

GENERAL NOTES

NEW PV SYSTEM: 11.700 kWp

OWNER NAME RESIDENCE

HOME FULL ADDRESS

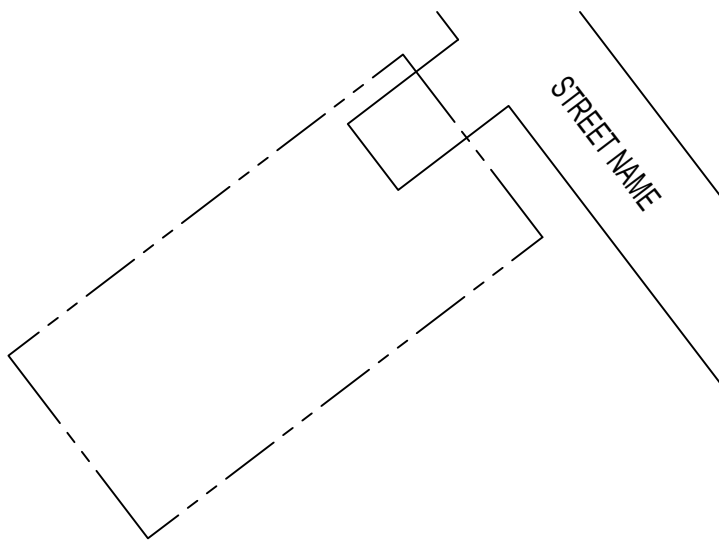
ASSESSOR'S #: _____



01

AERIAL PHOTO

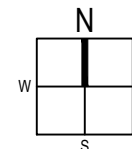
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02

PLAT MAP

NOT TO SCALE



SHEET LIST

SHEET NUMBER	SHEET TITLE
T-001	COVER PAGE
G-001	NOTES
A-101	SITE PLAN
A-102	ELECTRICAL PLAN
A-103	SOLAR ATTACHMENT PLAN
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E-601	LINE DIAGRAM
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E-603	PLACARDS
R-001	RESOURCE DOCUMENT
R-002	RESOURCE DOCUMENT
R-003	RESOURCE DOCUMENT
R-004	RESOURCE DOCUMENT
R-005	RESOURCE DOCUMENT

PROJECT INFORMATION

OWNER
NAME: _____ OWNER NAME

PROJECT MANAGER
NAME: _____
PHONE: _____

CONTRACTOR
NAME: _____ YOUR COMPANY NAME
PHONE: _____ (XXX) XXX-XXXX

AUTHORITIES HAVING JURISDICTION
BUILDING: _____
ZONING: _____
UTILITY: _____

DESIGN SPECIFICATIONS
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL GRID-TIED
GROUND SNOW LOAD: 0 PSF
WIND EXPOSURE: B
WIND SPEED: 136 MPH

APPLICABLE CODES & STANDARDS
BUILDING: FBC 2017, FRC 2017
ELECTRICAL: NEC 2014
FIRE: FFPC 2017

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX
ADDRESS: _____
LIC. NO.: _____
HIC. NO.: _____
ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS
APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

COVER PAGE

DATE: XX.XX.XXXX
DESIGN BY: X.X.
CHECKED BY: X.X.

REVISIONS

T-001.00
(SHEET 1)

- 1.1.1 **PROJECT NOTES:**
- 1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
- 1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
- 1.1.4 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4 & NEC 690.60: **PV MODULES:** UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE **INVERTERS:** UL 1741 CERTIFIED, IEEE 1547, 929, 519 **COMBINER BOX(ES):** UL 1703 OR UL 1741 ACCESSORY
- 1.1.5 NEC 690.35 REFERS SPECIFICALLY TO "UNGROUND" PV SYSTEMS. ALSO DESIGNATED AS "TRANSFORMERLESS" BY INVERTER MANUFACTURERS AND "NON-ISOLATED" BY UNDERWRITERS LABORATORY.
- 1.1.6 INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE LISTED FOR THIS USE [NEC 690.35 (G)].
- 1.1.7 AS SPECIFIED BY THE AHJ, EQUIPMENT USED IN UNGROUNDED SYSTEMS LABELED ACCORDING TO NEC 690.35 (F).
- 1.1.8 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
- 1.1.9 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].
- 1.1.10 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
- 1.2.1 **SCOPE OF WORK:**
- 1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.
- 1.3.1 **WORK INCLUDES:**
- 1.3.2 PV ROOF ATTACHMENTS - IRONRIDGE FLASHFOOT2
- 1.3.3 PV RACKING SYSTEM INSTALLATION - IRONRIDGE XR10
- 1.3.4 PV MODULE AND INVERTER INSTALLATION - PEIMAR SM325M (FB) / SOLAR EDGE - SE11400H-US
- 1.3.5 PV EQUIPMENT GROUNDING
- 1.3.6 PV SYSTEM WIRING TO A ROOF-MOUNTED SOLADECK JUNCTION BOX
- 1.3.7 PV LOAD CENTERS (IF INCLUDED)
- 1.3.8 PV METERING/MONITORING (IF INCLUDED)
- 1.3.9 PV DISCONNECTS
- 1.3.10 PV FINAL COMMISSIONING
- 1.3.11 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
- 1.3.12 SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE
- SCOPE OF WORK:**
- SYSTEM SIZE: STC: 36 x 325W = 11.700 kW
PTC: 36 x 292.9W= 10.544 kW DC
(36) PEIMAR SM325M (FB)
(1) SOLAR EDGE SE11400H-US (240V)
- ATTACHMENT TYPE: IRONRIDGE FLASHFOOT2
- MSP UPGRADE: NO

