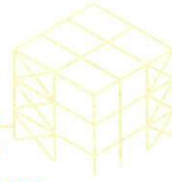


# Structural Capacity, PC

STRUCTURAL CONSULTING GROUP

North Carolina Firm License Number – C3406



October 28, 2020

Mr. Dustin Smith  
Titan Solar Power NC, Inc.  
525 W. Baseline Road  
Mesa, AZ 85210

Re: Michele, Florence – TSP49041 (SCPC Project No. – 2020.26.1270)  
50 Atkins Place  
Fuquay-Varina, NC 27526

Dear Mr. Smith:

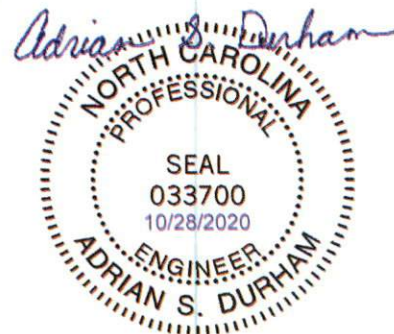
At the request of Titan Solar Power NC, an agent of Structural Capacity, PC (SCPC) made a site visit to observe solar panel installation on October 01, 2020 at the above noted site. SCPC provided a structural letter, dated August 21, 2020, "SCPC Letter" detailing installation requirements to meet loading requirements in accordance to the 2018 North Carolina Residential Code.

The PV equipment structural installation has been designed and inspected. In accordance to the engineered drawings, the equipment installation will not create a negative impact on the building's structural design, including any additional load imposed (dead, snow, wind) and the installation is in compliance with the 2018 North Carolina Residential Code.

If there are any questions, feel free to contact me directly.

Structural Capacity, PC

Adrian S. Durham, PE, SE, LEED AP



Adrian  
Durham

Digitally signed by  
Adrian Durham  
Date: 2020.10.28  
16:28:29 -04'00'



# ACCELERATE SOLAR

10345 Nations Ford Rd Charlotte, NC 28273

Array@accelerate-solar.com

(877) 997-7652

Customer Name	Address	Date	Phone
Michele Florence	50 Atkins Pl Cir, Fuquay-Varina, NC 27526	8/18/2020	(757) 206-4804

Component	Name	Size
Modules	(22) Silfab SIL330BL (2020)	7.3 kW-DC
Inverter(s)	(1) SolarEdge SE6000H-US	6 kW-AC
Optimizers	(22) SolarEdge Optimizers	

## GENERAL NOTES

1	Inverter and AC disconnect shall be installed in locations that satisfy minimum working clearances per NEC section 110.26.
2	Contractor shall use only components listed by a nationally recognized testing laboratory for the intended use.
3	Contractor is responsible for furnishing all related equipment, cables, additional conduits, boxes, raceways, and other accessories necessary for a complete and operational PV system.
4	The system shall comply with all manufacturers listing and installation instructions, as well as all relevant sections of the 2017 NEC (NFPA 70) and all other codes specified by the authority having jurisdictions (AHJ).
5	Where DC PV source or DC PV output circuits are run inside the building, they shall be contained in metal raceways, type MC metal-clad cable, or metal enclosures from the point of penetration into the building to the first readily accessible disconnecting means, per NEC section 690.31(G).



SITE PLAN (Aerial View)

THIS DOCUMENT HAS BEEN CREATED FOR THE PURPOSE OF DESCRIBING THE DESIGN OF A PROPOSED PHOTOVOLTAIC POWER SYSTEM WITH ENOUGH DETAIL TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE DOCUMENT SHOULD NOT BE RELIED UPON AS A SUBSTITUTE FOR FOLLOWING MANUFACTURER INSTALLATION MANUALS. INSTALLER SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER INSTALLATION MANUALS. NOTHING IN THIS DOCUMENT SHOULD BE INTERPRETED IN A WAY THAT OVERRIDES THE INSTRUCTIONS IN MANUFACTURER INSTALLATION MANUALS.

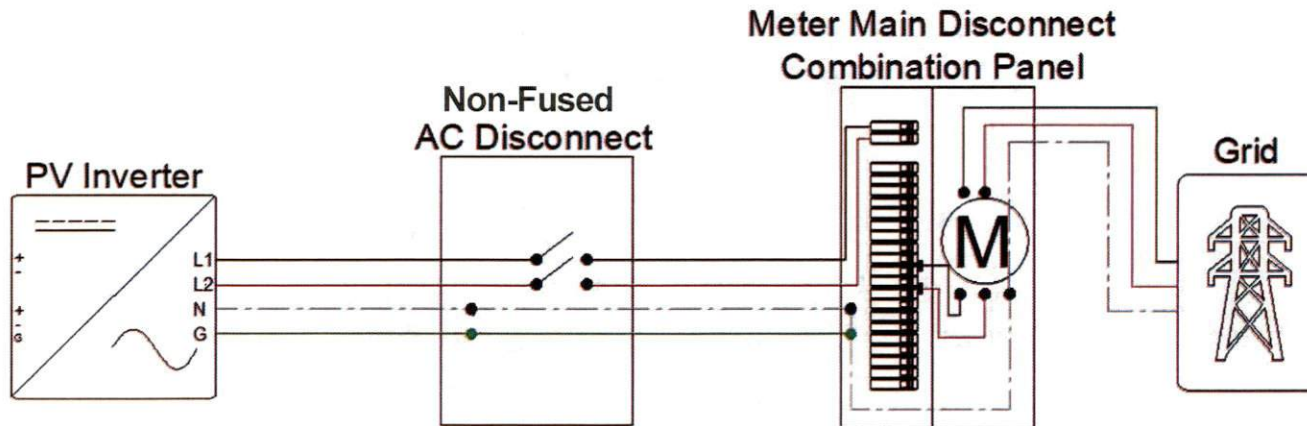


# ACCELERATE SOLAR

10345 Nations Ford Rd Charlotte, NC 28273  
Array@accelerate-solar.com  
(877) 997-7652

Customer Name	Address	Date	Phone
Michele Florence	50 Atkins Pl Cir, Fuquay-Varina, NC 27526	8/18/2020	(757) 206-4804

Component	Name	Size
Modules	(22) Silfab SIL330BL (2020)	7.3 kW-DC
Inverter(s)	(1) SolarEdge SE6000H-US	6 kW-AC
Optimizers	(22) SolarEdge Optimizers	



THIS DOCUMENT HAS BEEN CREATED FOR THE PURPOSE OF DESCRIBING THE DESIGN OF A PROPOSED PHOTOVOLTAIC POWER SYSTEM WITH ENOUGH DETAIL TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE DOCUMENT SHOULD NOT BE RELIED UPON AS A SUBSTITUTE FOR FOLLOWING MANUFACTURER INSTALLATION MANUALS. INSTALLER SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER INSTALLATION MANUALS. NOTHING IN THIS DOCUMENT SHOULD BE INTERPRETED IN A WAY THAT OVERRIDES THE INSTRUCTIONS IN MANUFACTURER INSTALLATION MANUALS.



