

Taken by Joyce

APPROVAL LETTER RESOLUTION NUMBER RESOLUTION DATE

TRC: APPROVED DENIED RESCHEDULED

APPLICATION FEE: 70 CHECK NO: 281618543452 RECEIPT NO: 4994 ONLINE:

PHOTOS SURVEY STRUCTURAL CERTIFICATION SKETCHES MATERIAL SPECIFICATIONS SITE PLAN

PROPOSED WORK: Solar Panels

ADDRESS: ~~325 Hwy Street Metuchen NJ 08840~~

BLOCK: 6702 LOT 7 ORANGE VALLEY MONTROSE SEVEN OAKS PARK MAIN STREET ST JOHN'S

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

NAME: Momentum Solar

PHONE: 201 341 8187 E-MAIL: brent.Engle@3@gmail.com

NAME: Brent Engle

MEETING DATE: May 17, 2023

APPLICATION NUMBER: A5172-23 DATE RECEIVED: 4/24/23

THE CITY OF ORANGE TOWNSHIP HISTORIC PRESERVATION COMMISSION



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 4/26/23 APPLICATION # A5172-23

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): BRENT ENGLE

Address: 174 Heywood Avenue Email: BrentEngle63@gmail.com

Telephone Number: (Day) 2013418187 (Eve) _____

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

174 HEYWOOD AVENUE

Tax Block: 6702 Lot: 7

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:
SINGLE FAMILY RESIDENTIAL

RECEIVED
 HISTORIC PRESERVATION'S OFFICE
 APR 23 3 24 PM '23

Describe in detail the proposed work to be done at the Property.
ROOFTOP SOLAR INSTALLATION

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?
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.**
- **Three (3) 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.**
- **Three (3) 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.**
- **Three (3) 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) JA

(Print Name) Alexa Cannon

Date 4-15-13

Signature of Owner(s) (if different than Applicant) Reid Steyer

(Print Name) Brent Engle

Date 4-15-13

Submission 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: _____ Fax: _____ Website: _____

Date payment received: 4/26/2013 Check Number: _____

Date sent to Finance: 4/26/2013 Receipt Number: 49916

Certification of Appropriateness Application Form Adopted 10/21/15, revised 10/6/22.



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

April 4, 2023

South Plainfield, NJ 07080

Re: Proposed Photovoltaic Solar Panel Installation

Brent Engle

174 HEYWOOD AVENUE

ORANGE, NJ 07050

Dear Plan Reviewer:

Certification: I have reviewed the engineering testing reports for the racking and attachments to be used on this project and I certify that the products are capable of supporting the code required loads and are suitable for this installation when installed in strict compliance with the manufacturers printed instructions.

Regarding the solar panel array installation on the above referenced project please note that an inspection was performed by a representative of the Architect/Engineer of Record, and analysis of the existing structure was conducted. There is adequate structural capacity for the installation of the array with the following recommendations:

1. The array will be installed on the existing roof. The roof framing is constructed of 2"x6" wood rafters @19.2" o.c. spanning 8'5" with 1/2" plywood sheathing. The new array (See Site map by contractor) will add 2.63 Lb. / Sf. overall to the roof. The existing structure is sufficient to support the new loads associated with the additional weight & wind resistance. No additional structural support is required for the roof structure.

2. The attachment system shall be secured to the roof and shall be in strict compliance with manufacturers printed instructions. The attachment system shall be UL 1703 approved tested. Provide water tight gasket and sealant at all penetrations. Attachments shall follow panel rows as specified by the system manufacturer's installation manual. The panel angle shall match the roof slope. Reference summary table below:

Roof Type:	Shingle	Fastener Max Spacing (in.)		
Attachment System:	"ROOFTECH® RT MINI II" & "UNIRAC SM" Mounting Systems	Wind Zone 1	Wind Zone 2	Wind Zone 3
Fastener Info:	min. 5/16" x 4" long stainless-steel lags with a min. embedment of 3" into the rafters	80	72	72

3. Solar Modules shall be UL-1703 rated. Refer to manufacturers specifications sheets.

4. Positive drainage of the system shall be so as not to void the existing roof warranty.

5. All aspects of the installation shall comply with NJUCC, ASCE 7-16, IBC NJ 2021, NEC 2020(NFPA-70), IRC NJ 2021. Please review the attached certifications prepared by the manufacturer.

6. Please refer to the attached structural calculations.

If you have any questions relating to this matter, please contact me at your earliest convenience. Thank you.

