

THE CITY OF ORANGE TOWNSHIP HISTORIC PRESERVATION COMMISSION

APPLICATION NUMBER: A5171-23 DATE RECEIVED: 4/21/23

MEETING DATE: May 17, 2023

NAME: Mary Johnson

PHONE: 801-306-2029 E-MAIL: ma192045@aol.com

NAME: Momentum Solar

PHONE: 732-366-1854 E-MAIL: permits@momentumSolar.com

BLOCK: 4901 LOT 37 ORANGE VALLEY MONTROSE SEVEN OAKS PARK MAIN STREET ST JOHN'S

ADDRESS: 454 Waverly Place

PROPOSED WORK: Solar Panels

PHOTOS SURVEY STRUCTURAL CERTIFICATION SKETCHES MATERIAL SPECIFICATIONS SITE PLAN

APPLICATION FEE: \$70 CHECK NO: 2834071221 RECEIPT NO: 4995 ONLINE:

TRC: APPROVED DENIED RESCHEDULED

APPROVAL LETTER RESOLUTION NUMBER RESOLUTION DATE



CITY OF ORANGE HISTORIC PRESERVATION COMMISSION

ORANGE CITY HALL

29 North Day Street, Orange, New Jersey 07050

PHONE (973) 952-6344 FAX (973) 672-6643

**CITY OF ORANGE PRESERVATION COMMISSION
APPLICATION FOR CERTIFICATION OF APPROPRIATENESS**

DATE RECEIVED _____ APPLICATION # _____

APPLICANT(S): _____

Name of Applicant(s): MOMENTUM SOLAR

Address: 325 HIGH STREET METUCHEN NJ 08840 Email: PERMITS@MOMENTUMSOLAR.COM

Telephone (Day) 732-366-1854 (Eve) _____ (Fax) 848-291-9798

Relationship of Applicant to Property owner:

- Owner(s) Lessee Property Under Contract Other (Specify)

Explanation if Other: CONTRACTOR

OWNER(S), IF DIFFERENT THAN APPLICANT:

Name(s) of Owner(s): Mary Johnson

Address: 454 WAVERLY PLACE Email: ma182045@aol.com

Telephone Number: (Day) 2013062029 (Eve) _____

Street Address of the Property that is subject of Application: _____

454 WAVERLY PLACE

Tax Block: 4901 Lot: 37

Name of Historic District in which Property lies: _____

- Orange Valley Montrose Seven Oaks Park Main Street St. John's

Existing use of the Property: _____
SINGLE FAMILY RESIDENTIAL

Existing zoning of the Property: _____



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SINGLE FAMILY RESIDENTIAL

Existing zoning of the Property: _____

Describe in detail the proposed work to be done at the Property.
ROOFTOP SOLAR INSTALLATION, PANELS WILL NOT EXCEED THE HEIGHT OF THE ROOF

Explain how you plan to prevent, minimize and mitigate any adverse effects to this Property, to nearby historically significant properties, and to the Historic District?

THE PANELS WILL NOT BE VISIBLE FROM THE STREET

Each Application must be accompanied by sketches, drawings, photographs, descriptions or other information sufficient to show the proposed alterations, additions, changes or new construction. The Commission may require the subsequent submission of such additional materials as it reasonably requires to make an informed decision. A submission shall include:

- A photograph of each elevation of the structure.
- Fifteen (15) copies of drawings, photographs, material brochures, samples, specifications or information that may be necessary to assist the Commission. Copies may be submitted electronically, or by CD or flash drive.
- Fifteen (15) copies of a survey, or if applicable, a site plan showing the location of new and existing structures on the site and their location with respect to the building line, property line, and the front of those buildings or structures immediately adjacent to each side of the lot to be built upon.
- Fifteen (15) copies of facade elevation(s), if applicable, of the proposed work in sufficient detail to identify the limits and location of the proposed work, and existing and proposed materials to be used.
- \$70.00 Application fee (check or money order made to the City of Orange).