	A	B	C	D	E	F	G	H
1	2.1.1	SITE NOTES:		2.4.9	THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.		DC POSITIVE- RED, OR OTHER COLOR EXCLUDING WHITE, GREY AND GREEN	
	2.1.2	A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.					DC NEGATIVE- BLACK, OR OTHER COLOR EXCLUDING WHITE, GREY AND GREEN	
	2.1.3	THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.		2.4.10	ACCORDING TO NEC 690.47 (C)(3), UNGROUNDED SYSTEMS INVERTER MAY SIZE DC GEC ACCORDING TO EGC REQUIREMENTS OF NEC 250.122. HOWEVER, DC GEC TO BE UNSPLICED OR IRREVERSIBLY SPLICED.	2.7.8	AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- RED, OR OTHER CONVENTION IF THREE PHASE PHASE C OR L3- BLUE, YELLOW, ORANGE*, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY	
	2.1.4	THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.						
	2.1.5	PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.		2.4.11	IN UNGROUNDED INVERTERS, GROUND FAULT PROTECTION IS PROVIDED BY "ISOLATION MONITOR INTERRUPTOR," AND GROUND FAULT DETECTION PERFORMED BY "RESIDUAL-CURRENT DETECTOR."			
	2.1.6	ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.		2.5.1	INTERCONNECTION NOTES:			
				2.5.2	LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 690.64 (B)]			
2	2.2.1	EQUIPMENT LOCATIONS		2.5.3	THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(D)(2)(3)].			
	2.2.2	ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.						
	2.2.3	WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C).		2.5.4	PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD [NEC 705.12(D)(2)(3)].			
	2.2.3	JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.		2.5.5	AT MULTIPLE INVERTERS OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVERCURRENT DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE COMBINED OVERCURRENT DEVICE MAY BE EXCLUDED ACCORDING TO NEC 705.12 (D)(2)(3)(C).			
	2.2.4	ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.		2.5.6	FEEDER TAP INTERCONNECTION (LOAD SIDE) ACCORDING TO NEC 705.12 (D)(2)(1)			
	2.2.5	ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.		2.5.7	SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12 (A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42			
	2.2.6	ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.		2.5.8	BACKFEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC 705.12 (D)(5)].			
3	2.3.1	STRUCTURAL NOTES:						
	2.3.2	RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAIL MANUFACTURER'S INSTRUCTIONS.		2.6.1	DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:			
				2.6.2	DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).			
	2.3.3	JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.		2.6.3	DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.			
	2.3.4	ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.		2.6.4	BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED. THEREFORE BOTH MUST OPEN WHERE A DISCONNECT IS REQUIRED, ACCORDING TO NEC 690.13.			
4	2.3.5	ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.		2.6.5	DC DISCONNECT INTEGRATED INTO ROOFTOP DC COMBINER OR INSTALLED WITHIN 6 FT, ACCORDING TO NEC 690.15 (C).			
	2.3.6	WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.		2.6.6	RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS ≤30V AND ≤240VA [NEC 690.12]. LOCATION OF LABEL ACCORDING TO AHJ.			
	2.4.1	GROUNDING NOTES:		2.6.7	ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.			
	2.4.2	GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.		2.6.8	BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED, THEREFORE BOTH REQUIRE OVER-CURRENT PROTECTION, ACCORDING TO NEC 240.21. (SEE EXCEPTION IN NEC 690.9)			
	2.4.3	AS IN CONVENTIONAL PV SYSTEMS, UNGROUNDED PV SYSTEMS REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED TO GROUND, IN ACCORDANCE WITH 250.134 OR 250.136(A). ONLY THE DC CONDUCTORS ARE UNGROUNDED.		2.6.9	IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.			
5	2.4.4	PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.		2.7.1	WIRING & CONDUIT NOTES:			
	2.4.5	METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURE CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).		2.7.2	ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.			
	2.4.6	EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.		2.7.3	ALL CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.			
	2.4.7	THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.		2.7.4	EXPOSED UNGROUNDED PV SOURCE AND OUTPUT CIRCUITS SHALL USE WIRE LISTED AND IDENTIFIED AS PHOTOVOLTAIC (PV) WIRE [690.35 (D)]. PV MODULES WIRE LEADS SHALL BE LISTED FOR USE WITH UNGROUNDED SYSTEMS, ACCORDING TO NEC 690.35 (D)(3).			
6	2.4.8	GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]		2.7.5	PV WIRE BLACK WIRE MAY BE FIELD-MARKED WHITE [NEC 200.6 (A)(6)].			
				2.7.6	MODULE WIRING SHALL BE LOCATED AND SECURED UNDER THE ARRAY.			
				2.7.7	ACCORDING TO NEC 200.7, UNGROUNDED SYSTEMS DC CONDUCTORS COLORED OR MARKED AS FOLLOWS:			

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX
ADDRESS: _____

LIC. NO.: _____
HIC. NO.: _____
ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS
APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

NOTES

DATE: XX.XX.XXXX
DESIGN BY: X.X.
CHECKED BY: X.X.

REVISIONS

G-001.00
(SHEET 2)

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

----- PROPERTY LINE

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

LIC. NO.: _____

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ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

SITE PLAN

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

A-101.00

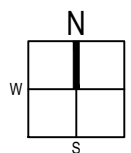
(SHEET 3)



01

SITE PLAN

1/16" = 1'-0"



GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE



- (A) MODULE STRINGING
- (B) MODULE STRINGING
- (C) MODULE STRINGING

EXTERIOR PV EQUIPMENT

- (N) (1) INVERTER
- (N) (1) AC DISCONNECT
- (E) (1) METER/MAIN

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

LIC. NO.: _____

HIC. NO.: _____

ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

ELECTRICAL PLAN

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

A-102.00

(SHEET 4)

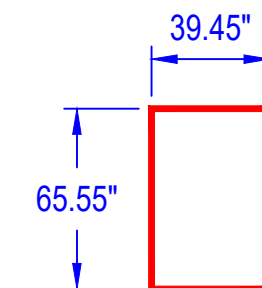
ARRAY 1 - 2.275 kW
[x7] (N) MODULES
TILT: 22 DEGREES
ROOF PITCH: 5:12
AZIMUTH: 232 DEGREES

ARRAY 2 - 9.425 kW
[x29] (N) MODULES
TILT: 22 DEGREES
ROOF PITCH: 5:12
AZIMUTH: 143 DEGREES

18" FIRE ACCESS PATH
18" FIRE ACCESS PATH

3' FIRE ACCESS PATH

3' FIRE ACCESS PATH

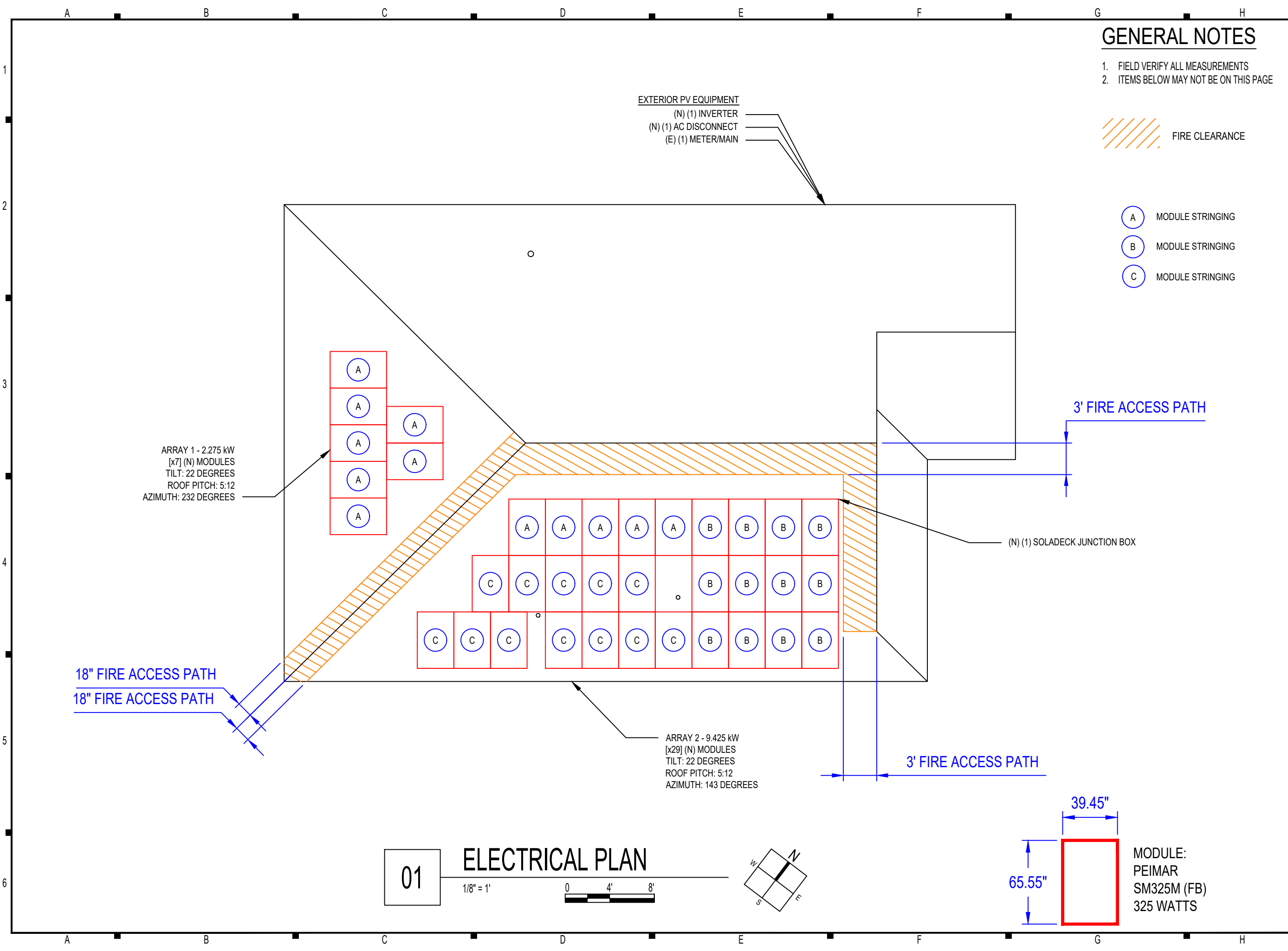
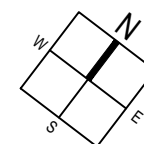


