

February 8, 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: 2023.02.08 15:34:11-07'00'
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services
Thompson Residence
243 Southwest Fantasy Glen, Lake City FL
10.000 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 2 x 4 dimensional lumber.
Roof Material: Composite Asphalt Shingles
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 7th 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.

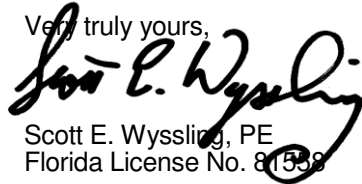
D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent Unirac 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 #12 lag screw is 226 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on two screws with a minimum penetration depth of 1¼", 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 two #12 lag screws with a minimum of 1¼" 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 center.

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 7th 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 2/8/2023

ARRAY DESCRIPTION					
ROOF	# OF MODULES	AZIMUTH	TRUSS SIZE	TRUSS SPACING	ROOF MATERIAL
#1	6	93	2X4	24"O.C.	COMP SHINGLE
#2	2	183	2X4	24"O.C.	COMP SHINGLE
#3	9	183	2X4	24"O.C.	COMP SHINGLE
#4	8	273	2X4	24"O.C.	COMP SHINGLE

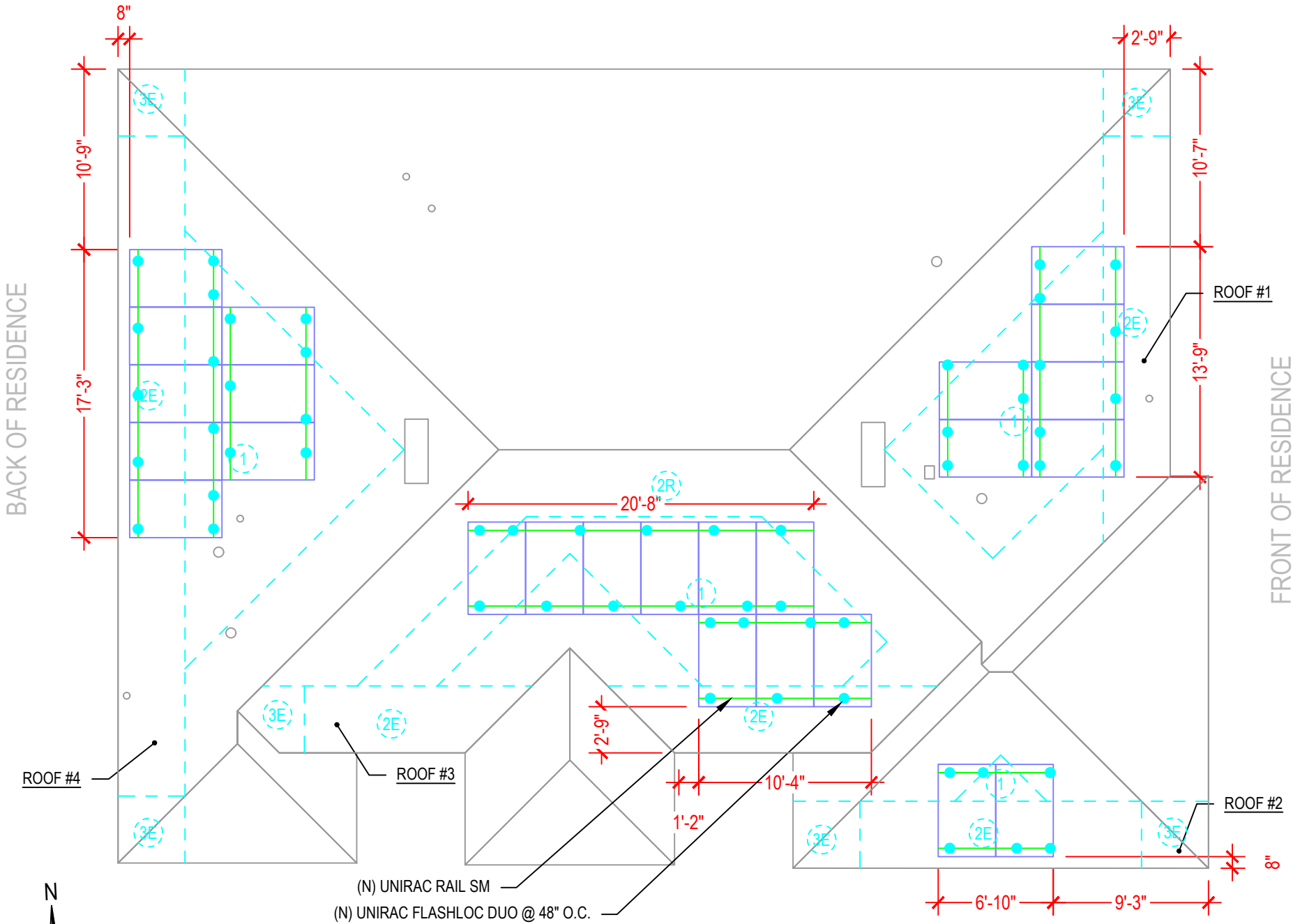
DESIGN SPECIFICATION	
RISK CATEGORY	II
CONSTRUCTION	SFD
ZONING	RESIDENTIAL
SNOW LOAD (ASCE 7-16)	0 PSF
EXPOSURE CATEGORY	B
WIND SPEED (ASCE 7-16)	120 MPH