By signing this Application, I hereby certify that the owner of record authorizes the proposed work and I have been authorized by the owner to make this Application as his/her authorized agent. By signing this Application, the owner hereby grants authorization to the Commission members, and its professional and support staff to enter the Property in question for inspection purposes. By signing this application I further agree that the attorney's and professional staff's review of my application is chargeable to me and that I agree to pay for such review separately from the application fee, by depositing an escrow payment of \$ _____.

Signature of Applicant(s) _____



(Print Name) MOMENTUM SOLAR

Date 4/18/2023

Signature of Owner(s) (if different than Applicant) *Mary A Johnson*

(Print Name) Mary Johnson

Date 4/18/2023

Submittal of this Application form-properly signed, with the indicated copies of documents and the Application fee will constitute a complete Application. Upon receipt of a complete Application, the Board Secretary will schedule the Application with the Commission. The Applicant delays his/her own Application if all of these required items are not submitted. The Commission shall reach a decision on the Application within forty-five (45) days of submission of a complete Application. The Applicant must appear in front of the Commission in order to present the Application during the public hearing on the scheduled date.

Telephone: 732-366-1854 Fax: 848-291-9798 Website: _____



The City of Orange Township Historic Preservation Commission

INSTRUCTIONS AND REQUIRED ATTACHMENTS FOR ALL APPLICATIONS

If your Application is not deemed complete, it will not be heard and your project will suffer delay. In order for your Application for a Certificate of Appropriateness to be deemed complete, you must provide the following documents with your Application:

- A. Photographs of the existing condition of each elevation (façade) of the structure, front, sides and rear, including photographs of the structure from the nearest public street or sidewalk, approaching the structure and leaving the structure. This means a minimum of three color photographs of the front, and both sides of the house or building. This is essential to understanding what work, installations, improvements etc. will be visible from the Public Street or right-of-way. An aerial shot by a drone of the structure is insufficient to satisfy this requirement.
- B. A site plan or other plan or drawing incorporating the location, type, design and details of the work to be undertaken. The plan must show the location of the street and front of the house or building that is the subject of the Application. Façade elevation(s), if applicable, of the proposed work shall have sufficient detail to identify the limits and location of the proposed work.
- C. Samples, specifications and product information on the materials (shingles, windows, paint, brick, wood siding, etc. that you intend to install) to assist the Commission in understanding the work to be undertaken and the products that will be placed on your property. No vinyl or aluminum siding is allowed on any history property, site or in any historic district. Photographs of examples of property/architectural features elsewhere in the historic district that are sought to be duplicated on your property may be submitted as examples. The Applicant should describe or show the existing and proposed materials to be used in some way. It is always preferred to use the same materials as the original structure.
- D. If applicable, a survey, or a site plan showing the location of any new proposed and existing structures on the site and their location with respect to any existing building footprints, height, property boundary lines, fence locations if applicable, and the front of those buildings or structures immediately adjacent to each side of the property(ies) on which the work will be undertaken, to help the Commission determine the design, scale and massing in context of the historic site, property, or neighborhood district.

ADDITIONAL INSTRUCTIONS AND REQUIRED ATTACHMENTS FOR SOLAR/PV APPLICATIONS

- A. As part of the plan set for the solar installation, **a roof layout plan for the solar/PV panels and equipment, showing the front of the house or building on which the panels will be installed, and the location of the street.**
- B. At least three color photographs from the front of the house, and both sides, as described above, in Section I. A., taken from the street level and showing the roof areas on which the solar panels will be placed, so that the Commission can see whether the panels to be attached to the roof according to the roof layout plan will be visible from the street.
- C. A written certification signed by a professional engineer (P.E.) or architect certifying to the fact that the structure and roof of the building that is the subject of the Application on which the solar/PV panels and related equipment will be installed, is capable of bearing the load of the panels and related equipment without any additional support or renovation, and that the installation will comply with the applicable building codes, if properly installed according to instructions.

