

GENERAL NOTES

- 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 GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE MICROINVERTER IN ACCORDANCE WITH NEC 690.41(B)
- 1.1.5 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:
- 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
- 1.1.6 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
- 1.1.7 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].
- 1.1.8 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 - SUNMODO NANOMOUNT (DECKING)
- 1.3.3 PV RACKING SYSTEM INSTALLATION - UNIRAC LIGHT
- 1.3.4 PV MODULE AND INVERTER INSTALLATION - HANWHA Q-CELLS Q.PEAK DUO BLK-G10+ 400W / ENPHASE IQ8M-72-2-US
- 1.3.5 PV EQUIPMENT GROUNDING
- 1.3.6 PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
- 1.3.7 PV LOAD CENTERS (IF INCLUDED)
- 1.3.8 PV METERING/MONITORING (IF INCLUDED)
- 1.3.9 PV DISCONNECT

SCOPE OF WORK

SYSTEM SIZE: STC: 24x 400W = 9.600kW
PTC: 24x 370.4W = 8.890kW DC
(24) HANWHA Q-CELLS Q.PEAK DUO BLK-G10+ 400W
(24) ENPHASE IQ8M-72-2-US

ATTACHMENT TYPE: SUNMODO NANOMOUNT (DECKING)

MSP UPGRADE: NO

NEW PV SYSTEM: 9.600 kWp

McKNIGHT RESIDENCE

1607 SW BLACKSTONE PL,
LEE'S SUMMIT, MO 64082

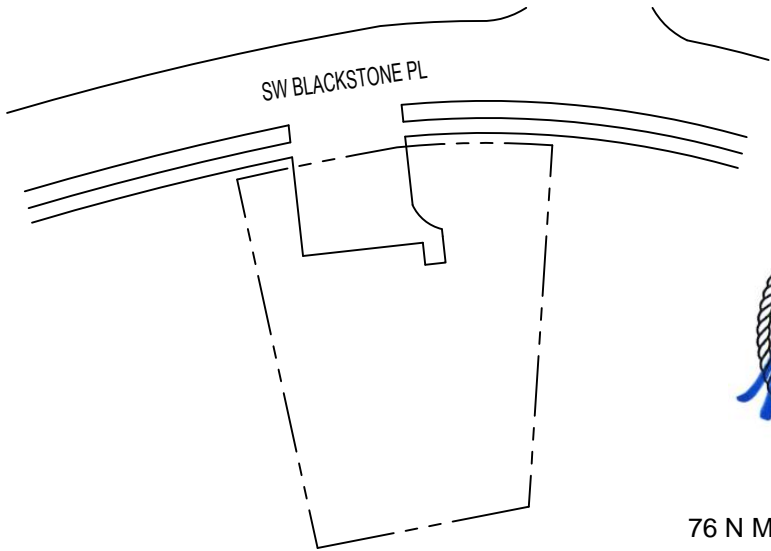
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AERIAL PHOTO

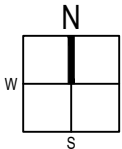
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02

PLAT MAP

NOT TO SCALE



Wyssling Consulting
76 N Meadowbrook Drive, Alpine UT 84004
COA #2020037943
Date Signed 7/11/22

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
T-001	COVER PAGE
G-001	NOTES
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E-602	ELECTRICAL TABLES
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R-001	RESOURCE DOCUMENT
R-002	RESOURCE DOCUMENT
R-003	RESOURCE DOCUMENT
R-004	RESOURCE DOCUMENT
R-005	RESOURCE DOCUMENT

PROJECT INFORMATION

OWNER

NAME: MICHAEL McKNIGHT

PROJECT MANAGER

NAME: KEATON D

PHONE: 8163517803

CONTRACTOR

NAME: ECOVOLE

PHONE: 8163517803

AUTHORITIES HAVING JURISDICTION

BUILDING: LEE'S SUMMIT MO

ZONING: LEE'S SUMMIT MO

UTILITY: EVERGY, MO

DESIGN SPECIFICATIONS

OCCUPANCY: II

CONSTRUCTION: SINGLE-FAMILY

ZONING: RESIDENTIAL

GROUND SNOW LOAD: 20 PSF

WIND EXPOSURE: B

WIND SPEED: 115 MPH

APPLICABLE CODES & STANDARDS

2018 INTERNATIONAL BUILDING CODE,

2018 INTERNATIONAL MECHANICAL CODE,

2018 INTERNATIONAL PLUMBING CODE,

2018 INTERNATIONAL FUEL GAS CODE,

2018 INTERNATIONAL FIRE CODE,

2017 NATIONAL ELECTRIC CODE

ICC/ANSI A117.1-2009

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
07/14/2022

ECOVOLTE

CONTRACTOR

ECOVOLE

PHONE: 8163517803

ADDRESS: 2300 MAIN ST., KANSAS CITY,
MO 64108

LIC. NO.: 206086

HIC. NO.:

ELE. NO.:

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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: 9.600 kWp

McKNIGHT
RESIDENCE

1607 SW BLACKSTONE PL,
LEE'S SUMMIT, MO 64082

APN: 69-720-10-10-00-0-00-000

ENGINEER OF RECORD

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

COVER PAGE

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

T-001.00

(SHEET 1)

