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HISTORIC PRESERVATION BOARD AGENDA

**250 NORTH 5TH STREET
CITY HALL AUDITORIUM**

TUESDAY, OCTOBER 14, 2025 - 4:00 PM

Call to Order/Announcements

Approval of Minutes

1. Approval of minutes for the September 2nd regular hearing.

Discussion Items

1. Certificate of Appropriateness - 640 N. 7th St.
2. APA Conference — Walking History Tour
3. Letter of Support - Records Archival Grant

Updates

Other Business/Public Comment

Adjournment



Grand Junction Planning Commission

Regular Session

Item #1.

Meeting Date: October 14, 2025

Presented By:

Department: Community Development

Submitted By: [AGENDA_ITEM_CUSTOM_TEXT_4]

Information

SUBJECT:

Approval of minutes for the September 2nd regular hearing.

RECOMMENDATION:

[ALTERNATIVE_ACTIONS]

EXECUTIVE SUMMARY:

[AGENDA_ITEM_CUSTOM_TEXT_1]

BACKGROUND OR DETAILED INFORMATION:

[AGENDA_ITEM_CUSTOM_TEXT_2]

SUGGESTED MOTION:

[AGENDA_ITEM_CUSTOM_TEXT_3]

Attachments

1. Historic Preservation Board Minutes -2025 - September 2
2. Dennis_Cert._of_Appropriateness (2)
3. certificate (55)
4. Heather Dennis 6.525kwp PV System (1)
5. Letter of Support - National Archives Grant (draft)

Historic Preservation Board Regular Hearing
Minutes – September 2, 2025

Board Members Present: Sidney Wood, Dustin Anzures, Kevin Tinsley, Adam Nikirk

Others in Attendance: Jessica Johnsen from Community Development, Scott Beilfuss, City Councilmember

CALL TO ORDER/ANNOUNCEMENTS

The meeting was called to order at 4:01 pm by Sidney Wood.

APPROVAL OF MINUTES

The Board considered the minutes of the July 1, 2025, regular hearing which were passed 5-0 on a motion by Kevin Tinsley and a second motion by Dustin Anzures.

DISCUSSION ITEMS

1. Vote on new By-laws before City Council adoption
 - a. Adam Nikirk motioned, Kevin Tinsley seconded. Passed 5-0
2. APA Western Slope Conference
 - a. Invite to members (once available)

UPDATES

1. Golf Tournament
 - a. Totally full!!
2. GJ Auto Building Tour
 - a. Conrad at CDOT can help facilitate
 - b. Kevin is working on scheduling the tour.
3. Update webpage with purpose statement

ADJOURNMENT

The meeting was adjourned at 5:00 PM with a motion from Adam Nikirk and a second by Kevin Tinsley. 5 – 0 pass



Certificate of Appropriateness

North Seventh Street Historic Residential District

This box for office use only

File Number: _____ **Review Fee:** _____

This application is a request to construct, add, change or demolish a property within the North Seventh Street Historic Residential District as follows:

APPLICANT INFORMATION

Applicant Name: Heather Dennis

Are You? Owner Buyer Lessee

Applicant's Mailing Address: 640 N 7th St, Grand Junction, CO 81501

Applicant's Phone: (480) 567-2143 **Email Address:** heatherdenn73@gmail.com

Representative/Contact Person: Eric Trott or Krystal Sherwood (project manager)

Representative/Contact Person Mailing Address: 2807 Riverside Parkway
Grand Junction, CO 81501

Rep/Contact Phone: 970-237-3800 **Email Address:** permitting@socosolarpower.com

Address of Subject Property: 640 N 7th St, Grand Junction, CO 81501 **Tax Parcel Number:** 294514126015

Have you reviewed the North Seventh Street Historic Residential District Guidelines and Standards?

Yes No

PROPOSAL AND PROPERTY INFORMATION**This application is a request to construct, add or change the following (check all that apply):**

	Add	Change	Demolish	N/A
Roof/Chimney				
Walls/Siding				
Fascia/Other Trim				
Windows/Doors				
Porch				
Other (describe below)				

Fully explain the nature of your request:

6.525kW mounted roof PV system

Number of Structures on Property: _____ Residential _____ Outbuildings _____

Total Gross Square Footage of Existing Structures (all floors): _____

Total Gross Square Footage of Proposed Structures or Additions (all floors): _____

Total Gross Square Footage of Existing Structures to be removed (all floors): _____

Existing Height to Building Eave: _____

Existing Height to Building Peak: _____

Proposed Height to Building Eave: _____

Proposed Height to Building Peak: _____

The existing building is a: Single-Family Dwelling Duplex Other Multi-Unit Other (specify): _____**Exterior Building Materials:**

	Existing	Proposed
Roof		
Walls/Siding		
Doors		
Fascia, Trim, Etc.		
Other		

Existing Windows:

Existing Material: _____

Existing Sill Depth: _____

Existing Window Type:

Casement _____ Slider _____ Double-Hung _____ Single-Hung _____

Fixed _____ Divided Light _____ How many? _____ (e.g. 4 over 1, 3 over 1)

Proposed Windows:

Proposed Material: _____

Proposed Sill Depth: _____

Proposed Window Type:

Casement _____ Slider _____ Double-Hung _____ Single-Hung _____

Fixed _____ Divided Light _____ How many? _____ (e.g. 4 over 1, 3 over 1)

For proposed divided lights, please describe grid, including width, whether it is flat or contoured:

Will the exterior trim remain on the replacement windows? _____ Yes _____ No _____

SITE AND LANDSCAPE INFORMATION

Fencing:

	Existing	Proposed
--	-----------------	-----------------

Type _____

Size/Height _____

Location _____

Are there any prominent trees or areas of vegetation on the property? If yes, what are the type, size and general location?

Does this application propose to remove or alter any of these prominent trees or vegetation areas? If so, which ones? And describe proposed change:

No _____

ADDITIONAL INFORMATION:

Are there other proposed changes not yet covered in the application? Yes No

If yes, please explain: _____

6.525kW mounted roof PV system

Signatures:

DocuSigned by:


Heather Dennis

71E4F3C578C2480...
Property Owner

8/31/2025

Date


Eric Trott

Representative

8/25/25

Date

City Approval:

Printed Name and Title

Signature

Date

Certificate Of Completion

Envelope Id: 4F337422-7F32-4758-828E-12016E44E54E

Status: Completed

Subject: Please Sign-Cert. of Appropriateness

Source Envelope:

Document Pages: 4

Signatures: 1

Envelope Originator:

Certificate Pages: 4

Initials: 0

Soco Solar

AutoNav: Enabled

1371 Saddle Ridge Rd

EnvelopeD Stamping: Enabled

nil

Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Loma, CO 81524

taylor@socosolarpower.com

IP Address: 216.157.40.44

Record Tracking

Status: Original

Holder: Soco Solar

Location: DocuSign

8/25/2025 11:20:25 AM

taylor@socosolarpower.com

Signer Events

Signature

Timestamp

Heather Dennis



Sent: 8/25/2025 11:21:32 AM

heatherdenn73@gmail.com

Viewed: 8/31/2025 6:56:03 PM

Security Level: Email, Account Authentication
(None)

Signed: 8/31/2025 6:56:46 PM

Signature Adoption: Pre-selected Style

Using IP Address:

2600:6c67:217f:b378:d154:dc97:de2:aaa5

Electronic Record and Signature Disclosure:

Accepted: 8/31/2025 6:56:03 PM

ID: c2a1cc66-9c56-4175-9174-8037d2d18e37

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	8/25/2025 11:21:32 AM
Certified Delivered	Security Checked	8/31/2025 6:56:03 PM
Signing Complete	Security Checked	8/31/2025 6:56:46 PM
Completed	Security Checked	8/31/2025 6:56:46 PM
Payment Events	Status	Timestamps
Electronic Record and Signature Disclosure		

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- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
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PHOTOVOLTAIC ROOF MOUNT SYSTEM

15 MODULES-ROOF MOUNTED ON GRID SOLAR SYSTEM 6.525 KW DC, 4.8 KW AC
640 N 7TH ST, GRAND JUNCTION, CO 81501



SOCO SOLAR & POWER

**SOCO SOUTH:
39754 HWY 160
BAYFIELD, CO 81122**

SOCO NORTH: 2007 DIVIDESIDE PARKWAY

2807 RIVERSIDE PARKWAY
GRAND JUNCTION, CO 81501

GRAND JUNCTION, CO 81501

EC #0102444

PH. NO:970-237-3800

PROJECT DATA		GENERAL NOTES	VICINITY MAP
PROJECT ADDRESS	640 N 7TH ST, GRAND JUNCTION, CO 81501	<ol style="list-style-type: none"> ALL COMPONENTS ARE UL LISTED AND CEC CERTIFIED, WHERE WARRANTED. THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2023 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION. ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY. WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT. HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24. A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH CEC 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM. PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE. PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE. ALL SINAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SINAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ. AS SPECIFIED BY THE AHJ, EQUIPMENT USED IN UNGROUNDED SYSTEMS LABELED ACCORDING TO NEC 690.35(F). INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE LISTED FOR THIS USE [NEC 690.35(G)]. THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)] ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250. SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41. PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12 DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)] ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31 WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3). ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703 ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC. 	
OWNER:	HEATHER DENNIS	REVISIONS	
LOT AREA:	10454 SQFT	DESCRIPTION	DATE
LIVING AREA:	2348 SQFT.		
PARCEL ID:	294514126015		
CONTRACTOR:	SO CO SOLAR & POWER		
DESIGNER:	H.N		
SCOPE:	6.525 KW DC ROOF MOUNT SOLAR PV SYSTEM WITH 15 HYUNDAI SOLAR HiN-T435NF(BK) 435W 15 ENPHASE IQ8MC-72-2-US MICRO INVERTER		
AUTHORITIES HAVING JURISDICTION:	GRAND JUNCTION		
BUILDING:	RESIDENTIAL		
ZONING:	RESIDENTIAL		
UTILITY:	XCEL		
COUNTY:	MESA		
SHEET INDEX		HOUSE PHOTO	
PV-1	COVER SHEET		
PV-2	PLOT PLAN WITH ROOF PLAN		
PV-3	ROOF PLAN & MODULES		
PV-4	ELECTRICAL PLAN		
PV-5	ATTACHMENT DETAIL		
PV-6	ELECTRICAL THREE LINE DIAGRAM		
PV-7	WIRING CALCULATION		
PV-8	LABELS		
PV-9	PLACARD		
PV-10+	EQUIPMENT SPECIFICATIONS		
CODE REFERENCES			
PROJECT TO COMPLY WITH THE FOLLOWING:			
2023 NATIONAL ELECTRICAL CODE			
2021 INTERNATIONAL RESIDENTIAL CODE			
2021 INTERNATIONAL BUILDING CODE			
2021 INTERNATIONAL ENERGY CONVERSATION CODE			
DRAWN BY H.N			
SHEET NAME COVER SHEET			
SHEET SIZE ANSI B 11" X 17"			
SHEET NUMBER PV-1			
PROJECT NAME & ADDRESS HEATHER DENNIS RESIDENCE 640 N 7TH ST, GRAND JUNCTION, CO 81501			
DATE:07/09/2025			
2807 RIVERSIDE PARKWAY GRAND JUNCTION, CO 81501 EC #0102444 PH. NO:970-237-3800			

PROJECT DESCRIPTION:

ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
 15 X HYUNDAI SOLAR HiN-T435NF(BK) 435 W PV MODULES
 15 ENPHASE IQ8MC-72-2-US MICRO INVERTER,(1-PHASE,240V,320W,1.33A,3-WIRE)
 DC SYSTEM SIZE: 6.525KW DC
 AC SYSTEM SIZE: 4.8KW AC,1-PHASE ,240V

ASPHALT SHINGLE ROOF

ROOF ARRAY AREA #1:- 314.99 SQ FT.
 ROOF ARRAY AREA #2:- ##### SQ FT.

(N) VISIBLE, LOCKABLE,
 LABELED OPEN TYPE,AND READILY
 ACCESSIBLE UTILITY AC DISCONNECT
 LOCATED WITHIN 10'
 OF UTILITY METER

NO CLEARANCE CONCERN
 FOR TO XCEL
 ENERGY EQUIPMENT

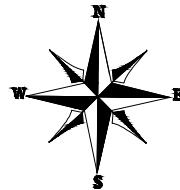
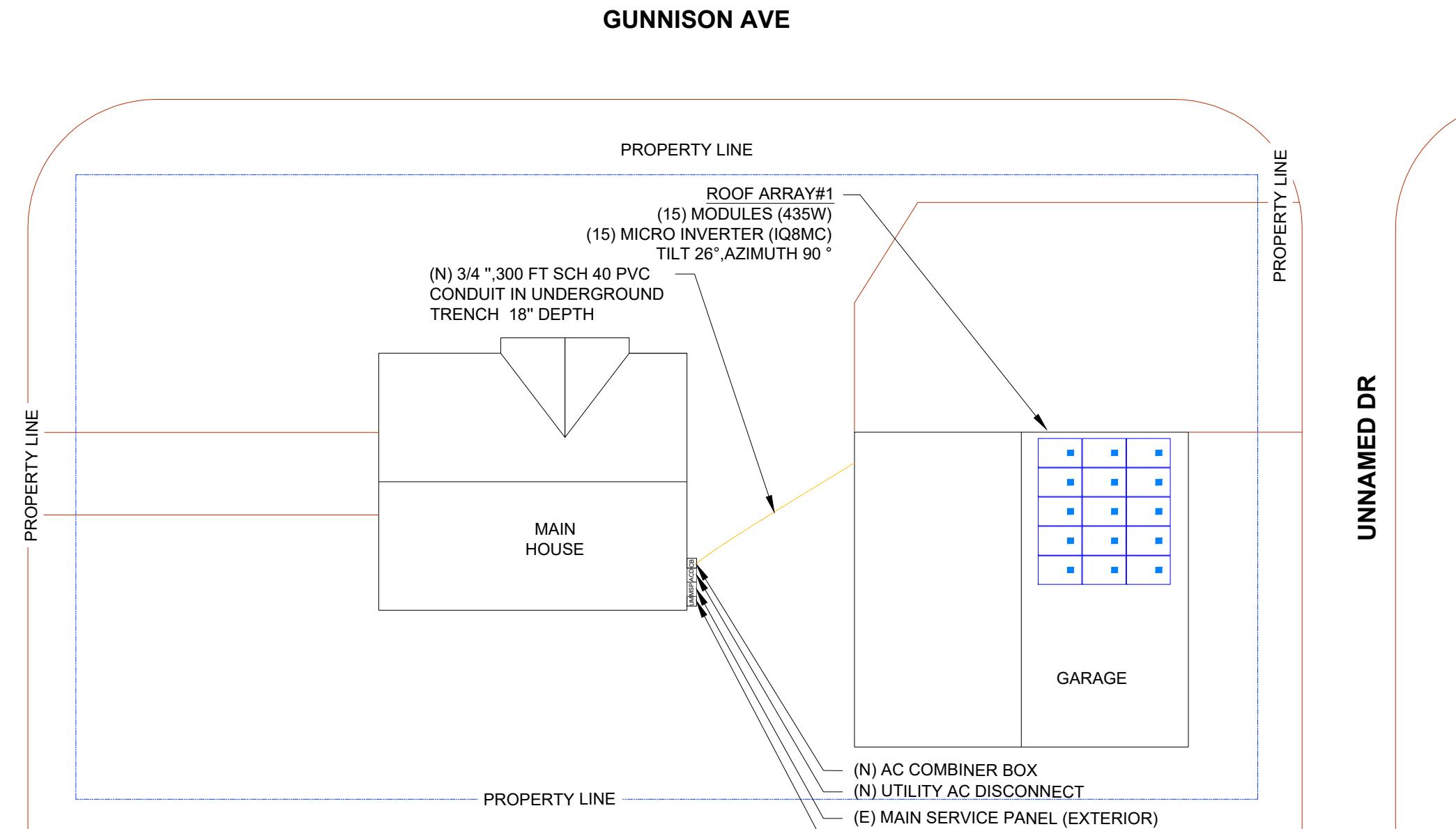
GUNNISON ON NORTH SIDE
 SIDE OF DRIVEWAY AND 10 FT
 AWAY FROM DRIVEWAY

