110 mm</th>
<th>Temperature Range</th>
<th>40°C to 60°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container 2P</td>
<td>216</td>
<td>Maximum temperature: 45°C</td>
<td></td>
</tr>
<tr>
<td>Container 4P</td>
<td>468</td>
<td>Maximum temperature: 45°C</td>
<td></td>
</tr>
<tr>
<td>Container 4P HC</td>
<td>995</td>
<td>Maximum temperature: 50°C</td>
<td></td>
</tr>
</tbody>
</table>

**System Design**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>IV-Curves</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>0.10</td>
</tr>
</tbody>
</table>

---

VSUN, a BNEF Tier-1 PV module manufacturer invested by Fuji Solar, has been committed to providing greener, cleaner and more intelligent renewable energy solutions. VSUN is dedicated to bringing reliable, customized and high-efficient products into various markets and customers worldwide.
IQ8 Series 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.

Easy to install
- Lightweight and compact with plug-n-play connections
- 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 E double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming
- Complies with the latest with various grid requirements
- Remote automatic updates for the latest grid requirements
- Configurable to support wide range of grid profiles
- Meets CA Rule 21 (UL 1741-5A) requirements

IQ8 Series Microinverters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Datasheet Version</th>
<th>Current efficiency</th>
<th>Efficiency (rated P)</th>
<th>Max AC power</th>
<th>DC input voltage</th>
<th>DC input current</th>
<th>DC/AC ratio</th>
<th>Power density</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN-039-02-125</td>
<td>F</td>
<td>228.8</td>
<td>102.95</td>
<td>235 - 345</td>
<td>205 - 210</td>
<td>200 - 205</td>
<td>1.17</td>
<td>7.5</td>
</tr>
</tbody>
</table>


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

* Only when installed with IQ System Controller 2, events CA-1A, CA-2A, CA-3A operate only in plug-in test mode.

** IQ8 Series Microinverters supports split-phase, 244V. IQ8 Series supports split-phase, 280V only.

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[Image: ENPHASE CE25 CERTIFIED INVERTER]
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 (CELMOBILE-MF-56-SP-05), included only with IQ Combiner 4C
- Includes solar shroud 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 back, bottom, and side conduit entry
- Up to four 3-pole branch circuits for 240 VAC plug-in kit (not included)
- R/A 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

Enphase IQ Combiner 4/4C

### Model Numbers

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ-AM1-240-A</td>
<td>IQ-AM1-240-A (4)</td>
</tr>
<tr>
<td>IQ-AM1-240-B</td>
<td>IQ-AM1-240-B (4)</td>
</tr>
</tbody>
</table>

#### ACCESSORIES AND REPLACEMENT PARTS

- **Ensemble Communications Kit**
  - Includes COMBO-4KIT-01 and CELM-DAMMININET-00-SP-05 with 5-year typical data plan for Ensemble devices.
- **Cell Modem**
  - Includes solar shroud for IQ Battery system
- **Combiner Breaker**
  - Circuit breaker, 2 poles, 50A, Eaton BR50C1
- **INVERTER**
  - Includes solar shroud for IQ Battery system

#### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Voltage</td>
<td>120/240V AC, 60Hz</td>
</tr>
<tr>
<td>Eaton-BR series breaker rating</td>
<td>35A</td>
</tr>
<tr>
<td>Max. continuous current rating</td>
<td>50A</td>
</tr>
<tr>
<td>Min. harmonic current rating (50Hz)</td>
<td>10A</td>
</tr>
<tr>
<td>Panel/circuit breaker (for branches)</td>
<td>30A</td>
</tr>
<tr>
<td>Max. rated branch circuit breaker rating</td>
<td>30A</td>
</tr>
<tr>
<td>DC Inrush current</td>
<td>100A</td>
</tr>
<tr>
<td>Consumption monitoring CT (CT-C00-GPH2)</td>
<td>5A or 20A split-core current transformer</td>
</tr>
</tbody>
</table>

#### MECHANICAL DATA

- Dimensions (Width x Height x Depth): 17.5 x 14.5 x 14.5 in
- Weight: 14 lbs (6.4 kg)
- Ambient temperature range: -40°F to 104°F (-40°C to 40°C)
- Cooling: Natural convection, plus shaded fan
- Enclosure environmental rating: NEMA Type 3R, weatherproof construction
- Fire rating: 240 A breaker, 94V-240V circuit breaker
- Power factor: Max. 10% variation at 20% power factor
- Ultrasafe: Yes
- Inrush current: 100A
- All local code requirements for conduit sizing.
- Input: 1200/2400伏 (400V)

#### INTERNET CONNECTION OPTIONS

- **Ethernet**
  - RJ45 (1)

#### COMPLIANCE

- **IQ Combiner**
  - UL 1741, CAN/CSA C22.2 No. 1071, 47 CFR, Part 15, Class A, 600V, 3G3-013
- **IQ Gateway**
  - UL 2271, CAN/CSA C22.2 No. 22, 47 CFR, Part 15, Class B, 3G3-013
- **Compliance, IQ Gateway**
  - UL 2271, CAN/CSA C22.2 No. 22, 47 CFR, Part 15, Class B, 3G3-013

To learn more about Enphase offerings, visit enphase.com

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General Duty Cartridge Fuse Safety Switch

DG222NRB

UPC:782113144221

Dimensions:
- Height: 7 IN
- Length: 6.41 IN
- Width: 8.4 IN

Weight: 9 LB

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.