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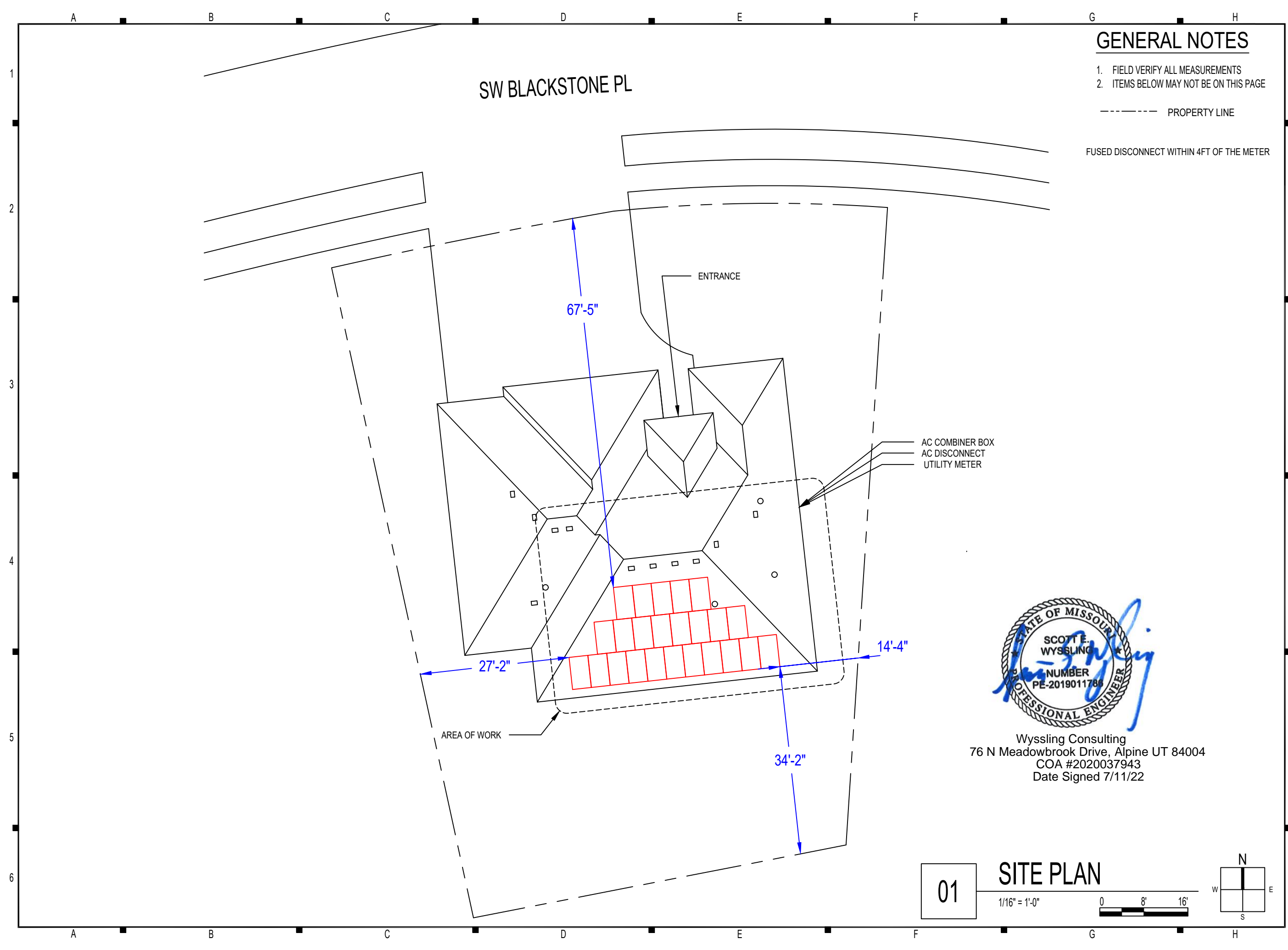
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(SHEET 2)

	A	B	C	D	E	F	G	H
1	2.1.1	SITE NOTES:		4.5.1	GROUNDING NOTES:			
	2.1.2	A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.		2.5.2	GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.			
	2.1.3	THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH STORAGE BATTERIES.		2.5.3	PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.			
	2.1.4	THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.		2.5.4	METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).			
	2.1.5	PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.		2.5.5	EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND MICROINVERTER MANUFACTURERS' INSTRUCTIONS.			
	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.		2.5.6	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	2.2.1	EQUIPMENT LOCATIONS:		2.5.7	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.			
	2.2.2	ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.		2.5.8	GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]			
	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).		2.5.9	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.			
	2.2.4	JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.		2.5.10	GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.41(B)(1) AND (2) TO REDUCE FIRE HAZARDS			
	2.2.5	ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.		2.6.1	DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:			
	2.2.6	ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.		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).			
3	2.2.7	ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.		2.6.3	DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH			
	2.3.1	STRUCTURAL NOTES:		2.6.4	PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH 690.12(A) THROUGH (D).			
	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 RAI MANUFACTURER'S INSTRUCTIONS.		2.6.5	ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.			
	2.3.3	JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.		2.6.6	MICROINVERTER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B).			
	2.3.4	ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.		2.6.7	IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.			
	2.3.5	ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.		2.7.1	INTERCONNECTION NOTES:			
4	2.3.6	WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.		2.7.2	LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 705.12 (B)]			
	2.4.1	WIRING & CONDUIT NOTES:		2.7.3	THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(D)(2)(3)].			
	2.4.2	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.		2.7.4	THE SUM OF 125 PERCENT OF THE POWER SOURCE(S) OUTPUT CIRCUIT CURRENT AND THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE BUSBAR SHALL NOT EXCEED 120 PERCENT OF THE AMPACITY OF THE BUSBAR, PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD [NEC 705.12(B)(2)(3)].			
	2.4.3	CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.		2.7.5	AT MULTIPLE ELECTRIC POWER SOURCES 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 (B)(2)(3)(C).			
	2.4.4	VOLTAGE DROP LIMITED TO 1.5%.		2.7.6	FEEDER TAP INTERCONNECTION (LOAD SIDE) ACCORDING TO NEC 705.12 (B)(2)(1)			
	2.4.5	DC WIRING LIMITED TO MODULE FOOTPRINT. MICROINVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY W/ SUITABLE WIRING CLIPS.		2.7.7	SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12 (A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42			
6	2.4.6	AC CONDUCTORS COLORED OR MARKED AS FOLLOWS:		2.7.8	BACKFEEDING BREAKER FOR ELECTRIC POWER SOURCES OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC 705.12 (B)(5)].			
		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 GRAY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15].						