Michael S. Rezk

Engineer-PE

Pro Custom Solar LLC

732-902-6224

3096B Hamilton Blvd

March 27, 2023

South Plainfield, NJ 07080

Gravity Load Calculation Criteria

Structural Design Loads per ASCE 7-16

Dead Loads = 10 psf + 2.6 psf (new solar panels) = 12.6 psf

Roof Live Load = 20 psf

Ground Snow Load/Live Load = 25 psf

Wind Load Calculation Criteria

Wind Loads per ASCE 7-16, Ch. 30.4

Design wind pressure determined by Eq. 29.4-7:

Zone 1 = -24.6 psf

Roof Slope = 23 degrees

Roof Mean Height = 15 ft

Zone 2 = -32 psf

Basic Wind Speed = 115 mph

Zone 3 = -36.9 psf

Exposure = B

Per section 2.4.1, ASD combo = D + 0.6W:

Zone 1 = 2.6 psf + 0.6(-24.6 psf) = -12.2 psf

Zone 2 = 2.6 psf + 0.6(-32 psf) = -16.6 psf

Zone 3 = 2.6 psf + 0.6(-36.9 psf) = -19.5 psf

Check Attachment to Wood Rafter

Use 5/16 dia. Lag screw w/ 3" embedment into 2 in. wide roof rafter

Lag Screw Spacing:

Lag Screw Tributary Area:

Zone 1 = 48" o.c. max

Zone 1 = $(48" \text{ o.c. max})^2 / 144 = 16 \text{ SF}$

Zone 2 = 32" o.c. max

Zone 2 = $(32" \text{ o.c. max})^2 / 144 = 7.11 \text{ SF}$

Zone 3 = 32" o.c. max

Zone 3 = $(32" \text{ o.c. max})^2 / 144 = 7.11 \text{ SF}$

Lag Screw Forces:

W = 266lb/in (Table 12.2A, 2015 NDS)

Zone 1 = 12.2 psf x 16 SF = 195 lb

Cd = 1.6 (Table 2.3.2, 2015 NDS)

Zone 2 = 16.6 psf x 7.11 SF = 118 lb

Ct = 1 (Table 2.3.3, 2015 NDS)

