ROOF MOUNT PHOTOVOLTAIC SYSTEM

CODES:

THIS PROPOSED INSTALLATION COMPLIES WITH THE FOLLOWING:

2023 8TH EDITION FLORIDA BUILDING CODE: BUILDING

2023 8TH EDITION FLORIDA BUILDING CODE: RESIDENTIAL

2023 8TH EDITION FLORIDA BUILDING CODE: MECHANICAL

2023 8TH EDITION FLORIDA BUILDING CODE: PLUMBING

2023 8TH EDITION FLORIDA BUILDING CODE: FUEL GAS

2023 8TH EDITION FLORIDA BUILDING CODE: ENERGY CONSERVATION

2023 8TH EDITION FLORIDA BUILDING CODE: EXISTING BUILDING

2023 8TH EDITION FLORIDA BUILDING CODE: ACCESSIBILITY

2023 8TH EDITION FLORIDA FIRE PREVENTION CODE (NFPA) 2020 NATIONAL ELECTRIC CODE (NEC)

AS ADOPTED BY COUNTY OF COLUMBIA

VICINITY MAP:

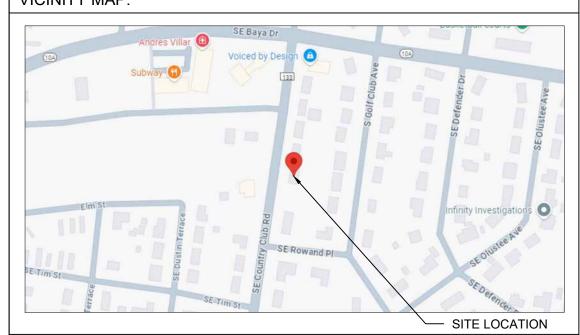


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APPENDIX	MANUFACTURER SPECIFICATION SHEETS

CONSTRUCTION NOTES:

CONDUIT AND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.

ALL SOLAR ENERGY SYSTEM EQUIPMENT SHALL BE SCREENED TO THE MAXIMUM EXTENT POSSIBLE AND SHALL BE PAINTED A COLOR SIMILAR TO THE SURFACE UPON WHICH THEY ARE MOUNTED.

MODULES SHALL BE TESTED, LISTED AND INDENTIFIED WITH FIRE CLASSIFICATION IN ACCORDANCE WITH UL 2703. SMOKE AND CARBON MONOXIDE ALARMS ARE REQUIRED PER SECTION R314 AND 315 TO BE VERIFIED AND INSPECTED BY INSPECTOR IN THE FIELD.

DIG ALERT (811) TO BE CONTACTED AND COMPLIANCE WITH EXCAVATION SAFETY PRIOR TO ANY EXCAVATION TAKING PLACE

PHOTOVOLTAIC SYSTEM GROUND WILL BE TIED INTO EXISTING GROUND AT MAIN SERVICE FROM DC DISCONNECT/INVERTER AS PER 2020 NEC SEC 250.166(A).

SOLAR PHOTOVOLTAIC SYSTEM EQUIPMENT WILL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF ART. 690 OF THE 2020 NEC

THE MAIN SERVICE PANEL WILL BE EQUIPPED WITH A GROUND ROD OR UFER

UTILITY COMPANY WILL BE NOTIFIED PRIOR TO ACTIVATION OF THE SOLAR PV SYSTEM

SOLAREDGE OPTIMIZERS ARE LISTED TO IEC 62109-1 (CLASS II SAFETY) AND UL 1741 STANDARDS

INSTALL CREW TO VERIFY ROOF STRUCTURE PRIOR TO COMMENCING WORK. EMT CONDUIT ATTACHED TO THE ROOF USING CONDUIT MOUNT.

THIS SYSTEM DESIGNED WITH: WIND SPEED: 119 WIND EXPOSURE: C SNOW LOAD: 0



Taqi Khawaja
Date: 2024.09.20
12:43:18 -07'00'

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CLIENT:
MICHAEL SCHLINK
485 SOUTHEAST COUNTRY CLUB ROAD,
LAKE CITY, FL 32025
AHJ: COUNTY OF COLUMBIA
UTILITY: FPL - FLORIDA POWER & LIGHT
METER: ACD5917
"PHONE:
FINANCE: OTHER

SYSTEM:
SYSTEM SIZE (DC): 16 X 430 = 6.880 kW
SYSTEM SIZE (AC): 5.000 kW @ 240V
MODULES: 16 X SILFAB SOLAR: SIL-430QD
OPTIMIZERS: 16 X SOLAREDGE S440
INVERTER: SOLAREDGE SE5000H-USRGM
[SI1]

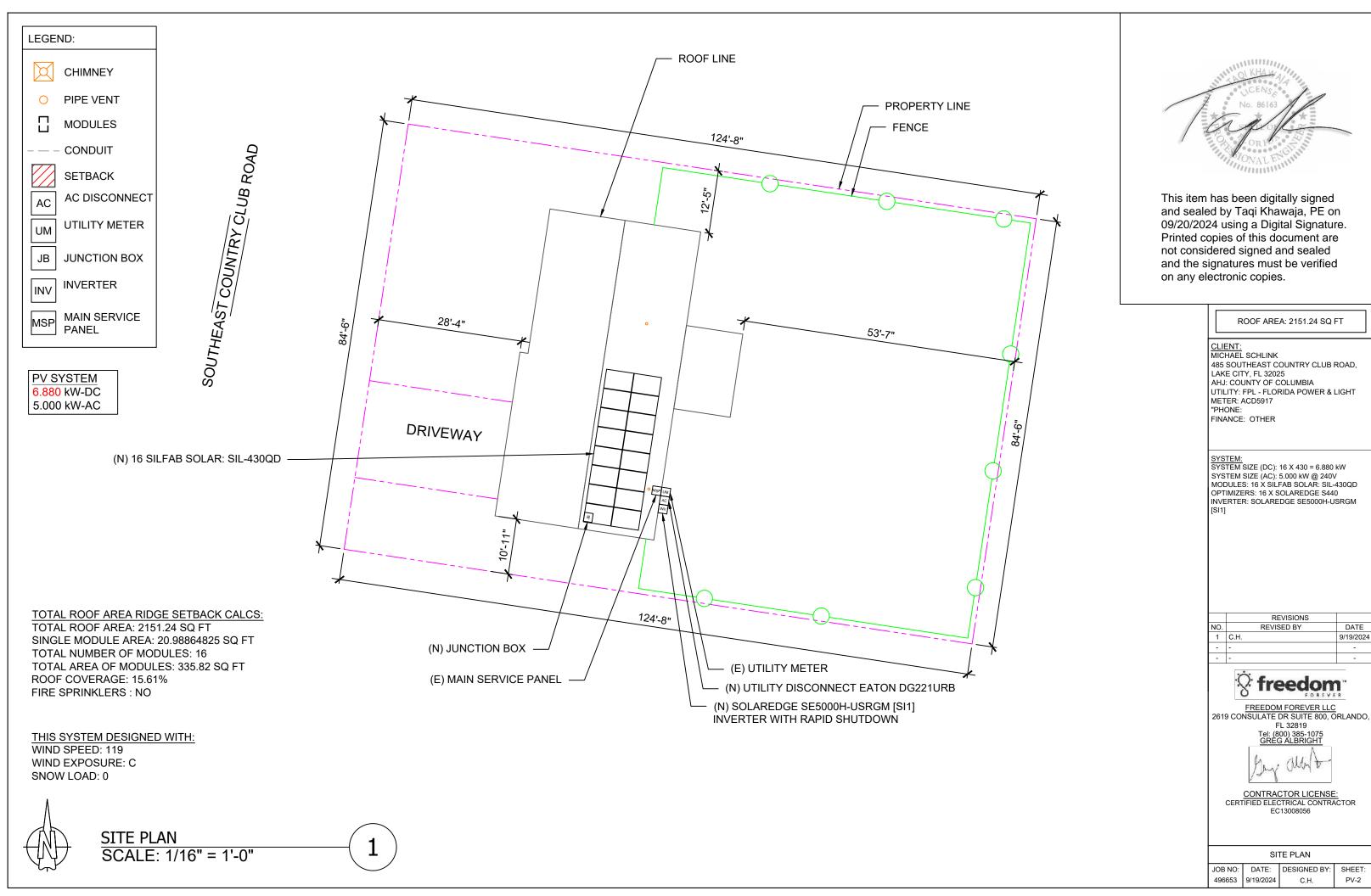
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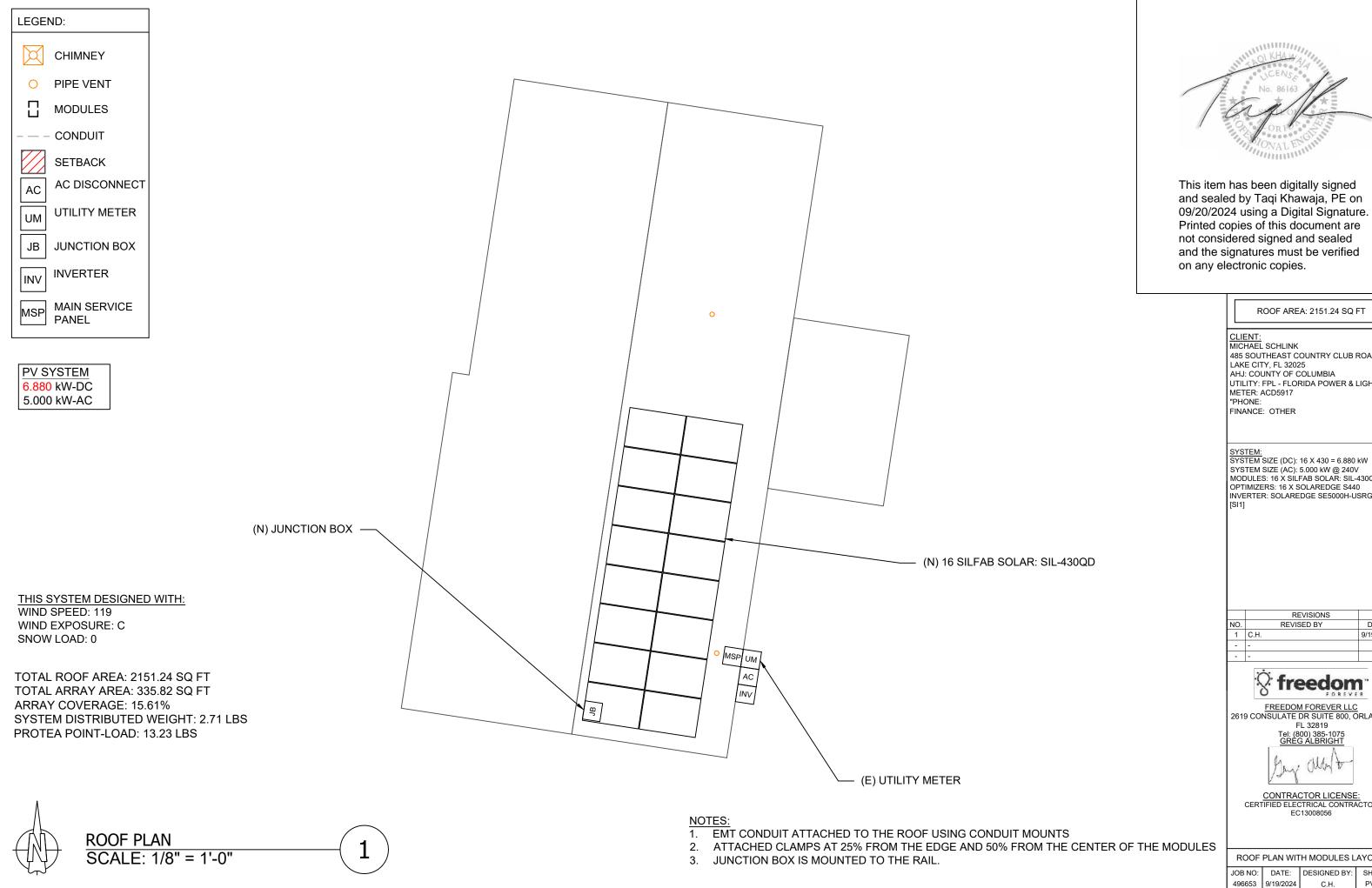