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GENERAL NOTES

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

----- PROPERTY LINE

FUSED DISCONNECT WITHIN 4FT OF THE METER

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
07/14/2022

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NEW PV SYSTEM: 9.600 kWp

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APN: 69-720-10-10-00-0-00-000

ENGINEER OF RECORD



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76 N Meadowbrook Drive, Alpine UT 84004
COA #2020037943
Date Signed 7/11/22

01

SITE PLAN

1/16" = 1'-0"

0 8' 16'

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

SITE PLAN

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

A-101.00
(SHEET 3)

CONTRACTOR

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ENGINEER OF RECORD

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ELECTRICAL PLAN

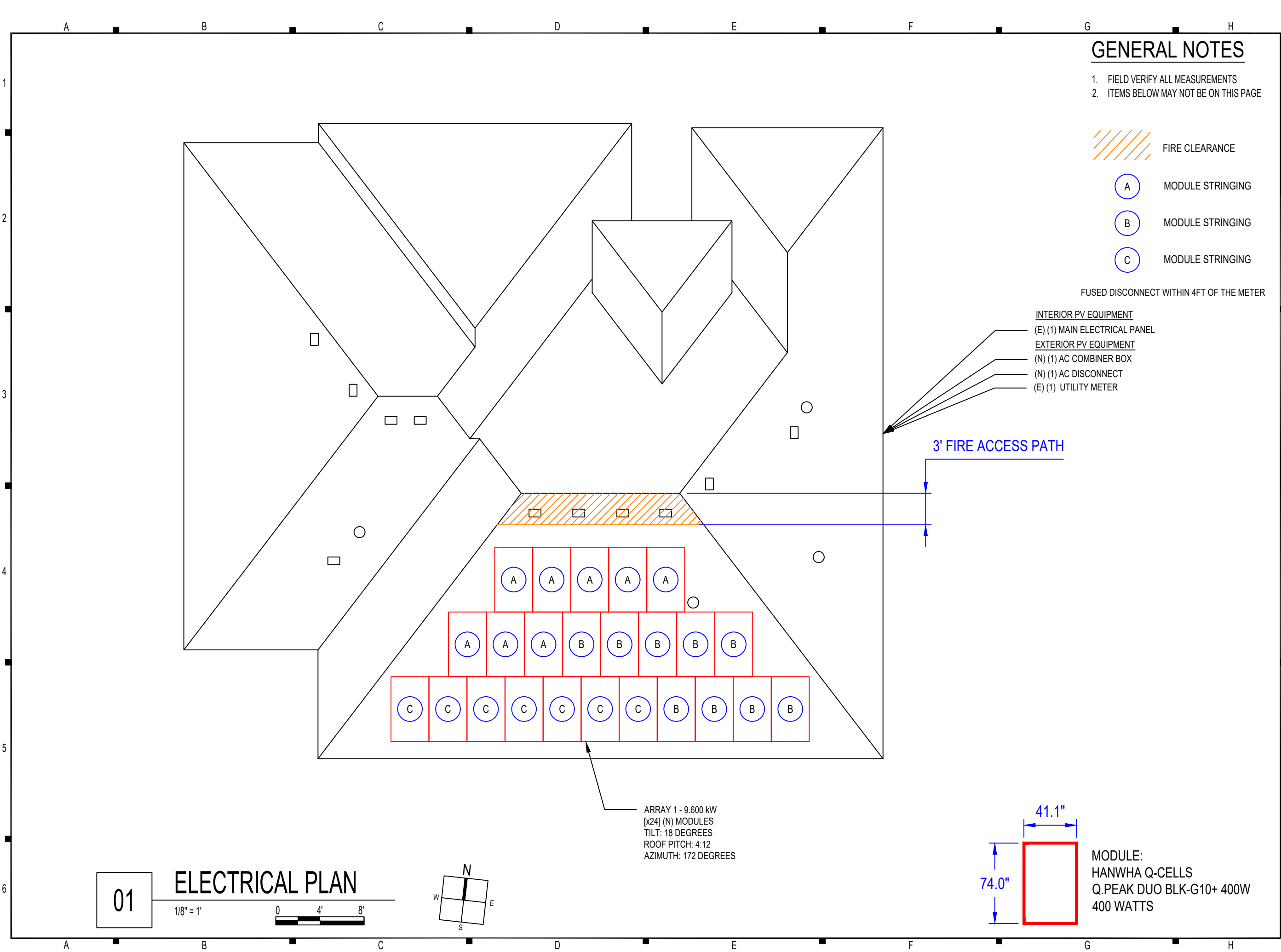
DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

A-102.00
(SHEET 4)



GENERAL NOTES

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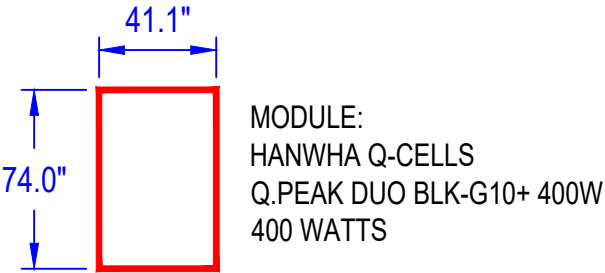
--- ROOF RAFTERS

ROOF MATERIAL IS ASPHALT SHINGLE

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



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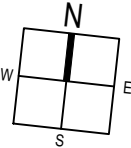


01

SOLAR ATTACHMENT PLAN

1/8" = 1'

0 4' 8'



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SOLAR ATTACHMENT PLAN

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

A-103.00

(SHEET 5)

ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OC PD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL
1	1	10 AWG THWN-2, COPPER	0.75" DIA EMT	6	20A	10 AWG THWN-2, COPPER	0.91 (36.2 °C)	0.8	10.8A	13.5A	40A	29.12A	75°C	35A
2	1	8 AWG THWN-2, COPPER	0.75" DIA EMT	2	50A	8 AWG THWN-2, COPPER	0.91 (36.2 °C)	1	32.4A	40.5A	55A	50.05A	75°C	50A
3	1	6 AWG THWN-2, COPPER	0.75" DIA EMT	2	N/A	6 AWG THWN-2, COPPER	0.91 (36.2 °C)	1	32.4A	40.5A	75A	68.25A	75°C	65A

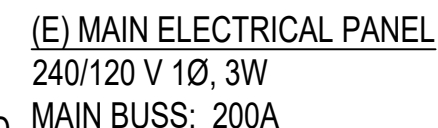
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REVISIONS

(SHEET 6)



1	SYSTEM SUMMARY			
	BRANCH #1	BRANCH #2	BRANCH #3	
	INVERTERS PER BRANCH	8	8	8
	MAX AC CURRENT	10.8A	10.8A	10.8A
	MAX AC OUTPUT POWER	2,640W	2,640W	2,640W
	ARRAY STC POWER	9,600W		
	ARRAY PTC POWER	8,890W		
	MAX AC CURRENT	32.400000A		
	MAX AC POWER	7,920W		
	DERATED (CEC) AC POWER	7,920W		