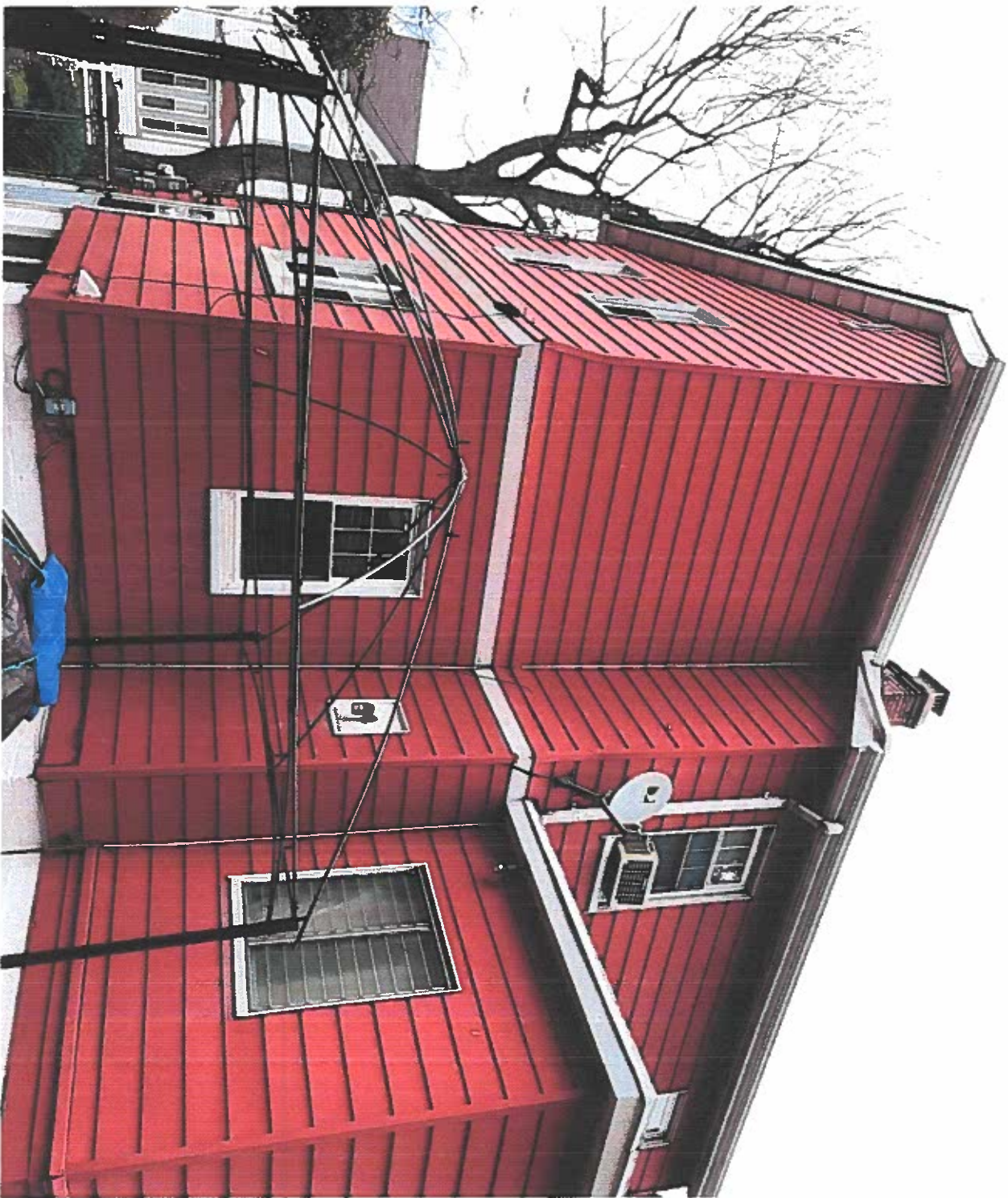
Zone 3 = 19.5 psf x 7.11 SF = 139 lb

W' = W x embed x Cd x Ct

W' = 266 lb/in x 3 in. x 1.6 x 1 = 1276.8 lb







Q. PEAK DUO BLK-G10+ / AC 360-365

Q.ANTUM DUO SOLAR MODULE
WITH INTEGRATED MICROINVERTER



Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.6%.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect, Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty².

STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO Z Technology and the integrated high-powered Enphase IQ 7+ Microinverter achieving maximum system efficiency.

RELIABLE ENERGY MONITORING

Seamless management with the Intelligent Enphase Enlighten™ monitoring system.

RAPID SHUTDOWN COMPLIANT

Built-in rapid shutdown with no additional components required.



¹ APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 90h)
² See data sheet on rear for further information



Roof-top arrays on
residential buildings

THE IDEAL SOLUTION FOR:

Engineered in Germany

Q CELLS

THIS IS YOUR RECEIPT
Receipt 4995

DATE
4/21/23

AMOUNT
\$70

RECEIVED FROM
Historic Preservation Commission
454 Waverly Pl HPC APPA5171-23
1113
\$70.00
Money order 28340711201

Treasurer's Miscellaneous Receipt
City of Orange Township, New Jersey

OFFICE OF THE MUNICIPAL CLERK
THE CITY OF ORANGE TOWNSHIP
CITY HALL
ORANGE, NEW JERSEY 07050

RECEIVED FROM Momentum Solar
Seventy dollars + 00/100 \$ 70 00
FOR 454 Waverly Place HPC APPA5171-23 DOLLARS

DATE 4/21/23

AMOUNT OF ACCOUNT
THIS PAYMENT
BALANCE DUE

CASH
 CHECK
 M.O.

BY [Signature]

4995
DATE 4/21/23

Thank You

Serial Number 28340711201

U.S. Dollars and Cents 088400
Post Office 2025-04-20

Amount [] \$70.00 []
Seventy Dollars and 00/100 *****

Pay to City of Orange
Address 29 N. DAY STREET
ORANGE NJ 07050

From Momentum Solar dba Momentum Solar
Address 325 High St
McFuchen NJ 08840

Memo HISTORIC REVIEW FEE
454 WAVERLY PLACE (TOWNSHIP)