CONTRACTOR LICENSE:
CERTIFIED ELECTRICAL CONTRACTOR
EC13008056

	PROJ	ECT DETAILS	
OB NO:	DATE:	DESIGNED BY:	SHEET:

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024 C.H.





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ROOF AREA: 2151.24 SQ FT

485 SOUTHEAST COUNTRY CLUB ROAD, AHJ: COUNTY OF COLUMBIA UTILITY: FPL - FLORIDA POWER & LIGHT

SYSTEM SIZE (AC): 5.000 kW @ 240V MODULES: 16 X SILFAB SOLAR: SIL-430QD OPTIMIZERS: 16 X SOLAREDGE S440 INVERTER: SOLAREDGE SE5000H-USRGM

REVISIONS 9/19/2024



FREEDOM FOREVER LLC

CONTRACTOR LICENSE: CERTIFIED ELECTRICAL CONTRACTOR

ROOF PLAN WITH MODULES LAYOUT

ROOF DETAILS:

TOTAL ROOF AREA: 2151.24 SQ FT TOTAL ARRAY AREA: 335.82 SQFT

ARRAY COVERAGE: 15.61%

SYSTEM DISTRIBUTED WEIGHT: 2.71 LBS

PROTEA POINT-LOAD: 13.23 LBS

	ROOF AREA STATEMENT								
ROOF	MODULE QUANTITY	ROOF PITCH	ARRAY PITCH	AZIMUTH	ROOF AREA	ARRAY AREA			
ROOF 1	16	16	16	98.7	956.9 SQ FT	335.82 SQ FT			
					SQ FT	SQ FT			
					SQ FT	SQ FT			
					SQ FT	SQ FT			
					SQ FT	SQ FT			
					SQ FT	SQ FT			
					SQ FT	SQ FT			
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					SQ FT	SQ FT			
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> CLIENT: MICHAEL SCHLINK 485 SOUTHEAST COUNTRY CLUB ROAD, LAKE CITY, FL 32025 AHJ: COUNTY OF COLUMBIA UTILITY: FPL - FLORIDA POWER & LIGHT METER: ACD5917

FINANCE: OTHER

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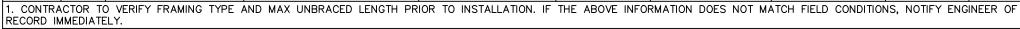
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CONTRACTOR LICENSE: CERTIFIED ELECTRICAL CONTRACTOR EC13008056

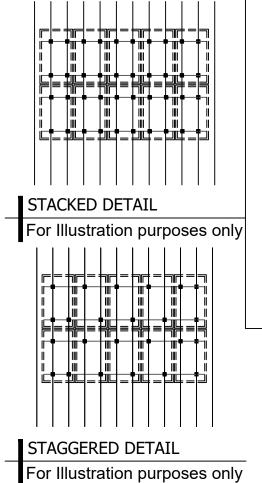
ARRA	Y DETAILS

JOB NO: DATE: DESIGNED BY: SHEET: 496653 9/19/2024

	TABLE 1 — ARRAY INSTALLATION										
	ROOF PITCH	ROOFING TYPE	ATTACHMENT TYPE	FRAMING TYPE	MAX UNBRACED LENGTH(FT.)	STRUCTURAL ANALYSIS RESULT	PENETRATION PATTERN	MAX ATTACHMEN T SPACING (IN.)	MAX RAIL OVERHANG(I N.)		
ROOF 1	16	Corrugated Metal	S-5 Proteabracket	2x4 @ 24" O.C.	5	PASS	STAGGERED	72	24		
							_				



- 2. WHERE COLLAR TIES OR RAFTER SUPPORTS EXIST, CONTRACTOR SHALL USE RAFTERS WITH COLLAR TIES AS ATTACHMENT POINTS.
- 3. MAX RAIL OVERHANG APPLICABLE FOR RAILED ATTACHMENT INSTALLATIONS.





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FREEDOM FOREVER LLC
2619 CONSULATE DR SUITE 800, ORLANDO,
FL 32819
Tel: (800) 385-1075
GREG ALBRIGHT

CONTRACTOR LICENSE: CERTIFIED ELECTRICAL CONTRACTOR EC13008056

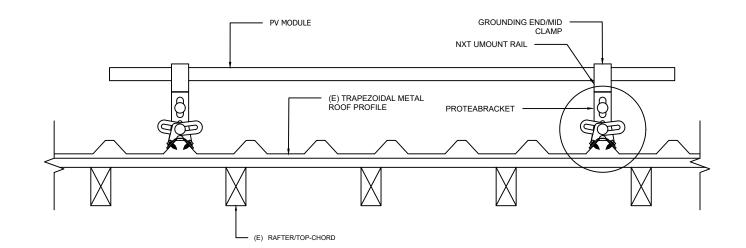
MOUNTING DETAILS

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024 C.H.

