

AERIAL VIEW:



STREET VIEW:



CONTRACTOR INFORMATION:

MODERN MILL SOLAR
3518 Broadway
Fort Wayne, Indiana 46807
844-440-2880

SITE INFORMATION

Nancy Anderson
836 N 34th St
Milwaukee, WI 53208
AC SYSTEM SIZE: 5 kW AC
DC SYSTEM SIZE: 5.92 kW DC
Lat, 43.0411576
Long, -87.9561665
(16) SIL-370 BK PV MODULES

(1) SolarEdge SE5000H-US (240V)
INVERTER(S)
We Energies

GENERAL NOTES

1. INSTALLATION OF SOLAR PHOTOVOLTAIC SYSTEM SHALL BE IN ACCORDANCE WITH NEC ARTICLE 690, AND ALL OTHER APPLICABLE NEC CODES WHERE NOTED OR EXISTING.
2. PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL COMPLY WITH NEC ARTICLE 110.
3. ALL WIRES, INCLUDING THE GROUNDING ELECTRODE CONDUCTOR SHALL BE PROTECTED FROM PHYSICAL DAMAGE IN ACCORDANCE WITH NEC ARTICLE 250
4. THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE; THIS SYSTEM IS UTILITY INTERACTIVE PER UL 1741 AND DOES NOT INCLUDE STORAGE BATTERIES OR OTHER ALTERNATIVE STORAGE SOURCES.
5. ALL DC WIRES SHALL BE SIZED ACCORDING TO [NEC 690.8]
6. DC CONDUCTORS SHALL BE WITHIN PROTECTED RACEWAYS IN ACCORDANCE WITH [NEC 690.31]
7. ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL JURISDICTIONAL BUILDING CODE.

PHOTOVOLTAIC (PV) SYSTEM SPECIFICATIONS

EQUIPMENT:
AC SYSTEM SIZE: 5 kW AC
DC SYSTEM SIZE: 5.92 kW DC
(16) SIL-370 BK PV MODULES
(1) SolarEdge SE5000H-US (240V) INVERTER(S)
RACKING: IronRidge - 48" O.C.

APPLICABLE GOVERNING CODES

2017 NEC
WI Uniform Dwelling Code for one/two family dwellings
2015 IFC
2015 IBC

SITE SPECIFICATIONS

OCCUPANCY: R-3
ZONING: RESIDENTIAL

APPROVED

By Tim Askin - Milwaukee HPC at 2:12 pm, Nov 29, 2021

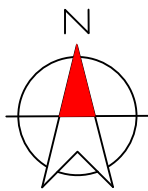
SHEET INDEX:

- PV01 COVER PAGE
- PV02 SITE PLAN
- PV03 ROOF PLAN
- PV04 ROOF ATTACHMENTS
- PV05 MOUNTING DETAIL
- PV06 LINE DIAGRAM
- PV07 LABELS
- PV08 PLACARD
- PV09 SITE PHOTOS

DRAWN BY: SoloCAD

DATE:
August 18, 2021

COVER PAGE - PV01

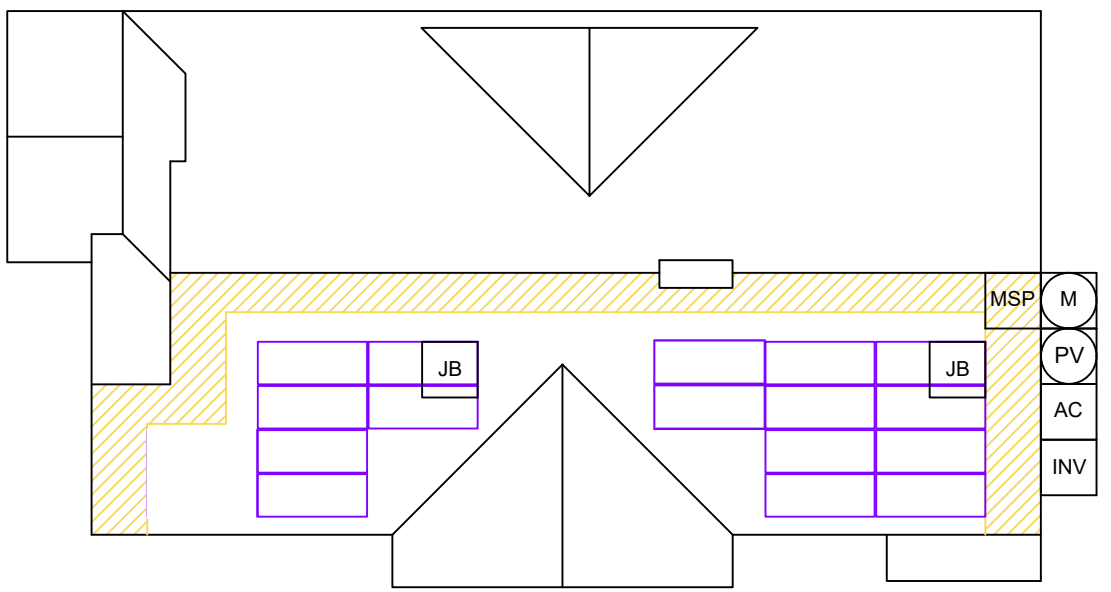


122'-6"

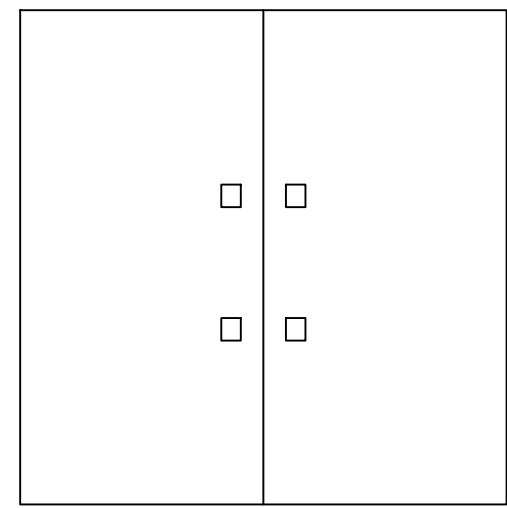
39'-8"

836 N 34th St

FRONT OF HOME



MP1
PITCH: 45°
AZIMUTH: 180°



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ENGINEER STAMP

(IF APPLICABLE)

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EQUIPMENT LEGEND:

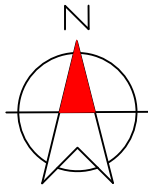
- | | | | | | |
|--------------------|--|--------------|-------------|------------------------------|--------------|
| UTILITY METER | VISIBLE, LOCKABLE, LABELED AC DISCONNECT | INVERTER | SUB PANEL | FIRE ACCESS PATHWAY (3' TYP) | BATTERY(IES) |
| MAIN SERVICE PANEL | METER SOCKET (FOR UTILITY PV METER) | COMBINER BOX | LOAD CENTER | PROPERTY LINE | |