SEE REVERSE WARNING • NEGOTIABLE ONLY IN THE U.S. AND POSSESSIONS
28340711201

POSTAL MONEY ORDER
UNITED STATES POSTAL SERVICE

THIS IS YOUR RECEIPT
Receipt 4995

DATE
4/21/23

AMOUNT
\$70

RECEIVED FROM
Historic Preservation Commission
454 Waverly Pl HPC APPA5171-23
1113
\$70.00
Money order 28340711201

Treasurer's Miscellaneous Receipt
City of Orange Township, New Jersey

OFFICE OF THE MUNICIPAL CLERK
THE CITY OF ORANGE TOWNSHIP
CITY HALL
ORANGE, NEW JERSEY 07050

RECEIVED FROM Momentum Solar
Seventy dollars + 00/100
FOR 454 Waverly Place HPC APPA5171-23

DATE 4/24/23
\$ 70 00 DOLLARS

AMOUNT OF ACCOUNT
THIS PAYMENT
BALANCE DUE

CASH
 CHECK
 M.O.

BY [Signature]

4995
Thank You

Serial Number 28340711201

Post Office 088400
Year, Month, Day 2023-04-20

U.S. Dollars and Cents

Amount \$70.00
Seventy Dollars and 00/100 *****

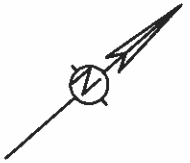
Pay to City of Orange
Address 29 N. DAY STREET
ORANGE NJ 07050
Memo HISTORICAL REVIEW FEE
154 Waverly Place (Common)
McFuchen NJ 08840

From Pro Custom Solar dba Momentum Solar
Address 325 High St
McFuchen NJ 08840

SEE REVERSE WARNING • NEGOTIABLE ONLY IN THE U.S. AND POSSESSIONS

28340711201

POSTAL MONEY ORDER
UNITED STATES POSTAL SERVICE



ROOF	MODULE COUNT	AZIMUTH	TILT	SHADING	LANDSCAPE ATTACHMENT	PORTRAIT ATTACHMENT MAX
R1	9	221°	32°	75%	MAX SPAN (ROOF AREA 1/2/3) 80/72/72	SPAN (ROOF AREA 1/2/3) 80/72/72



PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR
3096 HAMILTON BLVD, SOUTH PLAINFIELD, NJ 07080
(732) 902-6224
MOMENTUMSOLAR.COM

PROFESSIONAL ENGINEERING

MICHAEL REZK
LICENSE # GE56261

ENGINEERING LETTER ATTACHED HAS SPECIFICATIONS FOR WIND AND LOAD CALCULATIONS FOR SOLAR INSTALLATION SPANS & ATTACHMENTS TO MEET LOCAL AND STATE BUILDING CODE COMPLIANCE. WARNING THAT IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM IN ANY WAY.