MODULE:
PEIMAR
SM325M (FB)
325 WATTS

01

ELECTRICAL PLAN

1/8" = 1'



GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

--- ROOF TRUSSES

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

LIC. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

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APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

SOLAR ATTACHMENT PLAN

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

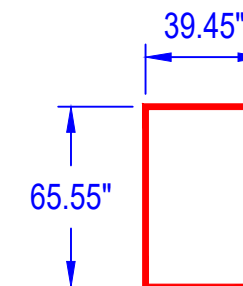
A-103.00
(SHEET 5)

ROOF MATERIAL IS ASPHALT SHINGLE

FLUSH MOUNT SOLAR MODULES ATTACHED TO ROOF SURFACE (SEE SHEET S-501 FOR MOUNTING DETAILS)

16'-5"

37'-10"

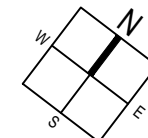
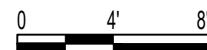


MODULE:
PEIMAR
SM325M (FB)
325 WATTS

01

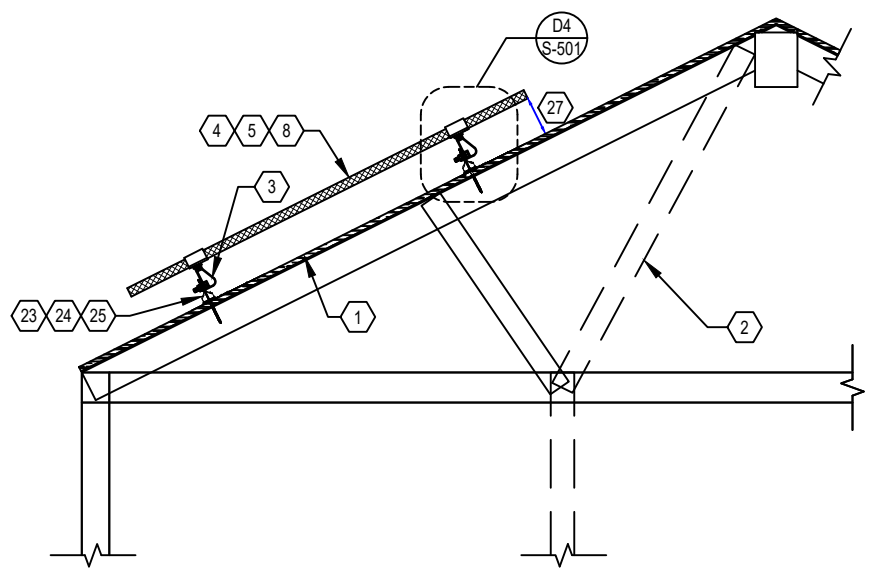
SOLAR ATTACHMENT PLAN

1/8" = 1'

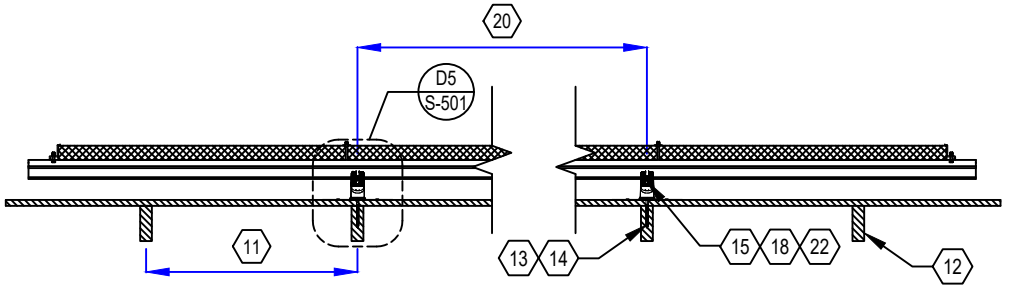


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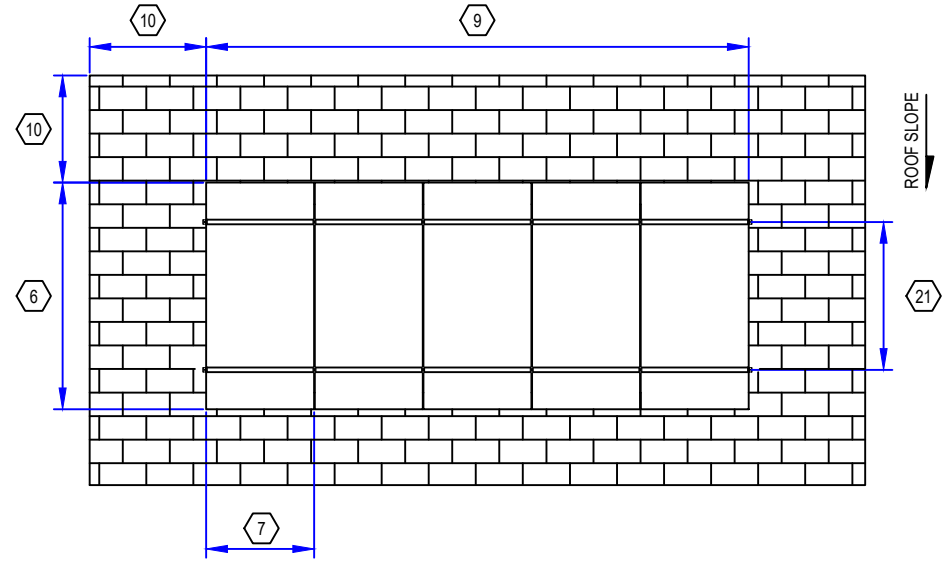
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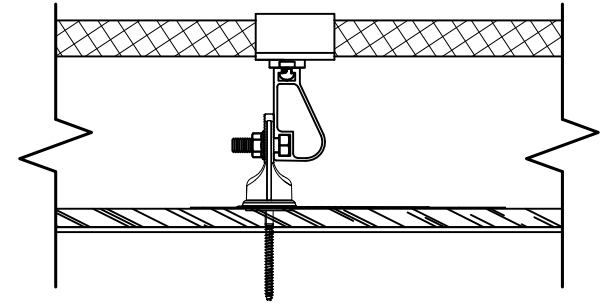
D1 RACKING DETAIL (TRANSVERSE)
NOT TO SCALE



