

January 13, 2023

Lumio Solar  
12600 Challenger Parkway, Suite 200  
Orlando, FL 32826

Scott  
Wyssling, PE

Digitally signed by Scott Wyssling, PE  
DN: C=US, S=Utah, L=Alpine, O=Wyssling  
Consulting, OU=Engineering, CN="Scott Wyssling,  
PE", E=swyssling@wysslingconsulting.com  
Reason: I am the author of this document  
Location: your signing location here  
Date: 2023.01.13 14:46:48-07'00'  
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services  
Waite Residence  
175 Northeast Fronie Street, Lake City FL  
5.200 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 2 x 4 dimensional lumber.

**Roof Material:** Metal Roofing

**Roof Slopes:** 27 +/- 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** = 0 psf
- **Wind Load** based on ASCE 7-16
  - Ultimate Wind Speed = 120 mph (based on Risk Category II)
  - Exposure Category B

*Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the FBC 2020 7<sup>th</sup> Edition, 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.*

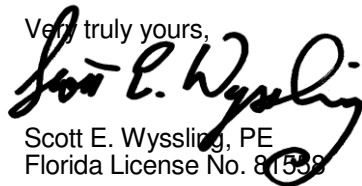
**D. Solar Panel Anchorage**

1. The solar panels shall be mounted in accordance with the most recent S-5! 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. System will be attached to the metal roofing material utilizing the patented S-5! Connection. Installation of the connections shall be in accordance with the manufacturer's recommendations..
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 center.
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 *FBC 2020 7<sup>th</sup> Edition*, current industry standards and practice, 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  
Florida License No. 81558

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



Wyssling Consulting, PLLC  
76 N Meadowbrook Drive Alpine UT 84004  
Florida License # RY34912

Date Signed 1/13/2023

ARRAY DESCRIPTION					
ROOF	# OF MODULES	AZIMUTH	TRUSS SIZE	TRUSS SPACING	ROOF MATERIAL
#1	13	179	2X4	24"O.C.	METAL

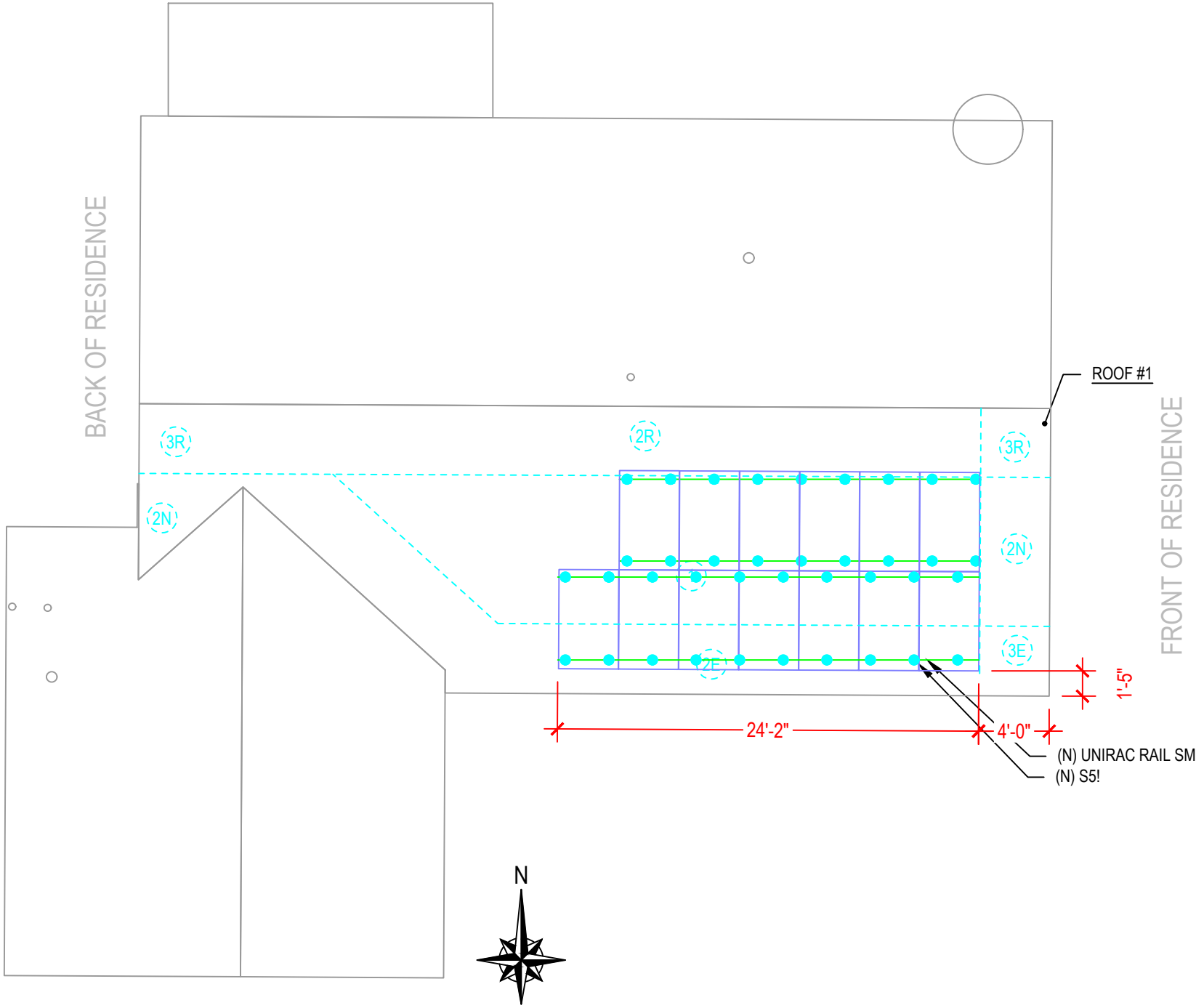
DESIGN SPECIFICATION	
RISK CATEGORY	II
CONSTRUCTION	SFD
ZONING	RESIDENTIAL
SNOW LOAD (ASCE 7-16)	0 PSF
EXPOSURE CATEGORY	B
WIND SPEED (ASCE 7-16)	120 MPH