VISIBLE, LOCKABLE, LABELED AC DISCONNECT LOCATED WITHIN 10' OF UTILITY METER

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SITE PLAN - PV02



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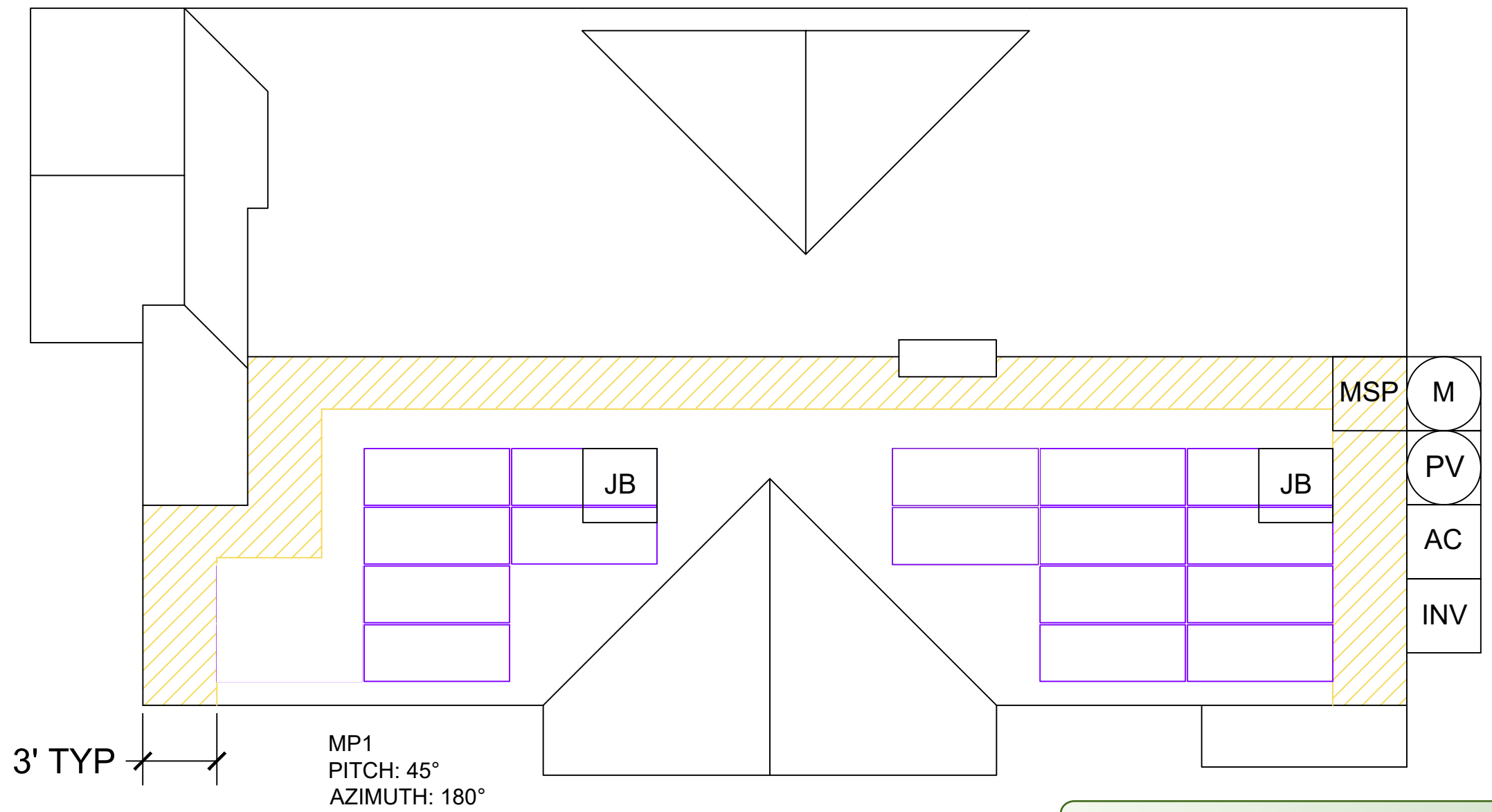
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ENGINEER STAMP

(IF APPLICABLE)

FRONT OF HOME



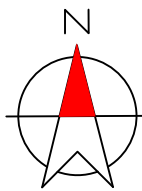
APPROVED
 By Tim Askin - Milwaukee HPC at 2:12 pm, Nov 29, 2021

EQUIPMENT LEGEND:

- | | | | | |
|--------------------|--|--------------|-------------|------------------------------|
| UTILITY METER | VISIBLE, LOCKABLE, LABELED AC DISCONNECT | INVERTER | SUB PANEL | FIRE ACCESS PATHWAY (3' TYP) |
| MAIN SERVICE PANEL | METER SOCKET (FOR UTILITY PV METER) | COMBINER BOX | LOAD CENTER | BATTERY(IES) |

VISIBLE, LOCKABLE, LABELED AC DISCONNECT LOCATED WITHIN 10' OF UTILITY METER

DRAWN BY: SoloCAD
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 ROOF PLAN - PV03



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 INVERTER(S)
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ENGINEER STAMP

(IF APPLICABLE)

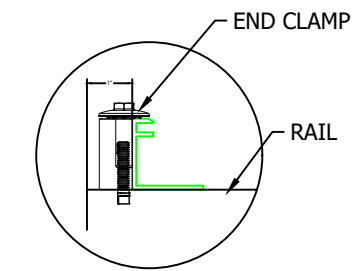
APPROVED
 By Tim Askin - Milwaukee HPC at 2:12 pm, Nov 29, 2021

EQUIPMENT INFORMATION:		ROOF INFO:		PHOTOVOLTAIC ARRAY STRUCTURAL CRITERIA:	
RAIL MANUFACTURER	IronRidge	ROOF TYPE	asphalt_shingle	PV MODULE COUNT:	16
RAIL PART NUMBER	XR-100	ROOF FRAMING	traditional_framing	ARRAY AREA:	MODULE COUNT * 18.06ft ² = 288.96
ATTACHMENTS	IronRidge - FLASHFOOT2	RAFTER/TOP CHORD SIZE	2x6	ROOF AREA:	1580 ft ²
ATTACHMENT QTY	48	RAFTER/TOP CHORD SPACING	24"	PERCENT OF ROOF COVERED:	18%
SPLICE QTY	0	ATTACHMENT SPACING	48	ARRAY WEIGHT:	MODULE COUNT * 50lbs = 800
MIDCLAMP QTY	16			DISTRIBUTED LOAD:	ARRAY LBS/ATTACHMENTS = 16.67
ENDCLAMP QTY	32			POINT LOAD: (lbs/ft ²)	(ARRAY) WEIGHT/AREA = 2.77 lbs/ft ²