1" SELF TAPPING SCREW

(E) TRAPEZOIDAL METAL
ROOF PROFILE
FACTORY APPLIED
EPDM WITH STICKY ADHESIVE

PROTEABRACKET



SOLAR PV ARRAY SECTION VIEW

Scale: NTS

ATTACHMENT DETAIL

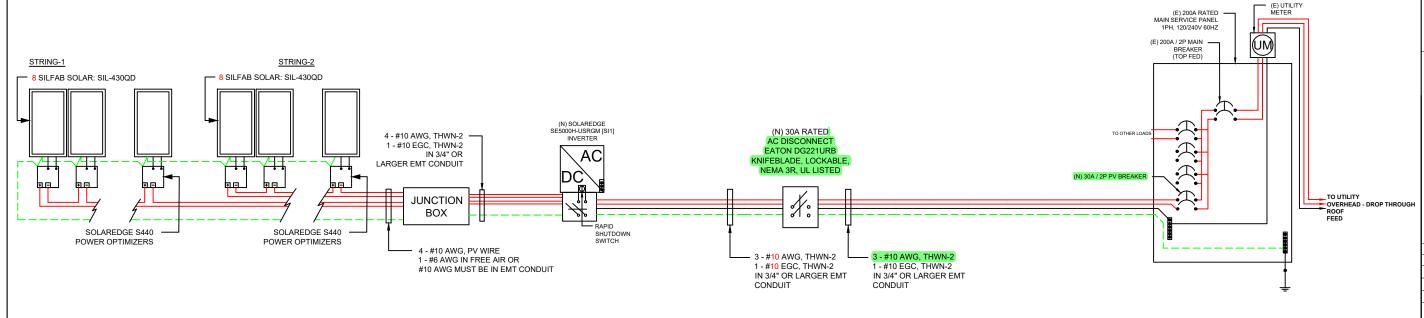
Scale: NTS

BACKFEED BREAKER SIZING							
MAX. CONTINUOUS OUTPUT 21.00A @ 240V							
21.00	Х	1.25	Ш	26.25AMPS		30A BREAKER - OK	
SEE 705.12	2 C	F 2020	NEC	;			
200	Χ	1.20	Ш	240			
240	-	200	=	40A ALLOWABLE BACKFEED			

PV SYSTEM 6.880 kW-DC 5.000 kW-AC



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[SI1]

FREEDOM FOREVER LLC
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NSULATE DR SUITE 800 FL 32819 Tel: (800) 385-1075 GREG ALBRIGHT

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THREE LINE DIAGRAM

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024 C.H.

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	WIRE SCHEDULE											
RACEWAY #		EQU	JIPMENT		CONDUCTOR QTY.	AWG WIRE SIZE	STARTING ALLOWABLE AMPACITY @ 90°C 310.15(B)(16)	STARTING CURRENT APPLIED TO CONDUCTORS IN RACEWAY	TEMPERATURE CORRECTION FACTOR 310.15(B)(2)(a)	ADJUSTMENT FACTOR FOR MORE THAN 3 CONDUCTORS 310.15(B)(3)(a)	ADJUSTED CONDUCTOR AMPACITY @ 90°C	MAXIMUM CURRENT APPLIED TO CONDUCTORS IN RACEWAY
1	DC	MODULE	ТО	OPTIMIZER	2	10	40	17.34	0.96	1	38.40	21.67
2	DC	OPTIMIZER	ТО	JUNCTION BOX	2	10	40	15.00	0.96	1	38.40	18.75
3	DC	JUNCTION BOX	ТО	INVERTER	4	10	40	15.00	0.96	0.8	30.72	18.75
4	AC	INVERTER	ТО	AC DISCONNECT	3	10	40	21.00	0.96	1	38.40	26.25
5	AC	AC DISCONNECT	ТО	POI	3	10	40	21.00	0.96	1	38.40	26.25

CONDUCTOR AMPACITY CALCULATIONS IN ACCORDANCE WITH NEC 690.8.

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EC13008056

CONDUCTOR CALCULATIONS

JOB NO: DATE: DESIGNED BY: SHEE
496653 9/19/2024 C.H. PV-

OCPD SIZES: 30A BREAKER

SERVICE LIST:

NONE		

MATE	ERIAL LIST:		
QTY.	PART	PART#	DESCRIPTION
16	110 - MODULES	PV-110-430-SIL	"MFG: SILFAB, 430W BOB, MFG SKU: SIL-430QD"
1	120 - INVERTERS	INV-120-508	"MFG: SOLAREDGE, 5.0 KW RGM SCREENLESS W/CONSUMPTION MONITORING, MFG SKU: SE5000H-US000BEI4"
1	180 - MONITORING EQUIPMENT	ME-180-502	"MFG: SOLAREDGE, CELL MODEM W/5 YRS, MFG SKU: SE-CELL-B-R05-US-S-S2"
2	160 - EQUIPMENT ACCESSORIES	EA-163-508	"MFG: SOLAREDGE, 225A CT, MFG SKU: SECT-SPL-225A-T-20"
1	160 - EQUIPMENT ACCESSORIES	EA-163-304	"MFG: SOLAREDGE, ENERGY NET PLUG-IN, MFG SKU: ENET-HBNP-01"
16	130 - OPTIMIZERS	OPT-130-440-2	"MFG: SOLAREDGE, 440W 60V OPTIMIZER, MFG SKU: S440"
2	260 - FITTINGS/ANCHORS	RAC-261-527	"MFG: UNIRAC, JUNCTION BOX, COMP SHINGLE AND RAIL MOUNT APPLICATIONS, MFG SKU: SOLOBOX-D"
2	210 - RAILS	RAC-211-201	"MFG: UNIRAC, E-BOSS J-BOX MOUNTING BRACKET, MFG SKU: 00802JB"
1	320 - DISCONNECTS	EE-321-030	"MFG: EATON, DISCONNECT, GENERAL DUTY, 2P, 240V, 30A, NON FUSIBLE, NEMA 3R, MFG SKU: DG221URB"
200	260 - FITTINGS/ANCHORS	RAC-260-550	"MFG: BURNDY, PV WILEY CABLE CLIP THICKNESS RANGE: 1.3 TO 3MM MFG SKU: ACC-FPV180"
	350 - ELECTRICAL ACCESSORIES	EA-350-585	"MFG: ILSCO, GROUND LUG, MFG SKU: SGB-4"
	240 - FOOTINGS	RAC-240-401	"MFG: S-5!, S-5! BRACKET FOR TRAPEZOIDAL METAL ROOFS, MFG SKU: PROTEABRACKET"
	210 - RAILS	RAC-211-117	"MFG: UNIRAC, NXT HORIZON RAIL - 84"" MILL, MFG SKU: 084RLM1"
	260 - FITTINGS/ANCHORS	RAC-261-123	"MFG: UNIRAC, NXT HORIZON COMBO CLAMP - DARK, MFG SKU: CCLAMPD1"
	210 - RAILS	RAC-211-119	"MFG: UNIRAC, NXT HORIZON RAIL SPLICE, MFG SKU: RLSPLCM1 / RLSPLCM2"
	260 - FITTINGS/ANCHORS	RAC-261-118	"MFG: UNIRAC, STRONGHOLD RAIL CLAMP MILL, MFG SKU: SHCLMPM1 / SHCLMPM2"
	260 - FITTINGS/ANCHORS	RAC-261-124	"MFG: UNIRAC, NXT MLPE & GND LUG CLAMP, MFG SKU: NULGMLP1"
	260 - FITTINGS/ANCHORS	RAC-261-113	"MFG: UNIRAC, NXT HORIZON NS WIRE MGMT CLIP, MFG SKU: WRMCNSD1"
	260 - FITTINGS/ANCHORS	RAC-261-114	"MFG: UNIRAC, NXT HORIZON RL & CLMP CAP KIT, MFG SKU: ENDCAPD1"
	260 - FITTINGS/ANCHORS	RAC-261-115	"MFG: UNIRAC, NXT HORIZON WIRE MGMT CLIP, MFG SKU: WRMCLPD1"
10	250 111111100/1110110110	1410 201 110	



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> CLIENT: MICHAEL SCHLINK 485 SOUTHEAST COUNTRY CLUB ROAD, LAKE CITY, FL 32025 AHJ: COUNTY OF COLUMBIA UTILITY: FPL - FLORIDA POWER & LIGHT METER: ACD5917 FINANCE: OTHER

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REVISIONS REVISED BY 1 C.H. 9/19/2024