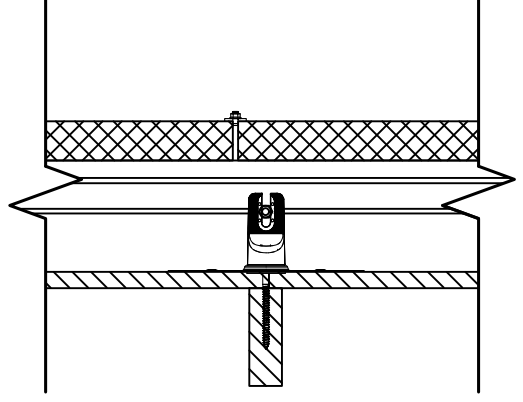
D2 RACKING DETAIL (LONGITUDINAL)
NOT TO SCALE



D3 RACKING DETAIL (TOP)
NOT TO SCALE



D4 DETAIL (TRANSVERSE)
NOT TO SCALE



D5 DETAIL (LONGITUDINAL)
NOT TO SCALE

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS

SHEET KEYNOTES

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: TRUSS
3. ATTACHMENT TYPE: IRONRIDGE FLASHFOOT2
4. MODULE MANUFACTURER: PEIMAR
5. MODULE MODEL: SM325M (FB)
6. MODULE LENGTH: 39.45"
7. MODULE WIDTH: 65.55"
8. MODULE WEIGHT: 41.01 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: NO FIRE CODE ENFORCED
11. TRUSS SPACING: 24 IN. O.C.
12. TRUSS SIZE: 2X4 NOMINAL
13. LAG BOLT DIAMETER: 5/16 IN.
14. LAG BOLT EMBEDMENT: 2-1/2 IN.
15. TOTAL # OF ATTACHMENTS: 44
16. TOTAL AREA: 646.49 SQ. FT.
17. TOTAL WEIGHT: 1698.24 LBS.
18. WEIGHT PER ATTACHMENT: 38.6 LBS.
19. DISTRIBUTED LOAD: 2.63 PSF
20. MAX. HORIZONTAL STANDOFF: 96 IN.
21. MAX. VERTICAL STANDOFF:
LANDSCAPE: 26 IN., PORTRAIT: 39 IN.
22. STANDOFF STAGGERING: NO
23. RAIL MANUFACTURER (OR EQUIV.): IRONRIDGE
24. RAIL MODEL (OR EQUIVALENT): XR10
25. RAIL WEIGHT: 0.436 PLF.
26. MAX. TRUSS SPAN: 96 IN.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

CONTRACTOR

YOUR COMPANY NAME

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ELE. NO.: _____

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APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

ASSEMBLY DETAILS

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

S-501.00

(SHEET 6)

A B C D E F G H

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL
01	3	10 AWG PV WIRE, COPPER	FREE AIR	2	N/A	6 AWG BARE, COPPER	0.71 (56.1 °C)	1	15A	18.75A	55A	39.05A	75°C	50A
02	1	10 AWG THWN-2, COPPER	0.75" DIA EMT	6	N/A	10 AWG THWN-2, COPPER	0.71 (56.1 °C)	0.8	15A	18.75A	40A	22.72A	75°C	35A
03	1	6 AWG THWN-2, COPPER	0.75" DIA EMT	2	N/A	6 AWG THWN-2, COPPER	0.96 (34.1 °C)	1	47.5A	59.38A	75A	72A	75°C	65A
04	1	6 AWG THWN-2, COPPER	0.75" DIA EMT	2	60A	6 AWG THWN-2, COPPER	0.96 (34.1 °C)	1	47.5A	59.38A	75A	72A	75°C	65A

- A MODULE STRINGING
- B MODULE STRINGING
- C MODULE STRINGING

SYSTEM EQUIPPED WITH RAPID SHUTDOWN DISCONNECT PER NEC 690.12. SYSTEM COMPLIANT WITH NEC 690.13

PEIMAR SM325M (FB) 325W

SOLAR EDGE POWER OPTIMIZER P340

SOLADECK JUNCTION BOX

SOLAR EDGE SE11400H-US 240V

AC DISCONNECT 60A

TO UTILITY GRID (UG)

CONTRACTOR
YOUR COMPANY NAME
PHONE: (XXX) XXX-XXXX
ADDRESS: _____
LIC. NO.: _____
HIC. NO.: _____
ELE. NO.: _____

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS.

NEW PV SYSTEM: 11.700 kWp

OWNER NAME
RESIDENCE
HOME FULL ADDRESS
APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

LINE DIAGRAM

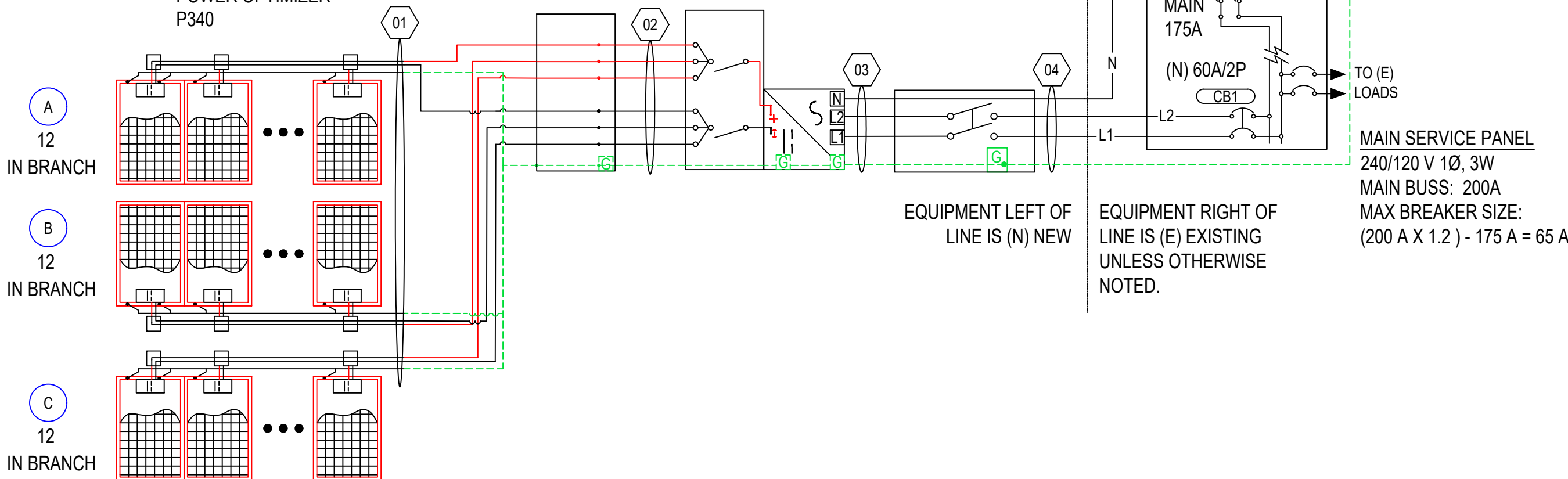
DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

E-601.00
(SHEET 7)



EQUIPMENT LEFT OF LINE IS (N) NEW
EQUIPMENT RIGHT OF LINE IS (E) EXISTING UNLESS OTHERWISE NOTED.

MAIN SERVICE PANEL
240/120 V 1Ø, 3W
MAIN BUSS: 200A
MAX BREAKER SIZE:
(200 A X 1.2) - 175 A = 65 A

1
2
3
4
5
6

SYSTEM SUMMARY			
	INVERTER #1		
	STRING #1	STRING #2	STRING #3
POWERBOX MAX OUTPUT CURRENT	15A	15A	15A
OPTIMIZERS IN SERIES	12	12	12
NOMINAL STRING VOLTAGE	400V	400V	400V
ARRAY OPERATING CURRENT	9.75A	9.75A	9.75A
ARRAY STC POWER	11,700W		
ARRAY PTC POWER	10,544W		
MAX AC CURRENT	47.5A		
MAX AC POWER	11,400W		
DERATED (CEC) AC POWER	10,313W		

MODULES										
REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-36	36	PEIMAR SM325M (FB)	325W	292.9W	10.08A	9.52A	41.67V	34.15V	-0.117V/°C (-0.28%/°C)	15A

POWER OPTIMIZERS							
REF.	QTY.	MODEL	RATED INPUT POWER	MAX OUTPUT CURRENT	MAX INPUT ISC	MAX DC VOLTAGE	WEIGHTED EFFICIENCY
PO1-36	36	SOLAR EDGE P340	340W	15A	11A	48V	98.8%

INVERTERS										
REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OCPD RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY
I1	1	SOLAR EDGE SE11400H-US (240V)	240V	FLOATING	60A	11400W	47.5A	30.5A	480V	99.0%