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LEGEND	
(E)	- EXISTING
(N)	- NEW

1	ROOF PLAN AND MODULES
S-0	SCALE: NTS



**ATLANTIC KEY ENERGY LLC**  
12600 CHALLENGER PARKWAY  
SUITE 200  
ORLANDO, FL 32826  
1 (407) 988-0273

**Lumio**<sup>ix</sup>

PROJECT NAME & ADDRESS

GARY WAITE  
RESIDENCE  
PROJECT # P-0065497  
175 NORTHEAST FRONIE STREET  
LAKE CITY, FL 32055

SIGNATURE WITH SEAL

REVISIONS		
DESCRIPTION	DATE	REV

Drawn by: CM

Date: 01/12/2023

SHEET NAME	
ROOF PLAN AND MODULES	
SHEET NUMBER	
S-0	



# S-5!®

## The Right Way!™

NEW

NOW AVAILABLE  
IN ALUMINUM

ProteaBracket™

### ProteaBracket™

A versatile bracket for mounting solar PV to trapezoidal roof profiles

ProteaBracket™ is now made in aluminum. Still the most versatile trapezoidal metal roof attachment solution on the market, the S-5! ProteaBracket just got better!

The bracket features an adjustable attachment base and module attachment options to accommodate different roof profile dimensions and mounting options.

Our pre-applied EPDM gasket with peel and stick adhesive makes installation a snap, ensuring accurate and secure placement the first time.

With no messy sealants, faster installation, and a weather-proof fit, ProteaBracket offers you the most versatile solar attachment solution available.

ProteaBracket\* can be used for rail mounting or "direct-attach" with S-5! PVKIT™

### Features and Benefits

- 34% lighter - saves on shipping
- Stronger L-Foot™
- Load-tested for engineered application
- Corrosion-resistant materials
- Adjustable - Fits rib profiles up to 3"
- Peel-and-Stick prevents accidental shifting during installation
- Fully pre-assembled
- 25-year warranty\*

\*When ProteaBracket is used in conjunction with the S-5! PVKIT, an additional nut is required during installation.

\*See [www.S-5.com](http://www.S-5.com) for details.



888-825-3432 | [www.S-5.com](http://www.S-5.com)

# S-5!®

The Right Way!™

ProteaBracket™ is the perfect solar attachment solution for most trapezoidal rib, exposed-fastened metal roof profiles!

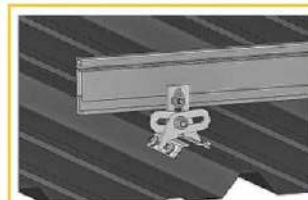
ProteaBracket™ is compatible with common metal roofing materials and comes with a pre-applied EPDM gasket on the base.