MODULES											
REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING	
PM1-24	24	HANWHA Q.CELLS Q.PEAK DUO BLK-G10+ 400W	400W	370.4W	11.14A	10.77A	45.3V	37.13V	-0.122V/°C (-0.27%/°C)	20A	

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	
I1-24	24	ENPHASE IQ8M-72-2-US	240V	FLOATING	20A	325W	1.35A	15A	60V	97.0%	

DISCONNECTS				
REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE
SW1	1	EATON DG222NRB OR EQUIV.	60A	240VAC

ASHRAE EXTREME LOW	-22.6°C (-8.7°F), SOURCE: CHARLES B WHEELER D (39.12°; -94.59°)
ASHRAE 2% HIGH	36.2°C (97.2°F), SOURCE: CHARLES B WHEELER D (39.12°; -94.59°)

OCPDS			
REF.	QTY.	RATED CURRENT	MAX VOLTAGE
CB1-3	3	20A	240VAC
CB4	1	10A	240VAC
F1-2	2	50A	240VAC

BILL OF MATERIALS							
CATEGORY	MAKE	MODEL NUMBER	REF	QTY	UNIT	QTY/UNIT	DESCRIPTION
MODULE	HANWHA Q.CELLS	Q.PEAK DUO BLK-G10+ 400W	PM1-24	24	PIECES	1	HANWHA Q.CELLS Q.PEAK DUO BLK-G10+ 400W 400W 132 HALF-CUT CELLS, MONOCRYSTALLINE SILICON
INVERTER	ENPHASE	IQ8M-72-2-US	I1-24	24	PIECES	1	ENPHASE IQ8M-72-2-US 325W INVERTER
DISCONNECT	EATON	DG222NRB	SW1	1	PIECE	1	EATON DG222NRB, FUSED, 2-POLE, 60A, 240VAC OR EQUIVALENT
MISC ELECTRICAL EQUIPMENT		GEN-CABLE-CLIP	HDWR27-147	120	PIECES	1	GENERIC CABLE CLIP
AC COMBINER PANEL		ENPHASE-IQ4-PANEL	EP1	1	PIECE	1	ENPHASE IQ COMBINER 4 (X-IQ-AM1-240-4)
WIRING	ENPHASE	Q-12-10-240	EN1-24	24	PIECES	1	ENPHASE ENGAGE (TM) TRUNK CABLE
WIRING	ENPHASE	Q-TERM-10	EN25	1	BUNDLE	10	ENPHASE ENGAGE (TM) BRANCH TERMINATOR
WIRING	ENPHASE	Q-SEAL-10	EN26	1	BUNDLE	10	ENPHASE ENGAGE (TM) WATERTIGHT SEALING CAP
WIRING		GEN-10-AWG-THWN-2-CU-RD	WR1	150	FEET	1	10 AWG THWN-2, COPPER, RED (LINE 1)
WIRING		GEN-10-AWG-THWN-2-CU-BLK	WR1	150	FEET	1	10 AWG THWN-2, COPPER, BLACK (LINE 2)
WIRING		GEN-10-AWG-THWN-2-CU-GR	WR1	50	FEET	1	10 AWG THWN-2, COPPER, GREEN (GROUND)
WIRING		GEN-8-AWG-THWN-2-CU-RD	WR2	10	FEET	1	8 AWG THWN-2, COPPER, RED (LINE 1)
WIRING		GEN-8-AWG-THWN-2-CU-BLK	WR2	10	FEET	1	8 AWG THWN-2, COPPER, BLACK (LINE 2)
WIRING		GEN-8-AWG-THWN-2-CU-WH	WR2	10	FEET	1	8 AWG THWN-2, COPPER, WHITE (NEUTRAL)
WIRING		GEN-8-AWG-THWN-2-CU-GR	WR2	10	FEET	1	8 AWG THWN-2, COPPER, GREEN (GROUND)
WIRING		GEN-6-AWG-THWN-2-CU-RD	WR3	10	FEET	1	6 AWG THWN-2, COPPER, RED (LINE 1)
WIRING		GEN-6-AWG-THWN-2-CU-BLK	WR3	10	FEET	1	6 AWG THWN-2, COPPER, BLACK (LINE 2)
WIRING		GEN-6-AWG-THWN-2-CU-WH	WR3	10	FEET	1	6 AWG THWN-2, COPPER, WHITE (NEUTRAL)
WIRING		GEN-6-AWG-THWN-2-CU-GR	WR3	10	FEET	1	6 AWG THWN-2, COPPER, GREEN (GROUND)
WIREWAY	ENPHASE	ET-SPLK-05	EN6	1	BUNDLE	5	ENPHASE ENGAGE (TM) ENGAGE COUPLER
WIREWAY		GEN-EMT-0.75" DIA	WW1-3	70	FEET	1	EMT CONDUIT, 0.75" DIA
OCPD	GENERIC MANUFACTURER	GEN-CB-20A-240VAC	CB1-3	3	PIECES	1	CIRCUIT BREAKER, 20A, 240VAC
OCPD	GENERIC MANUFACTURER	GEN-CB-10A-240VAC	CB4	1	PIECE	1	CIRCUIT BREAKER, 10A, 240VAC
OCPD	GENERIC MANUFACTURER	GEN-FU-50A-240VAC	F1-2	2	PIECES	1	FUSE, 50A, 240VAC
TRANSITION BOX	GENERIC MANUFACTURER	GEN-AWB-TB-4-4X	JB1	1	PIECE	1	TRANSITION/PASS-THROUGH BOX, WITH 4 TERMINAL BLOCKS

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
07/14/2022



CONTRACTOR

ECOVOLE

PHONE: 8163517803

ADDRESS: 2300 MAIN ST., KANSAS CITY, MO 64108

LIC. NO.: 206086

HIC. NO.:

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NEW PV SYSTEM: 9.600 kWp

McKNIGHT
RESIDENCE

1607 SW BLACKSTONE PL,
LEE'S SUMMIT, MO 64082

APN: 69-720-10-10-00-0-00-000

ENGINEER OF RECORD

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

ELECTRICAL TABLES

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

E-602.00

(SHEET 7)