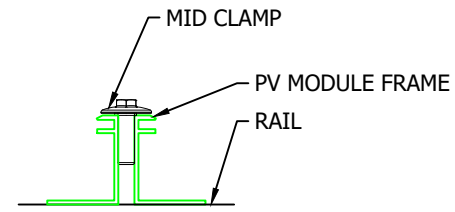
DRAWN BY: SoloCAD

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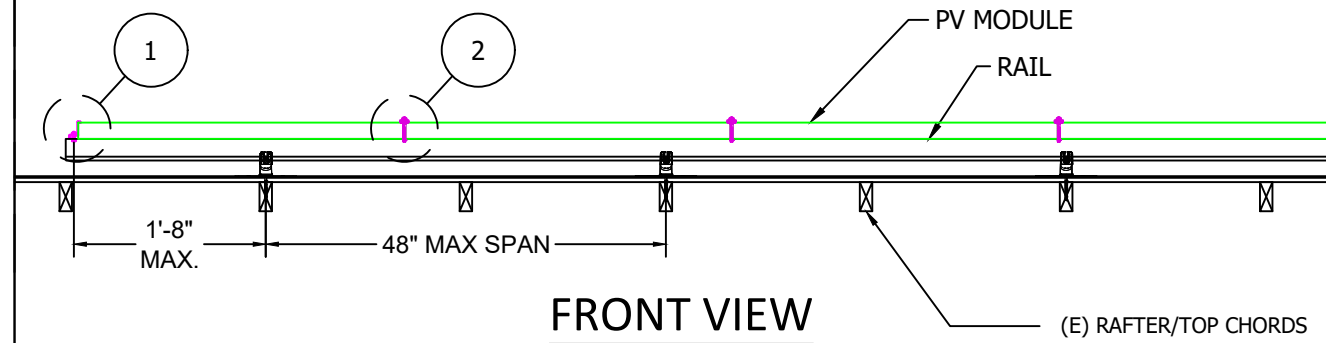
ROOF ATTACHMENTS - PV04



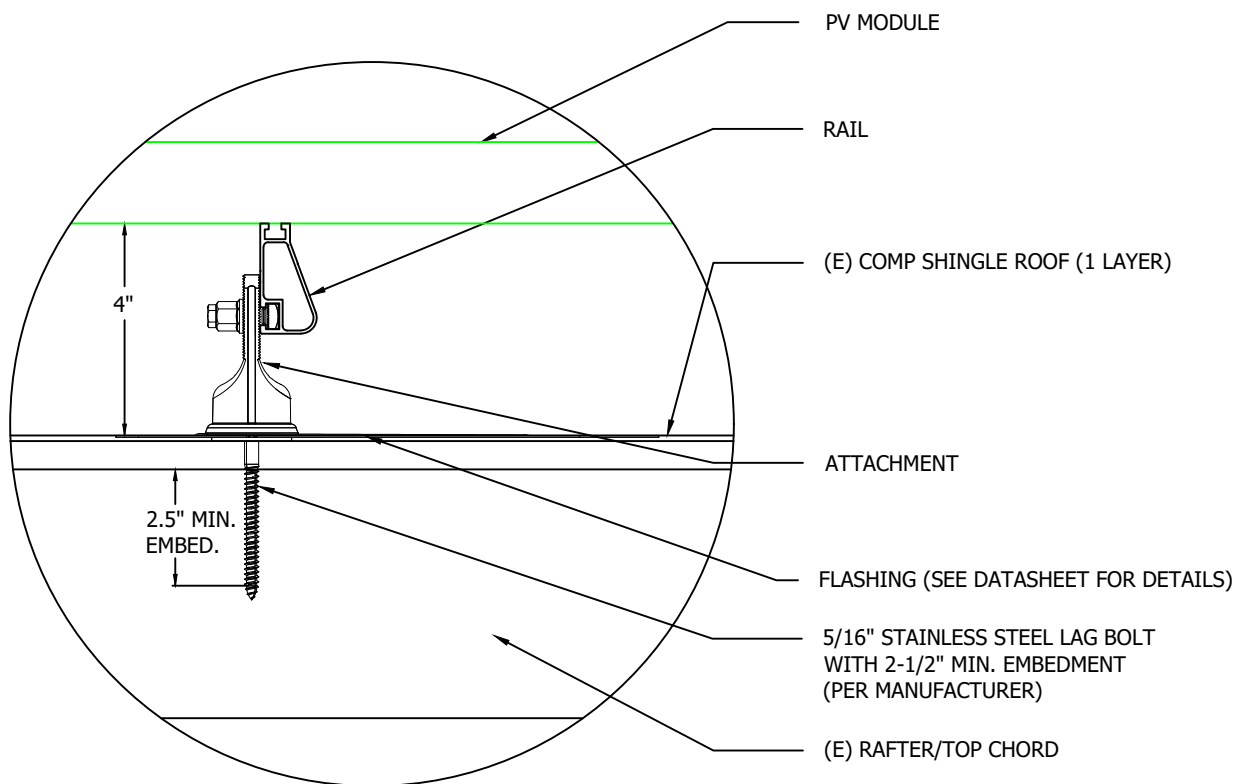
1 END CLAMP DETAILS



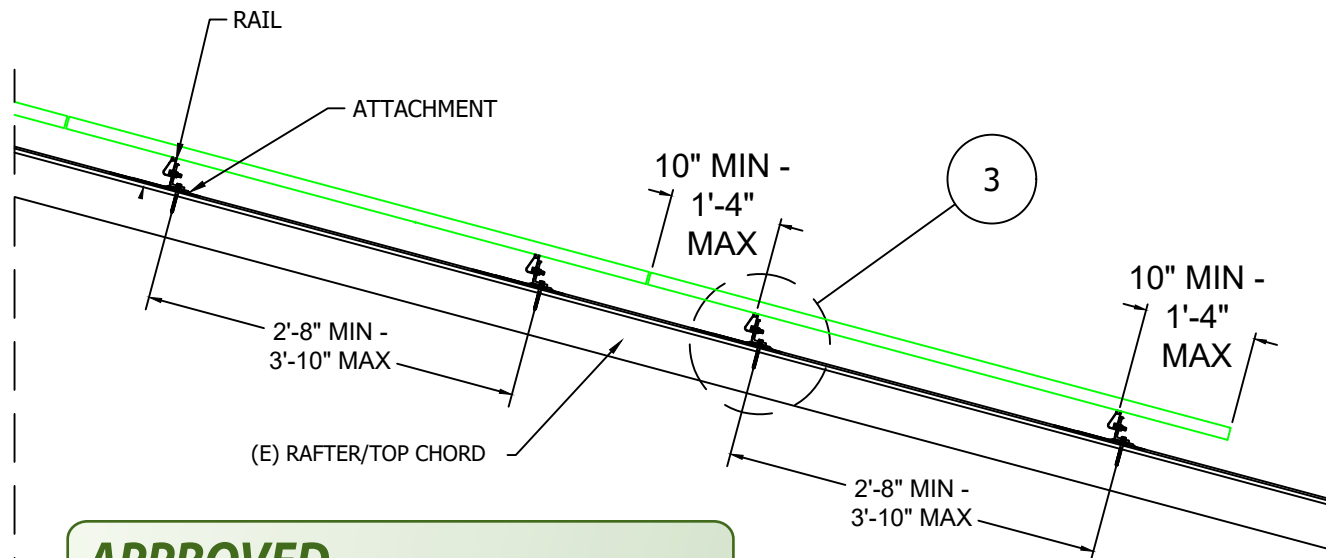
2 MID CLAMP DETAILS



FRONT VIEW



3 DETAIL, MOUNTING AND FLASHING



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SIDE VIEW



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We Energies

ENGINEER STAMP

(IF APPLICABLE)

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MOUNTING DETAIL - PV05

EQUIPMENT INFORMATION:

RAIL MANUFACTURER	IronRidge
RAIL PART NUMBER	XR-100
ATTACHMENTS	IronRidge - FLASHFOOT2
ATTACHMENT QTY	48
SPLICE QTY	0
MIDCLAMP QTY	16
ENDCLAMP QTY	32