# ACCELERATE SOLAR

10345 Nations Ford Rd Charlotte, NC 28273  
 Array@accelerate-solar.com  
 (877) 997-7652

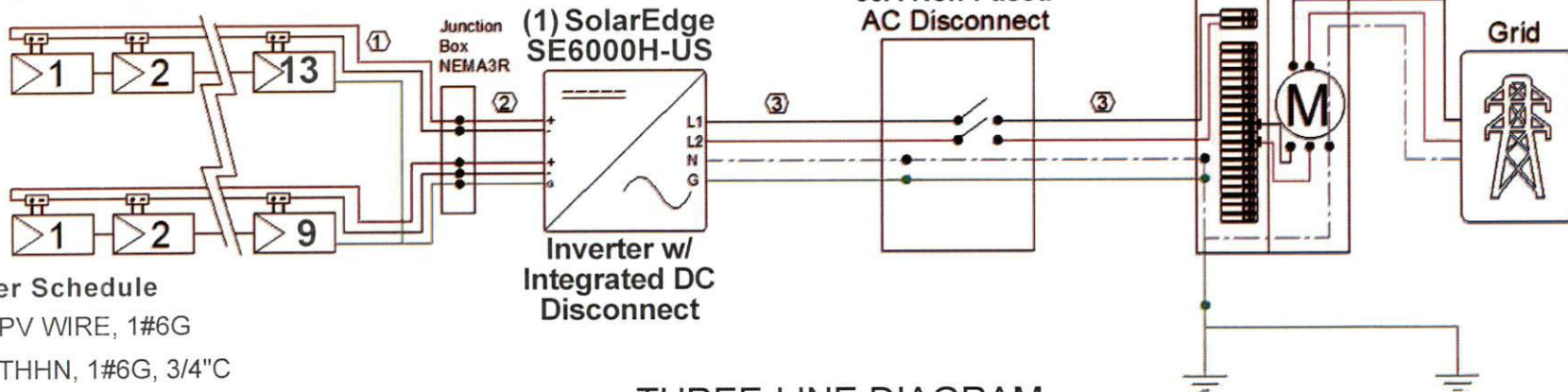
Customer Name	Address	Date	Phone
Michele Florence	50 Atkins Pl Cir, Fuquay-Varina, NC 27526	8/18/2020	(757) 206-4804

SOLAR PV OVERVIEW	
PV Array:	7.3 kW-DC
Inverter(s):	6 kW-AC - 25 A
AC Utility:	240 VAC - 60 Hz

MODULE SPECIFICATIONS	
Panels	(22) Silfab SIL330BL (2020)
STC Rating	325 W
Vmp	33 V
Imp	9 A
Voc	40 V
Isc	10 A

INVERTER SPECIFICATIONS	
Inverter(s)	(1) SolarEdge SE6000H-US
Max AC Power	6 kW-AC
Max Input Voltage	480 V
Min AC Power	0 W
Min Input Voltage	340 V

(22) Silfab SIL330BL (2020)  
 (22) SolarEdge P340 Optimizers



### Feeder Schedule

- 1 2#10 PV WIRE, 1#6G
- 2 2#10 THHN, 1#6G, 3/4"C
- 3 3#6 THHN, 1#6G, 3/4"C

## THREE-LINE DIAGRAM

### GROUNDING NOTES

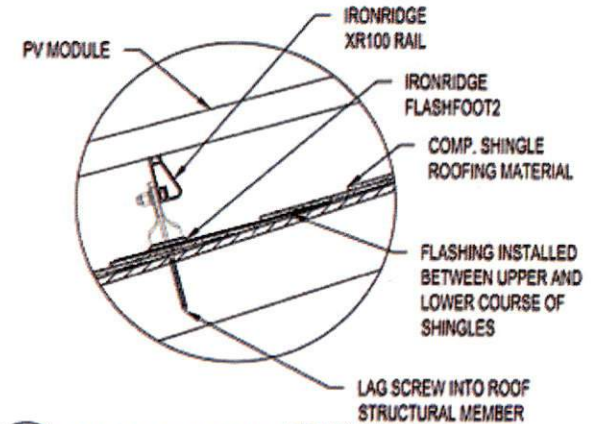
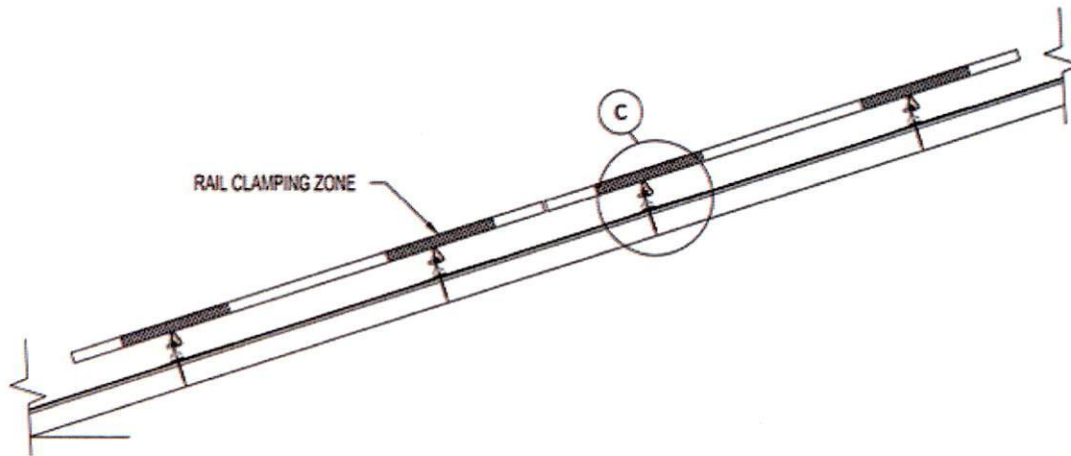
1	ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690
2	PV MODULES SHALL BE GROUNDED TO MOUNTING RAILS USING MODULE LUGS OR RACKING INTEGRATED GROUNDED CLAMPS AS ALLOWED BY LOCAL JURISDICTION. ALL OTHER EXPOSED METAL PARTS SHALL BE GROUNDED USING UL-LISTED LAY-IN LUGS
3	GROUNDED SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE
4	IF THE EXISTING MAIN SERVICE PANEL DOES NOT HAVE A VERIFIABLE GROUNDED ELECTRODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDED ELECTRODE
5	AC SYSTEM GROUNDED ELECTRODE CONDUCTOR (GEC) SHALL BE A MINIMUM SIZE #8 AWG WHEN INSULATED, #6 AWG IF BARE WIRE
6	EQUIPMENT GROUNDED CONDUCTORS SHALL BE SIZED ACCORDING TO NEC ARTICLE 690.45, AND BE A MINIMUM OF #10 AWG WHEN NOT EXPOSED TO DAMAGE, AND #6 AWG SHALL BE USED WHEN EXPOSED TO DAMAGE
7	GROUNDED AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLOR CODED GREEN, OR MARKED GREEN IF #4 AWG OR LARGER