DISCONNECTS				
REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE
SW1	1	SQUARE D D222NRB OR EQUIV.	60A	240VAC

OCPDS			
REF.	QTY.	RATED CURRENT	MAX VOLTAGE
CB1	1	60A	240VAC

ASHRAE EXTREME LOW	-3.7°C (25.3°F), SOURCE: ORLANDO JETPORT (28.43°; -81.33°)
ASHRAE 2% HIGH	34.1°C (93.4°F), SOURCE: ORLANDO JETPORT (28.43°; -81.33°)

BILL OF MATERIALS							
CATEGORY	MAKE	MODEL NUMBER	REF	QTY	UNIT	QTY/UNIT	DESCRIPTION
MODULE	PEIMAR	SM325M (FB)	PM1-36	36	PIECES	1	PEIMAR SM325M (FB) 325W 60 CELLS, MONOCRYSTALLINE SILICON
INVERTER	SOLAR EDGE	SE11400H-US (240V)	I1	1	PIECE	1	SOLAR EDGE SE11400H-US (240V) 11400W INVERTER
MODULE OPTIMIZER	SOLAR EDGE	P340	PO1-36	36	PIECES	1	SOLAR EDGE P340 OPTIMIZER (REQUIRED PART OF INVERTER'S DISTRIBUTED DC ARCHITECTURE)
DISCONNECT	SQUARE D	D222NRB	SW1	1	PIECE	1	SQUARE D D222NRB, 2-POLE, 60A, 240VAC OR EQUIVALENT
WIRING		GEN-10-AWG-PV-WIRE-CU	WR1	270	FEET	1	10 AWG PV WIRE, COPPER (POSITIVE AND NEGATIVE)
WIRING		GEN-6-AWG-BARE-CU	WR1	135	FEET	1	6 AWG BARE, COPPER (GROUND)
WIRING		GEN-10-AWG-THWN-2-CU-RD	WR2	60	FEET	1	10 AWG THWN-2, COPPER, RED (POSITIVE)
WIRING		GEN-10-AWG-THWN-2-CU-BLK	WR2	60	FEET	1	10 AWG THWN-2, COPPER, BLACK (NEGATIVE)
WIRING		GEN-10-AWG-THWN-2-CU-GR	WR2	20	FEET	1	10 AWG THWN-2, COPPER, GREEN (GROUND)
WIRING		GEN-6-AWG-THWN-2-CU-RD	WR3-4	20	FEET	1	6 AWG THWN-2, COPPER, RED (LINE 1)
WIRING		GEN-6-AWG-THWN-2-CU-BLK	WR3-4	20	FEET	1	6 AWG THWN-2, COPPER, BLACK (LINE 2)
WIRING		GEN-6-AWG-THWN-2-CU-WH	WR3-4	20	FEET	1	6 AWG THWN-2, COPPER, WHITE (NEUTRAL)
WIRING		GEN-6-AWG-THWN-2-CU-GR	WR3-4	20	FEET	1	6 AWG THWN-2, COPPER, GREEN (GROUND)
WIREWAY		GEN-EMT-0.75" DIA	WW2-4	40	FEET	1	EMT CONDUIT, 0.75" DIA
OCPD	GENERIC MANUFACTURER	GEN-CB-60A-240VAC	CB1	1	PIECE	1	CIRCUIT BREAKER, 60A, 240VAC
TRANSITION BOX	GENERIC MANUFACTURER	GEN-AWB-TB-4-4X	JB1	1	PIECE	1	TRANSITION/PASS-THROUGH BOX, WITH 4 TERMINAL BLOCKS

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

LIC. NO.: _____

HIC. NO.: _____

ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

DESIGN TABLES

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

LABELING NOTES
 1.1 LABELING REQUIREMENTS BASED ON THE 2014 NATIONAL ELECTRICAL CODE, INTERNATIONAL FIRE CODE 605.11, OSHA STANDARD 1910.145, ANSI Z535
 1.2 MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
 1.3 LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
 1.4 LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.
 1.5 ALERTING WORDS TO BE COLOR CODED. "DANGER" WILL HAVE RED BACKGROUND; "WARNING" WILL HAVE ORANGE BACKGROUND; "CAUTION" WILL HAVE YELLOW BACKGROUND. [ANSI Z535]

WARNING
 ELECTRICAL SHOCK HAZARD

THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN

LABEL 5
 AT RAPID SHUTDOWN SWITCH (5 1/4" X 2").
 [NEC 690.56(C)].

PHOTOVOLTAIC SOLAR DC DISCONNECT

LABEL 6
 AT EACH DC DISCONNECTING MEANS (1" X 4")
 [NEC 690.13(B)].

WARNING
 ELECTRICAL SHOCK HAZARD

DO NOT TOUCH TERMINALS TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

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

LABEL 7
 AT POINT OF INTERCONNECTION (2 3/4" X 1 5/8").
 [NEC 705.12(D)(3)].

LABEL 2
 AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT (3" X 4").
 [NEC 690.17]

PHOTOVOLTAIC SYSTEM AC DISCONNECT

RATED AC OUTPUT CURRENT A
 NOMINAL OPERATING AC VOLTAGE V

WARNING
 SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFED

LABEL 8
 AT POINT OF INTERCONNECTION (2" X 1").
 [NEC 705.12(D)(3)].

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED PHOTOVOLTAIC SYSTEM DISCONNECT LOCATED NW SIDE OF THE HOUSE

DIRECTORY
 PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF NOT IN THE SAME LOCATION (5 3/4" X 1 1/8").
 [NEC 690.56(B)]
 WHERE THE INVERTERS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY IN ACCORDANCE WITH 705.10 SHALL BE INSTALLED AT EACH DC PV SYSTEM DISCONNECTING MEANS, AT EACH AC DISCONNECTING MEANS, AND AT THE MAIN SERVICE DISCONNECTING MEANS SHOWING THE LOCATION OF ALL AC AND DC PV SYSTEM DISCONNECTING MEANS IN THE BUILDING.
 [NEC 690.4(H)]

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL 10
 AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10 FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS (5 3/4" X 1 1/8").
 [NEC 690.31(G)]
 LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE
 [IFC 605.11.1.1]

PHOTOVOLTAIC SYSTEM DC DISCONNECT

RATED MPP CURRENT AMPS
 RATED MPP VOLTAGE VOLTS
MPP-MAX POWER POINT
 MAX SYSTEM VOLTAGE VDC
 MAX CIRCUIT CURRENT AMPS

LABEL 3
 AT POINT OF INTERCONNECTION, MARKED AT DISCONNECTING MEANS (2" X 4").
 [NEC 690.54]