ROOF INFO:

ROOF TYPE	asphalt_shingle
ROOF FRAMING	traditional_framing
RAFTER/TOP CHORD SIZE	2x6
RAFTER/TOP CHORD SPACING	24"
ATTACHMENT SPACING	48

PHOTOVOLTAIC ARRAY STRUCTURAL CRITERIA:

PV MODULE COUNT:	16
ARRAY AREA:	MODULE COUNT * 18.06ft ² = 288.96
ROOF AREA:	1580 ft ²
PERCENT OF ROOF COVERED:	18%
ARRAY WEIGHT:	MODULE COUNT * 50lbs = 800
DISTRIBUTED LOAD:	ARRAY LBS/ATTACHMENTS = 16.67
POINT LOAD: (lbs/ft ²)	(ARRAY) WEIGHT/AREA = 2.77 lbs/ft ²

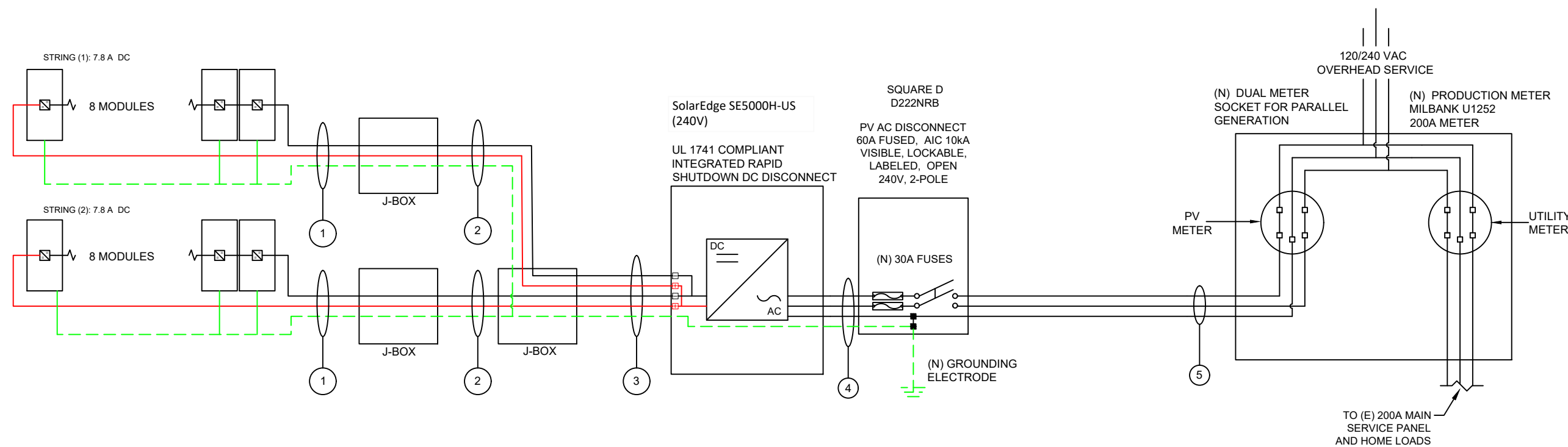
Conduit & Conductor Schedule									
TAG	WIRE GAUGE	DESCRIPTION	QTY	CONDUIT SIZE	CONDUCTOR RATING	# OF CONDUCTORS DERATE	TEMP. DERATE	CONDUCTOR RATING W/DERATES	CONDUIT FILL
1	10 AWG	PV-WIRE , USE-2, COPPER (L1, L2)	(2)	N/A - FREE AIR	40A	N/A - FREE AIR	0.96	33.6A	N/A - FREE AIR
	6 AWG	BARE, COPPER (GROUND)	(1)						
2	10 AWG	THWN-2, or THHN, or 10/2 NM-B COPPER - (L1, L2)	(2)	3/4" EMT	40A	1	0.96	33.6A	11.9%
	10 AWG	THWN-2, or THHN, or 10/2 NM-B COPPER - (GROUND)	(1)						
3	10 AWG	THHN/THWN-2, COPPER - (L1, L2)	(4)	3/4" EMT	40A	0.8	0.96	26.88A	19.8%
	10 AWG	THHN/THWN-2 - (GROUND)	(1)						
4	6 AWG	THWN-2 COPPER - (L1, L2, NEUTRAL)	(3)	3/4" EMT	65A	1	0.96	62.4A	35.5%
	8 AWG	THWN-2 COPPER - (GROUND)	(1)						
5	6 AWG	THWN-2 COPPER - (L1,L2,NEUTRAL)	(3)	3/4" EMT	65A	1	0.96	62.4A	32.58%

EQUIPMENT SCHEDULE:			
TYPE:	QTY:	DESCRIPTION:	RATING:
MODULES:	(16)	SIL-370 BK	370 W
INVERTERS:	(1)	SolarEdge SE5000H-US (240V)	5000 W
AC DISCONNECT(S):	(1)	PV AC DISCONNECT, 240V, 2-POLE	60A
DC OPTIMIZERS:	(16)	SolarEdge P401	15 Adc



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GROUNDING & GENERAL NOTES:

- PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
- DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
- ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
- JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOXES DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
- AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.

INTERCONNECTION NOTES

- GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9] & [NEC 230.95]
- SUPPLY SIDE INTERCONNECTION ACCORDING TO [NEC705.12(A)]

DISCONNECT NOTES

- DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
- AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.
- FUSED AC DISCONNECT TO BE USED.

VISIBLE, LOCKABLE,
LABELED AC DISCONNECT
LOCATED WITHIN 10'
OF UTILITY METER

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ENGINEER STAMP
(IF APPLICABLE)

DRAWN BY: SoloCAD

DATE:
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LINE DIAGRAM - PV06

WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

LABEL 1
FOR PV DISCONNECTING MEANS WHERE THE LINE AND
LOAD TERMINALS MAY BE ENERGIZED IN THE OPEN
POSITION.
[NEC 690.13(B)]

WARNING
THIS EQUIPMENT IS FED BY MULTIPLE
SOURCES. TOTAL RATING OF ALL
OVERCURRENT DEVICES, EXCLUDING
MAIN SUPPLY OVERCURRENT
DEVICE, SHALL NOT EXCEED
AMPACITY OF BUSBAR.