CUSTOMER INFORMATION

MARY JOHNSON
454 WAVERLY PL
ORANGE, NJ 07050
2013062029

PV SYSTEM INFORMATION

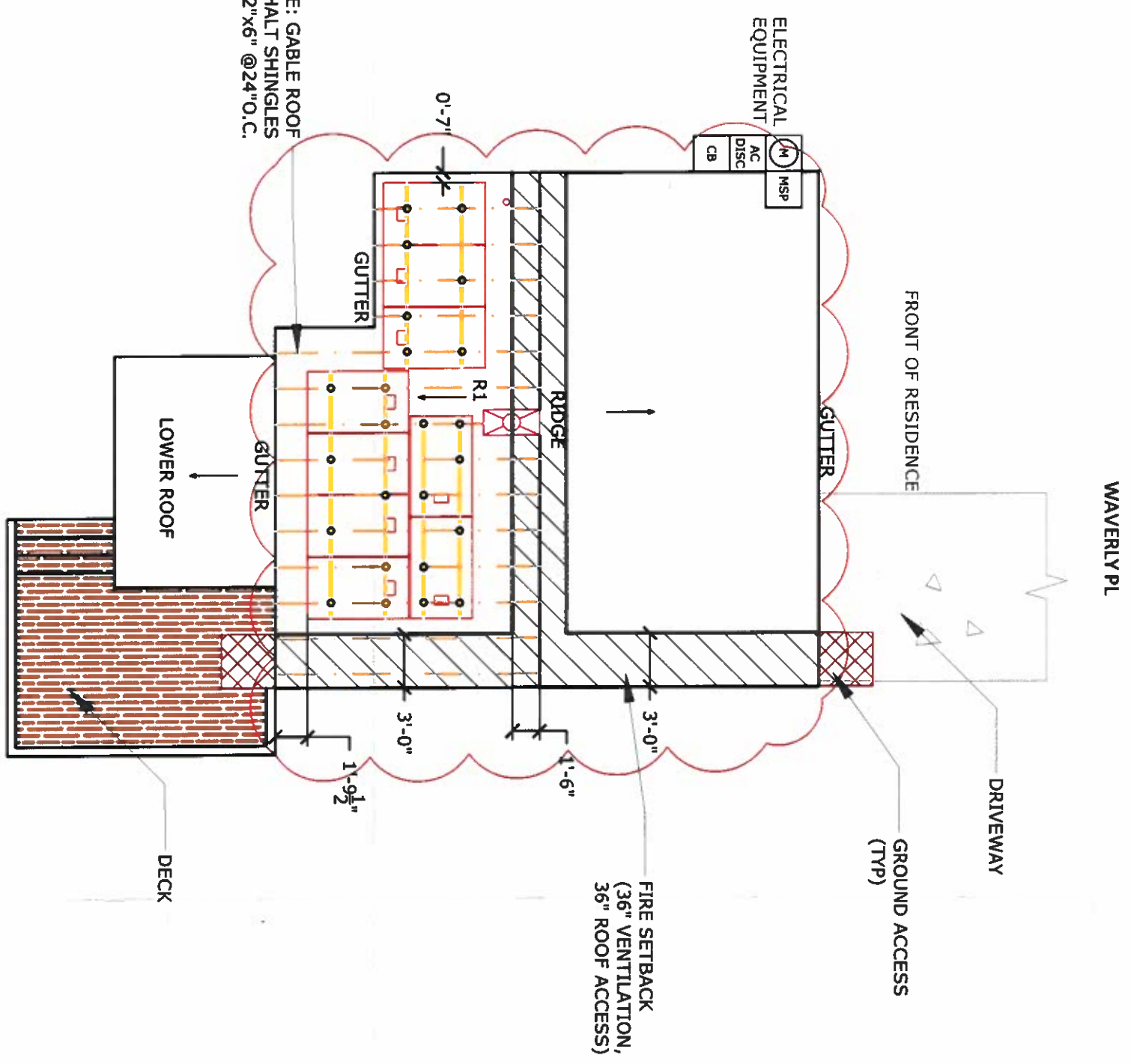
SYSTEM SIZE (DC): 3.285 KW
9 MODULES: HANWHA Q.PEAK DUO BLK-G10+ 365
9 INVERTERS: ENPHASE IQ8PLUS-72-2-US

PROJECT INFORMATION - MS121958

INITIAL: _____
DATE: 4/6/2023
DESIGNER: ZK
REV: _____
DATE: _____
DESIGNER: _____

PANEL LAYOUT

PV-2



EXISTING FRAMING TYPE: GABLE ROOF
ROOF MATERIALS: ASPHALT SHINGLES
EXISTING ROOF STRUCTURE: 2"x6" @24"O.C.

SYMBOL LEGEND

MSP	MAIN SERVICE PANEL		CHIMNEY	
SP	SUB-PANEL		SKYLIGHT	
M	UTILITY METER		VENT	
AC DISC	AC DISCONNECT		PIPE VENT	
UDC	UTILITY DISCONNECT		FAN	
LC	LOAD CENTER		SATELLITE DISH	
NBR	NEMA 3R BOX W/ ENVOY-S		FIRE SETBACKS	
CB	COMBINER BOX		GROUND ACCESS	
PF	PERFORMANCE METER		PITCH DIRECTION	
□	MODULE			

TOTAL SQUARE FOOTAGE OF ROOF: 810 SQFT
SQUARE FOOTAGE OF SOLAR ARRAY: 173.65 SQFT
PERCENTAGE OF SOLAR ROOF COVERAGE: 21.44%
18" RIDGE SETBACK SHALL BE REQUIRED

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