WARNING
 ELECTRICAL SHOCK HAZARD

DO NOT RELOCATE THIS OVERCURRENT DEVICE

PHOTOVOLTAIC SOLAR AC DISCONNECT

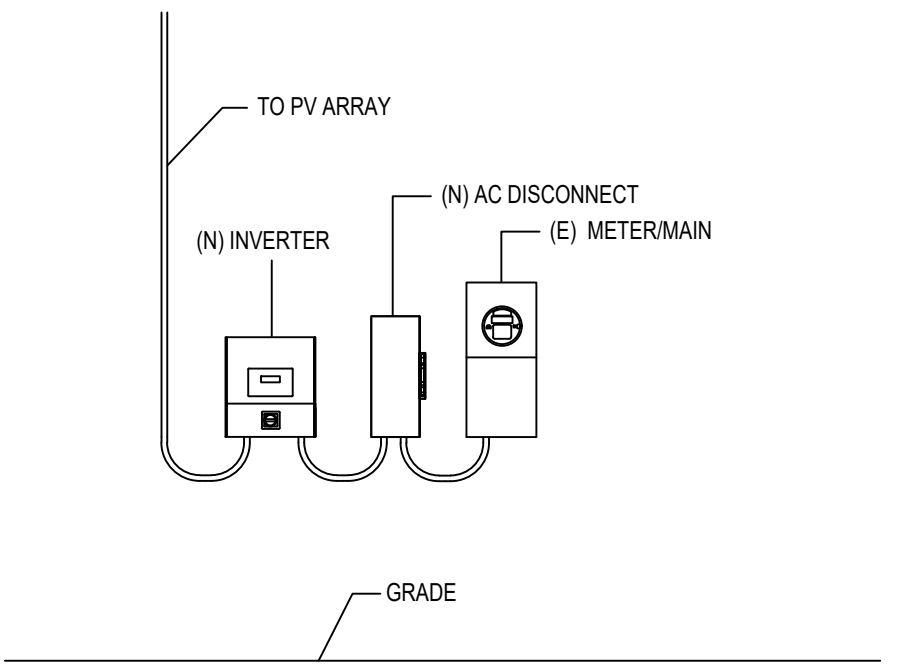
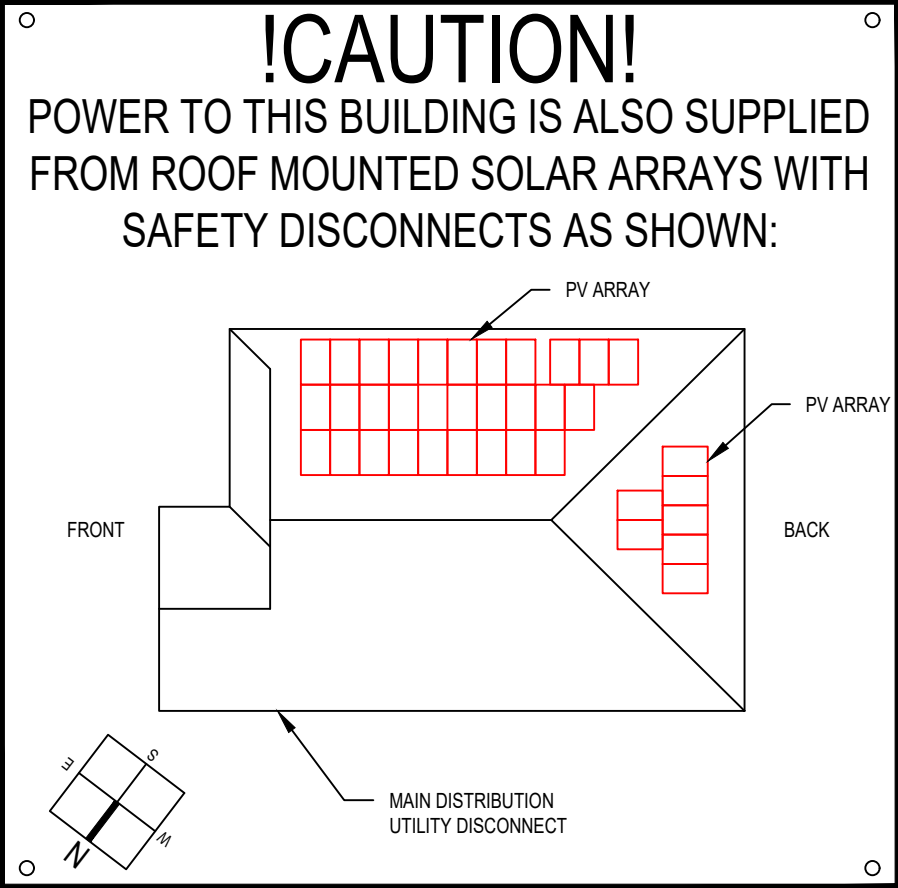
LABEL 9
 AT POINT OF INTERCONNECTION OVERCURRENT DEVICE (2" X 4").
 [NEC 705.12(D)(2)].

LABEL 11
 AT EACH DC DISCONNECTING MEANS (3" X 4").
 [NEC 690.53]

CAUTION
 SOLAR ELECTRIC SYSTEM CONNECTED

LABEL 4
 AT EACH AC DISCONNECTING MEANS (1" X 4").
 [NEC 690.13(B)]

LABEL 12
 AT UTILITY METER (5 3/4" X 1 1/8")
 [NEC 690.56(B)]



01 EQUIPMENT ELEVATION
 NOT TO SCALE

CONTRACTOR

YOUR COMPANY NAME _____

PHONE: (XXX) XXX-XXXX _____

ADDRESS: _____

LIC. NO.: _____

HIC. NO.: _____

ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS _____

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

PLACARDS

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

E-603.00
 (SHEET 9)



SM325M (FB)

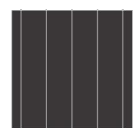
RESIDENTIAL LINE



Peimar monocrystalline solar panels, produced using a combination of innovative production processes and advanced engineering techniques, provide customers with maximum output and super high performance.

This allows fewer panels to be used to generate more energy, ideal if space is restricted or environmental conditions are challenging. Modern design, using matching black cells and frames and a very long lifespan ensure this monocrystalline are a great option.

CELLS



60 CELLS
MONO 5BB M3 | PERC
158.75x158.75mm / 6.25x6.25"

FRAME



COMPACT AND STURDY | 40mm
ANCHORABLE ALSO ON THE SHORT SIDE ⁽⁴⁾

ELECTRICAL CHARACTERISTICS (STC) ⁽¹⁾

Nominal Output (Pmax)	325 W
Power Tolerance	0/+5 W
Voltage at Pmax (Vmp)	34.15 V
Current at Pmax (Imp)	9.52 A
Open Circuit Voltage (Voc)	41.67 V
Short Circuit Current (Isc)	10.08 A
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	15 A
Module Efficiency	19.48%
Protection class against electric shock	Class II

SM325M (FB)

MECHANICAL CHARACTERISTICS

Solar Cells	60 (6x10) M3 monocrystalline PERC
Solar Cells Size	158.75x158.75 mm / 6.25x6.25"
Front Cover	3.2 mm / 0.13" thick, low iron tempered glass
Back Cover	TPT (Tedlar-PET-Tedlar)
Encapsulant	EVA (Ethylene vinyl acetate)
Frame	Anodized aluminium alloy, double wall
Frame finishing	Black
Backsheet finishing	Black
Diodes	3 Bypass diodes serviceable
Junction Box	IP67 rated
Connector	MC4 or compatible connector
Cables Length	900 mm / 35.43"
Cables Section	4.0 mm ² / 0.006 in ²
Dimensions	1665x1002x40 mm / 65.55x39.45x1.57"
Weight	18.6 Kg / 41.01 lbs
Max. Load ⁽⁴⁾	Certified to 5400 Pa

TEMPERATURE CHARACTERISTICS

NOCT ⁽²⁾	45±2 °C
Temperature Coefficient of Pmax	-0.37 %/°C
Temperature Coefficient of Voc	-0.28 %/°C
Temperature Coefficient of Isc	0.042 %/°C
Operating Temperature	-40 °C ~ +85°C

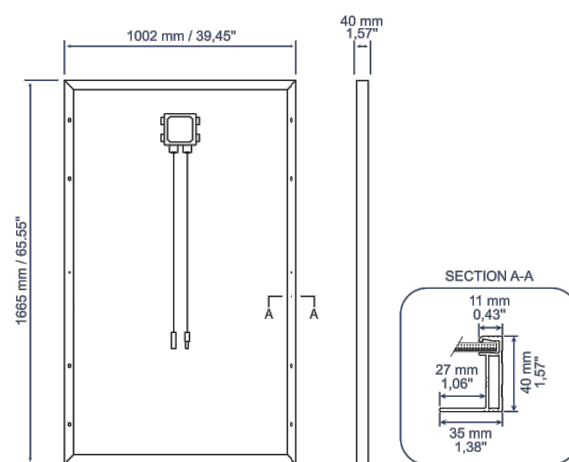
PACKAGING ⁽³⁾

Pallet dimensions	1720x1200x1210 mm / 67.72x47.24x47.64"
Pieces per pallet	27
Weight	535 Kg / 1179 lbs