LABEL 2
PLACED ADJACENT TO THE BACK-FED BREAKER
FROM THE INVERTER IF TIE IN CONSISTS OF
LOAD SIDE CONNECTION TO BUSBAR.
[NEC 705.12(B)(2)(3)(b)]

WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE
THIS OVERCURRENT
DEVICE

LABEL 3
PLACED ADJACENT TO THE BACK-FED BREAKER
FROM THE INVERTER IF TIE IN CONSISTS OF
LOAD SIDE CONNECTION TO BUSBAR.
[NEC 705.12(B)(2)(3)(c)]

WARNING
DUAL POWER SUPPLY
SOURCES: UTILITY GRID AND PV
SOLAR ELECTRIC SYSTEM

LABEL 4
EQUIPMENT CONTAINING OVERCURRENT
DEVICES IN CIRCUITS SUPPLYING POWER
TO A BUSBAR OR CONDUCTOR SUPPLIED
FROM MULTIPLE SOURCES SHALL BE
MARKED TO INDICATE THE PRESENCE OF
ALL SOURCES [NEC 705.12(B)(3)]

PHOTOVOLTAIC AC DISCONNECT
RATED AC OUTPUT CURRENT: 21
NOMINAL OPERATING AC VOLTAGE: 240

LABEL 5
AT POINT OF INTERCONNECTION, MARKED
AT AC DISCONNECTING MEANS.
[NEC 690.54, NEC 690.13 (B)]

LABELING NOTES:

1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z535.
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21(B)(3)]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [IFC 605.11.1.1]

**WARNING: PHOTOVOLTAIC
POWER SOURCE**

LABEL 6
AT DIRECT-CURRENT EXPOSED RACEWAYS, CABLE TRAYS, COVERS
AND ENCLOSURES OF JUNCTION BOXES, AND OTHER WIRING METHODS;
SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY
ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.
[NEC 690.31(G)(3&4)]

**SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN
SWICH TO THE "OFF"
POSITION TO SHUT DOWN
PV SYSTEM AND REDUCE
SHOCK HAZARD IN ARRAY

LABEL 7
FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS
LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE
DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED
AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID
SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 690.56(C)(1)(A)]

**SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**

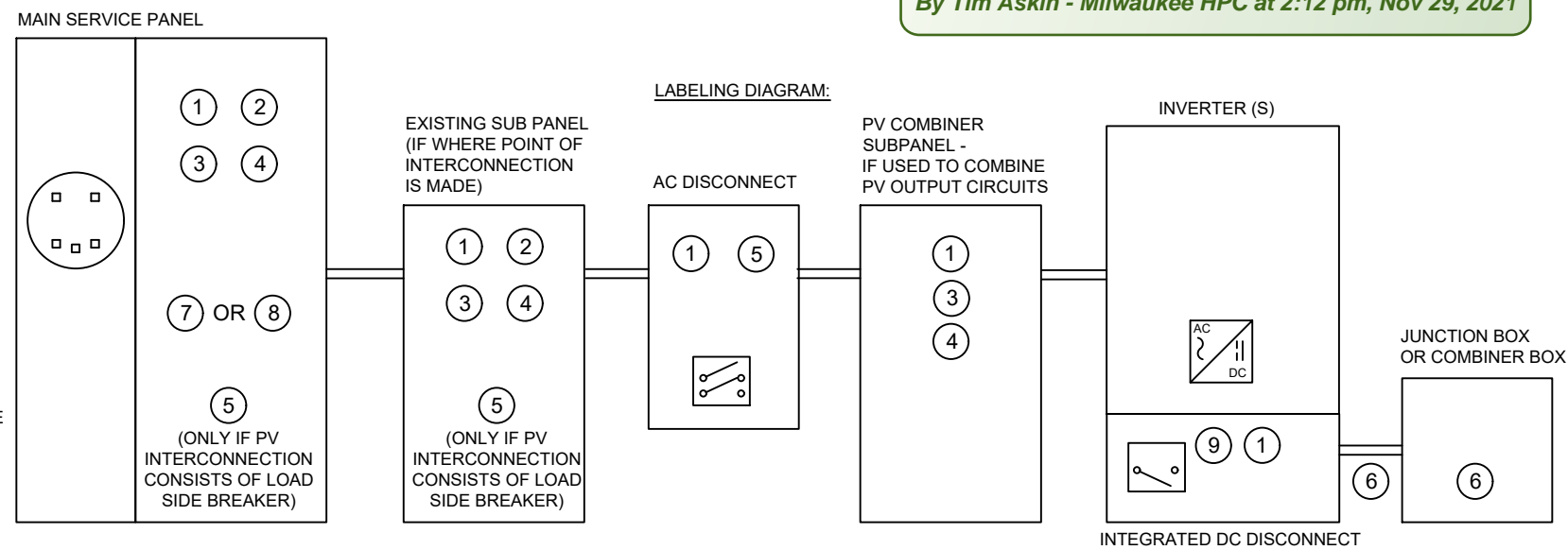
TURN RAPID SHUTDOWN
SWITCH TO THE "OFF"
POSITION TO SHUT DOWN
CONDUCTORS OUTSIDE
THE ARRAY. CONDUCTORS
WITHIN THE ARRAY REMAIN
ENERGIZED IN SUNLIGHT

LABEL 8
FOR PV SYSTEMS THAT ONLY SHUT DOWN
CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT
AWAY FROM SERVICE DISCONNECTING MEANS TO
WHICH THE PV SYSTEMS ARE CONNECTED AND
SHALL INDICATE THE LOCATION OF ALL IDENTIFIED
RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME
LOCATION.
[NEC 690.56(C)(1)(b)]

**RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**

LABEL 9
SIGN LOCATED AT RAPID SHUT DOWN
DISCONNECT SWITCH [NEC 690.56(C)(3)].

APPROVED
By Tim Askin - Milwaukee HPC at 2:12 pm, Nov 29, 2021



*ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENTATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VARY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ON THE ELECTRICAL DIAGRAM PAGE.

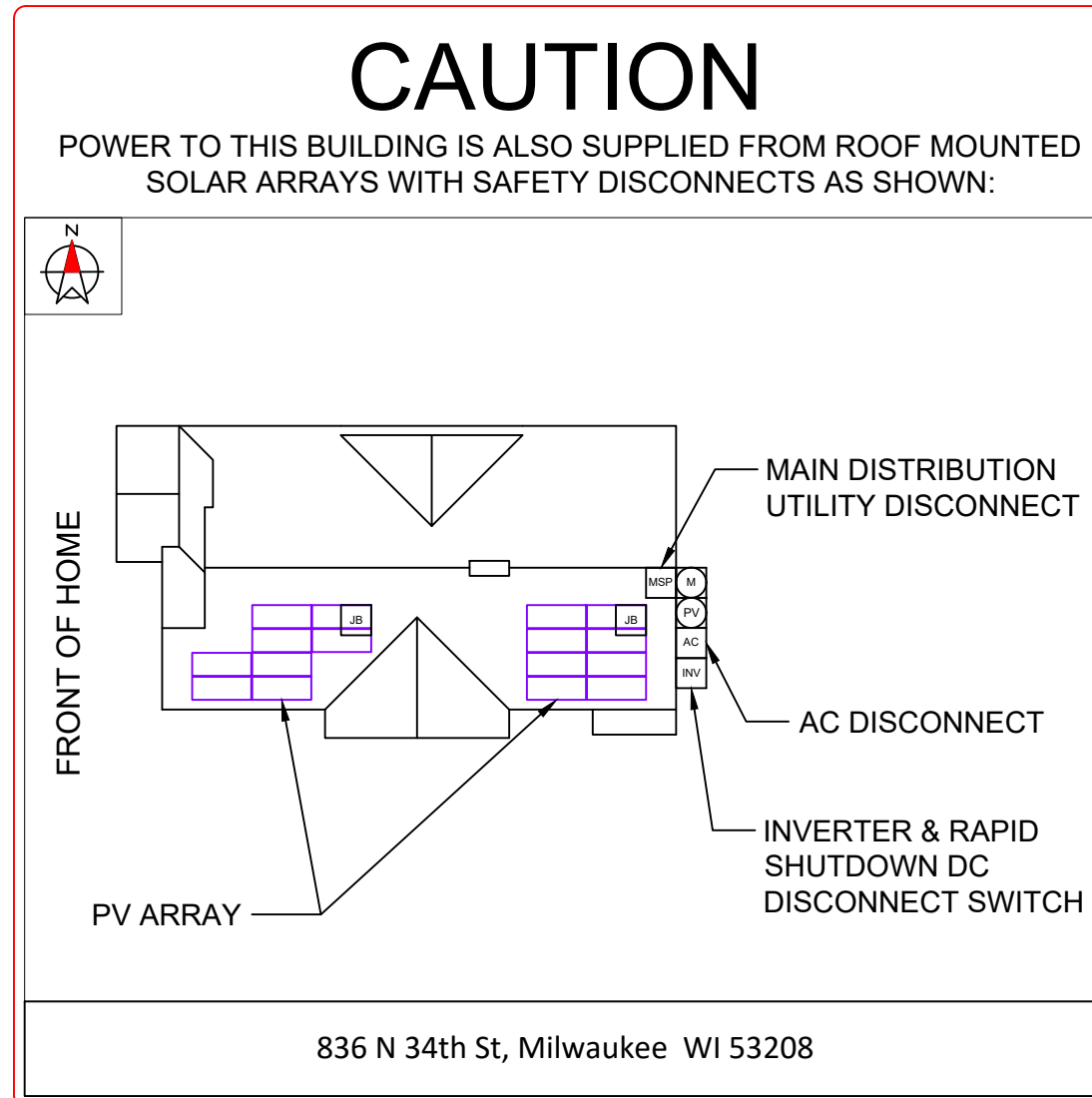
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LABELS - PV07