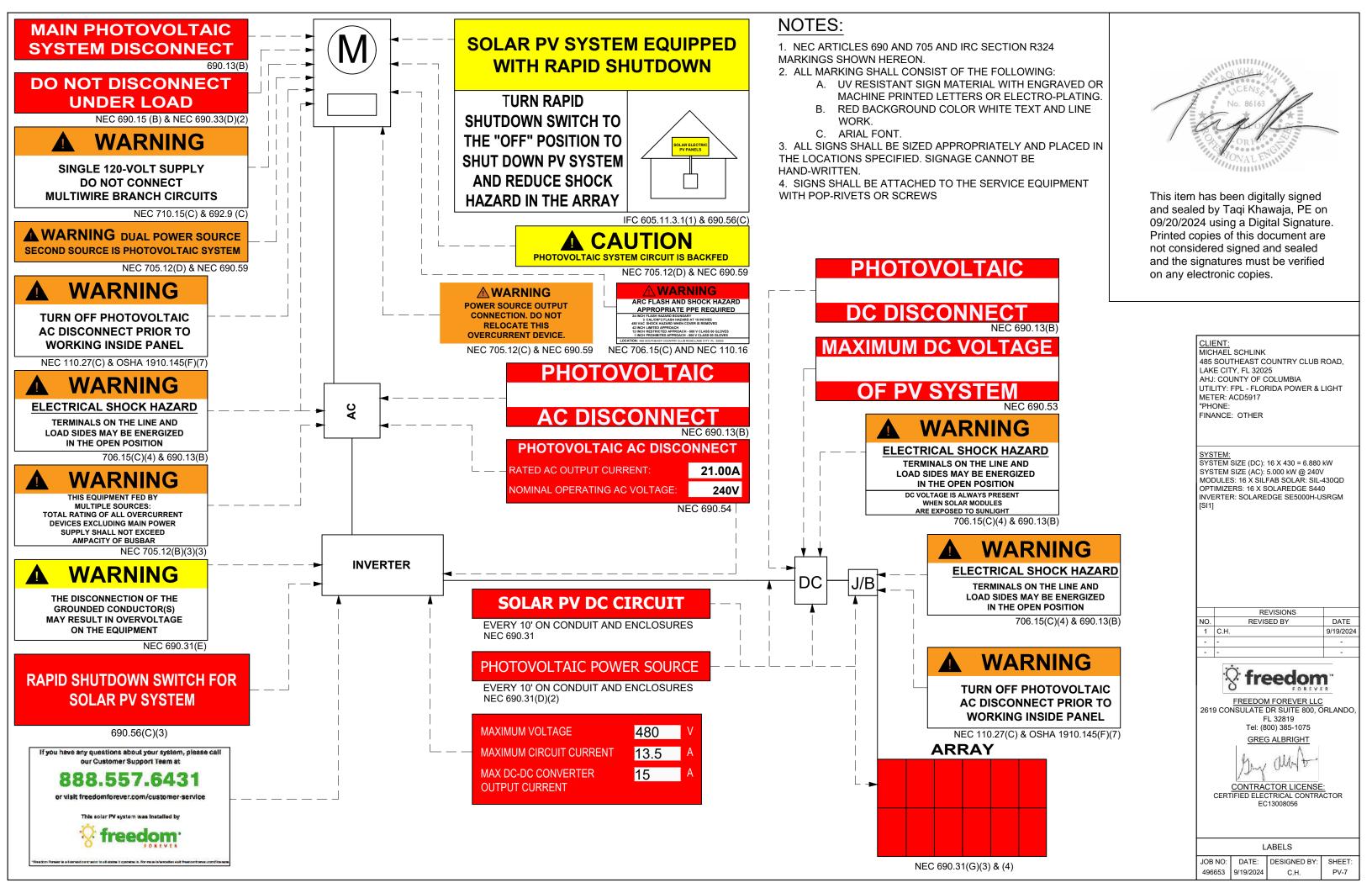


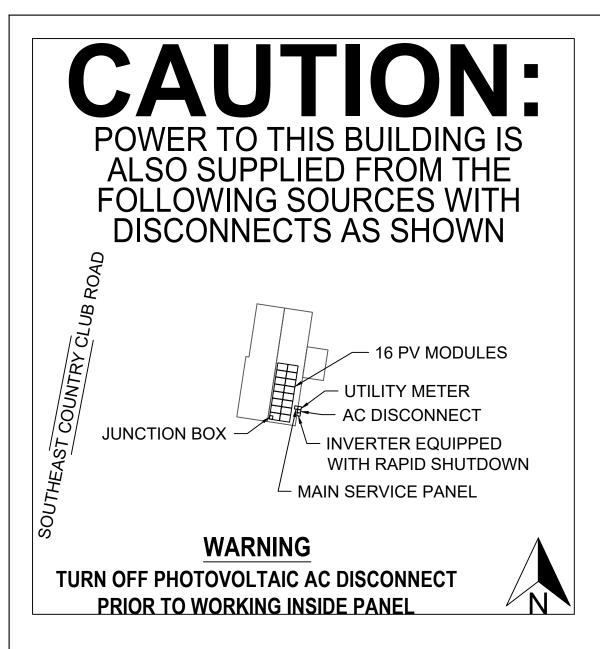
FREEDOM FOREVER LLC 2619 CONSULATE DR SUITE 800, ORLANDO, FL 32819 Tel: (800) 385-1075 GREG ALBRIGHT

CONTRACTOR LICENSE: CERTIFIED ELECTRICAL CONTRACTOR EC13008056

EQUIPMENT & SERVICE LIST

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024





NOTES:

- 1. NEC ARTICLES 690 AND 705 AND IRC SECTION R324 MARKINGS SHOWN HEREON.
- 2. ALL MARKING SHALL CONSIST OF THE FOLLOWING:
 - A. UV RESISTANT SIGN MATERIAL WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PLATING.
 - B. RED BACKGROUND COLOR WHITE TEXT AND LINE WORK.
 - C. AERIAL FONT.
- 3. ALL SIGNS SHALL BE SIZED APPROPRIATELY AND PLACED IN THE LOCATIONS SPECIFIED. SIGNAGE CANNOT BE HAND-WRITTEN.
- 4. SIGNS SHALL BE ATTACHED TO THE SERVICE EQUIPMENT WITH POP-RIVETS OR SCREWS.



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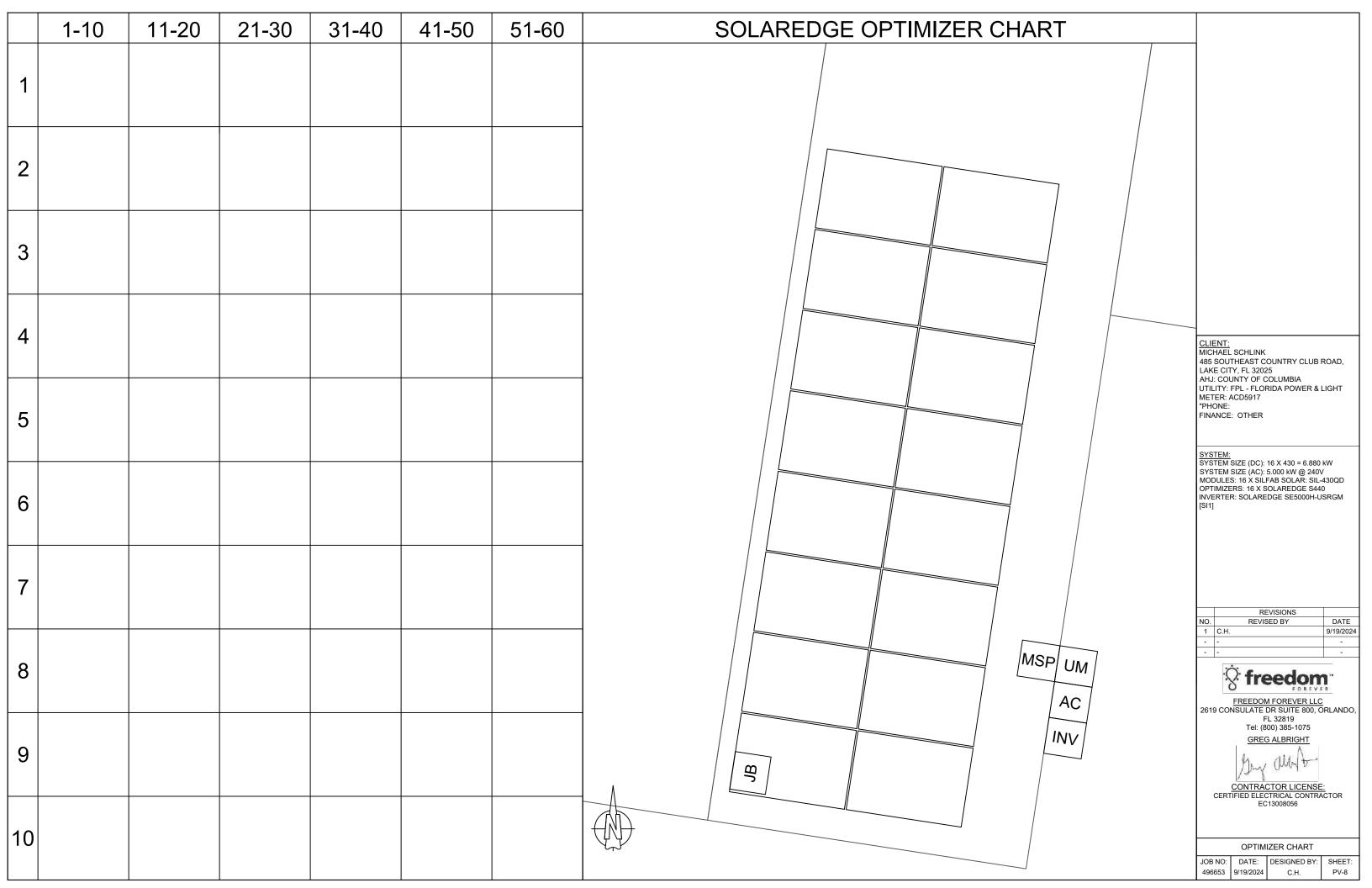