Warranties:
- 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.

Specifications:
- Type: General Duty/Cartridge Fuse
- Ampere Rating: 60A
- Enclosure: NEMA 3R
- Enclosure Material: Painted galvanized steel
- Fuse Class Provision: Class H fuses
- Fuse Configuration: Fusible with renewal
- Number Of Poles: Two-pole
- Number Of Wires: Three-wire
- Product Category: General Duty Safety Switch
- Voltage Rating: 240V

Supporting documents:
- Eaton's Volume 2-Commercial Distribution
- Eaton Specification Sheet - DG222NRB

Certifications:
- UL Listed

Product compliance: No Data

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Splice Foot X
Patent Pending

Technical Data

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Splice Foot X</td>
<td>40005313</td>
</tr>
<tr>
<td>2</td>
<td>K2 EverSeal</td>
<td>40005313</td>
</tr>
<tr>
<td>3</td>
<td>M5 x 60 lag screws</td>
<td>40005313</td>
</tr>
<tr>
<td>4</td>
<td>T-Bolt &amp; Hex Nut Set</td>
<td>40005313</td>
</tr>
</tbody>
</table>

Technical Details

- Splice Foot X
  - Roof Type: Composition shingle
  - Material: Aluminum with stainless steel hardware
  - Finish: M6
  - Roof Connection: M5 x 60 lag screws
  - Code Compliance: UL 2703
  - Compatibility: CrossRail 44-X, 48-X, 48-XL, ED

Units: [in] mm
SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge

Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience

Start Installing Ultra Rail Today

- Industry leading Wire Management Solutions
- Single Tool Installation
- All SnapNrack Module Clamps & Accessories are compatible with both rail profiles


SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety. 877-732-2860 www.snapnrack.com contact@snapnrack.com

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**POWERWALL**

**Backup Gateway 2**

The Backup Gateway 2 for Tesla Powerwall provides energy management and monitoring for solar self-consumption, time-based control, and backup. The Backup Gateway 2 controls connection to the grid, automatically detecting outages and providing a seamless transition to backup power. When equipped with a main circuit breaker, the Backup Gateway 2 can be installed at the service entrance. When the optional internal panelboard is installed, the Backup Gateway 2 can also function as a load center. The Backup Gateway 2 communicates directly with Powerwall, allowing you to monitor energy use and manage backup energy reserves from a mobile device with the Tesla app.

**PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Voltage (Nominal)</td>
<td>240/240V</td>
</tr>
<tr>
<td>Feed-in Type</td>
<td>Split Phase</td>
</tr>
<tr>
<td>Grid Frequency</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Current Rating</td>
<td>20A</td>
</tr>
<tr>
<td>Maximum Input Short Circuit Current</td>
<td>10 KA</td>
</tr>
<tr>
<td>Overvoltage Category</td>
<td>Category IV</td>
</tr>
<tr>
<td>AC Motor</td>
<td>Reverse accurate (1.1+/-0.2 N)</td>
</tr>
<tr>
<td>Primary Connectivity</td>
<td>Ethernet, WiFi</td>
</tr>
<tr>
<td>Secondary Connectivity</td>
<td>Celluar (SIM, LTE/WWAN)</td>
</tr>
<tr>
<td>User Interface</td>
<td>Tesla App</td>
</tr>
<tr>
<td>Operating Modes</td>
<td>Support for solar self-consumption, time-based control, and backup</td>
</tr>
<tr>
<td>Backup Transition</td>
<td>Automatic disconnection for seamless backup</td>
</tr>
<tr>
<td>Modularity</td>
<td>Supports up to 10 AC-occupied Residence</td>
</tr>
<tr>
<td>Optional Internal Panelboard</td>
<td>300A 6-space / 12 circuit Eaton BR Circuit Breaker</td>
</tr>
<tr>
<td>Warranty</td>
<td>10 years</td>
</tr>
</tbody>
</table>

1 When prohibited by Class I laws, Backup Gateway 2 is suitable for use in certain applications as detailed in Section 60A of the National Electrical Code.

2 The customer is expected to provide internet connectivity for Backup Gateway. A cellular network should not be used as the primary mode of connectivity. Cellular connectivity is intended to serve as a back-up to internet service coverage and signal strength.

**MECHANICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Dimensions</td>
<td>655 mm x 411 mm x 149 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>20.4 kg (45 lb)</td>
</tr>
<tr>
<td>Mounting options</td>
<td>Wall mount, Screw mount</td>
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**COMPLIANCE INFORMATION**

<table>
<thead>
<tr>
<th>Certifications</th>
<th>UL 67, UL 950A, UL 916, UL 1741 PCS CSA 22.2 No. 19, CSA 22.2 No. 200</th>
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</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>FCC Part 15, ICES-053</td>
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</table>

**ENVIRONMENTAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 55°C (-4°F to 122°F)</td>
</tr>
<tr>
<td>Operating Humidity (DRH)</td>
<td>Up to 100% condensing</td>
</tr>
<tr>
<td>Maximum Elevation</td>
<td>3050 m (9973 ft)</td>
</tr>
<tr>
<td>Environment</td>
<td>Indoor and outdoor rated</td>
</tr>
<tr>
<td>Enclosure Type</td>
<td>NEMA 3R</td>
</tr>
</tbody>
</table>

**CUSTOMER INFORMATION**

NAME: CAMARON BENJAMIN

ADDRESS: 1127 S NORFOLK AVE, TULSA, OK 74120

UTILITY: PSO

PRN NUMBER: SNS-70486

© SHINE SOLAR 2020

TSLR

PAGE 2/2

DATE: 3/25/2023

REV: F

DRAFTED BY: K. VINANTI
QC'ED BY: N. MAHALE

PAPERSIZE: 17"X11"
Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall’s electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

**PERFORMANCE SPECIFICATIONS**

- **AC Voltage (Nominal):** 120/240 V
- **Rated Power:** Split Phase
- **Grid Frequency:** 60 Hz
- **Total Energy:** 14 kWh
- **Usable Energy:** 13.5 kWh
- **Real Power, max continuous:** 3 kW (charge and discharge)
- **Real Power, peak (15%, off-grid/battery):** 7 kW (charge and discharge)
- **Apparent Power, max continuous:** 9.8 kWh (charge and discharge)
- **Apparent Power, peak (15%, off-grid/battery):** 12.2 kW (charge and discharge)
- **Maximum Supply Fault Current:** 10 kA
- **Maximum Output Fault Current:** 35 A
- **Overcurrent Protection Device:** 30 kA
- **Impedance for Split-Phase Loads:** 100% Power Factor (Output Range) +/- 10 adjustable
- **Power Factor Range (rated power):** +/- 0.85
- **Internal Battery DC Voltage:** 50 V
- **Round Trip Efficiency:** 99%

**COMPLIANCE INFORMATION**

- **Certifications:** UL 1943, UL 743, UL 954, UL 1741, UL 3112, UL 5071, UL 1741-EN, EN 303, EN 30362-1
- **Grid Connection:** Worldwide Compatibility
- **Environmental:** RoHS Directive 2015/863/EU
- **Seismic:** AC34, IEC 664-2005 (light)

**ENVIRONMENTAL SPECIFICATIONS**

- **Operating Temperature:** -30°C to 50°C (-22°F to 122°F)
- **Recommended Humidity:** 20% to 90% (32°F to 93°F)
- **Operating Humidity (Rel):** 95% (32°F to 93°F)
- **Storage Conditions:** -20°C to 30°C (-4°F to 86°F)
- **Minimum Elevation:** 3000 m (9840 ft)
- **Environmental:** Indoor and outdoor safe
- **Enclosure Type:** NEMA 3R
- **Ingress Rating:** IP65 (Battery & Power Execution) IP66 (Wiring Conformance)
- **Wet Location Rating:** No
- **Noise Level (6 ft):** < 40 dBA at 30°C (86°F)

**CUSTOMER INFORMATION**

- **NAME:** CAMARON BENJAMIN
- **ADDRESS:** 1127 S NORFOLK AVE, TULSA, OK 74120
- **APN:** 353-009-21-213-640
- **UTILITY:** PSO
- **PRR NUMBER:** SNS-70486

**ILLUMINE**

- **DRAFTED BY:** K. VINANTI
- **QC’ED BY:** N. MAHALE
- **PAPERSIZE:** 17"X11"
- **SCALE:** AS NOTED
- **REV:** F
- **DATE:** 3/25/2023
- **LICENSE NUMBER:** 2020012960
- **ADDRESS:** 36.14688, -95.978823
- **APN:** 353-009-21-213-640
- **AHD:** OK- CITY OF TULSA
- **UTILITY:** PSO
- **PRR NUMBER:** SNS-70486

**TESLA POWERWALL 2**

- **TSLA.COM/ENERGY**
- **DATE:** 3/25/2023
- **REV:** F
- **SCALE:** AS NOTED
- **PAPERSIZE:** 17"X11"
- **LICENSE NUMBER:** 2020012960
- **ADDRESS:** 36.14688, -95.978823
- **APN:** 353-009-21-213-640
- **AHD:** OK- CITY OF TULSA
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- **PRR NUMBER:** SNS-70486