# ACCELERATE SOLAR

10345 Nations Ford Rd Charlotte, NC 28273  
 Array@accelerate-solar.com  
 (877) 997-7652

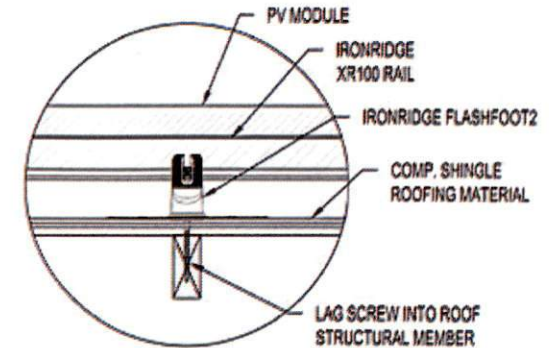
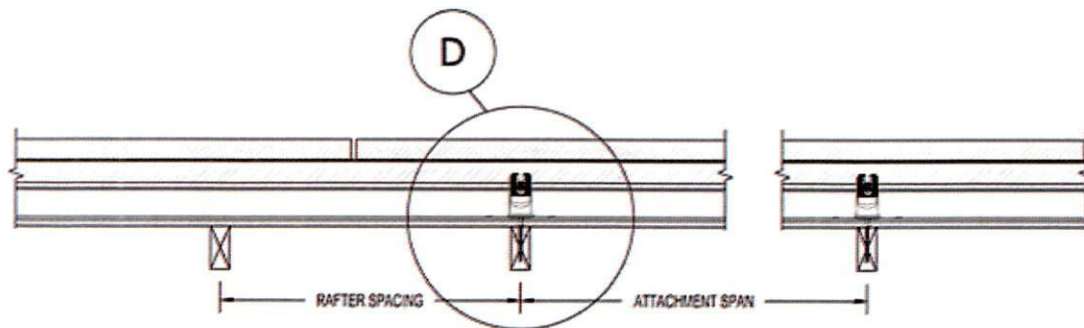
Customer Name	Address	Date	Phone
Michele Florence	50 Atkins Pl Cir, Fuquay-Varina, NC 27526	8/18/2020	(757) 206-4804



**C ATTACHMENT DETAIL (TRANSVERSE VIEW)**  
 PV-6 SCALE: NTS

MOUNTING NOTES	
1	FLASHING SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS' PRINTED INSTRUCTIONS.
2	IF THERE IS ANY CONFLICT BETWEEN WHAT IS DEPICTED HERE AND INSTRUCTIONS PROVIDED BY THE MANUFACTURER, MANUFACTURERS' INSTRUCTIONS SHALL SUPERCEDE.

**A RACKING ELEVATION (TRANSVERSE VIEW)**  
 PV-6 SCALE: NTS



**D ATTACHMENT DETAIL (LONGITUDINAL VIEW)**  
 PV-6 SCALE: SCALE

**B RACKING ELEVATION (LONGITUDINAL VIEW)**  
 PV-6 SCALE: NTS



# ACCELERATE SOLAR

10345 Nations Ford Rd Charlotte, NC 28273

Array@accelerate-solar.com

(877) 997-7652

Customer Name	Address	Date	Phone
Michele Florence	50 Atkins Pl Cir, Fuquay-Varina, NC 27526	8/18/2020	(757) 206-4804

## ! WARNING

ELECTRICAL SHOCK HAZARD

1

WARNING: PHOTOVOLTAIC POWER SOURCE

2

PHOTOVOLTAIC SYSTEM EQUIPPED WITH  
RAPID SHUTDOWN.

3

! WARNING - DUAL POWER SOURCE  
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

4

PHOTOVOLTAIC  
DC DISCONNECT

5

PHOTOVOLTAIC AC DISCONNECT  
MAX AC OPERATING CURRENT: \_\_\_A  
NOM OPERATING AC VOLTAGE: \_\_\_V

6

! CAUTION  
PHOTOVOLTAIC SYSTEM IS BACKFED

7



### DC RACEWAYS

2

### MAIN SERVICE PANEL

4, 7

### INVERTER w/ DC DISCONNECT

1, 3, 5

### AC COMBINER PANEL

1, 4

### AC DISCONNECT

1, 4, 6

### UTILITY METER

4

### LABELING NOTES

1	ALL PLAQUES AND SIGNAGE REQUIRED BY 2014 NEC AND 2015 IFC WILL BE INSTALLED AS REQUIRED.
2	LABELS, WARNING(S) AND MARKING SHALL COMPLY WITH ANSI Z35.4, WHICH REQUIRES THAT DANGER, WARNING, AND CAUTION SIGNS USED THE STANDARD HEADER COLORS, HEADER TEXT, AND SAFETY ALERT SYMBOL ON EACH LABEL. THE ANSI STANDARD REQUIRES A HEADING THAT IS AT LEAST 50% TALLER THAN THE BODY TEXT, IN ACCORDANCE WITH NEC SECTION 110.21(B).
3	A PERMANENT PLAQUE OR DIRECTORY SHALL BE INSTALLED PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF NOT IN THE SAME LOCATION IN COMPLIANCE NEC SECTION 690.56(B).
4	WHERE THE INVERTERS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY SHALL BE INSTALLED AT EACH DC PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS, AT EACH AC IS CONNECTING MEANS, AND AT THE MAIN SERVICE DISCONNECTING MEANS SHOWING THE LOCATION OF ALL AC AND DC PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IN THE BUILDING, IN ACCORDANCE WITH NEC SECTION 690.4(H).
5	LABEL(S) WITH MARKING "WARNING: PHOTOVOLTAIC POWER SOURCE" SHALL BE LOCATED AT EVERY 10 FEET OF EACH DC RACEWAY AND WITHIN ONE FOOT OF EVERY TURN OR BEND AND WITHIN ONE FOOT ABOVE AND BELOW ALL PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS AND BARRIERS. THE LABEL SHALL HAVE 3/8" TALL LETTERS AND BE REFLECTIVE WITH WHITE TEXT ON A RED BACKGROUND.



# BC Series SIL-330 BL



## 126 Cell Monocrystalline PV Module

### INDUSTRY LEADING WARRANTY

All our products include an industry leading 25-year product workmanship and 30-year performance warranty.

### MAXIMUM ENERGY OUTPUT

Silfab BC Series utilizes next generation Back Contact technology to reduce production/manufacturing steps and improve quality while maximizing power. Ideal for residential and commercial projects where maximum power density is preferred.