FL 32819 Tel: (800) 385-1075

CERTIFIED ELECTRICAL CONTRACTOR EC13008056

SITE PLACARD

496653 9/19/2024



SAFETY PLAN

INSTRUCTIONS:

- 1. USE SYMBOLS IN KEY TO MARK UP THIS SHEET.
- 2. SAFETY PLAN MUST BE MARKED BEFORE JOB STARTS AS PART OF THE
- 3. DOCUMENT ALL ADDITIONAL HAZARDS ON THIS PAGE & MAKE NOTES ON THE JHA SHEET

INCIDENT REPORTING:

INJURIES - CALL INJURY HOTLINE

(855) 400-7233

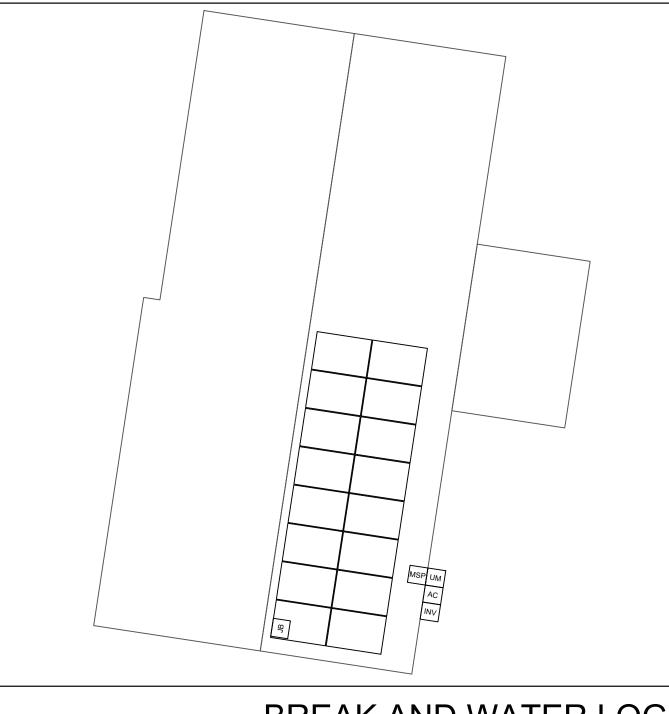
*If injury is life threatening, call 911 first THEN the Injury Hotline

NON-INJURIES - USE MOBILE INCIDENT REPORTING (Auto, Property Damage, Near Miss)



NEAREST OCCUPATIONAL/INDUSTRIAL CLINIC:
NAME:
ADDRESS:
NEAREST HOSPITAL:
NAME:
ADDRESS:
SAFETY COACH CONTACT INFORMATION:
NAME:
PHONE NUMBER:
ALL EMPLOYEES ON SITE SHALL BE MADE AWARE OF THE SAFETY PLAN AN SIGN INDICATING THAT THEY ARE AWARE OF THE HAZARDS ON-SITE AND TIPLAN FOR WORKING SAFELY.

	•
NAME	SIGNATURE
	
DATE:	TIME:



MARK UP KEY

P PERMANENT ANCHOR





JUNCTION / COMBINER BOX

S STUB-OUT

SKYLIGHT

NO LADDER ACCESS (STEEP GRADE OR GROUND LEVEL OBSTRUCTIONS)

RESTRICTED ACCESS

CONDUIT

AS) GAS SHUT OFF

(H₂O) WATER SHUT OFF

7 SERVICE DROP

) POWER LINES

INSTRUCTIONS:

SCAN QR LINK BELOW TO
 ACCESS ALL FREEDOM
 FOREVER SAFETY
 POLICIES AND PROGRAMS.

POLICIES



CLIENT:
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ISI11

BREAK AND WATER LOG

THIS LOG IS TO BE FILLED OUT ANY TIME THE TEMP EXCEEDS **90** DEGREES. THE CREW LEAD AND ROOF LEAD ARE RESPONSIBLE FOR ENSURING THIS IS COMPLETED AND UPLOADED AT THE END OF EVERYDAY WHEN TEMPS EXCEED **90** DEGREES

										1
NAME	0800HRS	0900HRS	1000HRS	1100HRS	1200HRS	1300HRS	1400HRS	1500HRS	1600HRS	
										2619
										JOB

C.H. 9/19/20 - - - -

FREEDOM FOREVER LLC
19 CONSULATE DR SUITE 800, ORLANDO,
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GREG ALBRIGHT

CONTRACTOR LICENSE:
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EC13008056

SAFETY PLAN

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024 C.H.

BY: SHEET PV-9

JOB HAZARD ANALYSIS

Crew leader to fill out all sections below, hold a pre-job safety meeting with all personnel, and upload this completed document and the Safety Plan to Site Capture

Ladder Access

- Ladders must be inspected before each use.
- Extension ladders must be set up on a firm and level surface at a 4-to-1 rise to run angle (or 75 degrees) and the top must be secured to the structure. Extension style ladders placed on uneven, loose or slippery surfaces must additionally have the base firmly anchored or lashed so the base will not slip out.
- Extension ladders must be used with walk-through devices or the ladder must extend 36" above the stepping off point.
- A-frame ladders must only be climbed with the ladder spreader bars locked in the open position; A-frame ladders shall not be climbed while in the closed position (ex, closed and used while leaned against a structure).
- Additional notes:

Mobile Equipment

- Only Qualified operators will operate equipment; operators must maintain a certification on their person for the equipment being operated
- Type(s) of mobile equipment (Type/Make/Model):
- Qualified operator(s):

Material Handling and Storage

 Materials will be staged/stored in a way that does not present a hazard to client, personnel or public. Materials stored on the roof will be physically protect from failing or sliding off.

Fall Protection

- A site-specific plan for fall prevention and protection is required prior to starting work and must remain onsite at all times until work is complete; a fall rescue plan must be outlined and discussed among the crew prior to work start.
- First-person-Up (FPU) must install their anchor and connect before any other task, including installing other anchors. The Last-Person-Down (LPD) must be the only person on a roof uninstalling fall protection.
- FPCP (name and title):
- FPU and LPD (name and title):

Electrical Safety

- The Electrical Qualified Person (EQP) is required onsite to perform electrical work.
- All electrical work will be performed with equipment in an electrically safe condition (de-energized) unless approval has been granted prior to work.
- Service drops and overhead electrical hazards will be indentified and protected from contact, as neccessary.
- EQP (name and tile):

Public Protection

- The safety of the Client and Public must be maintained at all times.
- The Client and the Public shall be prevented from entering the work zone through the use of barriers and/or signage, as required.
- Company, Client and Public property shall be protected from falling objects.
- Pets (including dogs) shall be secured by their owners prior to work start
- The Client should not leave pets, family members, or others in charge or care of Employees, Contractors, or Temporary Workers.

- Crew leader responsible for communication with the client:
- Client and public is excluded from work area by barricades (N/A, Yes, No):

Training and Pre-Job Safety Briefing

- All employees onsite shall be made aware of the specific hazards
 of this project and review this HJA during a pre-job briefing, and
 their signature indicates awareness of site conditions and the
 plan to eliminate any hazards identified prior to and during the
 project.
- Crew leader (name/title):
- Crew member (name/title):

Airborne Contaminants:

- Asbestos-containing (Transite) piping (ACP) Do not disturb (move, drill, cut fracture, etc.)
- Asbestos-containing thermal insulation (ACI) and Asbestos-containing duct wrapping (ACW) - do not disturb, no attic or crawlspace access is allowed if work to be performed could cause exposure to personnel, client or public.
- If yes, list specific tasks and protection in place:

Weather and Environment

- The site supervisor shall forecast the weather conditions at the job site, prior to crew arrival, in order to mitigate any hazards associated with inclement weather (heat, cold, wind, rain, etc.)
- The site supervisor will utilized a portable wind meter (anemometer) to verify actual onsite wind conditions, by checking at the ground and on any elevated work surface (ex, rooftop) prior to work start, at midday and prior to solar panel staging on a roof.
- Elevated work involving the moving or maneuvering of solar panels shall cease at 25mph (sustained wind) until wind subsides.
- Forecasted weather maximum temp (degrees f):

Heat Related Illness Prevention

- Employees shall have access to potable drinking water that is fresh, pure, and suitably cool. The water shall be located as close as practicable to the areas where employees are working. Water shall be supplied in sufficient quantity at the beginning of the work shift to provide at least one quart per employee per hour for drinking for the entire shift. Employees may begin the shift with smaller quantities of water if they identify the location and have effective means for replenishment during the shift to allow employees to drink on quart or more per hour. The frequent drinking of water shall be encouraged.
- Shade shall be present when temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work exceeds 80 degrees Fahrenheit, employees shall have and maintain one or more areas with shade at all times.
- New employees must be acclimatized. New employees will be monitored by their Crew Leader (site supervisor) for the first two (2) weeks of employment or longer when necessary.
- Employees will be allowed and encouraged to implement scheduled breaks during each shift. Employees must take cool-down breaks in the shade any time they feel the need to do so to protect them from overheating. Supervisors are REQUIRED to allow employees any break period they need during high heat conditions.
- Cool Vests are encouraged for all employees at all times during periods of high heat.
- Identify the location of the closet Occupational/Industrial Clinic or Hospital in case a crew member becomes ill.

