Town of Long Island

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BUILDING PERMIT APPLICATION# 634

LOT# 530 **ZONE** 1R **LOT SIZE** 185,064 **STREET LOCATION** 340 Fern Ave

OWNER/APPLICANT Doug Schlichting

OWNER/APPICANT ADDRESS 340 Fern Ave

TELEPHONE HOME _____ WORK _____ CELL _____

CONTRACTOR North East Electric

ADDRESS 41 Evergreen Drive, Portland ME 04103

TELEPHONE WORK 207-797-3633 CELL 207-299-2687 JOB SITE _____

EMAIL info@Gowenpower.com, Jdesmond@Gowenpower.com

APPLICATION TYPE

_____NEW PRINCIPAL STRUCTURE _____ADDITION _____RELOCATION

_____NEW ACCESSORY STRUCTURE __X__ALTERATION _____REPLACEMENT

_____REPAIR

PROJECT DESCRIPTION (BRIEF EXPLANATION OF WORK TO BE DONE):

Solar + Battery PV System.

DIMENSIONS OF PROPOSED STRUCTURE _____

PROPOSED FOUNDATION TYPE:

_____FULL 10' _____FULL 8' _____4' FROST WALL _____PIER _____SLAB

SETBACKS OF PROPOSED STRUCTURES (MUST BE SHOWN ON "REQUIRED" SITE PLAN)

FRONT ____FT SIDES ____FT/____FT REAR ____FT

BUILDING HEIGHT
THE VERTICAL DISTANCE FROM THE AVERAGE ORIGINAL GRADE TO THE TOP OF THE HIGHEST ROOF BEAMS OF A FLAT ROOF, OR TO THE MEAN LEVEL OF THE HIGHEST GABLE OR SLOPE OF GABLE OR HIP ROOF. (MAX 35' ALLOWED)

EXISTING STRUCTURES_____FT PROPOSED STRUCTURES_____FT

FOR STRUCTURES TO BE OCCUPIED OR FOR AN INCREASE IN THE # OF BEDROOMS TO BE SERVICED BY PRIVATE SEPTIC SYSTEM:

OF EXISTING BEDROOMS_____ # OF ADDITIONAL BEDROOMS_____

CEO PERMIT CHECKLIST:
SEASONAL CONVERSION _____YES _____NO
SEPTIC REVIEW NEEDED _____YES _____NO
SEPTIC DESIGN NEEDED _____YES _____NO
EXISTING LOT COVERAGE _____ OVER ON COVERAGE _____YES _____NO

NO BUILDING HEREAFTER ERECTED SHALL BE OCCUPIED OR USED, IN WHOLE OR IN PART, UNTIL A CERTIFICATE OF OCCUPANCY SHALL HAVE BEEN ISSUED BY THE CODE ENFORCEMENT OFFICER.

MINIMUM OF THREE INSPECTION REQUIRED FOR ALL CONSTRUCTION WORK.
1. FOUNDATIONS (FOOTINGS, WALLS, DRAINAGE, WATER PLUG)
2. FRAMING (PRIOR TO COVERING STRUCTURAL MEMBERS)
3. FINAL INSPECTION BEFORE OCCUPANCY

SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING AND SHORELAND CONSTRUCTION MAY REQUIRE MAINE DEP PERMIT

THIS PERMIT APPLICATION DOES NOT PRECLUDE THE APPLICANT(S) FROM MEETING APPLICABLE STATE AND FEDERAL RULES.

THIS PERMIT WILL BE COME NULL AND VOID IF CONSTRUCTION IS NOT STARTED WITHIN SIX MONTHS OF PERMIT ISSUE DATE.

I HEREBY CERTIFY THAT I AM THE OWNER OF RECORD OF THE NAMED PROPERTY, OR THAT I HAVE BEEN AUTHORIZED BY THE OWNER TO MAKE THIS APPLICATION AS THEIR AGENT. I AGREE TO CONFORM TO ALL APPLICABLE LAWS OF THIS JURISDICTION. IN ADDITION, IF THIS PERMIT IS ISSUED, I CERTIFY THAT THE CODE OFFICIAL OR HIS REPRESENTATIVE SHALL HAVE THE AUTHORITY TO ENTER ALL AREAS COVERED BY SUCH PERMIT AT ANY REASONABLE HOUR FOR THE PURPOSES OF INSPECTING SAID WORK.

PRINTED NAME_____OWNER/AUTHORIZED AGENT

SIGNED_____**DATE**_____
OWNER / AUTHORIZED AGENT

APPROVED BY CODE ENFORCEMENT OFFICER _____**YES** _____**NO**

SIGNED_____**DATE** 4/15/22

ESTIMATED COST INCLUDING MATERIALS & LABOR $_____

PERMIT FEE: _____ **PAID: CASH**_____ **CHECK#**_____
(SEE PAGE 4 FOR PERMIT FEE SCHEDULE)

WYSSLING CONSULTING
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Alpine, UT 84004
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March 11, 2022

Current Insight
2852 W. Amini Way
South Jordan, UT 84095

Re: Engineering Services
Schlichting Residence
340 Fern Avenue, Long Island ME
8.000 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

A. *Site Assessment Information*

1. Site visit documentation identifying attic information including size and spacing of framing for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.

B. *Description of Structure:*

Roof Framing:	Prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber.
Roof Material:	Composite Asphalt Shingles
Roof Slope:	42 degrees
Attic Access:	Accessible
Foundation:	Permanent

C. *Loading Criteria Used*

- **Dead Load**
  - Existing Roofing and framing = 7 psf
  - New Solar Panels and Racking = 3 psf
  - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 50 psf
- **Wind Load** based on ASCE 7-10
  - Ultimate Wind Speed = 120 mph (based on Risk Category II)
  - Exposure Category C

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the 2015 IRC, including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.

D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent Ironridge installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a $^{5}/_{16}$" lag screw is 235 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum **penetration depth of 2½"**, the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using one $^{5}/_{16}$" **diameter lag screw with a minimum of 2½" embedment** will be adequate and will include a sufficient factor of safety.
3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 48" on centers.
4. Panel supports connections shall be staggered to distribute load to adjacent framing members.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the 2015 IRC, current industry standards, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

Very truly yours,

Scott E. Wyssling, PE
Maine License No. 10467