**DISREGARD
DRAWING ON THIS
PAGE-TA-hpc**



DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN:
NEC 690.56(B)&(C), [NEC 705.10])



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PLACARD - PV08

SITE PHOTOS:



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SITE PHOTOS - PV09





BC Series SIL-370 BK

(Early 2021)



HIGH EFFICIENCY PREMIUM MONO-PERC PV MODULE Back Contact Technology



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

INDUSTRY LEADING WARRANTY

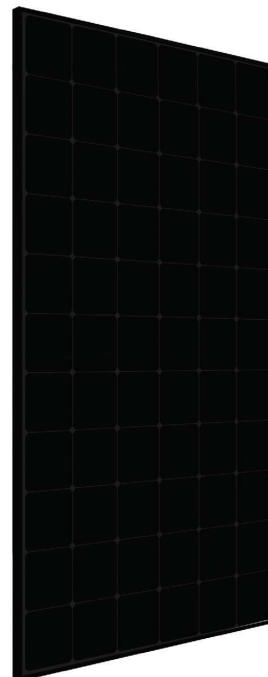
All our products include an industry leading 25-year product workmanship and 30-year performance warranty.

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.



PROVIDES MAXIMUM EFFICIENCY

High-efficiency cells combined with a black conductive back-sheet resulting in a maximum power rating of 370Wp.

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 high wind load conditions for test loads validated up to 4000Pa uplift. 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.

Electrical Specifications	SIL-370 BK mono PERC MWT Technology	
Test Conditions	STC	NOCT
Module Power (Pmax)	Wp	370
Maximum power voltage (Vpmax)	V	38.3
Maximum power current (Ipmax)	A	9.66
Open circuit voltage (Voc)	V	45.0
Short circuit current (Isc)	A	10.29
Module efficiency	%	20.8
Maximum system voltage (VDC)	V	1000
Series fuse rating	A	20
Power Tolerance	Wp	0 to +10

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 Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by 0 to +10W.

Temperature Ratings	SIL-370 BK mono PERC MWT Technology	
Temperature Coefficient Isc	+0.046 %/°C	
Temperature Coefficient Voc	-0.279 %/°C	
Temperature Coefficient Pmax	-0.377 %/°C	
NOCT (± 2°C)	43.5 °C	
Operating temperature	-40/+85 °C	

Mechanical Properties and Components	SIL-370 BK mono PERC MWT Technology	
	Metric	Imperial
Module weight	19.0±0.2 kg	41.9±0.4 lbs
Dimensions (H x L x D)	1795 mm x 990 mm x 38 mm	70.67 in x 39.98 in x 1.5 in
Maximum surface load (wind/snow)*	4000 Pa rear load / 5400 Pa front load	83.5/112.8 lb/ft ²
Hail impact resistance	Ø 25 mm at 83 km/h	Ø 1 in at 51.6 mph
Cells	66 high efficiency back contact mono-PERC c-Si cells	66 high efficiency back contact mono-PERC c-Si cells
Glass	3.2 mm high transmittance, tempered, DSM anti-reflective coating	0.126 in high transmittance, tempered, DSM anti-reflective coating
Cables and connectors (refer to installation manual)	1200 mm Ø 5.7 mm, MC4 from Staubli	47.24 in, Ø 0.22 in, MC4 from Staubli

Backsheet	Multilayer, integrated insulation film and electrically conductive backsheets, superior hydrolysis and UV resistance, fluorine-free PV backsheets
Frame	Anodized Aluminum (Black)
Bypass diodes	3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)
Junction Box	UL 3730 Certified, IP67 rated

Warranties	SIL-370 BK mono PERC MWT Technology	
Module product workmanship warranty	25 years**	
Linear power performance guarantee	30 years	

	≥ 97.1% end 1 st year	≥ 91.6% end 12 th year	≥ 85.1% end 25 th year	≥ 82.6% end 30 th year
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Certifications	SIL-370 BK mono PERC MWT Technology	
Product	ULC ORD C1703***, UL1703***, CEC listed***, UL 61215-1/1-1-1-2***, UL 61730-1/-2***, IEC 61215-1/1-1-1-2***, IEC 61730-1/-2***, CSA C22.2#61730-1/-2***, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 1	
Factory	ISO9001:2015	

- Modules Per Pallet: 26
- Pallets Per Truck: 34
- Modules Per Truck: 884

*Warning: Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.

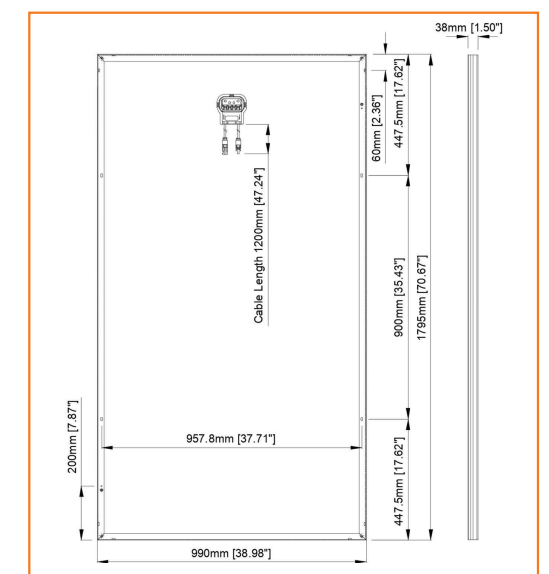
**12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at www.silfabsolar.com.

***Certification anticipated November 2020. PAN files generated from 3rd party performance data are available for download at: www.silfabsolar.com/downloads.