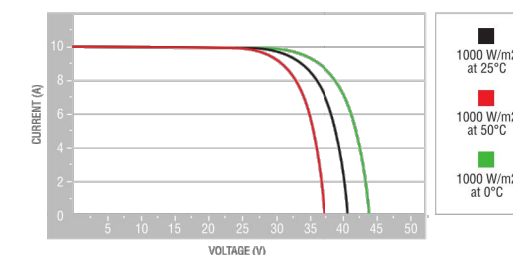
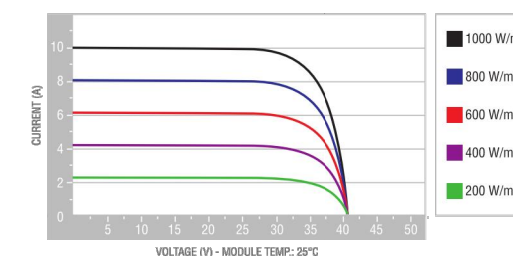
CERTIFICATIONS

Fire Resistance Rating	Class of reaction to fire: 1 (UNI 9177)
------------------------	---

DIMENSIONS



CURRENT/VOLTAGE CHARACTERISTICS



¹ STC: (Standard Test Condition) Irradiance 1000W/m²; Module Temperature 25°C; Air Mass 1.5
² NOCT: (Nominal Operation Cell Temperature) Irradiance 800W/m²; Air 20°C; Wind speed 1m/s
³ Pallets can be stacked up to two

⁴ Consult the installation manual for the relative mounting configurations

30 YEAR LINEAR POWER WARRANTY
20 YEAR PRODUCT WARRANTY

PERC TECHNOLOGY

MODULE FIRE PERFORMANCE: CLASS 1

ANTI-REFLECTIVE GLASS

QBE INSURANCE
Product Liability Insurance QBE

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

R-001.00

(SHEET 10)

Single Phase Inverter with HD-Wave Technology

for North America

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



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⁾								
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								
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								
Nominal DC Input Voltage	380				400				
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								
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								
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	3/4" minimum / 14-6 AWG						3/4" minimum / 14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG						3/4" minimum / 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		
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6				lb / kg	
Noise	< 25						< 50		
Cooling	Natural Convection								
Operating Temperature Range	-40 to +140 / -25 to +60 ⁴⁾ (-40°F / -40°C option) ⁵⁾								
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: SExxxxH-US000NCC2
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: SExxxxH-US000NNU4

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RoHS

CONTRACTOR

YOUR COMPANY NAME

PHONE: (XXX) XXX-XXXX

ADDRESS: _____

LIC. NO.: _____

HIC. NO.: _____

ELE. NO.: _____

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

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PAPER SIZE: 11" x 17" (ANSI B)

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REVISIONS

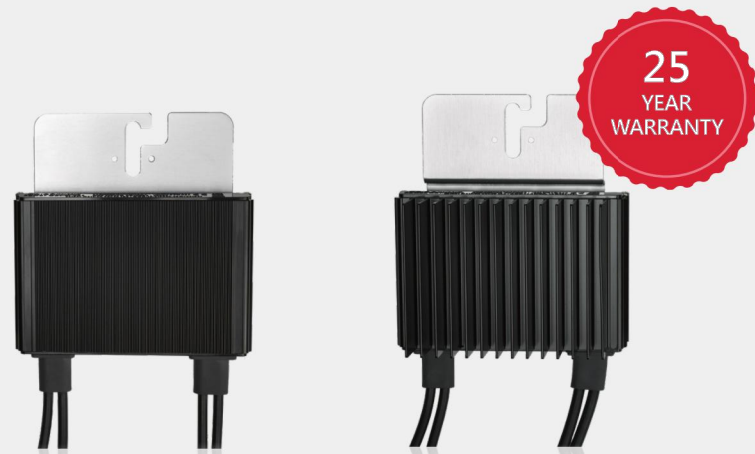
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(SHEET 11)

Power Optimizer

For North America

P320 / **P340** / P370 / P400 / P405 / 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

solaredge.com



Power Optimizer For North America

P320 / **P340** / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)	
INPUT							
Rated Input DC Power ¹⁾	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 ²⁾	83 ²⁾	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)		11		10.1		14	Adc
Maximum DC Input Current		13.75		12.63		17.5	Adc
Maximum Efficiency				99.5			%
Weighted Efficiency			98.8			98.6	%
Overvoltage Category				II			
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)							
Maximum Output Current			15				Adc
Maximum Output Voltage			60		85		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							
EMC			FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3				
Safety			IEC62109-1 (class II safety), UL1741				
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 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3		mm / in
Weight (including cables)	630 / 1.4		750 / 1.7	845 / 1.9	1064 / 2.3		gr / lb
Input Connector	MC4 ³⁾						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						
Operating Temperature Range	-40 - +85 / -40 - +185						
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						

¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed
²⁾ NEC 2017 requires max input voltage be not more than 80V
³⁾ For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter ⁴⁾	Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8	10	18	
	P405 / P505	6	8	14	
Maximum String Length (Power Optimizers)		25	25	50 ⁵⁾	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁶⁾	12750 ⁶⁾	W
Parallel Strings of Different Lengths or Orientations	Yes				

⁴⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
⁵⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
⁶⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
⁷⁾ For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W
⁸⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W

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NEW PV SYSTEM: 11.700 kWp

OWNER NAME

RESIDENCE

HOME FULL ADDRESS

APN: _____

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

R-003.00

(SHEET 12)



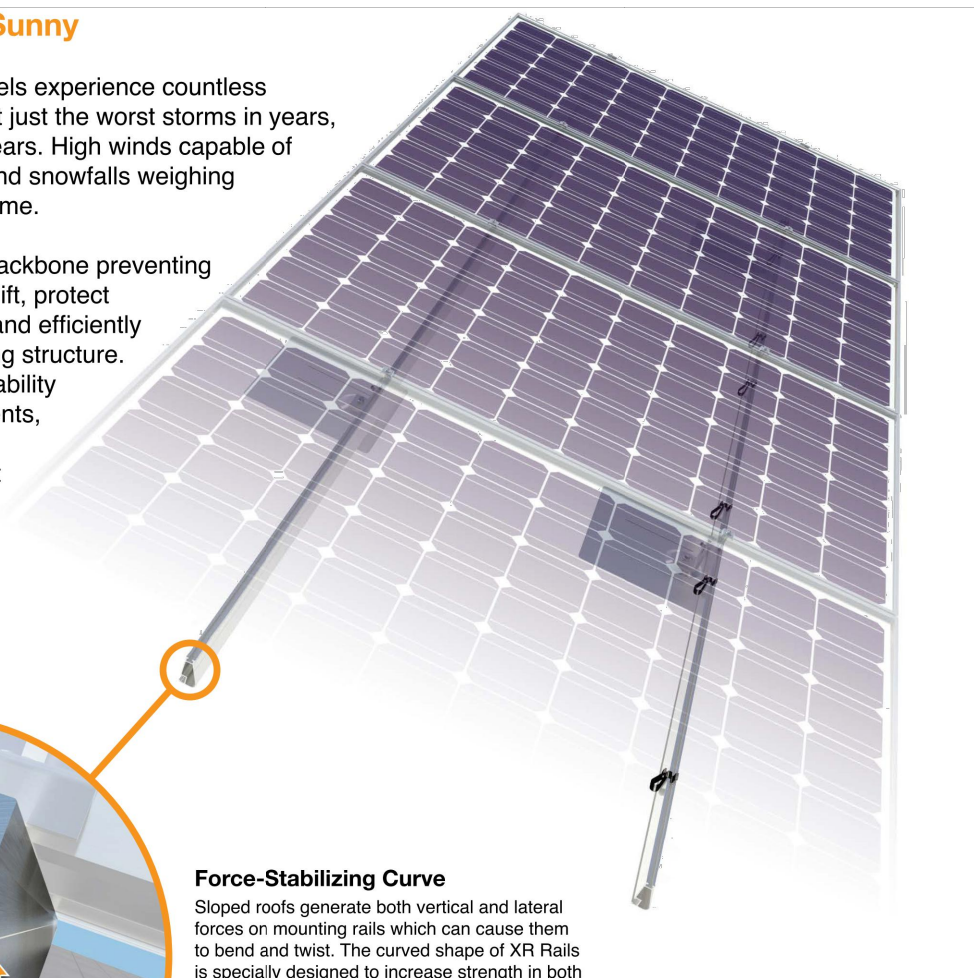
XR Rail Family

Tech Brief

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



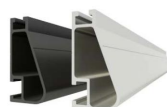
XR Rails are compatible with FlashFoot and other pitched roof attachments.