ACCOUNT: 53-0012188641-6
 METER: 360757599
 PREMISE: 300009208

MAIN BILLING METER ON EAST SIDE
 OF MAIN HOUSE ,UTILITY AC
 DISCONNECT IS WITHIN 10' FROM
 MAIN BILLING METER

24/7 UNESCORTED KEYLESS ACCESS SHALL BE
 PROVIDED TO ALL XCEL ENERGY EQUIPMENT

N 7TH ST



SOCO SOLAR & POWER

SOCO SOUTH:
 39754 HWY 160
 BAYFIELD, CO 81122

SOCO NORTH:
 2807 RIVERSIDE PARKWAY
 GRAND JUNCTION, CO 81501

EC #0102444
 PH. NO:970-237-3800

REVISIONS

DESCRIPTION	DATE	REV

DATE:07/09/2025

PROJECT NAME & ADDRESS

**HEATHER DENNIS
 RESIDENCE**

640 N 7TH ST,
 GRAND JUNCTION, CO 81501

DRAWN BY
H.N

SHEET NAME
**PLOT PLAN WITH
 ROOF PLAN**

SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-2

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 15 MODULES
 MODULE TYPE = HYUNDAI SOLAR HiN-T435NF(BK) 435W MODULES
 MODULE WEIGHT = 50 LBS / 22.7KG.
 MODULE DIMENSIONS = 67.80" x 44.60" =21.00 SF

15 X HYUNDAI SOLAR HiN-T435NF(BK) 435 W

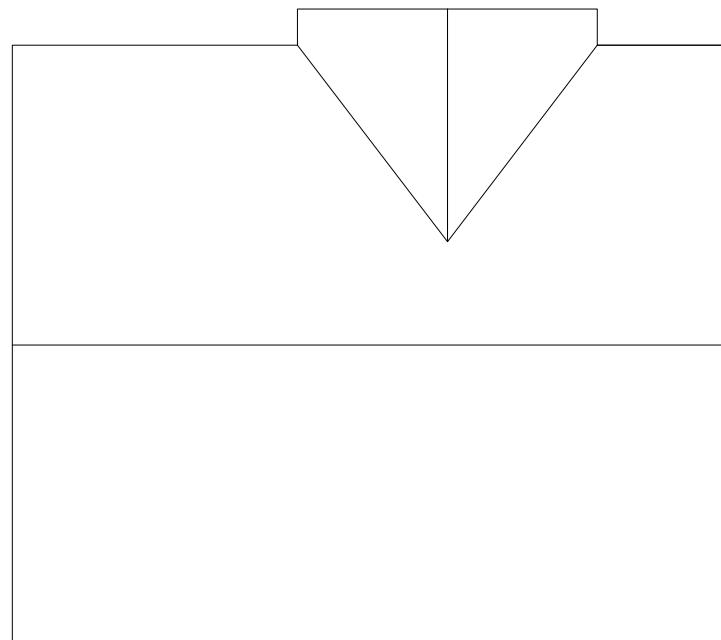
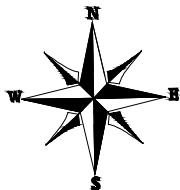
PV MODULES

ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES

15 ENPHASE IQ8MC-72-2-US MICRO INVERTER

DC SYSTEM SIZE: 6.525KW DC

AC SYSTEM SIZE: 4.8KW AC

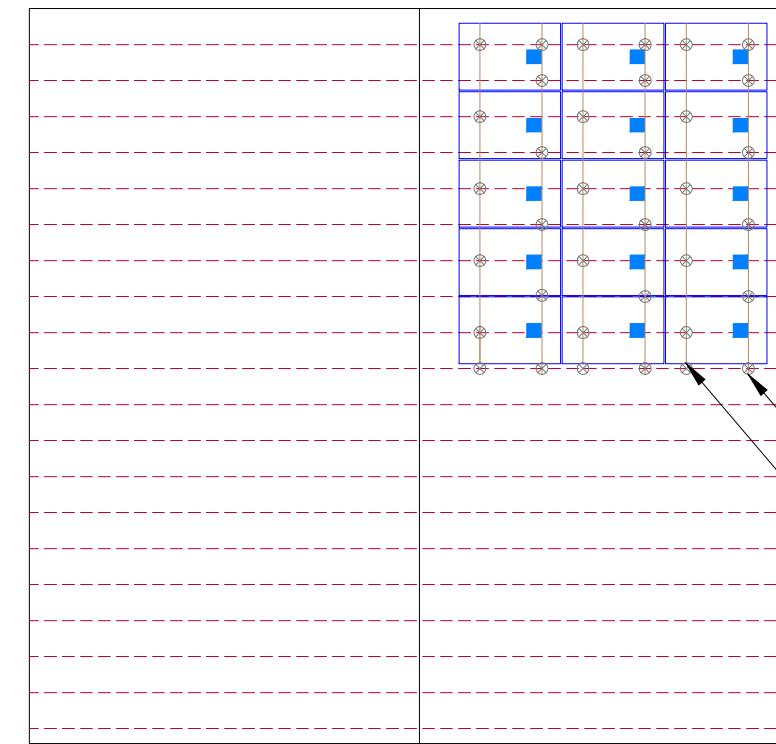


(N) VISIBLE, LOCKABLE,
 LABELED OPEN TYPE, AND READILY
 ACCESSIBLE UTILITY AC DISCONNECT
 LOCATED GREATER THAN 10'
 OF UTILITY METER