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(N) UNIRAC RAIL SM
(N) UNIRAC FLASHLOC DUO @ 48" O.C.

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



PROJECT NAME & ADDRESS

LUKE THOMPSON
RESIDENCE
PROJECT # P-0066029
243 SOUTHWEST FANTASY GLEN
LAKE CITY, FL 32024

SIGNATURE WITH SEAL

REVISIONS

DESCRIPTION	DATE	REV

Drawn by: A.A.

Date: 02/07/2023

SHEET NAME

ROOF PLAN AND
MODULES

SHEET NUMBER

S-0

FLASHLOC™ DUO

THE MOST VERSATILE DIRECT TO DECK ATTACHMENT



FLASHLOC™ DUO is the most versatile direct to deck and rafter attachment for composition shingle and rolled comp roofs. The all-in-one mount installs fast — no kneeling on hot roofs to install flashing, no prying or cutting shingles, no pulling nails. Simply drive the required number of screws to secure the mount and inject sealant into the base. FLASHLOC's patented TRIPLE SEAL technology preserves the roof and protects the penetration with a permanent pressure seal. Kitted with two rafter screws, sealant and hardware for maximum convenience (deck screws sold separately). Don't just divert water, **LOC it out!**



PROTECT THE ROOF

Install a high-strength waterproof attachment without lifting, prying or damaging shingles.



LOC OUT WATER

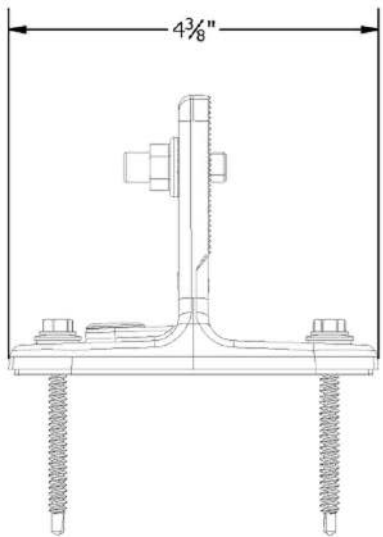
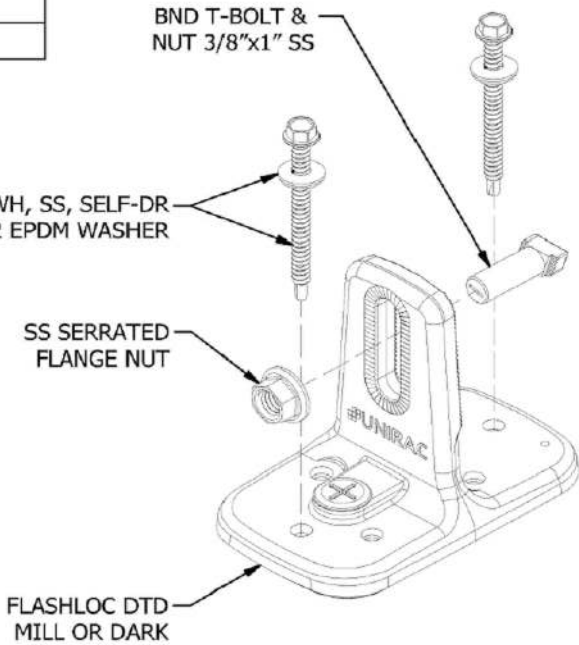
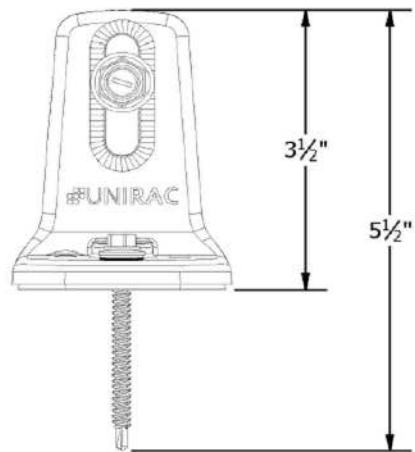
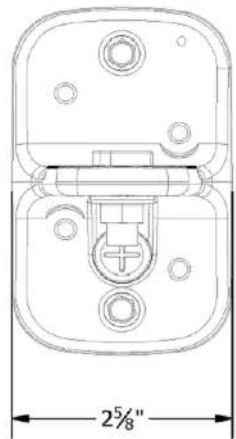
With an outer shield **1** contour-conforming gasket **2** and pressurized sealant chamber **3** the Triple Seal technology delivers a 100% waterproof connection.