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS

SHEET KEYNOTES

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: KNEE WALL & COLLAR TIE
3. ATTACHMENT TYPE: SUNMODO NANOMOUNT (DECKING)
4. MODULE MANUFACTURER: HANWHA Q-CELLS
5. MODULE MODEL: Q.PEAK DUO BLK-G10+ 400W
6. MODULE LENGTH: 74.0"
7. MODULE WIDTH: 41.1"
8. MODULE WEIGHT: 48.5 LBS
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: 3' FROM RIDGE/RAKE, 18" FROM HIPS/VALLEYS
11. RAFTER SPACING: 24" IN. O.C.
12. RAFTER SIZE: 2X6" NOMINAL
13. LAG BOLT DIAMETER: 5/16 IN.
14. LAG BOLT EMBEDMENT: 2.65 IN.
15. TOTAL # OF ATTACHMENTS: 48
16. TOTAL AREA: 506.9 SQ. FT.
17. TOTAL WEIGHT: 1301.84 LBS.
18. WEIGHT PER ATTACHMENT: 27.12 LBS.
19. DISTRIBUTED LOAD: 2.57 PSF
20. MAX. HORIZONTAL STANDOFF: 48" IN.
21. MAX. VERTICAL STANDOFF: IN ACCORDANCE WITH MODULE MANUFACTURER'S INSTRUCTIONS.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER (OR EQUIV.): UNIRAC
24. RAIL MODEL (OR EQUIVALENT): LIGHT
25. RAIL WEIGHT: 0.491 PLF
26. MAX. RAFTER SPAN: 7 FT.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

CONTRACTOR

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ENGINEER OF RECORD

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

ASSEMBLY DETAILS

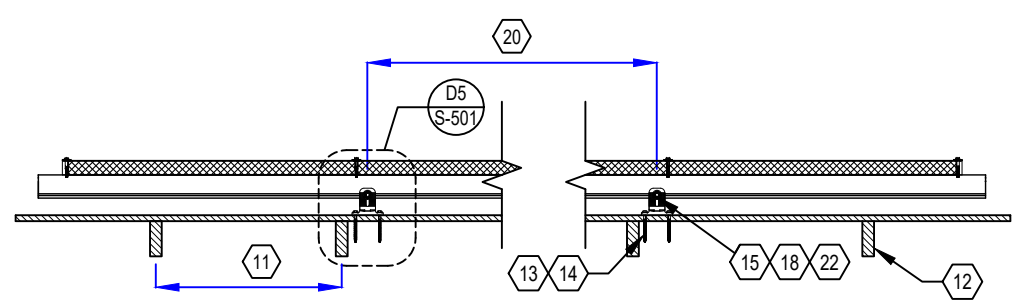
DATE: 07.08.2022

DESIGN BY: R.K.

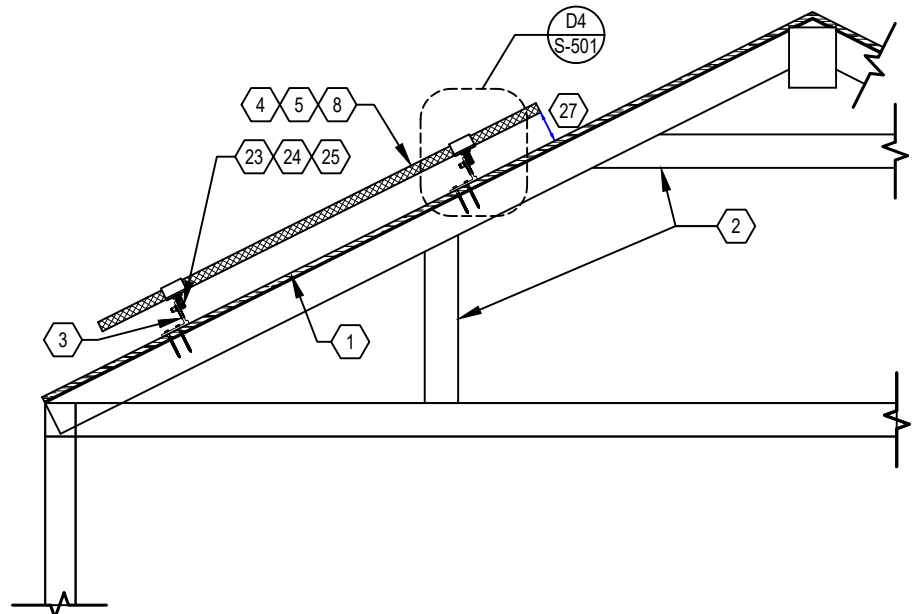
CHECKED BY: M.M.

REVISIONS

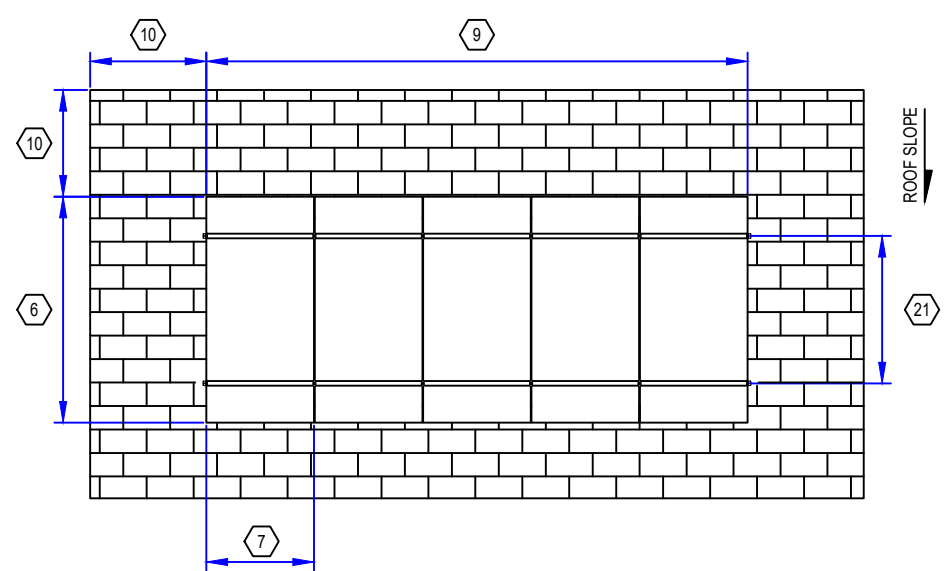
S-501.00
(SHEET 9)