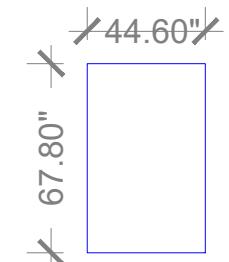
DISTRIBUTED LOAD CALC'S						
# OF MODULE	MODULE WT lbs	TOTAL WT lbs	MODULE AREA ft ²	TOTAL MODULE AREA ft ²	TOTAL RACKING WT lbs	DISTRIBUTED WT lbs/ft ²
15	50	750.00	21.12	316.80	80.0	2.62

ROOF DESCRIPTION				
ROOF TYPE		ASPHALT SHINGLE		
ROOF	ROOF PITCH	AZIMUTH	WOOD TRUSS SIZE	SPACING
#1	26°	90°	2"X4"	24"/O.C

ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	15	316.82	2348	13.49
#TOTAL	15	316.82	2348.00	13.49



- (N) AC COMBINER BOX
- (N) UTILITY AC DISCONNECT
- (E) MAIN SERVICE PANEL (EXTERIOR)
- (E) UTILITY METER



HYUNDAI SOLAR
 HiN-T435NF(BK) 435
 W MODULES
 ROOF ARRAY#1
 (15) MODULES (435W)
 (15) MICRO INVERTER (IQ8MC)
 TILT 26°,AZIMUTH 90°