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Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

12-25
YEAR
WARRANTY



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com



Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US		
OUTPUT									
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA	
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA	
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac	
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac	
AC Frequency (Nominal)	59.3 - 60 - 60.5 ¹⁾							Hz	
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A	
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A	
GFDI Threshold	1							A	
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes								
INPUT									
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W	
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W	
Transformer-less, Ungrounded	Yes								
Maximum Input Voltage	480							Vdc	
Nominal DC Input Voltage	380				400			Vdc	
Maximum Input Current @240V ²⁾	8.5	10.5	13.5	16.5	20	27	30.5	Adc	
Maximum Input Current @208V ²⁾	-	9	-	13.5	-	-	27	Adc	
Max. Input Short Circuit Current	45							Adc	
Reverse-Polarity Protection	Yes								
Ground-Fault Isolation Detection	600ka Sensitivity								
Maximum Inverter Efficiency	99	99.2						%	
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%	
Nighttime Power Consumption	< 2.5							W	
ADDITIONAL FEATURES									
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)								
Revenue Grade Data, ANSI C12.20	Optional ³⁾								
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect								
STANDARD COMPLIANCE									
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07								
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (H)								
Emissions	FCC Part 15 Class B								
INSTALLATION SPECIFICATIONS									
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 AWG				1" Maximum / 1-3 strings / 14-6 AWG				
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174				21.3 x 14.6 x 7.3 / 540 x 370 x 185				in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6				lb / kg	
Noise	< 25				< 50				dBA
Cooling	Natural Convection								
Operating Temperature Range	-13 to +140 / -25 to +60 ⁴⁾ (-40°F / -40°C option) ⁵⁾							°F / °C	
Protection Rating	NEMA 4X (Inverter with Safety Switch)								

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

³⁾ Revenue grade inverter P/N: SE000H-US000NNC2

⁴⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

⁵⁾ -40 version P/N: SE000H-US000NNU4

Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

Power Optimizer For North America

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power ⁽¹⁾	370	400		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125 ⁽²⁾	83 ⁽²⁾	Vdc
MPPT Operating Range	8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	11.75	11	14	Adc
Maximum Efficiency	99.5					%
Weighted Efficiency	98.8					%
Overtoltage Category	II					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)						
Maximum Output Current	15					Adc
Maximum Output Voltage	60		80			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer	1 ± 0.1					Vdc
STANDARD COMPLIANCE						
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 & 2020		NEC 2014, 2017 & 2020		NEC 2014, 2017 & 2020	
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741					
Material	UL94 V-0, UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage	1000					Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	655 / 1.4	750 / 1.7	655 / 1.4	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4 ⁽³⁾			Single or dual MC4 ⁽³⁾⁽⁴⁾		MC4 ⁽³⁾
Input Wire Length	0.16 / 0.52, 0.9 / 2.95 ⁽⁴⁾	0.16 / 0.52	0.16 / 0.52, 0.9 / 2.95 ⁽⁴⁾	0.16 / 0.52	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length	1.2 / 3.9					m / ft
Operating Temperature Range ⁽⁵⁾	-40 to +85 / -40 to +185					°C / °F
Protection Rating	IP68 / NEMA6P					
Relative Humidity	0 - 100					%

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
 (2) NEC 2017 requires max input voltage be not more than 80V
 (3) For other connector types please contact SolarEdge
 (4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals
 (5) For ambient temperature above +85°C / +185°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 ⁽⁶⁾⁽⁷⁾	Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401 P485, P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum Nominal Power per String		25	25	50	
Maximum Nominal Power per String		5700 ⁽⁸⁾ (6000 with SE7600-US - SE11400-US)	5250 ⁽⁸⁾	6000 ⁽⁹⁾	12750 ⁽⁹⁾ W
Parallel Strings of Different Lengths or Orientations	Yes				

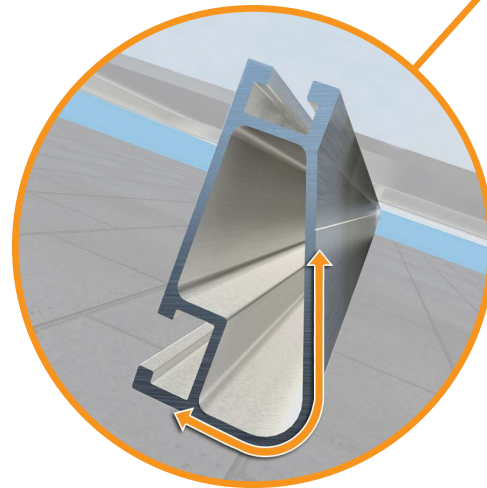
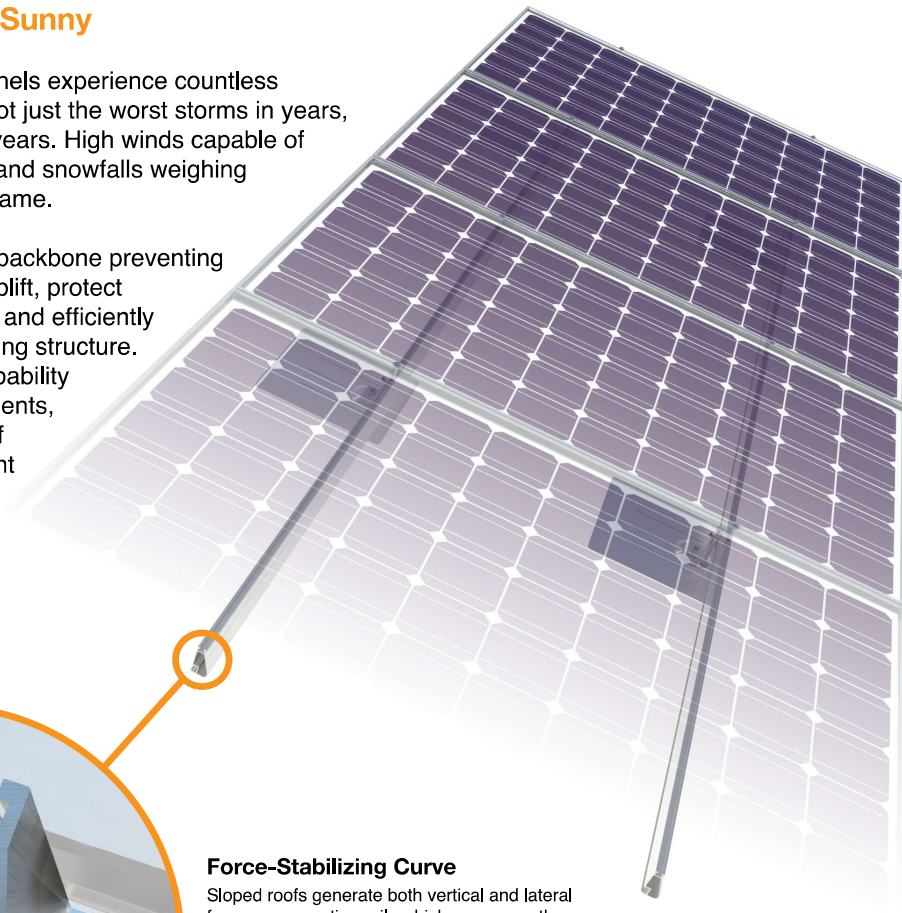
(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
 (7) It is not allowed to mix P485/P505 with P370/P400/P401 in one string
 (8) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will 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>
 (9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W
 (10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

XR Rail Family

Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

Compatible with Flat & Pitched Roofs



XR Rails are compatible with FlashFoot and other pitched roof attachments.