### NORTH AMERICAN QUALITY

Silfab is the leading automated solar module manufacturer in North America. Utilizing premium quality materials and strict quality control management to deliver the highest efficiency, premium quality PV modules 100% made in North America.



CHUBB<sup>®</sup>

\* Chubb provides error and omission insurance to Silfab Solar Inc.

### PROVIDES MAXIMUM EFFICIENCY

126 high-efficiency half-cut cells combined with a black conductive back-sheet resulting in a maximum power rating of 330Wp.

### 35+ YEARS OF SOLAR INNOVATION

Leveraging over 35+ years of worldwide experience in the solar industry, Silfab is dedicated to superior manufacturing processes and innovations such as Bifacial and Back Contact technologies to ensure our partners have the latest in solar innovation.

### BAA / ARRA COMPLIANT

Silfab panels are designed and manufactured to meet Buy American Act Compliance. The US State Department, US Military and FAA have all utilized Silfab panels in their solar installations.

### LIGHT AND DURABLE

Engineered to accommodate low load bearing structures up to 5400Pa. The light-weight frame is exclusively designed for wide-ranging racking compatibility and durability.

### QUALITY MATTERS

Total automation ensures strict quality controls during the entire manufacturing process at our ISO certified facilities.

### DOMESTIC PRODUCTION

Silfab Solar manufactures PV modules in two automated locations within North America. Our 500+ North American team is ready to help our partners win the hearts and minds of customers, providing customer service and product delivery that is direct, efficient and local.

### SUPERIOR POWER

Super power achieved through relocation of tabbing ribbon to reduce shading on module front service and circuit resistance.

### AESTHETICALLY PLEASING

Sleek aesthetics from black cells to black back-sheet without tabbing or bus-bar ribbons, ideal for residential applications.

### STABLE PERFORMANCE

Enhanced life-time performance through reduced thermal stresses and increased current flow paths.

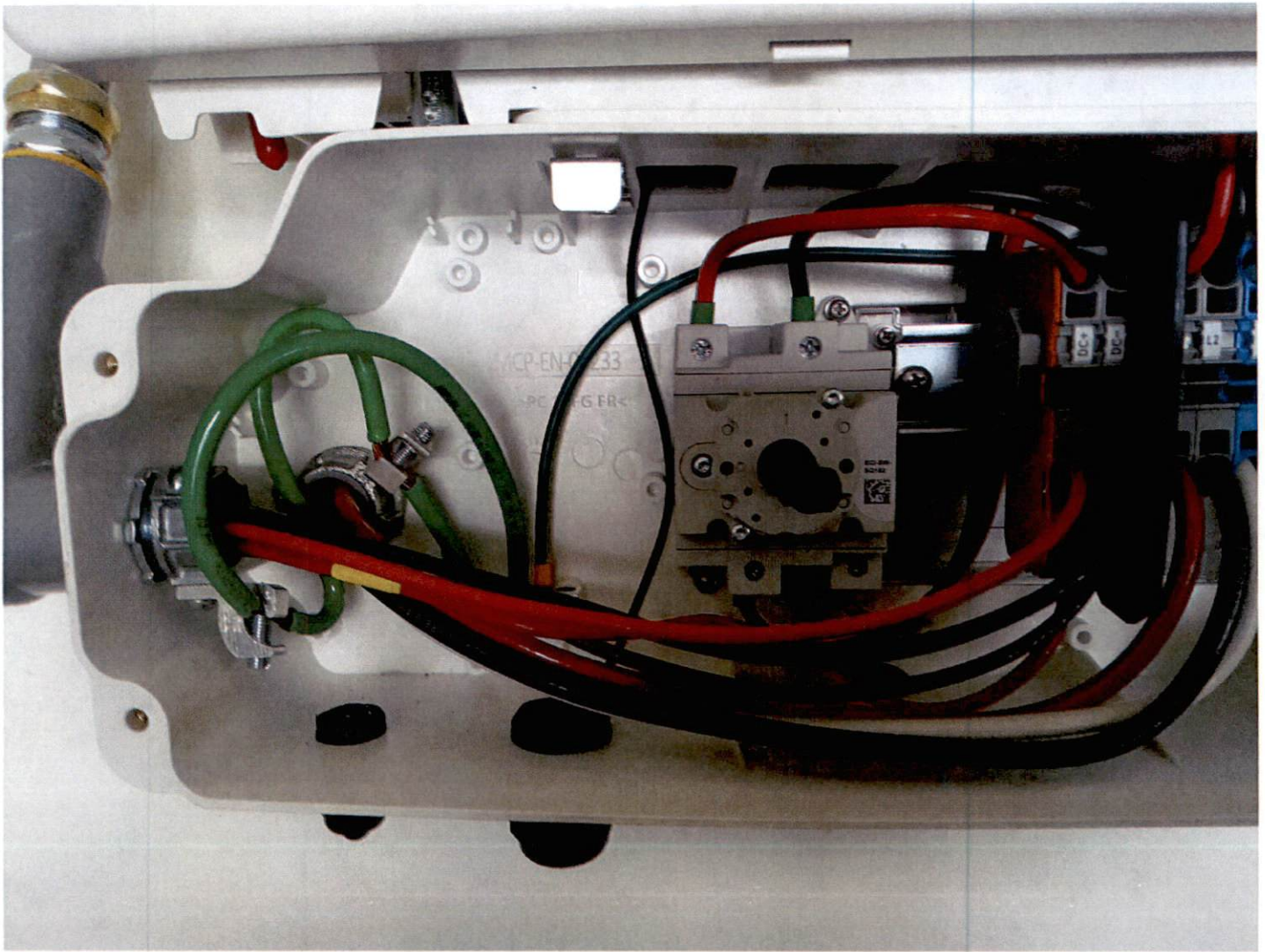
### PID RESISTANT

PID Resistant due to advanced cell technology and material selection. In accordance to IEC 62804-1.