(N) SUNMODO NANOMOUNT
 ATTACHMENTS @48"
 (N) SUNMODO SMR100 RAIL



SOCO SOLAR & POWER

SOCO SOUTH:
 39754 HWY 160
 BAYFIELD, CO 81122

SOCO NORTH:
 2807 RIVERSIDE PARKWAY
 GRAND JUNCTION, CO 81501
 EC #0102444
 PH. NO:970-237-3800

REVISIONS

DESCRIPTION	DATE	REV

DATE:07/09/2025

PROJECT NAME & ADDRESS

HEATHER DENNIS
 RESIDENCE

640 N 7TH ST,
 GRAND JUNCTION, CO 81501

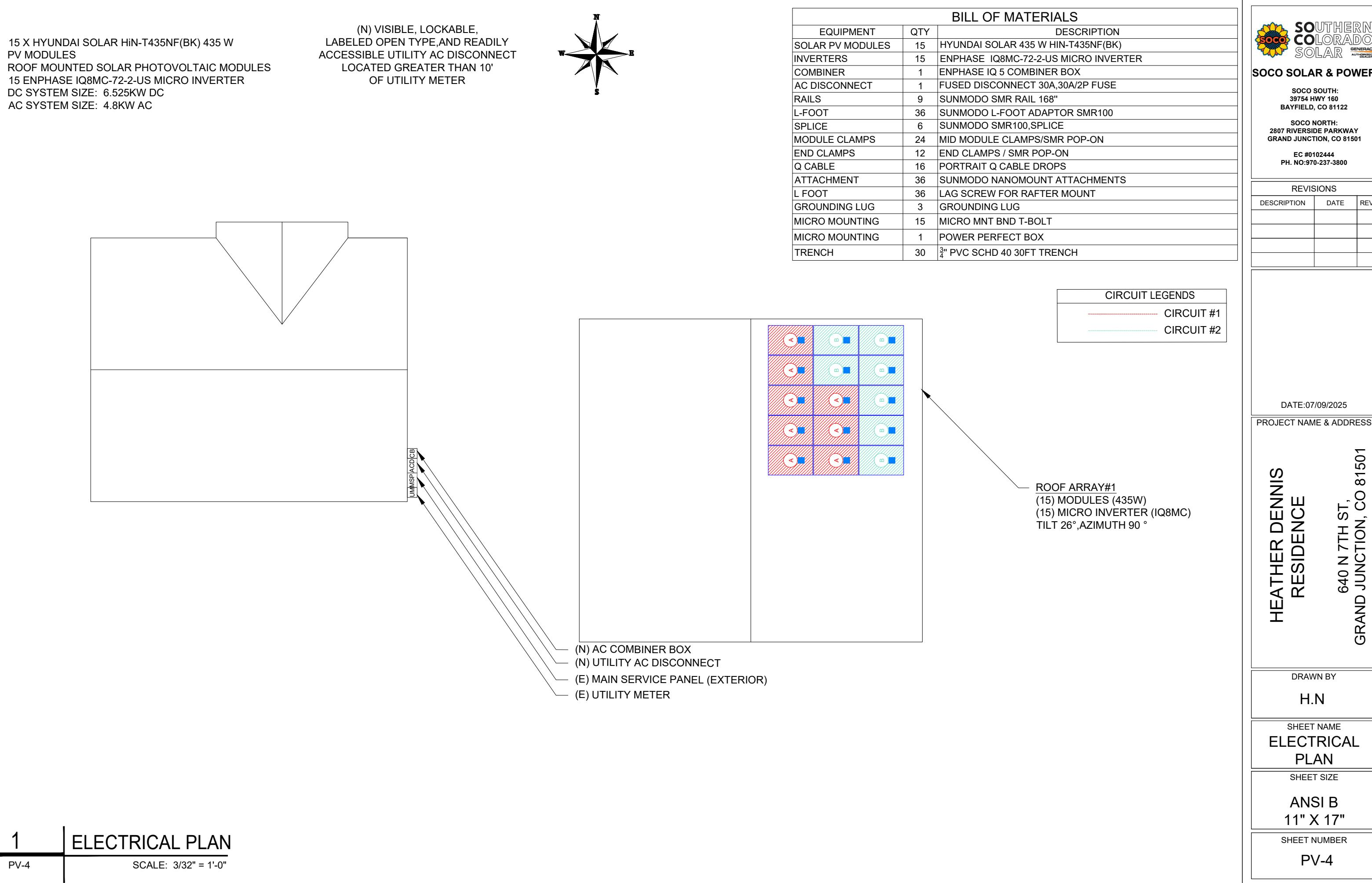
DRAWN BY
 H.N

SHEET NAME
 ROOF PLAN &
 MODULES

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER
 PV-3



REVISIONS

DESCRIPTION	DATE	REV
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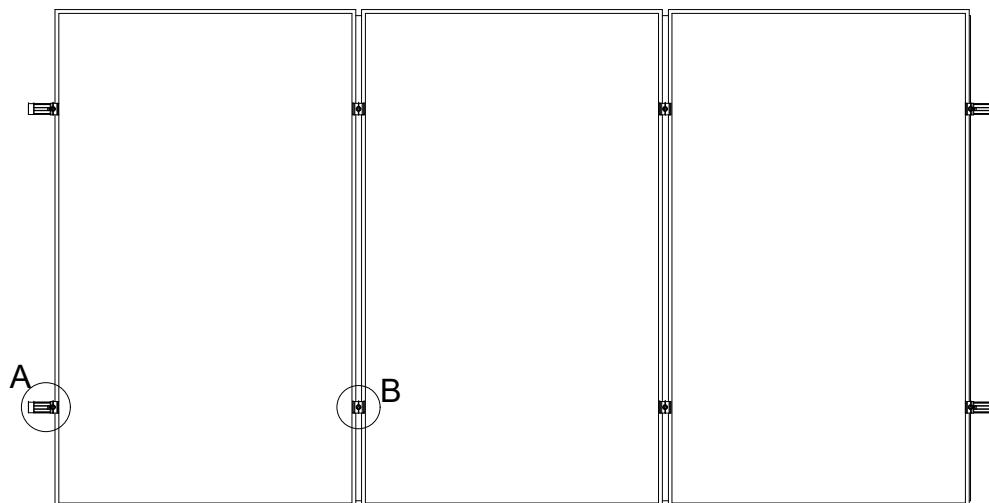
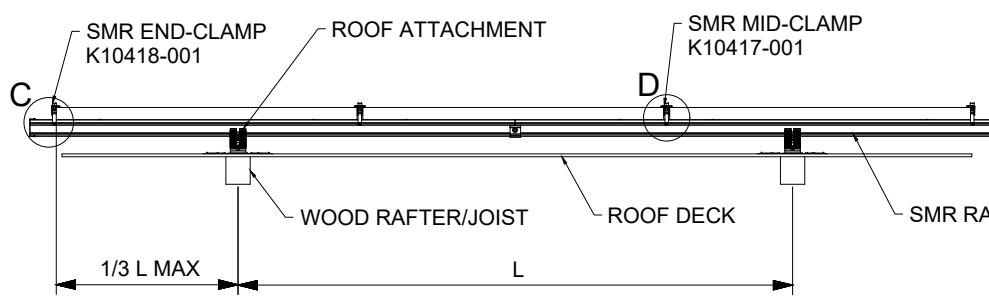
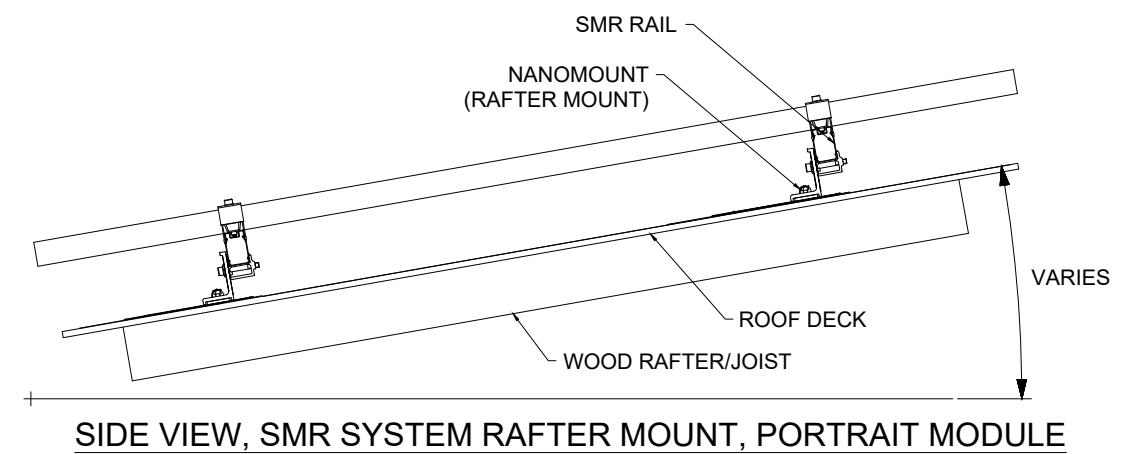
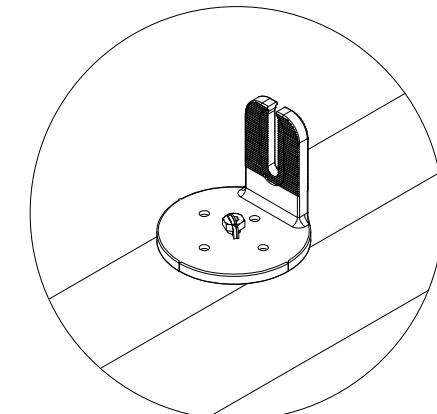
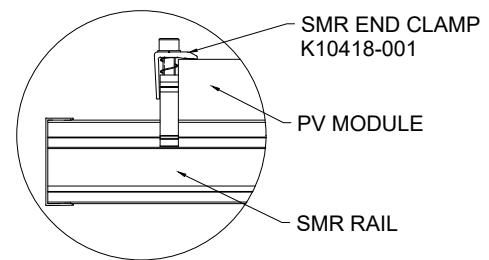
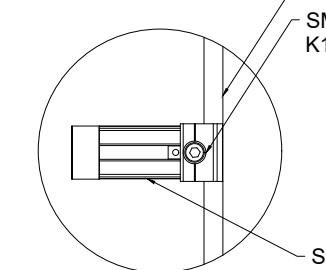
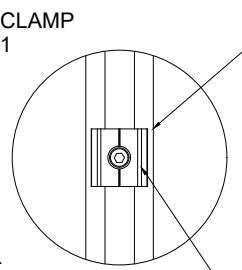
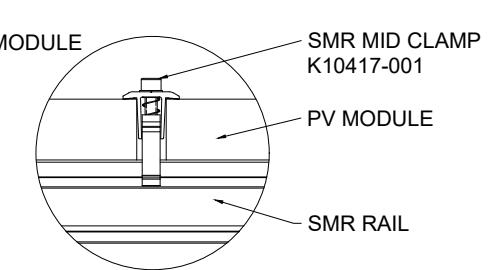
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DATE:07/09/2025

PROJECT NAME & ADDRESS
**HEATHER DENNIS
RESIDENCE**

640 N 7TH ST,
GRAND JUNCTION, CO 81501

DRAWN BY
H.N

**ATTACHMENT
DETAIL**
SHEET SIZE
**ANSI B
11" X 17"**
SHEET NUMBER
PV-5

PLAN VIEW, SMR SYSTEM RAFTER MOUNT, PORTRAIT MODULE

FRONT VIEW, SMR SYSTEM RAFTER MOUNT, PORTRAIT MODULE

SIDE VIEW, SMR SYSTEM RAFTER MOUNT, PORTRAIT MODULE

NANO RAFTER MOUNT

DETAIL C

DETAIL A

DETAIL B

DETAIL D

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	ENPHASE IQ8MC-72-2-US MICRO INVERTER
MIN/MAX DC VOLT RATING	30DCV MIN/ 58V MAX
MAX INPUT DC VOLTAGE	60V
NOMINAL AC VOLTAGE RATING	240V/ 211-264V
MAX AC CURRENT	1.33A
MAX MODULES PER CIRCUIT	12
MAX OUTPUT POWER	(320VA)

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	HYUNDAI SOLAR HIN-T435NF(BK) 435 MODULE
VMP	32.1V
IMP	13.56A
VOC	38.6V
ISC	14.32A
TEMP. COEFF. VOC	-0.27%/°C
MODULE DIMENSION	67.80" L x 44.60" W x 1.25" D (In Inch)

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP ASHARE	-17°
ASHARE AMBIENT TEMP (HIGH TEMP 2%)	34°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.27%/°C
PERCENT OF VALUES	
.80	4-6
.70	7-9
.50	10-20


SOUTHERN COLORADO SOLAR
 GENERAC
 AUTHORIZED DEALER
SOCO SOLAR & POWER
 SOCO SOUTH:
 39754 HWY 160
 BAYFIELD, CO 81122
 SOCO NORTH:
 2807 RIVERSIDE PARKWAY
 GRAND JUNCTION, CO 81501
 EC #0102444
 PH. NO:970-237-3800