What is the specific plan to provide and replenish sufficient water for all employees on site?

- If offsite replenish is necessary, where will you go to replenish water (location/address):
- Who will replenish the drinking water (name):

Restroom facilities

- Employees shall have access to restroom facilities with hand-washing stations. Use of onsite restroom is at the client's discretion (location is annotated below). If client does not give permission, location of suitable restroom facilities with hand-washing stations offsite will be provided. The onsite supervisor will identify location and make arrangements to ensure all employees have access at any point.
- Restroom facilities will be (circle one): Onsite Offsite
- If Offsite, add location name and address:

Incident Reporting Procedure

Contact your Site Supervisor

•	٦	uı	•	•	·	•
_	_		_	_	_	_

Phone:

Contact your Manager

Name:

Phone:

Contact your Site Supervisor

Name:

Phone:

With: Your full name, phone number, office location, brief description of what happen and when.

NOTE ADDITIONAL HAZARDS NOT ADDRESSED ABOVE

(add as many as necessary by using additional sheets)

Define the Hazard:	Method/steps to prevent incident:
Define the Hazard:	Method/steps to prevent incident:
Define the Hazard:	Method/steps to prevent incident:
Define the Hazard:	Method/steps to prevent incident:

CLIENT:
MICHAEL SCHLINK

485 SOUTHEAST COUNTRY CLUB ROAD,
LAKE CITY, FL 32025

AHJ: COUNTY OF COLUMBIA
UTILITY: FPL - FLORIDA POWER & LIGHT
METER: ACD5917
"PHONE:
FINANCE: OTHER

SYSTEM:
SYSTEM SIZE (DC): 16 X 430 = 6.880 kW
SYSTEM SIZE (AC): 5.000 kW @ 240V
MODULES: 16 X SILFAB SOLAR: SIL-430QD
OPTIMIZERS: 16 X SOLAREDGE S440
INVERTER: SOLAREDGE SE5000H-USRGM
[SI1]

	REVISIONS	
١٥.	REVISED BY	DATE
1	C.H.	9/19/20
-	-	-
-	-	-



FL 32819 Tel: (800) 385-1075 GREG ALBRIGHT

CONTRACTOR LICENSE:
CERTIFIED ELECTRICAL CONTRACTOR
EC13008056

SAFETY PLAN

JOB NO: DATE: DESIGNED BY: 496653 9/19/2024 C.H.

D BY: SHEET PV-10

FOR INSTALLATION REFERENCE ONLY

SCAN QR CODE TO ACCESS REFERENCE LINK







Enphase Storage Systems



SOLAREDGE Storage Systems



BATTERY INSTALLATION REFERENCES

TESLA Storage Systems



NON-BACKUP Battery Systems



Misc. Quick Guide

SILFAB NTC



SIL-430 QD



INTRODUCING NEXT-GENERATION N-TYPE CELL TECHNOLOGY

- Improved Shade Tolerance
- Improved Low-Light Performance
- Increased Performance in High Temperatures
- Enhanced Durability
- Reduced Degradation Rate
- Industry-Leading Warranty

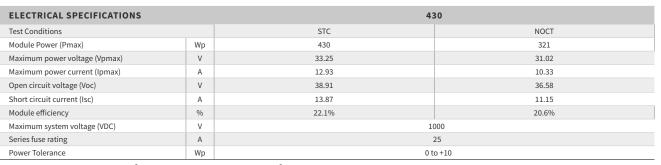












Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%

Sun simulator calibration reference modules from Frauphofer Institute, Electrical characteristics may vary by ±5% and nower by 0 to ±10 W

Sun simulator calibration reference modules from Frauni	nofer Institute. Electrical characteristics may	ary by ±5% and power by 0 to +10 W.

MECHANICAL PROPERTIES / COMPONENTS	METRIC	IMPERIAL
Module weight	21 kg ± 0.2 kg	46.3 lbs ± 0.4 lbs
Dimensions (H x L x D)	1721 mm x 1133 mm x 35 mm	67.8 in x 44.6 in x 1.37 in
Maximum surface load (wind/snow)*	4000 Pa rear load / 5400 Pa front load	83.5 lb/ft² rear load / 112.8 lb/ft² front load
Hail impact resistance	ø 25 mm at 83 km/h	ø 1 in at 51.6 mph
Cells	108 Half cells - N-Type Silicon solar cell 182 mm x 91 mm	108 Half cells - N-Type Silicon solar cell 7.16 in x 3.58 in
Glass	3.2 mm high transmittance, tempered, antireflective coating	0.126 in high transmittance, tempered, antireflective coating
Cables and connectors (refer to installation manual)	1350 mm, ø 5.7 mm, MC4 from Staubli	53.1 in, ø 0.22 in (12 AWG), MC4 from Staubli
Backsheet	High durability, superior hydrolysis and UV resistance, multi fluorine-free PV backsheet	-layer dielectric film,
Frame	Anodized aluminum (Black)	
Junction Box	UL 3730 Certified, IEC 62790 Certified, IP68 rated, 3 diodes	

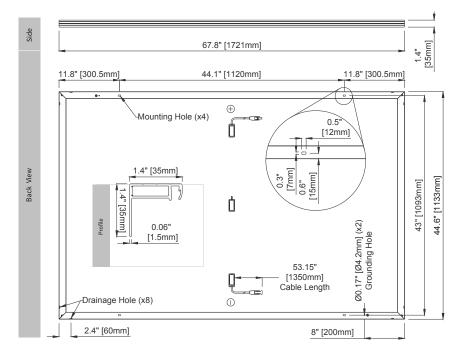
TEMPERATURE RATINGS		WARRANTIES			
Temperature Coefficient Isc	0.04 %/°C	Module product workmanship warranty	25 years**		
Temperature Coefficient Voc	-0.24 %/°C	Linear power performance guarantee	30 years		
Temperature Coefficient Pmax	-0.29 %/°C		≥ 98% end 1st yr ≥ 94.7% end 12th yr		
NOCT (± 2 °C)	45 °C		≥ 94.7% end 12th yr ≥ 90.8% end 25th yr		
Operating temperature	-40/+85 °C		≥ 89.3% end 30th yr		

CERTIFICATIONS		SHIPPING SPECS	
Product	UL 61215, UL 61730, CSA C22.2#61730, IEC 61215, IEC 61730, IEC 61701 (Salt Mist Corrosion), IEC 62716 (Ammonia Corrosion), CEC Listed, UL Fire Rating: Type 2	Modules Per Pallet:	26 or 26 (California)
Product		Pallets Per Truck	32 or 30 (California)
Factory	ISO9001:2015	Modules Per Truck	832 or 780 (California)

^{* 🛦} Warning. Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.

^{** 12} year extendable to 25 years subject to registration and conditions outlined under "Warranty" at silfabsolar.com.

PAN files generated from 3rd party performance data are available for download at: silfabsolar.com/downloads.



SILFAB SOLAR INC.