**Note:** All four pre-punched holes must be used to achieve tested strength. Fasteners are provided.

For design assistance, ask your distributor, or visit [www.S-5.com](http://www.S-5.com) for the independent lab test data that can be used for load-critical designs and applications. Also, please visit our website for more information including metallurgical compatibilities and specifications.

S-5!® holding strength is unmatched in the industry.

### Multiple Attachment Options:



Side  
Mount Rail



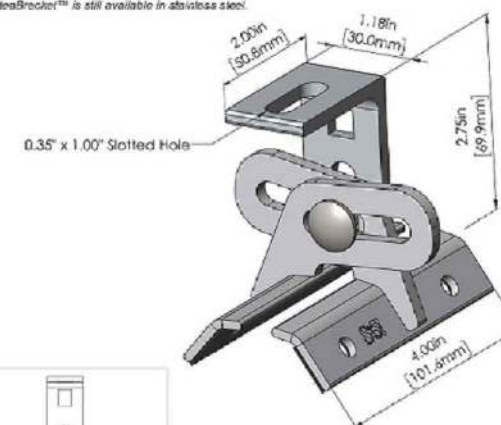
Bottom  
Mount Rail



w/ S-5!  
PVKIT™  
(rail-less)

### ProteaBracket™

ProteaBracket™ is still available in stainless steel.



ProteaBracket fits profiles  
up to 3 inches

INSTALLATION:

No surface preparation needed. (1) Wipe away excess oil and debris. (2) Peel off adhesive release paper. (3) Align and mount bracket directly onto crown of panel. (4) Secure ProteaBracket through pre-punched holes, using piercing-point S-5! screws.



ProteaBracket™ and the S-5! PVKIT™ 2.0 mounted on a trapezoidal roof profile

S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, bolt torque, patents, and trademarks, visit the S-5! website at [www.S-5.com](http://www.S-5.com).

Copyright 2019, Metal Roof Innovations, Ltd. S-5! products are patent protected. S-5! aggressively protects its patents, trademarks, and copyrights. Version 07080.

Distributed by



ATLANTIC KEY ENERGY LLC  
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EQUIPMENT  
SPECIFICATIONS

SHEET NUMBER

S-1



# SOLARMOUNT



**SOLARMOUNT** defined the standard in solar racking. Features are designed to get installers off the roof faster. Our grounding & bonding process eliminates copper wire and grounding straps to reduce costs. Systems can be configured with standard or light rail to meet your design requirements at the lowest cost possible. The superior aesthetics package provides a streamlined clean edge for enhanced curb appeal, with no special brackets required for installation.



Now Featuring:  
**THE NEW FACE OF SOLAR RACKING**  
Superior Aesthetics Package



**LOSE ALL OF THE COPPER & LUGS**  
System grounding through Enphase microinverters and trunk cables



**SMALL IS THE NEXT NEW BIG THING**  
Light Rail is Fully Compatible with all SM Components



**ENHANCED DESIGN & LAYOUT TOOLS**  
Featuring Google Map Capabilities within U-Builder

## FAST INSTALLATION. SUPERIOR AESTHETICS

OPTIMIZED COMPONENTS • VERSATILITY • DESIGN TOOLS • QUALITY PROVIDER

# SOLARMOUNT



## OPTIMIZED COMPONENTS

### INTEGRATED BONDING & PRE-ASSEMBLED PARTS

Components are pre-assembled and optimized to reduce installation steps and save labor time. Our new grounding & bonding process eliminates copper wire and grounding straps or bonding jumpers to reduce costs. Utilize the microinverter mount with a wire management clip for an easier installation.

## VERSATILITY

### ONE PRODUCT - MANY APPLICATIONS

Quickly set modules flush to the roof or at a desired tilt angle. Change module orientation to portrait or landscape while securing a large variety of framed modules on flat, low slope or steep pitched roofs. Available in mill, clear and dark anodized finishes to outperform your projects financial and aesthetic aspirations.

## AUTOMATED DESIGN TOOL

### DESIGN PLATFORM AT YOUR SERVICE

Creating a bill of materials is just a few clicks away with U-Builder, a powerful online tool that streamlines the process of designing a code compliant solar mounting system. Save time by creating a user profile, and recall preferences and projects automatically when you login. You will enjoy the ability to share projects with customers; there's no need to print results and send to a distributor, just click and share.



## UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT



### TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

### CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

### BANKABLE WARRANTY

Don't leave your project to chance. Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. SOLARMOUNT is covered by a twenty five (25) year limited product warranty and a five (5) year limited finish warranty.

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

FILED 09/22/2015



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