HIGH-SPEED INSTALL

Simply drive the required number of screws and inject sealant into the port **4** to create a permanent pressure seal.

PART TABLE	
P/N	DESCRIPTION
004275M	FLASHLOC DUO MILL, 20 PACK
004275D	FLASHLOC DUO DARK, 20 PACK



UNIRAC
1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM

PRODUCT LINE:	SOLARMOUNT
DRAWING TYPE:	ASSEMBLY DETAIL
DESCRIPTION:	FLASHLOC DUO KIT
REVISION DATE:	4/29/2021

DRAWING NOT TO SCALE ALL DIMENSIONS ARE NOMINAL
PRODUCT PROTECTED BY ONE OR MORE US PATENTS
LEGAL NOTICE

FL-A04
SHEET

FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

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

Lumio
PROJECT NAME & ADDRESS

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RESIDENCE
PROJECT # P-0066029
243 SOUTHWEST FANTASY GLEN
LAKE CITY, FL 32024

SIGNATURE WITH SEAL

REVISIONS

DESCRIPTION	DATE	REV

Drawn by: A.A.
Date: 02/07/2023

SHEET NAME
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 09/22/2023 - PP/INTD



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



PROJECT NAME & ADDRESS

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LAKE CITY, FL 32024

SIGNATURE WITH SEAL

REVISIONS

DESCRIPTION	DATE	REV

Drawn by: A.A.

Date: 02/07/2023

SHEET NAME

EQUIPMENT
SPECIFICATIONS

SHEET NUMBER

THIS INSTRUMENT PREPARED BY: Frank Grezaffi
Name: Lumio Hx
Address: 12600 Challenger Pkwy Orlando, FL 32826

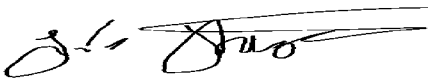
NOTICE OF COMMENCEMENT

Permit Number: _____
Parcel ID Number: 16-4S-16-03025-106

The undersigned hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. **DESCRIPTION OF PROPERTY:** (Legal description of the property and street address if available)
LOT 6 MEADOW VISTA S/D. ORB 803-1448.973-387.WD 1051-1229. QC 1076-1897.1898. WD 1272-1699. SWD 1285-2397
243 SW FANTASY GLEN LAKE CITY, FL 32024
2. **GENERAL DESCRIPTION OF IMPROVEMENT:**
PV Solar Panels Installation
3. **OWNER INFORMATION OR LESSEE INFORMATION IF THE LESSEE CONTRACTED FOR THE IMPROVEMENT:**
Name and address: THOMPSON LUKE T & THOMPSON MARY J 243 SW FANTASY GLEN LAKE CITY, FL 32024
Interest in property: Owner
Fee Simple Title Holder (if other than owner listed above) Name: _____
Address: _____
4. **CONTRACTOR:** Name: Lumio Hx Phone Number: 407-988-0273
Address: 12600 Challenger Pkwy Orlando, FL 32826
5. **SURETY (If applicable, a copy of the payment bond is attached):** Name: _____
Address: _____ Amount of Bond: _____
6. **LENDER:** Name: _____ Phone Number: _____
Address: _____
7. **Persons within the State of Florida Designated by Owner upon whom notice or other documents may be served as provided by Section 713.13(1)(a)7., Florida Statutes.**
Name: _____ Phone Number: _____
Address: _____
8. In addition, Owner designates _____ of _____
to receive a copy of the Lienor's Notice as provided in Section 713.13(1)(b), Florida Statutes. Phone number: +13865900328
9. Expiration Date of Notice of Commencement (The expiration is 1 year from date of recording unless a different date is specified) _____

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.



(Signature of Owner or Lessee, or Owner's or Lessee's
Authorized Officer/Director/Partner/Manager)

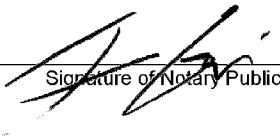
LUKE
THOMPSON

(Print Name and Provide Signatory's Title/Office)

State of Florida County of Orange

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 03 day of 02, 2023, by Luke Thompson (name of person acknowledging), who is ☒ personally known to me; or ☐ has produced _____ as identification.




Signature of Notary Public