REVISIONS		
DESCRIPTION	DATE	REV

DATE:07/09/2025

PROJECT NAME & ADDRESS

HEATHER DENNIS
RESIDENCE
640 N 7TH ST,
GRAND JUNCTION, CO 81501

AC FEEDER CALCULATIONS																						
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	L1/L2	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
STRING 1	MIRCO INVERTER	240	14.85	18.56	N/A	CU # 12AWG	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	34	4	30	0.91	1	27.30	PASS	30	1.68	0.624	EMT 3/4"	N/A
MIRCO INVERTER	COMBINER	240	10.64	13.30	20	CU # 12AWG	CU #10 AWG	CU #12 AWG	25	PASS	34	4	30	0.91	1	27.30	PASS	5	1.68	0.074	EMT 3/4"	N/A
AC COMBINER	AC DISCONNECT	240	19.95	24.94	30	CU # 6AWG	CU # 8 AWG	CU # 6AWG	65	PASS	34	4	75	1.00	1	75.00	PASS	30	0.49	0.244	EMT 3/4"	N/A
AC COMBINER	POI	240	19.95	24.94	30	CU # 6AWG	CU # 8 AWG	CU # 6AWG	65	PASS	34	4	75	1.00	1	75.00	PASS	5	0.49	0.041	EMT 3/4"	N/A

ELECTRICAL NOTES

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF SOLADECK, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.

DRAWN BY
H.N

SHEET NAME
WIRING
CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

**CAUTION:
AUTHORIZED SOLAR
PERSONNEL ONLY!**

**PLACARD-1:
PLACARD LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13**

WARNING

ELECTRICAL SHOCK HAZARD

PLACARD- 2:
PLACARD LOCATION:
AC DISCONNECT
COMBINER
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
CODE REF: NEC 690.13(B)

**⚠️ WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

PLACARD- 3:
PLACARD LOCATION:
PRODUCTION METER
UTILITY METER
MAIN SERVICE PANEL
SUBPANEL
CODE REF: NEC 705.12(D)(3) & NEC 690.59

! WARNING

TURN OFF PHOTOVOLTAIC AC

DISCONNECT PRIOR TO

WORKING INSIDE PANEL

PLACARD- 4:
PLACARD LOCATION:
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
COMBINER
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

! CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS
BACKFEED

**PLACARD- 5:
PLACARD LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 690.13 (F) NEC 705.12(B) (3-4) & NEC 690.59**

A yellow warning sign with a black exclamation mark inside a triangle. The word "WARNING" is in large black capital letters. Below it, the text "POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE" is in black capital letters.

LABEL- 6:
PLACARD LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF. NEC 705.10(B)(2)(c))

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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

ACARD-7:
ACARD LOCATION:
C DISCONNECT
CODE REF: IFC 605.11.3.1(1) & NEC 690.56(C)(1)(a)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LACARD- 8:
LACARD LOCATION:
C DISCONNECT
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

LACARD- 9:
LACARD LOCATION:
C DISCONNECT
CODE REF: NEC 690.13(B)

**PHOTOVOLTAIC
AC DISCONNECT**

LACARD- 10:
LACARD LOCATION:
MAIN SERVICE PANEL
SUBPANEL
C DISCONNECT
CODE REF: NEC 690.13(B)

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

ACARD- 11:
ACARD LOCATION:
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)
CODE REF: NEC 690.13(B)

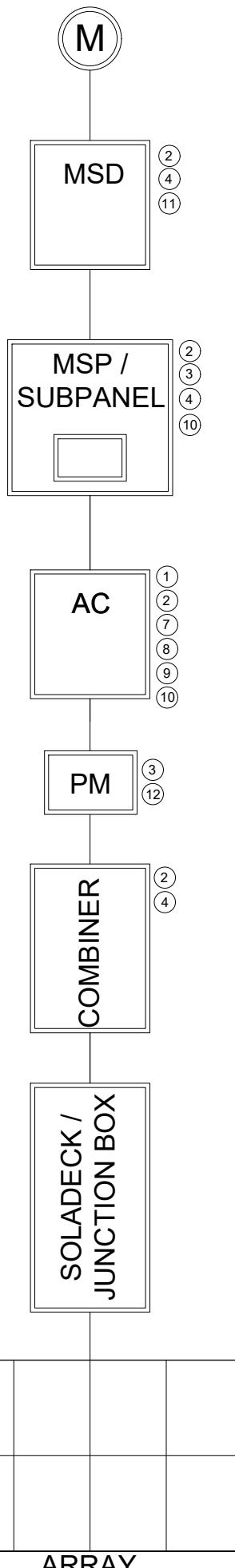
PRODUCTION METER

ACARD- 12:
ACARD LOCATION:
PRODUCTION METER (ONLY IF PRODUCTION METER IS USED)
025-075-100-10/01

PHOTOVOLTAIC SYSTEM CONNECTED

LACARD- 13:
LACARD LOCATION:
UTILITY METER
CODE REF: NEC 690.13 (B)

NOTE:



SOUTHERN COLORADO SOLAR <small>GENERAL AUTHORIZED DEALER</small>		
SOCO SOLAR & POWER		
SOCO SOUTH: 39754 HWY 160 BAYFIELD, CO 81122		
SOCO NORTH: 2807 RIVERSIDE PARKWAY GRAND JUNCTION, CO 81501		
EC #0102444 PH. NO:970-237-3800		
REVISIONS		
DESCRIPTION	DATE	REV
DATE:07/09/2025		
PROJECT NAME & ADDRESS		
HEATHER DENNIS RESIDENCE 640 N 7TH ST, GRAND JUNCTION, CO 81501		
DRAWN BY		
H.N		
SHEET NAME		
LABELS		
SHEET SIZE		
ANSI B 11" X 17"		
SHEET NUMBER		
PV-8		