### File Viewer

Prev

Next

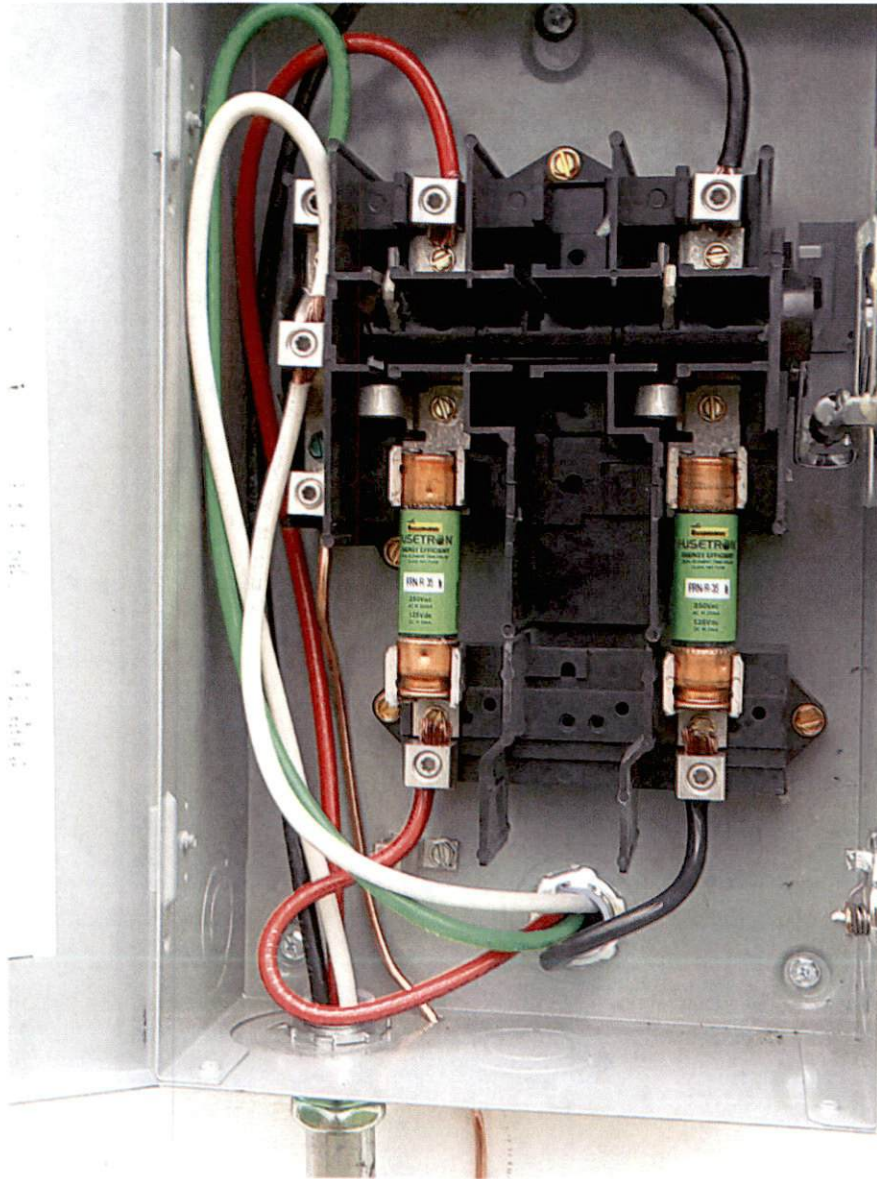




# File Viewer

Prev

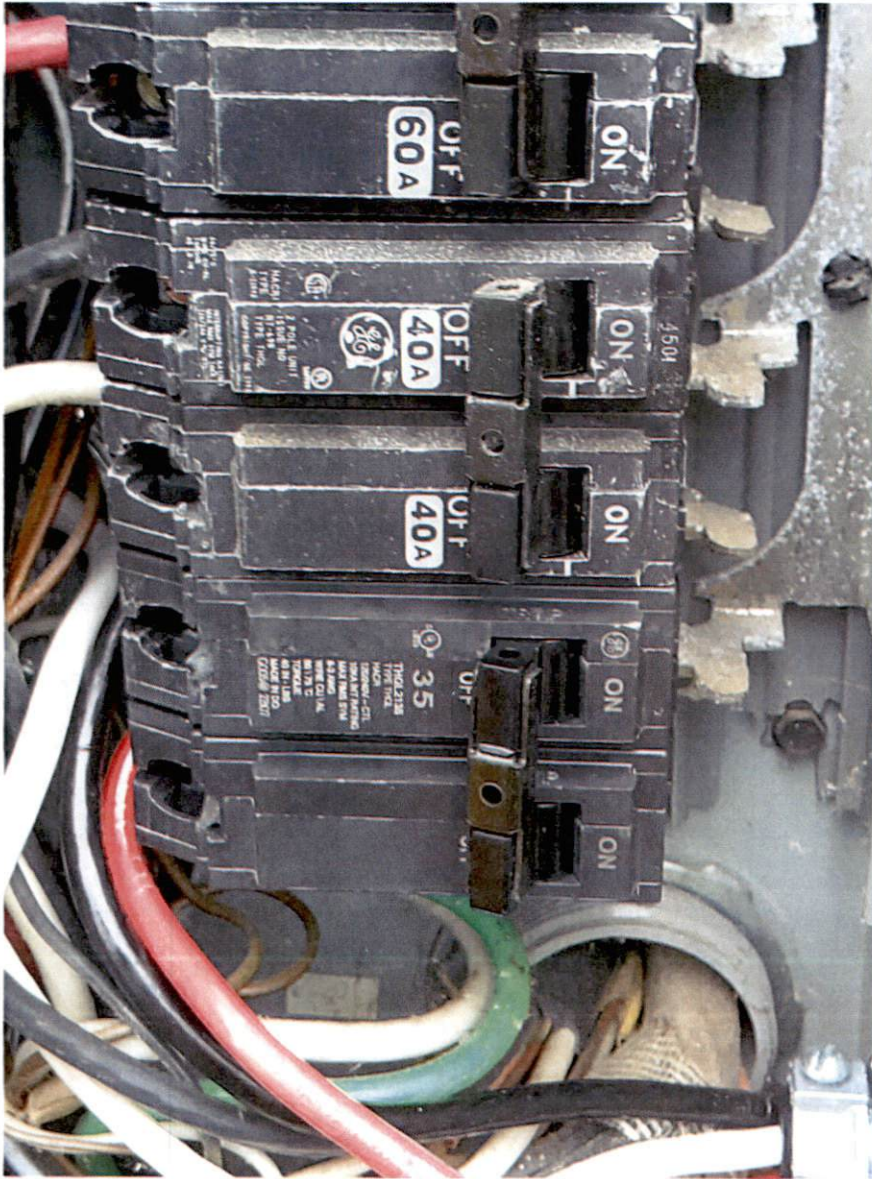
Next



### File Viewer

Prev

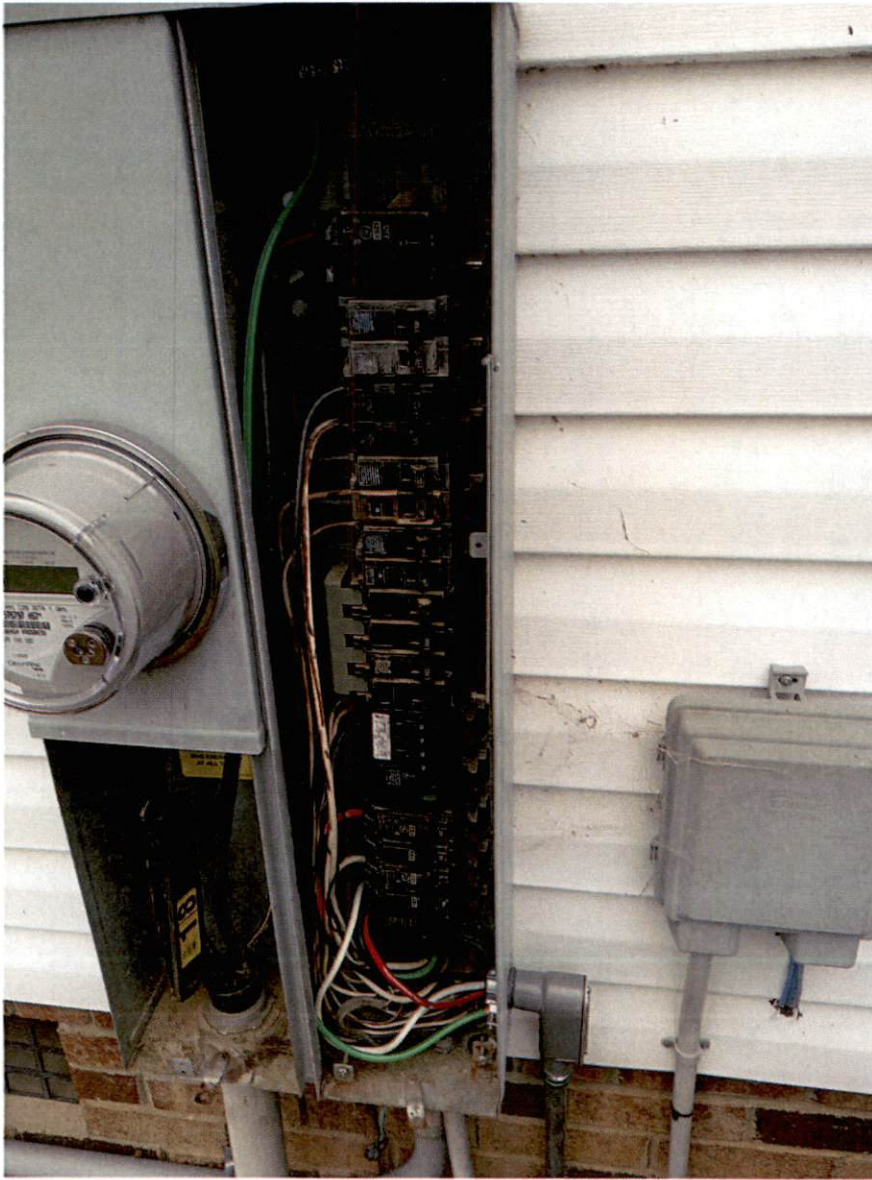
Next



### File Viewer

Prev