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Burlington WA 98233 USA T+1 360.569.4733 info@silfabsolar.com

into@siltabsolar.com SILFABSOLAR.COM

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240 Courtneypark Drive East Mississauga ON L5T 2Y3 Canada **T** +1 905.255.2501

F +1 905.696.0267

Silfab - SIL-430-QD-20240227

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SolarEdge Home Wave Inverter For North America

SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US





Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014-2023 per articles 690.11 and 690.12

- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)





/ SolarEdge Home Wave Inverter For North America

SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number		SE11400H- XXXXXBXX5							
	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	Unit		
OUTPUT									
Rated AC Power Output	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA		
Maximum AC Power Output	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA		
AC Output Voltage MinNomMax. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	Vac		
AC Output Voltage MinNomMax. (183 - 208 - 229)	✓	-	✓	-	-	✓	Vac		
AC Frequency (Nominal)			59.3 - 60	- 60.5 ⁽¹⁾			Hz		
Maximum Continuous Output Current @240V	16	21	25	32	42	47.5	А		
Maximum Continuous Output Current @208V	16	-	24	-	-	48.5	А		
Power Factor		1, Adjustable - 0.85 to 0.85							
GFDI Threshold			1				А		
Utility Monitoring, Islanding Protection, Country Configurable Thresholds			Ye	ŝ					
INPUT									
Maximum DC Power @240V	5900	7750	9300	11800	15500	17650	W		
Maximum DC Power @208V	5100	-	7750	-	-	15500	W		
Transformer-less, Ungrounded			Yes	S					
Maximum Input Voltage			480)			Vd		
Nominal DC Input Voltage			380)			Vd		
Maximum Input Current @240V ⁽²⁾	10.5	13.5	16.5	20	27	30.5	Ad		
Maximum Input Current @208V ⁽²⁾	9	-	13.5	-	-	27	Ad		
Max. Input Short Circuit Current			45				Ad		
Reverse-Polarity Protection			Yes	5					
Ground-Fault Isolation Detection			600k Ser	sitivity					
Maximum Inverter Efficiency			99.	2			%		
CEC Weighted Efficiency			99		_	99 @ 240V 98.5 @ 208V	%		
Nighttime Power Consumption			< 2.	.5			W		

⁽¹⁾ For other regional settings please contact SolarEdge support.

⁽²⁾ A higher current source may be used; the inverter will limit its input current to the values stated

/ SolarEdge Home Wave Inverter

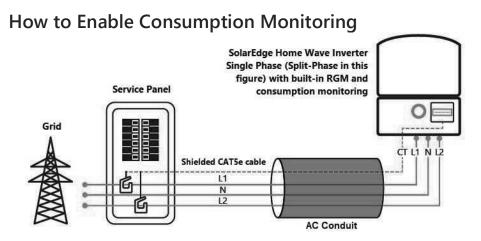
For North America

SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number		SI	XXXXH-XXXXXBX	X4		SE11400H- XXXXXBXX5	
	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES							
Supported Communication Interfaces	F	RS485, Ethernet, Zig	* 1	less SolarEdge Hom . Cellular (optional)	ne Network (optional)	(3),	
Revenue Grade Metering, ANSI C12.20			Opt	tional ⁽⁴⁾			
Consumption Metering							
Inverter Commissioning	With	the SetApp mobile	application using B	uilt-in Wi-Fi Access	Point for Local Conn	ection	
Rapid Shutdown - NEC 2014-2023 per articles 690.11 and 690.12		Automatic Rapid Shutdown upon AC Grid Disconnect					
STANDARD COMPLIANCE							
Safety	UL17-	UL1741, UL1741 SA, UL1741 SB, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07					
Grid Connection Standards		IEEE1547-2018, Rule 21, Rule 14 (HI), CSA C22.3 No. 9					
Emissions		FCC Part 15 Class B					
INSTALLATION SPECIFICATION	S						
AC Output Conduit Size / AWG Range		1" Maximum	/ 14 – 6 AWG		1" Maximum	/ 14 – 4 AWG	
DC Input Conduit Size / # of Strings / AWG Range		1" Maximum / 1 – 2	strings / 14 – 6 AW0	j.		imum / / 14 – 6 AWG	
Dimensions with Safety Switch (H x W x D)		17.7 x 14.6 x 6.8 ,	/ 450 x 370 x 174		21.06 x 14.6 x 7.3 / 535 x 370 x 185	21.06 x 14.6 x 8.2 / 535 x 370 x 208 ⁽⁵⁾	in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2	/ 11.9	38.8 / 17.6	44.9 / 20.4 ⁽⁵⁾	lb/kg
Noise	< 25 <50			dBA			
Cooling			Natural	Convection			
Operating Temperature Range		-40 to +140 / -40 to +60 ⁽⁶⁾			°F / °C		
Protection Rating		NEMA 4X (Inverter with Safety Switch)					

⁽³⁾ For more information, refer to the <u>SolarEdge Home Network</u> datasheet

⁽⁶⁾ Full power up to at least 50°C / 122°F; for power de-rating information refer to the Temperature De-rating Technical Note for North America.



By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills.

⁽⁴⁾ Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxH-US000BEI4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box.

⁽⁵⁾ SE11400H-USxxx8xx5 is the updated PN, though SE11400H-USxxx8xx4 will still be available. All specifications are similar for both models, **EXCLUDING** the weight and dimensions [HxWxD]; The weight and dimensions of SE11400H-USxxx8xx4 are 17.6 [kg] and 21.06-14.6-7.3 / 535-370-185 [in/mm], accordingly.

Power Optimizer For North America

S440, S500



PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- * Expected availability in 2022

- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)



/ Power Optimizer For North America S440, S500

	S440	S500	Unit
INPUT			
Rated Input DC Power ⁽¹⁾	440	500	W
Absolute Maximum Input Voltage (Voc)	60		Vdc
MPPT Operating Range	8 - 60		Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5	15	Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overvoltage Category	II		
OUTPUT DURING OPERATION			
Maximum Output Current	15		Adc
Maximum Output Voltage	60		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER D	ISCONNECTED FROM INVERTER OR IN	VERTER OFF)	
Safety Output Voltage per Power Optimizer	1+/-0.1		Vdc
STANDARD COMPLIANCE			<u>.</u>
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 &	2020	
EMC	FCC Part 15 Class B, IEC61000-	6-2, IEC61000-6-3	
Safety	IEC62109-1 (class II safe	ty), UL1741	
Material	UL94 V-0, UV Res	istant	
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:	2013-05	
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 153 x 30 / 5.07 x	6.02 x 1.18	mm / in
Weight (including cables)	655 / 1.5		gr / lb
Input Connector	MC4 ⁽²⁾		
Input Wire Length	0.1 / 0.32		m / ft

Output Connector

Protection Rating

Relative Humidity

Output Wire Length Operating Temperature Range®

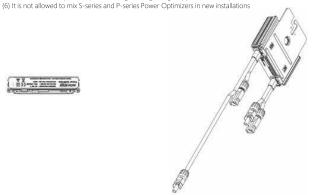
⁽³⁾ For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

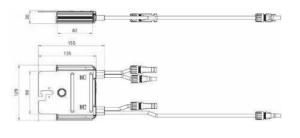
PV System Design Using a SolarEdge Inverter		Single Phase HD-Wave	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	S440, S500	8	14	18	
Maximum String Length (Power Op	otimizers)	25		50(4)	
Maximum Nominal Power per String		5700 (6000 with SE7600-US-SE11400-U)	6000	12750	W
Maximum Allowed Connected Powe (Permitted only when the difference in co		Refer to Footnate 5	One String 7200W	15.000W	
strings is 1,000W or less)	ninected power between	Refer to Postriote 3	Two strings or more 7800W	13,00000	
Parallel Strings of Different Lengths or Orientations			Υ		

⁽⁴⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement

⁽⁵⁾ If the inverters rated AC power < maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power. Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf







MC4 (+) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32

-40 to +85

IP68 / Type6B

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solaredge.com

⁽¹⁾ Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed

Product specifications

Eaton DG221URB

Catalog Number: DG221URB

Eaton General duty non-fusible safety switch, single-throw, 30 A, 240 V, NEMA 3R, Rainproof, Painted galvanized steel, Two-pole, Two-wire

General specifications

Product Name Catalog Number DG221URB Eaton general duty non-fusible safety

switch

UPC

782113120232

Product Length/Depth Product Height

6.88 in 10.81 in

Product Width Product Weight

6 lb 6.38 in

Warranty Certifications Eaton Selling Policy 25-000, one (1) year UL Listed

from the date of installation of the

Product or eighteen (18) months from the Catalog Notes

WARNING! Switch is not approved for date of shipment of the Product, service entrance unless a neutral kit is whichever occurs first.

installed.



Product specifications

Product Category

General duty safety switch

Enclosure material

Painted galvanized steel

Non-fusible, single-throw

Fuse configuration

Non-fusible

Number of wires

Enclosure NEMA 3R

Voltage rating

240V

Amperage Rating

30A

Number Of Poles

Two-pole

Resources

Catalogs

Eaton's Volume 2—Commercial Distribution

Multimedia

Double Up on Safety

Switching Devices Flex Center

Specifications and datasheets

Eaton Specification Sheet - DG221URB



Eaton Corporation plc Eaton House 30 Pembroke Road Dublin 4. Ireland Eaton.com

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A versatile bracket for mounting solar PV to trapezoidal roof profiles

profiles!

roof

to trapezoidal

attach solar

The right way to

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™

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



ProteaBracket™

NOW AVAILABLE IN ALUMINUM



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*

*See www.S-5.com for details.



www.S-5.com 888-825-3432 The Right Way!™

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

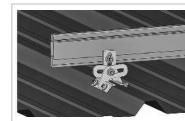
ProteaBracket™ is compatible with common metal roofing materials and comes with a pre-applied EPDM gasket on

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

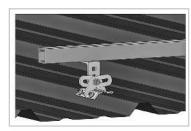
For design assistance, ask your distributor, or visit www.S-5.com for the independent lab test data that can be used for load-critical designs and applications. Also, please visit our website for more information including metallurgical compatibilities and specifications.