REVISIONS

DESCRIPTION	DATE	REV

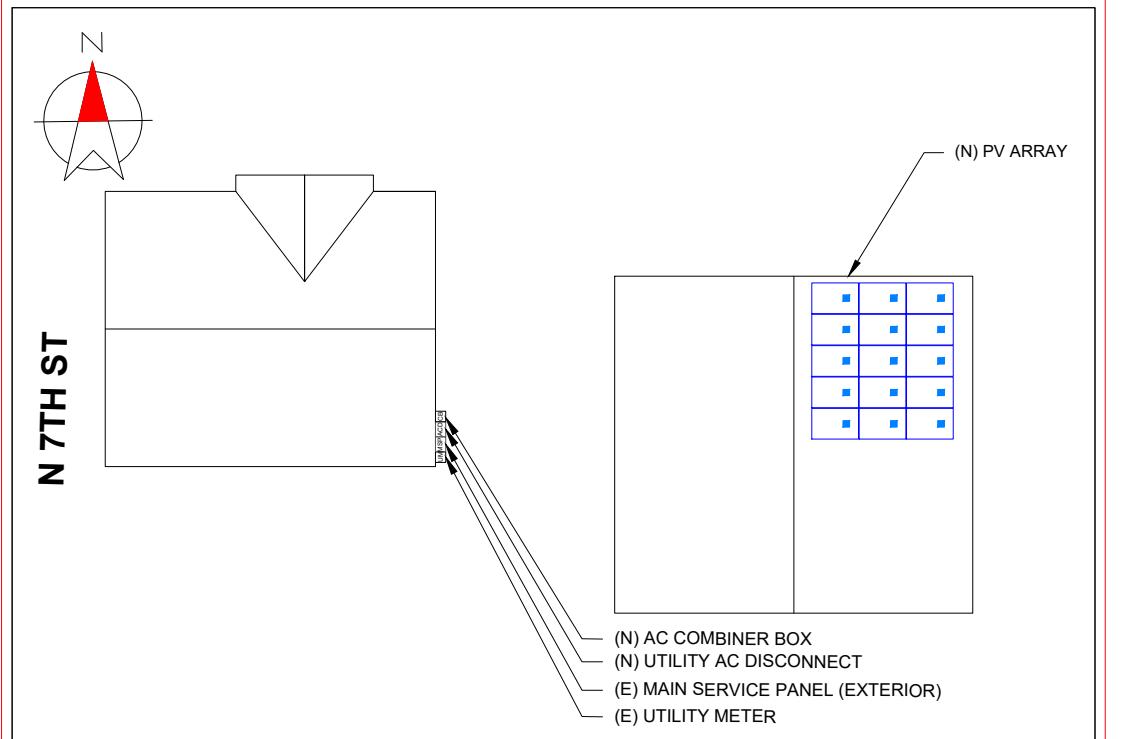
DATE:07/09/2025

PROJECT NAME & ADDRESS
**HEATHER DENNIS
RESIDENCE**

640 N 7TH ST,
GRAND JUNCTION, CO 81501

CAUTION: MULTIPLE SOURCES OF POWER

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM ROOF MOUNTED
SOLAR ARRAYS WITH SAFETY DISCONNECTS AS SHOWN:



640 N 7TH ST, GRAND JUNCTION, CO 81501

DIRECTORY

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

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

DRAWN BY
H.N

SHEET NAME
PLACARD

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9

LABELING NOTES:

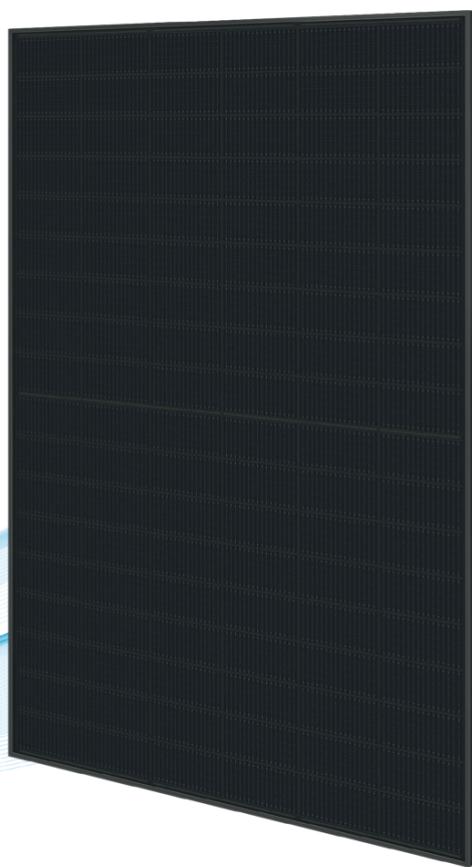
1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2023 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z535.
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [IFC 605.11.1.1]

HD HYUNDAI SOLAR MODULE

NF(BK) Series

Premium N-Type TOPCon Module

HiN-T430NF(BK) | HiN-T435NF(BK) | HiN-T440NF(BK)



22.53%
High Efficiency



High-End
TOPCon
Technology



Higher
Bifaciality



Long-Term
Reliability



Compatible
with Carport
Applications



For Residential
(Full Black Design)

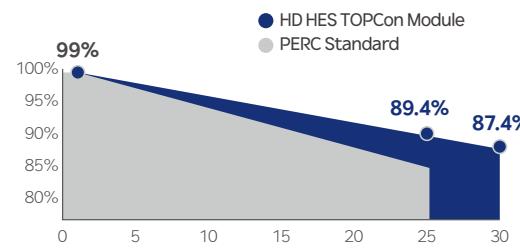
HD Hyundai's Warranty Provisions



- 25-Year Product Warranty
 - Materials and workmanship



- 30-Year Performance Warranty
 - First year degradation: 1%
 - Linear warranty after initial year: with 0.4%p annual degradation, 87.4% is guaranteed up to 30years



*Refer to HD HES standard warranty for details.

Certification



- ISO 9001 : Quality management systems
- ISO 14001 : Environmental management systems
- ISO 45001 : Occupational health and safety management systems
- UL 61730: Photovoltaic (PV) module safety qualification (CSA)
- IEC 61701: Salt mist corrosion testing
- IEC 62716: Ammonia corrosion testing
- IEC 62804: Potential Induced Degradation (PID) testing
- IEC 60068-2-68: Sand and dust testing for environmental durability

Electrical Characteristics

HiN-TxxxNF(BK)		HiN-T430NF(BK)		HiN-T435NF(BK)		HiN-T440NF(BK)	
Item	Unit	BNPI		BNPI		BNPI	
Nominal output (Pmax)	W	430	476	435	482	440	488
Open circuit voltage (Voc)	V	38.4	38.4	38.6	38.6	38.8	38.8
Short circuit current (Isc)	A	14.25	15.79	14.32	15.87	14.39	15.94
Voltage at Pmax (Vmpp)	V	31.9	31.9	32.1	32.1	32.3	32.3
Current at Pmax (Impp)	A	13.48	14.94	13.56	15.02	13.63	15.10
Module efficiency	%	22.02		22.28		22.53	
Power Class Sorting	W			0 ~ +5			
Temperature coefficient of Pmax	%/K			-0.30			
Temperature coefficient of Voc	%/K			-0.25			
Temperature coefficient of Isc	%/K			0.046			
Bifaciality	%			80% ± 10%			

*STC : Irradiance 1,000 W/m², cell temperature 25°C, AM=1.5 / Test uncertainty for Pmax ±3%; Voc ±3%; Isc ±3%

**The electrical properties of BNPI are measured under the irradiance corresponding to 1000 W/m² on the module front and 135 W/m² on the module rear.

Additional Power Gain from rear side

Pmpp gain	Pmpp[W]	Vmpp[V]	Impp[A]	Voc[V]	Isc[A]
5%	458	32.30	14.18	38.80	14.97
15%	493	32.30	15.27	38.80	16.12
25%	528	32.40	16.36	38.90	17.27

*Electrical characteristics with different rear power gain (reference to 440W)