IronRidge offers a range of tilt leg options for flat roof mounting applications.

Corrosion-Resistant Materials

All XR Rails are made of 6000-series aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves spans up to 6 feet, while remaining light and economical.

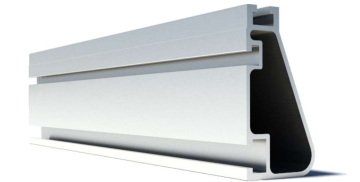
- 6' spanning capability
- Moderate load capability
- Clear & black anodized finish
- Internal splices available



XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 10 feet.

- 10' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available



XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans up to 12 feet for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The table below was prepared in compliance with applicable engineering codes and standards.* Values are based on the following criteria: ASCE 7-16, Gable Roof Flush Mount, Roof Zones 1 & 2e, Exposure B, Roof Slope of 8 to 20 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed certification letters.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
None	90						
	120						
	140	XR10		XR100		XR1000	
	160						
20	90						
	120						
	140						
	160						
30	90						
	160						
40	90						
	160						
80	160						
120	160						

*Table is meant to be a simplified span chart for conveying general rail capabilities. Use approved certification letters for actual design guidance.



The Strongest Attachment in Solar

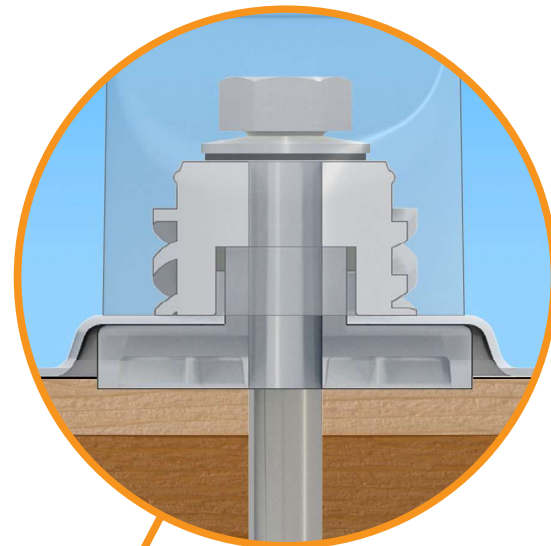
IronRidge FlashFoot2 raises the bar in solar roof protection. The unique water seal design is both elevated and encapsulated, delivering redundant layers of protection against water intrusion. In addition, the twist-on Cap perfectly aligns the rail attachment with the lag bolt to maximize mechanical strength.

Twist-On Cap

FlashFoot2's unique Cap design encapsulates the lag bolt and locks into place with a simple twist. The Cap helps FlashFoot2 deliver superior structural strength, by aligning the rail and lag bolt in a concentric load path.

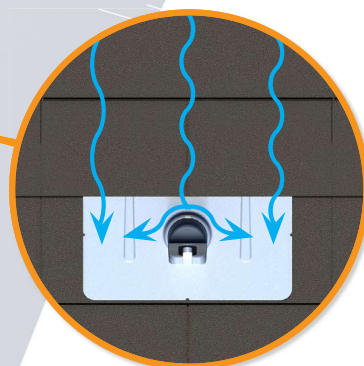
Single Socket Size

A custom-design lag bolt allows you to install FlashFoot2 with the same 7/16" socket size used on other Flush Mount System components.



Three-Tier Water Seal

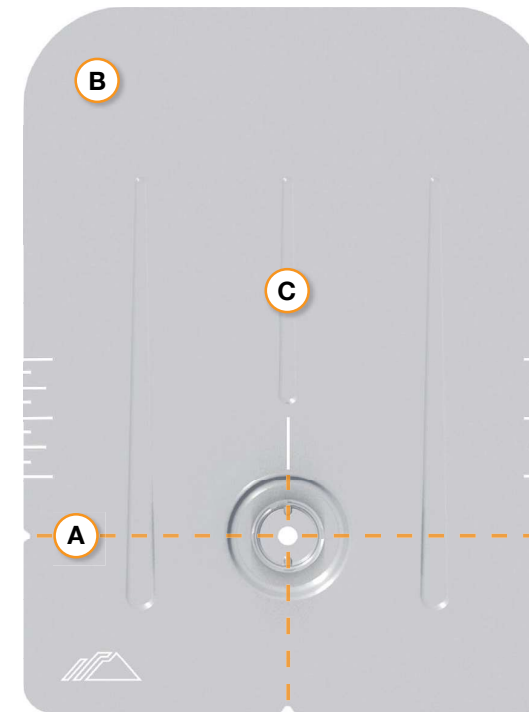
FlashFoot2's seal architecture utilizes three layers of protection. An elevated platform diverts water away, while a stack of rugged components raises the seal an entire inch. The seal is then fully-encapsulated by the Cap. FlashFoot2 is the first solar attachment to pass the TAS-100 Wind-Driven Rain Test.



Water-Shedding Design

An elevated platform diverts water away from the water seal.

Installation Features



A Alignment Markers

Quickly align the flashing with chalk lines to find pilot holes.

B Rounded Corners

Makes it easier to handle and insert under the roof shingles.

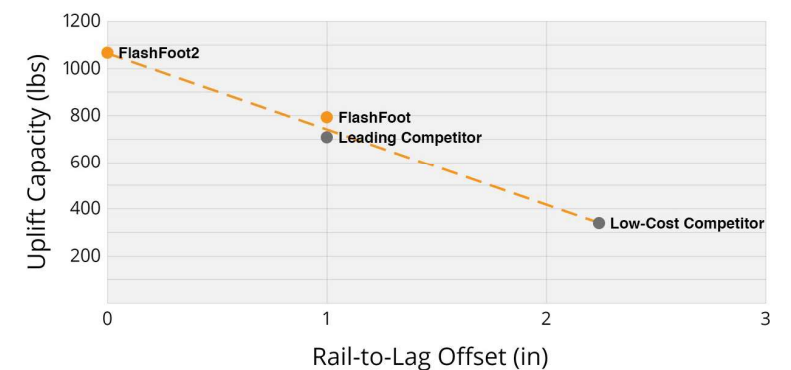
C Reinforcement Ribs

Help to stiffen the flashing and prevent any bending or crinkling during installation.

Benefits of Concentric Loading

Traditional solar attachments have a horizontal offset between the rail and lag bolt, which introduces leverage on the lag bolt and decreases uplift capacity.

FlashFoot2 is the only product to align the rail and lag bolt. This concentric loading design results in a stronger attachment for the system.



Testing & Certification

Structural Certification

Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7.

Water Seal Ratings

Water Sealing Tested to UL 441 Section 27 "Rain Test" and TAS 100-95 "Wind Driven Rain Test" by Intertek. Ratings applicable for composition shingle roofs having slopes between 2:12 and 12:12.

UL 2703

Conforms to UL 2703 Mechanical and Bonding Requirements. See Flush Mount Install Manual for full ratings.