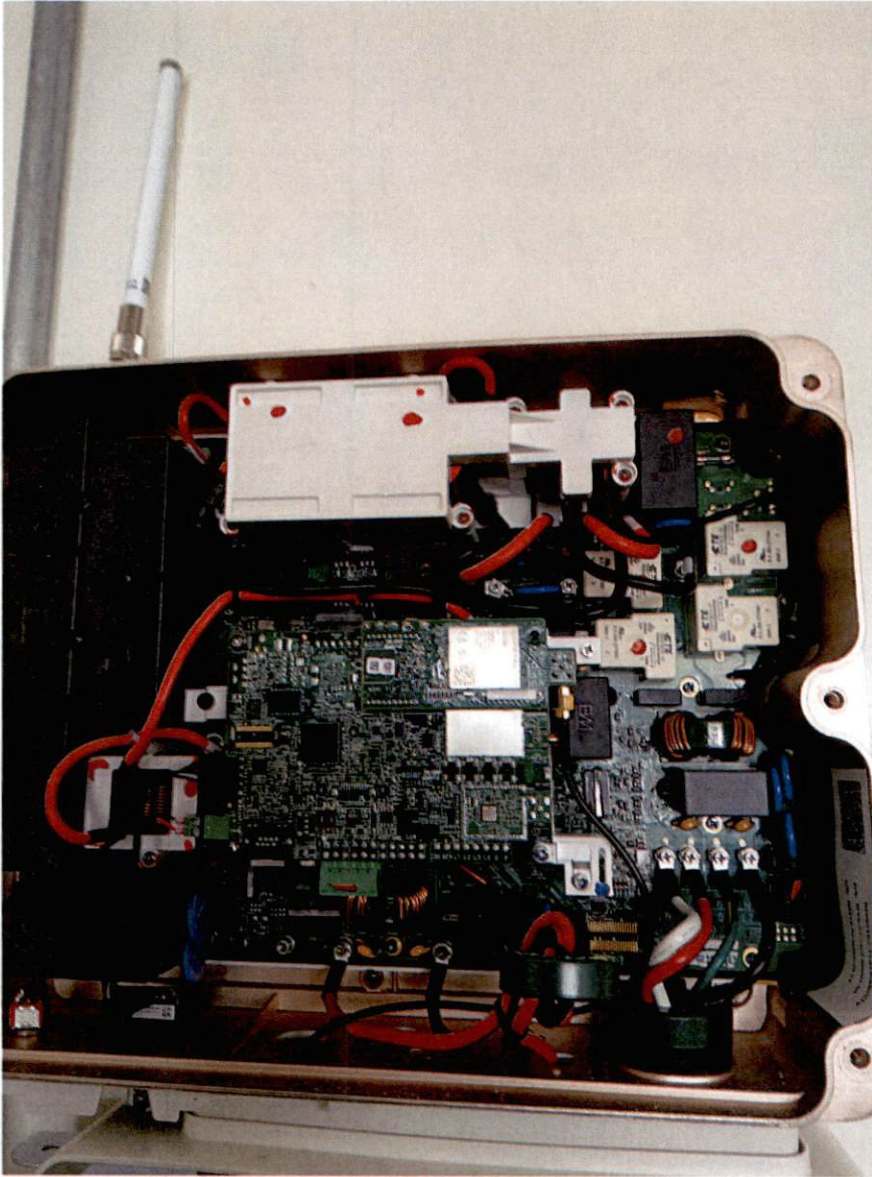
Next



## File Viewer

Prev

Next



## File Viewer

Prev

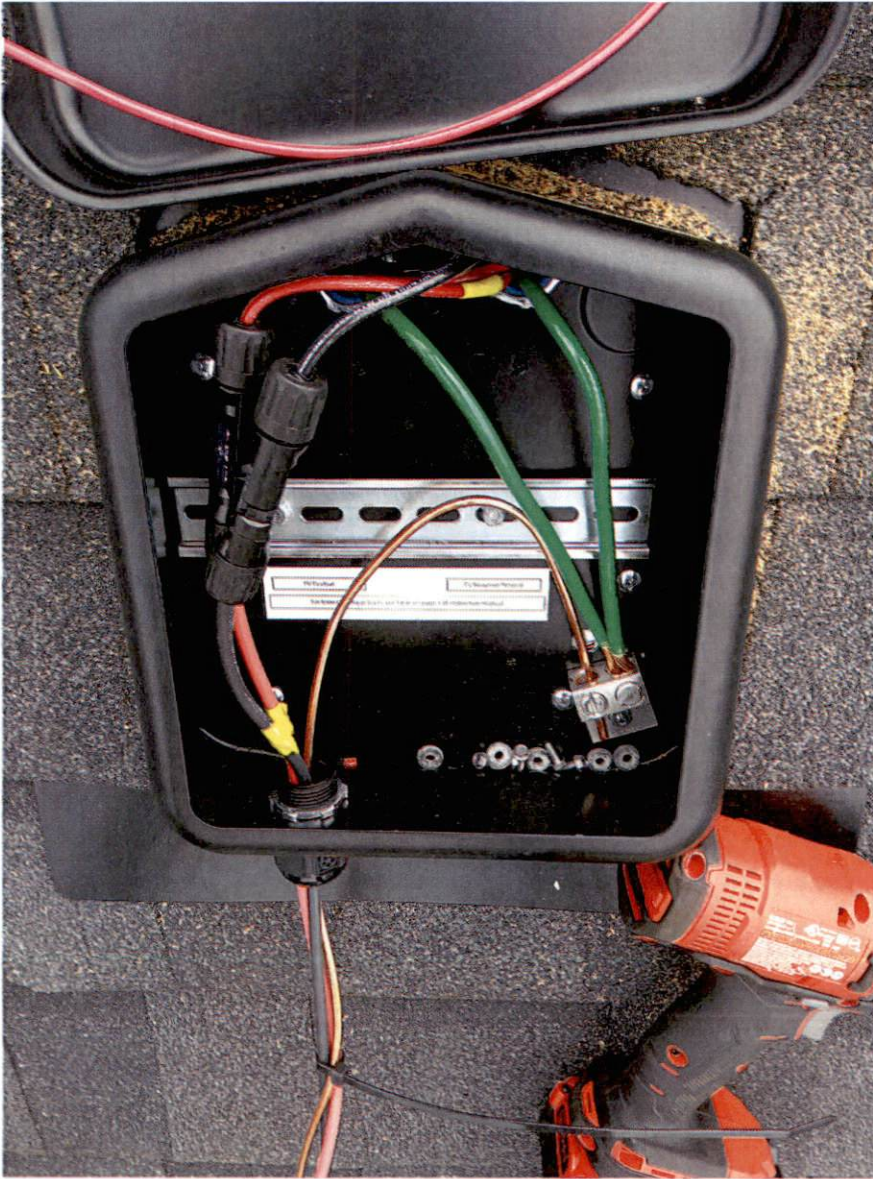
Next



### File Viewer

Prev

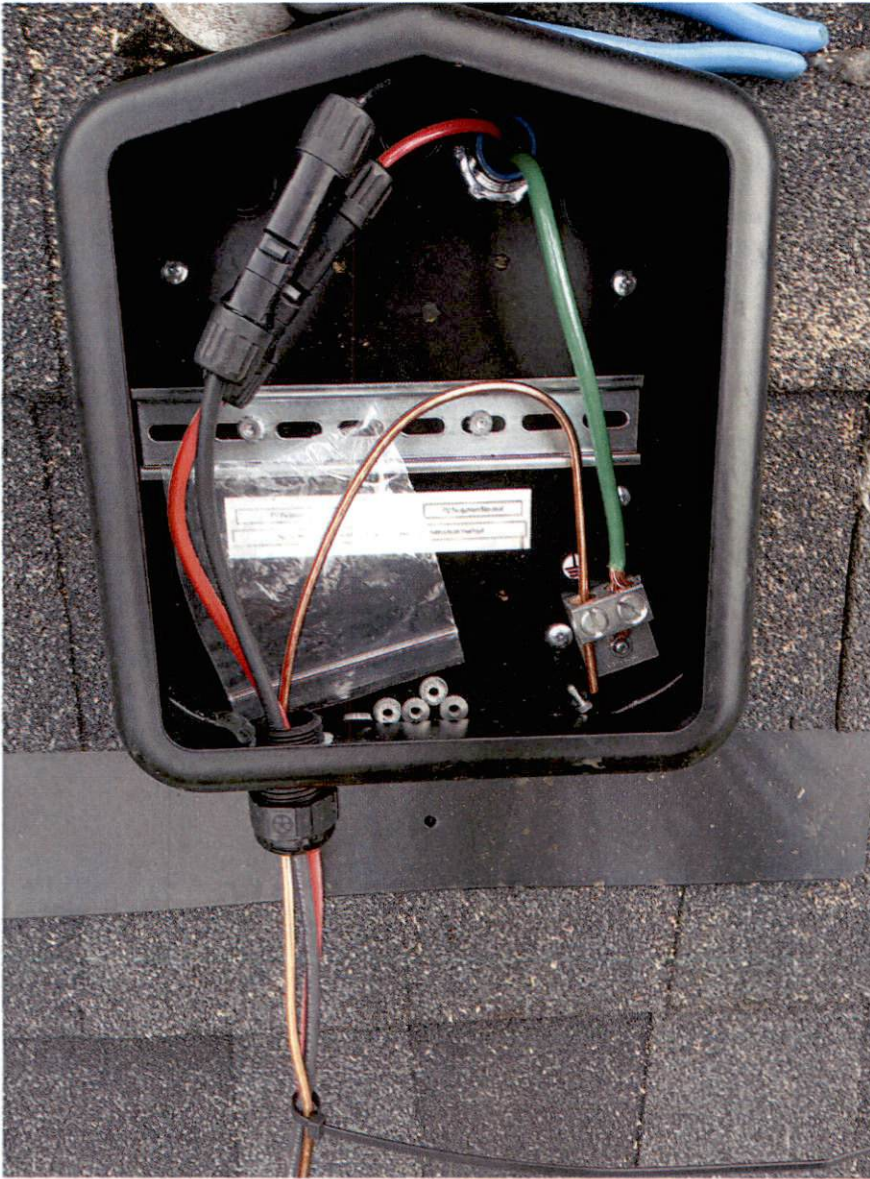
Next



### File Viewer

Prev