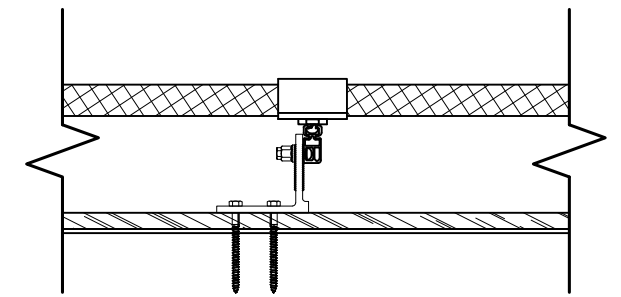
D2 RACKING DETAIL (LONGITUDINAL)
NOT TO SCALE



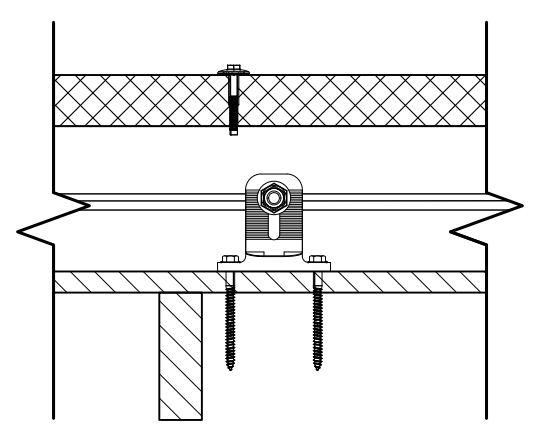
D1 RACKING DETAIL (TRANSVERSE)
NOT TO SCALE



D3 RACKING DETAIL (TOP)
NOT TO SCALE



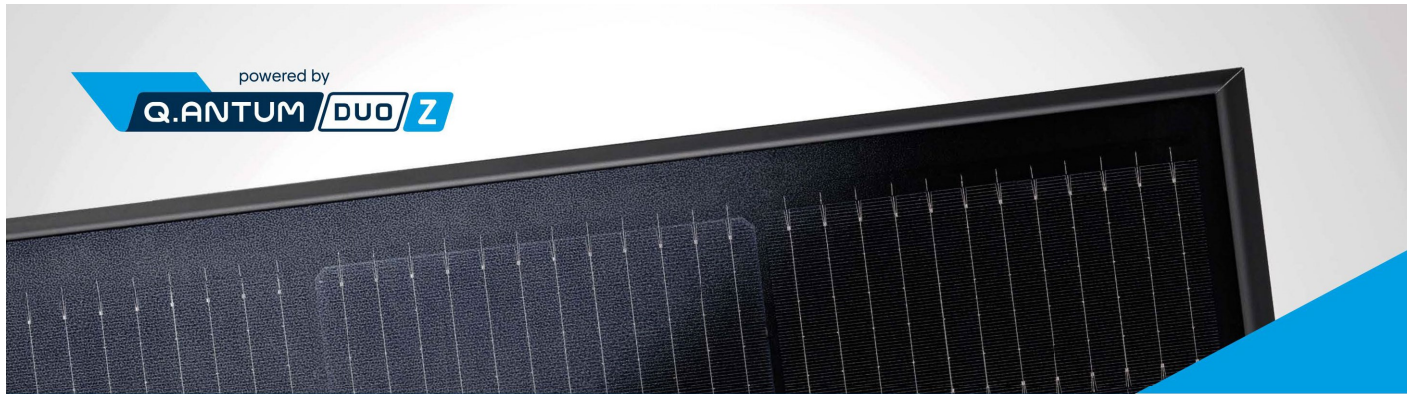
D4 DETAIL (TRANSVERSE)
NOT TO SCALE



D5 DETAIL (LONGITUDINAL)
NOT TO SCALE



Wyssling Consulting
76 N Meadowbrook Drive, Alpine UT 84004
COA #2020037943
Date Signed 7/11/22



Q.PEAK DUO BLK ML-G10+ 385-405

ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY

Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty².

¹ APT test conditions according to IEC/TS 62804-1:2015, method A (~1500V, 96h)

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



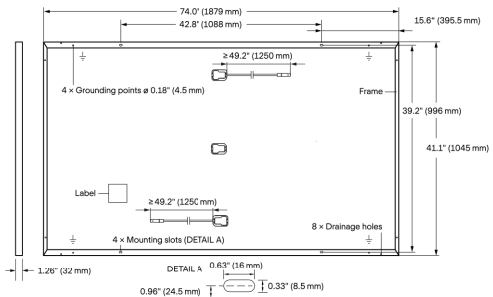
Rooftop arrays on
residential buildings

Engineered in Germany



MECHANICAL SPECIFICATION

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68



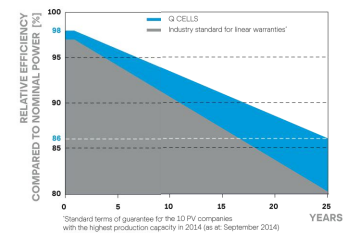
ELECTRICAL CHARACTERISTICS

POWER CLASS			385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	385	390	395	400	405
	Short Circuit Current ¹	I _{SC} [A]	11.04	11.07	11.10	11.14	11.17
	Open Circuit Voltage ¹	V _{OC} [V]	45.19	45.23	45.27	45.30	45.34
	Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77	10.83
	Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13	37.39
	Efficiency ¹	η [%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	288.8	292.6	296.3	300.1	303.8
	Short Circuit Current	I _{SC} [A]	8.90	8.92	8.95	8.97	9.00
	Open Circuit Voltage	V _{OC} [V]	42.62	42.65	42.69	42.72	42.76
	Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51	8.57
	Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25	35.46

¹ Measurement tolerances P_{MPP} ± 3 %; I_{SC}; V_{OC} ± 5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 2800 W/m², NMOT, spectrum AM 1.5

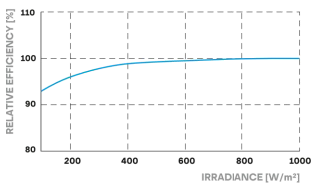
Q CELLS PERFORMANCE WARRANTY

PERFORMANCE AT LOW IRRADIANCE



At least 98 % of nominal power during first year. Thereafter max. 0.5 % degradation per year. At least 93.5 % of nominal power up to 10 years. At least 86 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²)

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull ³	[lbs/ft ²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull ³	[lbs/ft ²]	113 (5400 Pa) / 84 (4000 Pa)		

³ See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),
QCPC Certification ongoing



Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 modules
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Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us



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RESOURCE DOCUMENT

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

R-001.00

(SHEET 10)



DATA SHEET



IQ8M and IQ8A Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one mill on cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

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IQ8MA-DS-0003-01-EN-US-2022-03-17

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

* Only when installed with IQ System Controller 2, meets UL 1741.