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

Multiple Attachment Options:



Side Mount Rail



Bottom Mount Rail



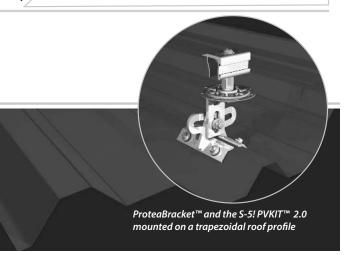
w/S-5!**PVKIT**TM (rail-less)

ProteaBracket[™] 0.35" x 1.00" Slotted Hole

up to 3 inches

ProteaBracket fits profiles

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.



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

Copyright 2019, Metal Roof Innovations, Ltd. S-5! products are patent protected S-5! aggressively protects its patents, trademarks, and copyrights. Version 0708! Distributed by

IXIT HORIZON



#UNIRAC

DISCOVER YOUR **NXT** HORIZON°

The culmination of over two decades of experience. Thoughtful design, rigorous engineering, world-class support, and a reliable supply chain are the foundation of what makes us confident that NXT HORIZON® is the NXT Level of DESIGN, SIMPLICITY, and VALUE.

NXT HORIZON COMBO CLAMP

DARK: CCLAMPD1 MILL: CCLAMPM1

1/2 inch module spacing for efficiency.

mid and end clamps.

Unirac-quality bonding that works both as

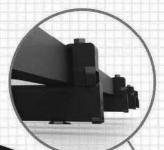
Clicks into rail anywhere (even where there are cables!) Self-standing clamp with spring combines as both mid and end clamp Clamps 30-40 mm modules



STRONGHOLD™ RAIL CLAMP

DARK: SHCLMPD1 MILL: SHCLMPM1

Adaptable rail connection to attachments allows click-in feature compatibility with almost all of Unirac's attachments.



NXT HORIZON CAP KIT

ENDCAPD1

Make the install look clean with the end cap kit designed to complement the module end clamp and rail ends.



FlashLoc technology combined with new features: click-in rail & open slot L-Foot for the best flash-less install experience.



NXT HORIZON RAIL

DARK: 168RLD1 MILL: 168RLM1

RLSPLCM1

Strong, lightweight open channel rail with invisible, easy, unfailing and integrated wire management

NXT HORIZON' RAIL SPLICE



WIRE MANAGEMENT OPTONS

NXT HORIZON MLPE & LUG CLAMP

LUGMLPET

Works as either MLPE Mount or Grounding Lug connection to the rail. Why source two parts when one can do the job?



NXT HORIZON' WIRE MANAGEMENT CLIP

WRMCLPD1

Aesthetic, yet functional accessory that works to help installers keep wires inside the rail. No zip-ties required. Optional zip tie loop for extra wire management capabilities!



NXT HORIZON' NORTH/SOUTH WIRE

WRMCNSD1

An elegant solution to help installers get to the home run. The same hardware works to provide both easy entry to rail and adjustability for cable

STRONGHOLD" ATTACHMENT KIT

DARK: SHCPKTD1 MILL: SHCPKTM1

Rail clicks into the clamps attached to the Stronghold™ base. Open slot in L-foot allows drop-in rail clamp.

Alternative attachment options



Structural internal splice that does not interfere with roof connection nor module connection. Pre-assembled thread cutting bolts.

ALL NXT HORIZON' SYSTEMS INCLUDE A FREE PERMITTING PLANSET DESIGN - FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR EMAIL NXTPERMITS@UNIRAC.COM



Certificate: 70131735 **Project:** 80182385

Master Contract: 266909 Date Issued: 2023-11-29

Downward Design Load (lb/ft²)	33.9
Upward Design Load (lb/ft²)	33.9
Down-Slope Load (lb/ft²)	16.5

Γ	Model	NXT	-	Flush-to-Roof is an extruded aluminum rail PV racking system that is
		UMOUNT		installed parallel to the roof in landscape or portrait orientations.

NXT UMOUNT

The system listed is designed to provide bonding/grounding, and mechanical stability for photovoltaic modules. The system is secured to the roof with the L-Foot components through the roofing material to building structure. Modules are secured to the racking system with aluminum mid clamps and aluminum end clamps. The modules are bonded to the racking system with bonding mid and end clamps with piercing points. Fire ratings of Class A with Type 1, 2, 3 (with metallic frame), 10(with metallic frame), 19, 22, 25, 29, or 30 for steep and low slope. Tested at 5" interstitial gap which allows installation at any stand-off height.

The grounding of the system is intended to comply with the latest edition of the National Electrical Code, to include NEC 250 & 690. Local codes compliance is required, in addition to national codes. All grounding/bonding connections are to be torqued in accordance with the Installation Manual and the settings used during the certification testing for the current edition of the project report.

Latest Install Manual revision: PUB2023NOV10

UL 2703 Mechanical Load ratings for tested module area 21.86 sq ft:

NXT Systems without DTD Butyl Attachment P30817211, Rail Splice P30808218, or Rail Clamp P30817214		
Downward Design Load (lb/ft²) 113.7		
Upward Design Load (lb/ft²)	51.1	
Down-Slope Load (lb/ft²)	16.8	

NXT Systems with DTD Butyl Attachment		
P30817211, Rail Splice P30808218, or Rail		
Clamp P30817214		
Downward Design Load (lb/ft²) 51.1		
Upward Design Load (lb/ft²)	51.1	



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Down-Slope Load	(lb/ft²)	16.8

UL 2703 and TIL Mechanical Load ratings tested module area 27.76 sq ft:

NXT Systems without DTD Butyl Attachment P30817211, Rail Splice P30808218, or Rail Clamp P30817214		
Downward Design Load (lb/ft²) 50.1		
Upward Design Load (lb/ft²) 22.2		
Down-Slope Load (lb/ft²) 8.0		

NXT Systems with DTD Butyl Attachment P30817211, Rail Splice P30808218, or Rail Clamp P30817214		
Downward Design Load (lb/ft²) 39.47		
Upward Design Load (lb/ft²)	22.2	
Down-Slope Load (lb/ft²)	8.0	

UL 2703 and TIL Mechanical Load ratings tested module area 29.49 sq ft:

NXT Systems with all components included in			
PUB2023NOV10 Install Manual			
Downward Design Load (lb/ft²) 37.06			
Upward Design Load (lb/ft²) 20.97			
Down-Slope Load (lb/ft²) 7.53			

Model	SM Ascender	1	One or two row elevated or non-elevated roof system is an extruded aluminum rail PV racking system that is installed to the roof in
			portrait orientation.

SM Ascender

The system listed is designed to provide bonding/grounding, and mechanical stability for photovoltaic modules. The system is secured to the roof with the L-Foot components through the roofing material to building structure. Modules are secured to the racking system with aluminum mid clamps and aluminum end clamps. Fire rating of Class A when installed over non-combustible roofing materials.

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February 5, 2024

Unirac, Inc. 1411 Broadway Boulevard NE Albuquerque, New Mexico 87102 TEL: (505) 242-6411

FAX: (505)242-6512

Re.: Innova Technologies No.: 124-099-1000

Unirac NXT U-Mount Design Tool - Florida

Attn: Engineering Services

Innova Technologies Inc. has reviewed Unirac's NXT U-Mount design tool and analysis, including the U-Builder online tool. NXT U-mount is a proprietary system to support Photovoltaic (PV) panels on a rooftop structure.

All analysis and information in the NXT design tool's formulas and tables comply with the following:

- <u>2009-2021 International Building Code</u> by International Code Council Inc. with provisions from SEAOC PV-2
- ASCE/SEI 7-05 through 7-22 Minimum Design Loads and Other Structures, by American Society of Civil Engineers.
- Florida Building Code 2020, and 2023 Editions
- 2005 2020 Aluminum Design Manual, by the Aluminum Association.

This letter certifies that the structural analysis of the racking members and their direct components comply with the above codes and methodologies. This Design tool does not review the existing roof structure, or the PV panels themselves.

The U-Builder tool should be used under review of a registered design professional where required by the authority having jurisdiction.

For more information, see the construction drawings, and manufacturer installation instructions.

Exp 02/28/2025

02/06/2024

Best Regards,

Adriana Gonorazky Sr. Vice President

Innova Technologies, Inc.

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