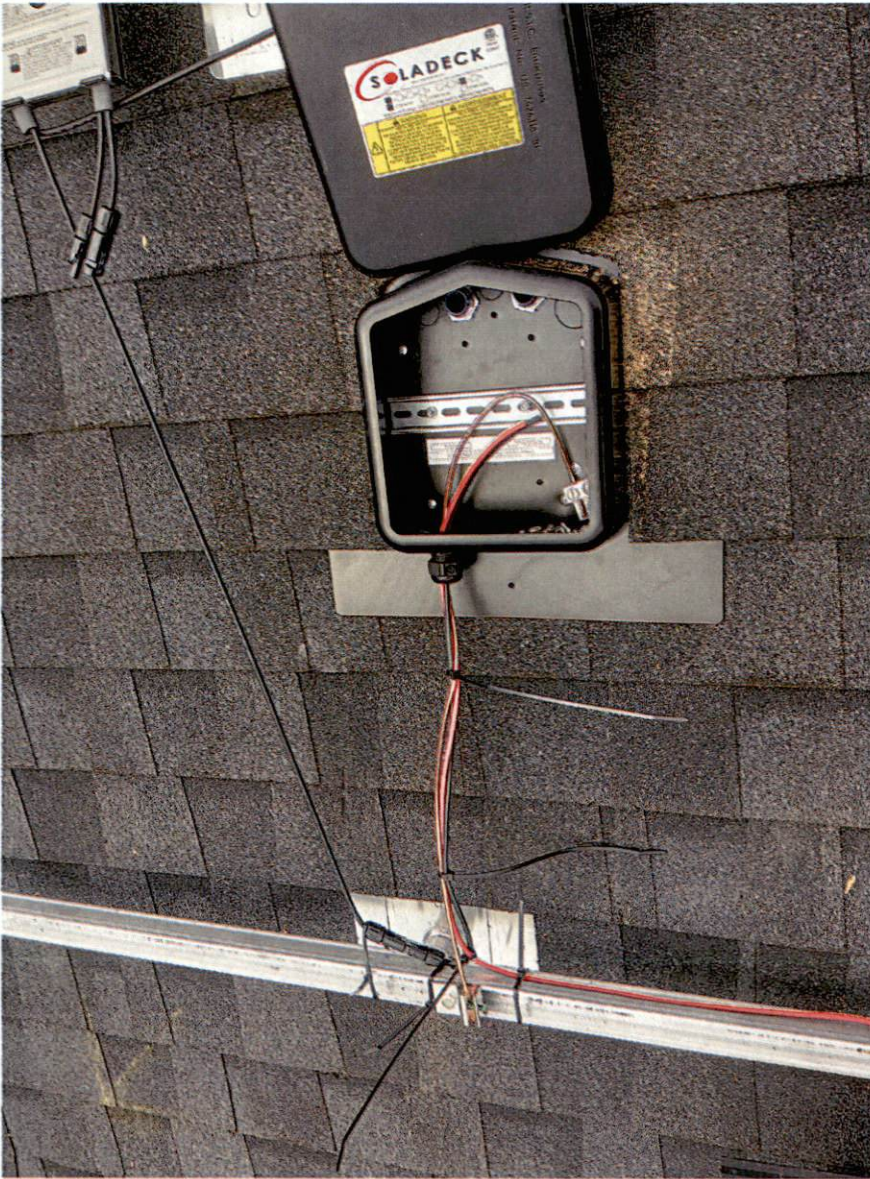
Next



# File Viewer

Prev

Next





## File Viewer

Prev

Next



# File Viewer

Prev

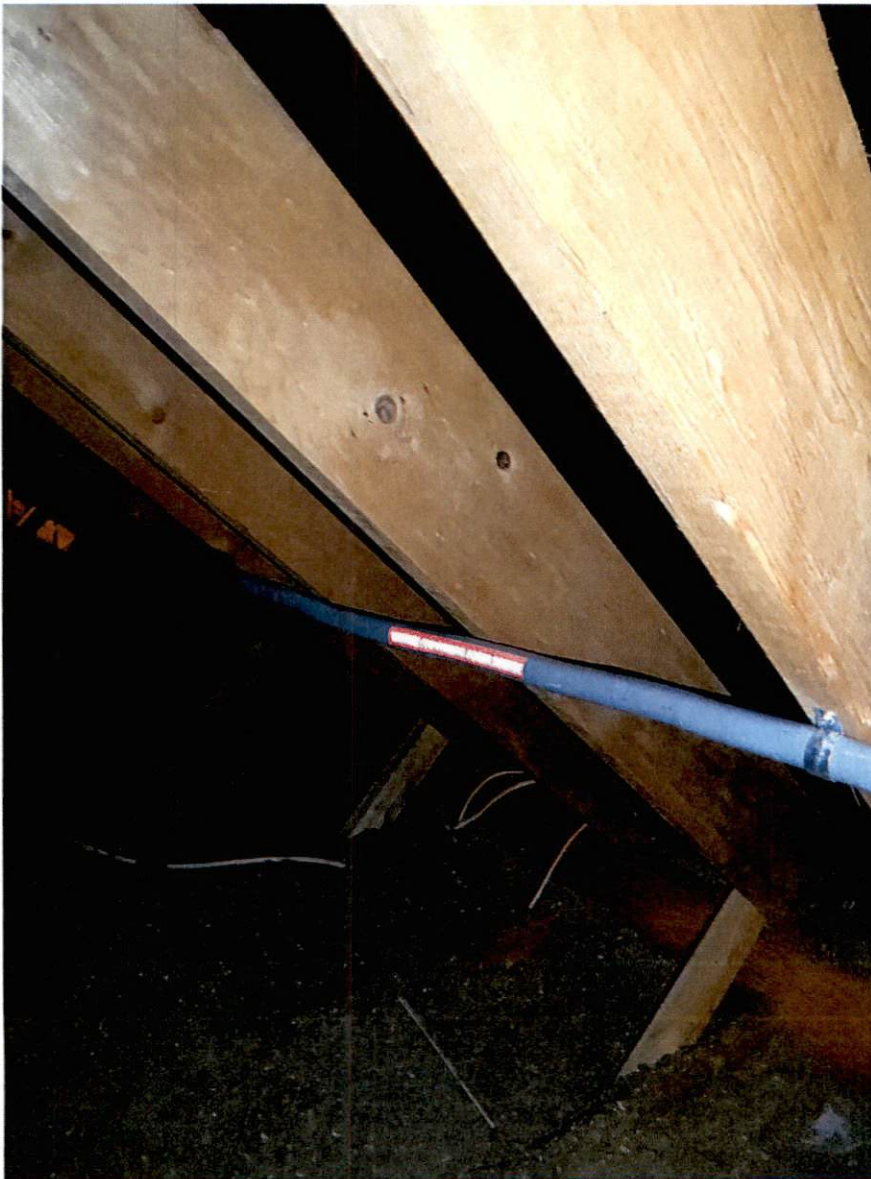
Next



## File Viewer

Prev

Next



## File Viewer

Prev

Next



## File Viewer

Prev

Next



# File Viewer

Prev

Next



# File Viewer

Prev

Next



# File Viewer

Prev

Next





# File Viewer

Prev

Next



# File Viewer

Prev

Next



# File Viewer

Prev

Next



# File Viewer

Next