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

Corrosion-Resistant Materials

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



XR Rail Family

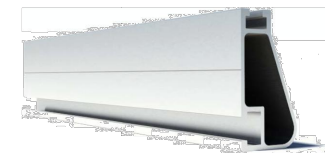
The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



XR10

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

- 6' spanning capability
- Moderate load capability
- Clear 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 8 feet.

- 8' 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 12 feet or more for commercial applications.

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

Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
None	100	XR10		XR100		XR1000	
	120						
	140						
	160						
10-20	100			XR100		XR1000	
	120						
	140						
	160						
30	100			XR100		XR1000	
	160						
40	100			XR100		XR1000	
	160						
50-70	160						
80-90	160						

Tech Brief

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HOME FULL ADDRESS

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ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: XX.XX.XXXX

DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

R-004.00

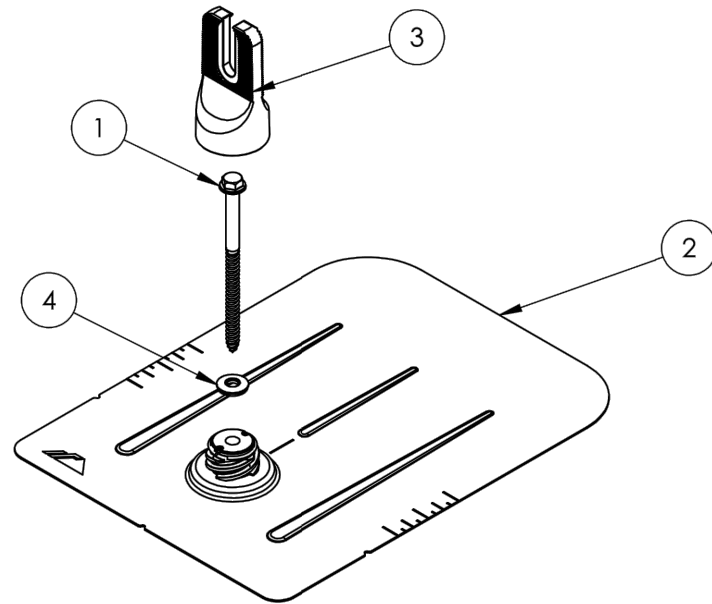
(SHEET 13)



FlashFoot2

Cut Sheet

Cut Sheet

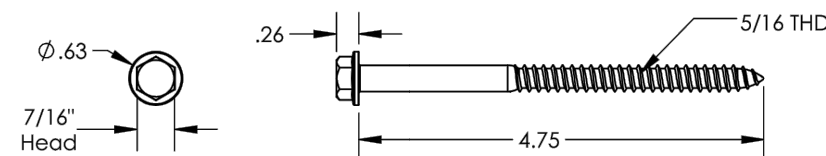


ITEM NO.	DESCRIPTION	Qty in Kit
1	BOLT LAG 5/16 X 4.75"	4
2	ASSY, FLASHING	4
3	ASSY, CAPFOOT	4
4	WASHER, EPDM BACKED	4

FLASHFOOT2

Part Number	Description
FM-FF2-001	Kit, 4pcs, FlashFoot2 (Mill)
FM-FF2-001-B	Kit, 4pcs, FlashFoot2 (Black)

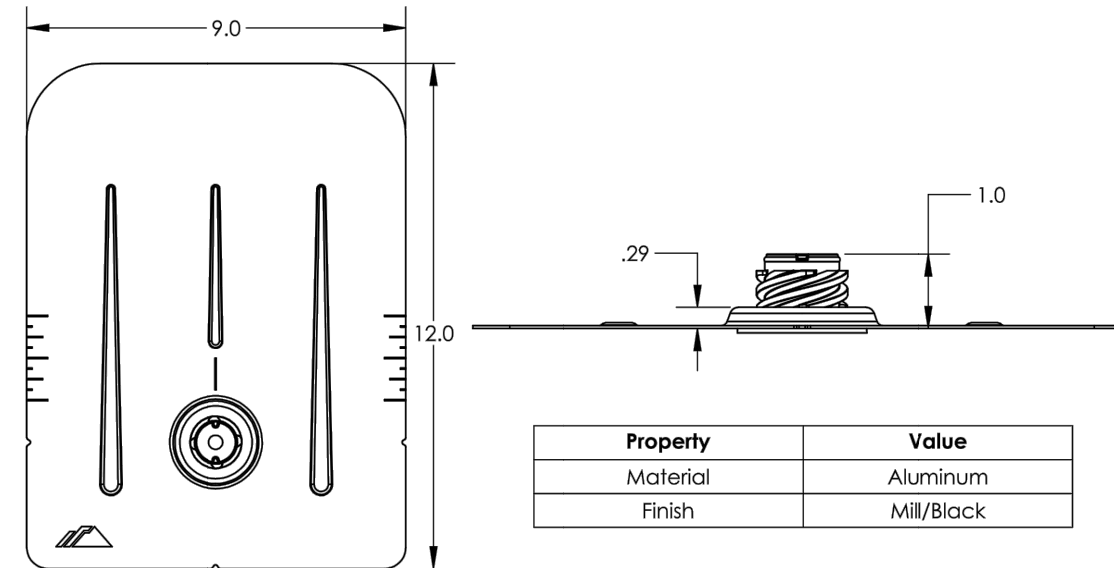
1) Bolt, Lag 5/16 x 4.75



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

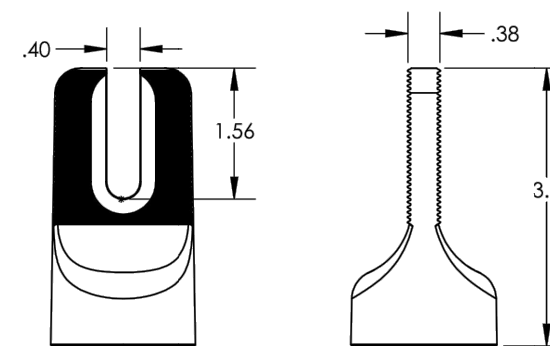
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2) Assy, Flashing



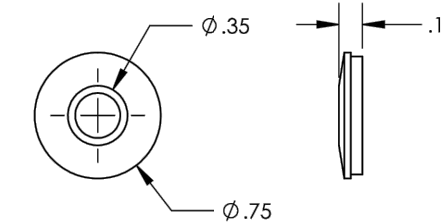
Property	Value
Material	Aluminum
Finish	Mill/Black

3) Assy, Capfoot



Property	Value
Material	Aluminum
Finish	Mill/Black

4) Washer, EPDM Backed



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.0

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DESIGN BY: X.X.

CHECKED BY: X.X.

REVISIONS

R-005.00

(SHEET 14)