Michael S

Rezk

CN = Michael

S Rezk C =

US O = New

Jersey



Michael S. Rezk, P.E.
NJ Lic. No. GE56261

2023.04.04 17:
42:30 -04'00'

Pro Custom Solar LLC
3096B Hamilton Blvd
South Plainfield, NJ 07080

732-902-6224
April 4, 2023

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 = -18.5 psf	Roof Slope = 36 degrees	Roof Mean Height = 15 ft
Zone 2 = -24 psf	Basic Wind Speed = 115 mph	
Zone 3 = -27.1 psf	Exposure = B	

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

Zone 1 = 2.6 psf + 0.6(-18.5 psf) = -8.5 psf
Zone 2 = 2.6 psf + 0.6(-24 psf) = -11.8 psf
Zone 3 = 2.6 psf + 0.6(-27.1 psf) = -13.7 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 = 80" o.c. max	Zone 1 = $(80" \text{ o.c. max})^2 / 144 = 44.44 \text{ SF}$
Zone 2 = 72" o.c. max	Zone 2 = $(72" \text{ o.c. max})^2 / 144 = 36 \text{ SF}$
Zone 3 = 72" o.c. max	Zone 3 = $(72" \text{ o.c. max})^2 / 144 = 36 \text{ SF}$

Lag Screw Forces:

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

Zone 1 = 8.5 psf x 44.44 SF = 378 lb	< W', OK
Zone 2 = 11.8 psf x 36 SF = 425 lb	< W', OK
Zone 3 = 13.7 psf x 36 SF = 493 lb	< W', OK

Cd = 1.6 (Table 2.3.2, 2015 NDS)

Ct = 1 (Table 2.3.3, 2015 NDS)

W' = W x embed x Cd x Ct

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



Serial Number
28618643452

POSTAL MONEY ORDER

Term: Month Day 07 2008

U.S. Dollars and Cents

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

Pay to
CITY OF ORANGE
Address
29 N. DAY ST
ORANGE NY 07050
Dunk
23

From
Pro Custom Solar dba Momentum Solar
Address
325 High Street
Metuchen NJ 08840

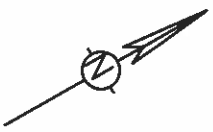
Mailbox
174 HERWOOD AVE (GENIE)
SEE REVERSE WARNING • NEGOTIABLE ONLY IN THE U.S. AND POSSESSIONS
28618643452

!@00000800 2!:



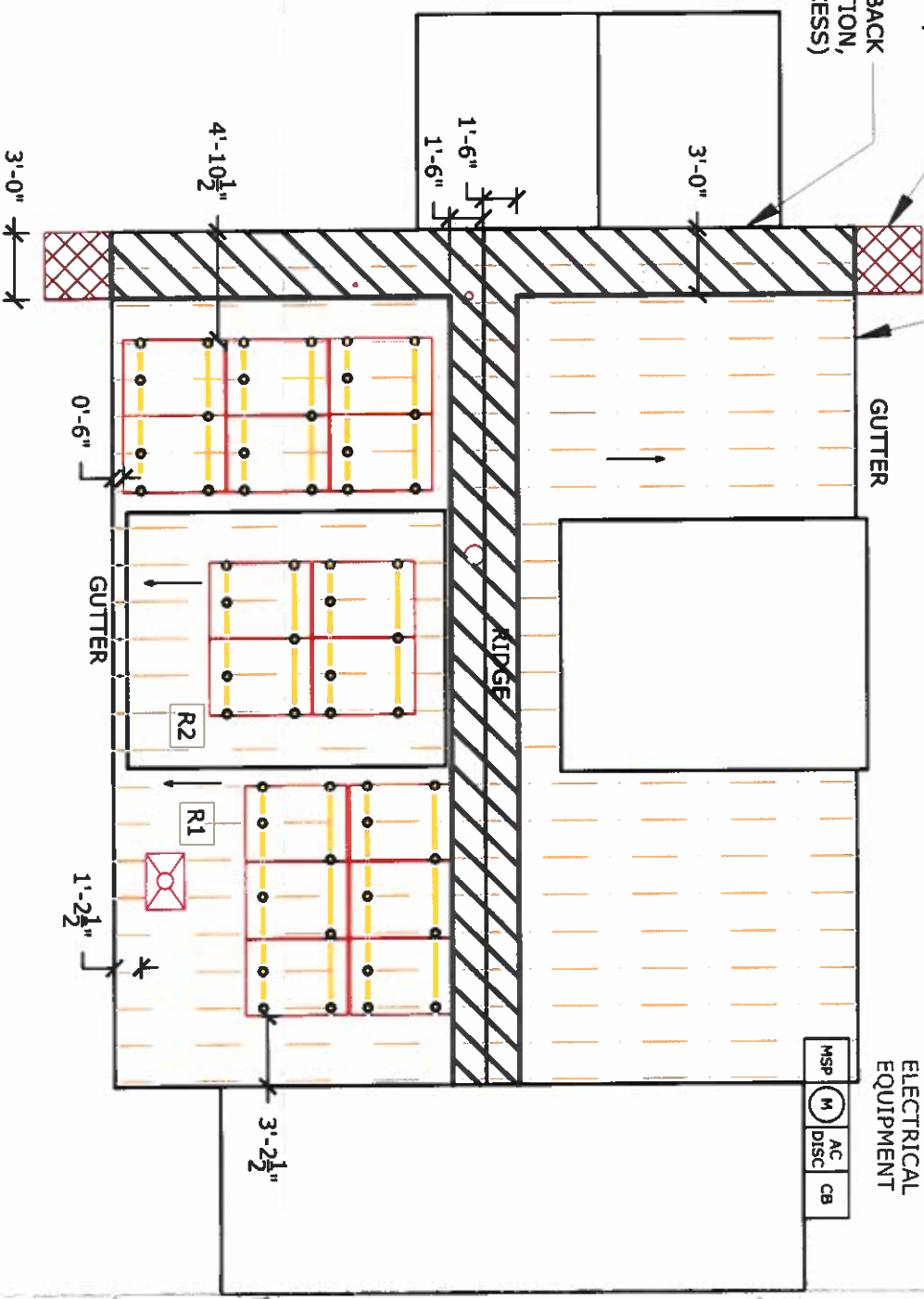






EXISTING FRAMING TYPE:
GABLE ROOF
ROOF MATERIALS: ASPHALT
SHINGLES EXISTING ROOF
STRUCTURE: 2"x6" @20"O.C.

GROUND ACCESS
(TYP)
FIRE SETBACK
(18" VENTILATION,
36" ROOF ACCESS)



ROOF	MODULE COUNT	AZIMUTH	TILT	SHADING	LANDSCAPE ATTACHMENT MAX SPAN (ROOF AREA 1/2/3)	PORTRAIT ATTACHMENT MAX SPAN (ROOF AREA 1/2/3)
R1	12	209°	36°	74%	80/72/72	80/72/72
R2	4	209°	17°	81%	80/72/72	80/72/72

HEWWOOD AVENUE
FRONT OF RESIDENCE

DRIVEWAY

TOTAL SQUARE FOOTAGE OF ROOF: 1963 SQFT
 SQUARE FOOTAGE OF SOLAR ARRAY: 308.71 SQFT
 PERCENTAGE OF SOLAR ROOF COVERAGE: 15.73%
 18" RIDGE SETBACK SHALL BE REQUIRED

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
NAR	NEMA 3R BOX W/ ENVOY-S		FIRE SETBACKS
CB	COMBINER BOX		GROUND ACCESS
PF	PERFORMANCE METER		PITCH DIRECTION
0	MODULE		

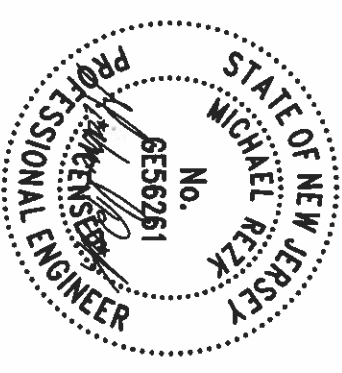


PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR
 3096 HAMILTON BLVD, SOUTH PLAINFIELD, NJ 07080
 (732) 902-6224
 MOMENTUMSOLAR.COM

**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**

BRENT ENGLE
 174 HEWWOOD AVENUE
 ORANGE, NJ 07050
 2013418187

**PV SYSTEM
INFORMATION**

SYSTEM SIZE (DC): 5.84 KW
 SYSTEM DESIGN CAPACITY (AC): 4.64 KWVA
 16 MODULES: HANWHA Q.PEAK DUO BLK-G10+ 365
 16 INVERTERS: ENPHASE IQ8PLUS-72-2-US

PROJECT INFORMATION - MS1318755

INITIAL DATE: 4/4/2023 DESIGNER: [RB]
 REV: DATE: DESIGNER:
 REV: DATE: DESIGNER:

PANEL LAYOUT

PV-2

SITE PLAN

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