** IQ8M and IQ8A supports split phase, 240V installations only.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)		IQ8M-72-2-US	IQ8A-72-2-US
Commonly used module pairings¹	W	260 – 460	295 – 500
Module compatibility		60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell	
MPPT voltage range	V	33 – 45	36 – 45
Operating range	V	25 – 58	
Min/max start voltage	V	30 / 58	
Max input DC voltage	V	60	
Max DC current² [module Isc]	A	15	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		IQ8M-72-2-US	IQ8A-72-2-US
Peak output power	VA	330	366
Max continuous output power	VA	325	349
Nominal (L-L) voltage/range³	V	240 / 211 – 264	
Max continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	50 – 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max units per 20 A (L-L) branch circuit⁴		11	
Total harmonic distortion		<5%	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging	
Peak efficiency	%	97.6	97.6
CEC weighted efficiency	%	97	97.5
Night-time power consumption	mW	60	
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (condensing)	
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.3”) x 175 mm (6.9”) x 30.2 mm (1.2”)	
Weight		1.08 kg (2.38 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations		Yes	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure	
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	
COMPLIANCE			
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01		
	This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer’s instructions.		

(1) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility>

(2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8MA-DS-0003-01-EN-US-2022-03-17

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DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

R-002.00
(SHEET 11)

Data Sheet
Enphase Networking

Enphase
IQ Combiner 4/4C
X-IQ-AM1-240-4
X-IQ-AM1-240-4C



To learn more about Enphase offerings, visit enphase.com



The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed

Enphase IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.

ACCESSORIES AND REPLACEMENT PARTS

Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers

MECHANICAL DATA

Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6,560 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit enphase.com

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RELEASED FOR
CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
07/14/2022



CONTRACTOR

ECOVOLTE

PHONE: 8163517803
ADDRESS: 2300 MAIN ST., KANSAS CITY,
MO 64108

LIC. NO.: 206086
HIC. NO.:
ELE. NO.:

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

NEW PV SYSTEM: 9.600 kWp

McKNIGHT
RESIDENCE

1607 SW BLACKSTONE PL,
LEE'S SUMMIT, MO 64082
APN: 69-720-10-10-00-0-00-000

ENGINEER OF RECORD

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

RESOURCE DOCUMENT

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

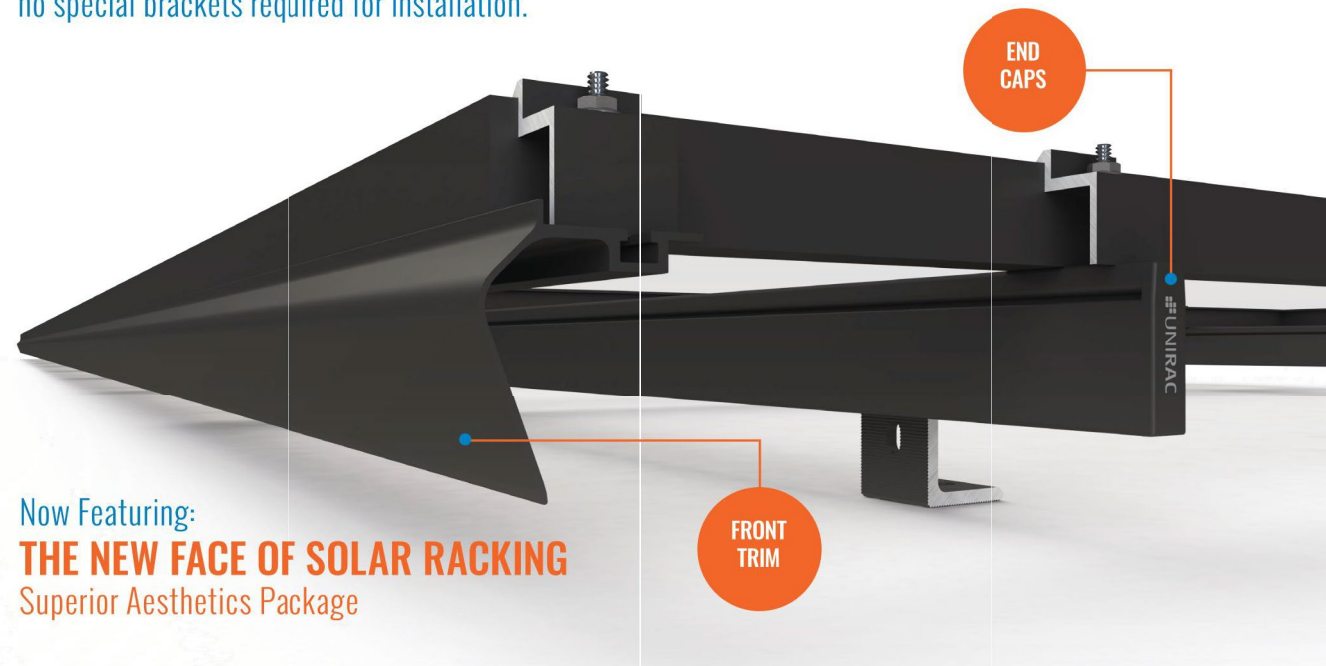
R-003.00

(SHEET 12)

SOLARMOUNT



SOLARMOUNT defined the standard in solar racking. Features are designed to get installers off the roof faster. Our grounding & bonding process eliminates copper wire and grounding straps to reduce costs. Systems can be configured with standard or light rail to meet your design requirements at the lowest cost possible. The superior aesthetics package provides a streamlined clean edge for enhanced curb appeal, with no special brackets required for installation.



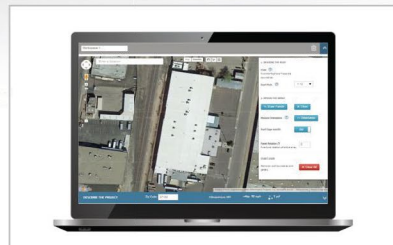
Now Featuring:
THE NEW FACE OF SOLAR RACKING
Superior Aesthetics Package



LOSE ALL OF THE COPPER & LUGS
System grounding through Enphase microinverters and trunk cables



SMALL IS THE NEXT NEW BIG THING
Light Rail is Fully Compatible with all SM Components



ENHANCED DESIGN & LAYOUT TOOLS
Featuring Google Map Capabilities within U-Builder

FAST INSTALLATION. SUPERIOR AESTHETICS

OPTIMIZED COMPONENTS • VERSATILITY • DESIGN TOOLS • QUALITY PROVIDER

SOLARMOUNT



OPTIMIZED COMPONENTS

INTEGRATED BONDING & PRE-ASSEMBLED PARTS

Components are pre-assembled and optimized to reduce installation steps and save labor time. Our new grounding & bonding process eliminates copper wire and grounding straps or bonding jumpers to reduce costs. Utilize the microinverter mount with a wire management clip for an easier installation.

VERSATILITY

ONE PRODUCT - MANY APPLICATIONS

Quickly set modules flush to the roof or at a desired tilt angle. Change module orientation to portrait or landscape while securing a large variety of framed modules on flat, low slope or steep pitched roofs. Available in mill, clear and dark anodized finishes to outperform your projects financial and aesthetic aspirations.

AUTOMATED DESIGN TOOL

DESIGN PLATFORM AT YOUR SERVICE

Creating a bill of materials is just a few clicks away with U-Builder, a powerful online tool that streamlines the process of designing a code compliant solar mounting system. Save time by creating a user profile, and recall preferences and projects automatically when you log in. You will enjoy the ability to share projects with customers; there's no need to print results and send to a distributor, just click and share.



LISTED UL2703

BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM FIRE CLASSIFICATION

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT



UNMATCHED
EXPERIENCE



CERTIFIED
QUALITY



ENGINEERING
EXCELLENCE



BANKABLE
WARRANTY



DESIGN
TOOLS



PERMIT
DOCUMENTATION

TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. SOLARMOUNT is covered by a twenty five (25) year limited product warranty and a five (5) year limited finish warranty.

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

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As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
07/14/2022



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NEW PV SYSTEM: 9.600 kWp

McKNIGHT RESIDENCE

1607 SW BLACKSTONE PL,
LEE'S SUMMIT, MO 64082
APN: 69-720-10-10-00-0-00-000

ENGINEER OF RECORD

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

RESOURCE DOCUMENT

DATE: 07.08.2022

DESIGN BY: R.K.

CHECKED BY: M.M.

REVISIONS

R-004.00

(SHEET 13)



NanoMount™ (Decking)

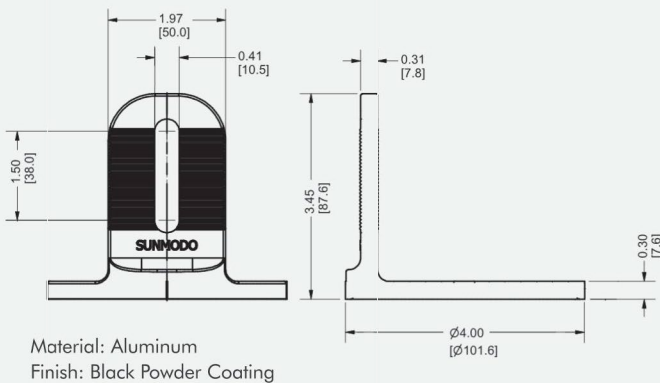


Part Description: Nano Deck Mount, Black
Part No.: K50044-BK2

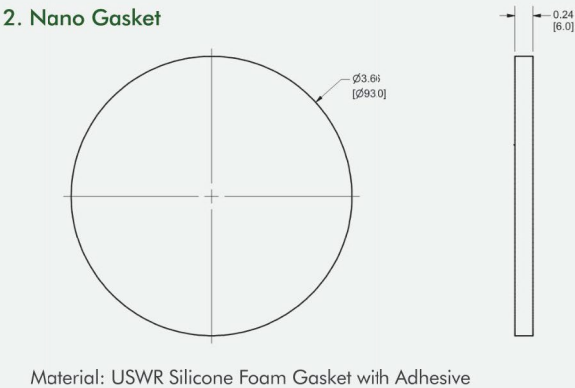
Item No.	Description	Qty in Kit
1	Nano Deck Mount Assembly <ul style="list-style-type: none">Nano Deck MountNano Gasket	1
2	Decking Screw Assembly <ul style="list-style-type: none">Self-Drilling Screw, #6.3 X 76Sealing Washer .26ID X .50X .125	4

Cut Sheet

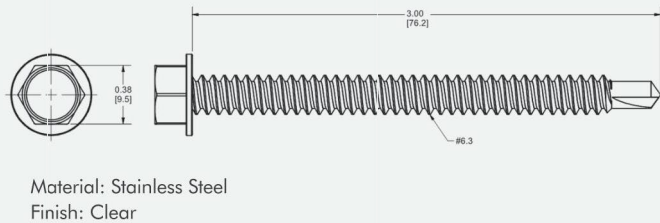
1. Nano Mount



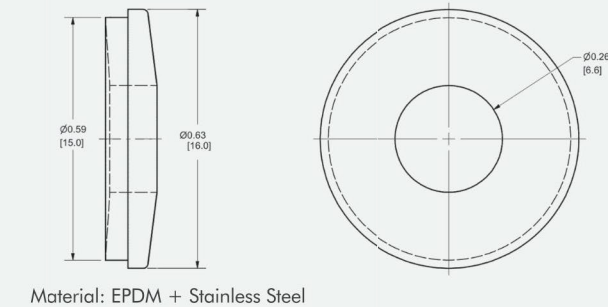
2. Nano Gasket



3. Self-Drilling Screw, #6.3 X 76



4. Sealing Washer .26ID X .50X .125



D10214-V001
Dimensions shown are inches (and millimeters)
Details are subject to change without notice



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REVISIONS

R-005.00

(SHEET 14)