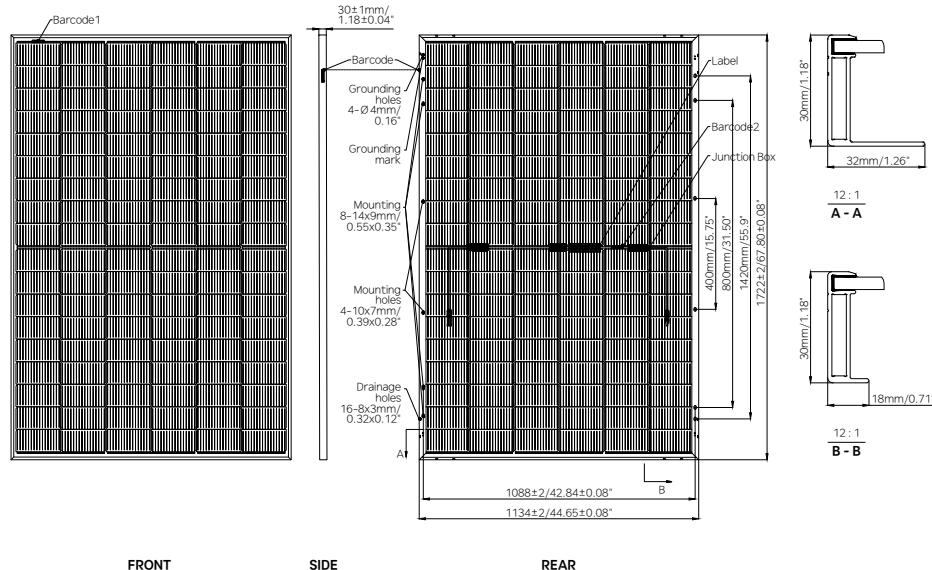
Mechanical Characteristics

Dimensions	1,722mm (L) x 1,134mm (W) x 30mm (H) (67.8in x 44.6in x 1.2in)
Weight	24.5 kg (50.01lbs)
Solar Cells	N-Type TOPCon, 108 (6x18) monocrystalline 16BB half-cut bifacial cells
Output Cables	Cable : (+)1,200mm(47.2in), (-)1,200mm(47.2in) / Customized length available Connector : Stäubli MC4 genuine Connector / Compatible, IP68
Junction Box	3-part, 3 bypass diodes, IP68 rated
Construction	Front : 2.0mm(0.08in) semi-tempered solar glass with high transmittance and anti-reflective coating Rear : 2.0mm(0.08in) semi-tempered solar glass
Frame	Anodized aluminum alloy

Shipping Configurations

Packing Direction	Vertical	Packing pallet weight (kg)	912
Container Size (HC)	40'	Modules Per Pallet (pcs)	36
Pallets Per Container	26	Modules Per Container (pcs)	936

Module Diagram (unit : mm)



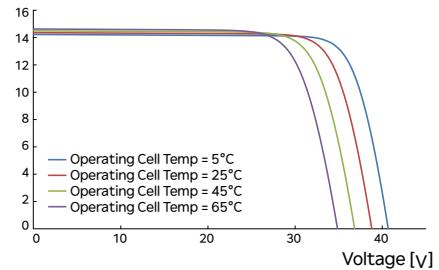
Installation Safety Guide

- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not handle or install modules when they are wet.

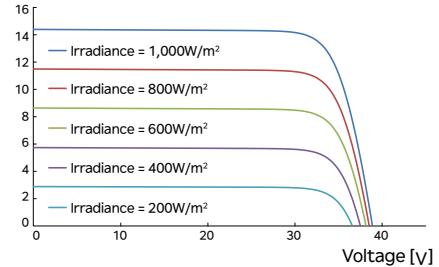
Nominal Module Operation Temperature	44°C ± 2°C
Operating Temperature	-40°C ~ +85°C
Maximum System Voltage	DC 1,500 V
Maximum Reverse Current	30A
Maximum Test Load	Front 5,400Pa *See Installation Manual
	*Rear 5,400Pa
Fire Performance	Type 29

I-V Curves (HiN-T440NF(BK))

Current [A]



Current [A]

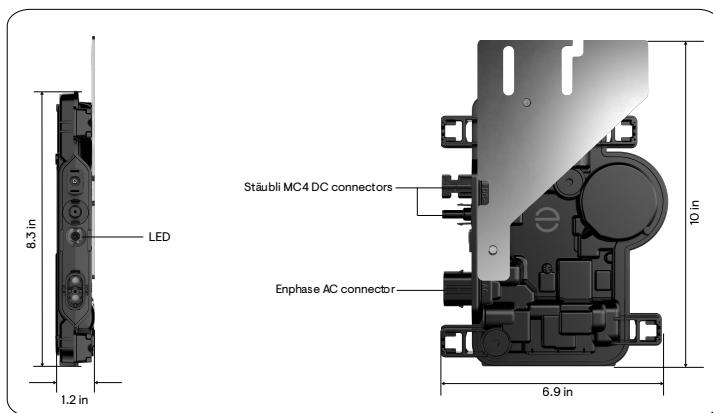


IQ8MC Microinverter

Our newest IQ8 Series Microinverters^{1,2,3} are the industry's first microgrid-forming⁴, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently.



Key specifications	IQ8MC-72-M-US @240 VAC	IQ8MC-72-M-US @208 VAC
Peak output power	330 VA	315 VA
Nominal grid voltage (L-L)	240 V split-phase (L-L), 180°	208 V single-phase (L-L), 120°
Nominal frequency	60 Hz	60 Hz
CEC weighted efficiency	97%	96.5%
Maximum input DC voltage	60 V	60 V
MPPT voltage range	25–45 V	25–45 V
Maximum module I_{sc}	20 A	20 A
Ambient temperature range	-40°C to 65°C (-40°F to 149°F)	



Simple

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

Reliable

- Produces power even when the grid is down⁴
- More than one million cumulative hours of testing
- Industry-leading limited warranty of up to 25 years
- 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) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)

¹ IQ8 Series Microinverters can be added to existing IQ7 systems on the same IQ Gateway only in the following grid-tied configurations: Solar Only or Solar + Battery (IQ Battery 3T/10T and IQ Battery 5P) without backup.

² IQ7 Series Microinverters cannot be added to a site with existing IQ8 Series Microinverters on the same gateway. Mixed system of IQ7 and IQ8 will not support IQ8-specific PCS features and grid-forming capabilities.

³ IQ Microinverters ship with default settings that meet North America's IEEE 1547 interconnection standard requirements. Region-specific adjustments may be requested by an Authority Having Jurisdiction (AHJ) or utility representative, according to the IEEE 1547 interconnection standard. Use an IQ Gateway to make these changes during installation.

⁴ Meets UL 1741 only when installed with IQ System Controller 2 or 3.

Input data (DC)	Units	IQ8MC-72-M-US	
Commonly used module pairings ⁵	W	260–460	
Module compatibility	—	To meet compatibility, PV modules must be within the following max. input DC voltage and max. module I_{sc} . Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator .	
MPPT voltage range	V	25–45	
Operating range	V	18–58	
Min./Max. start voltage	V	22/58	
Max. input DC voltage	V	60	
Max. continuous operating DC current	A	14	
Max. input DC short-circuit current	A	25	
Max. module I_{sc}	A	20	
Overtoltage class DC port	—	II	
DC port backfeed current	mA	0	
PV array configuration	—	Ungrounded array; no additional DC side protection required; AC side protection requires a maximum of 20 A per branch circuit.	
Output data (AC)	Units	IQ8MC-72-M-US @240 VAC	IQ8MC-72-M-US @208 VAC
Peak output power	VA	330	315
Max. continuous output power	VA	320	310
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Min./Max. grid voltage ⁶	V	211–264	183–229
Max. continuous output current	A	1.33	1.49
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short-circuit fault current over three cycles	Arms	2.70	
Max. units per 20 A (L-L) branch circuit ⁷	—	12	10
Total harmonic distortion	%	<5	
Overtoltage class AC port	—	III	
AC port backfeed current	mA	18	
Power factor setting	—	1.0	
Grid-tied power factor (adjustable)	—	0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.4	97.2
CEC weighted efficiency	%	97.0	96.5
Nighttime power consumption	mW	33	25
Mechanical data		IQ8MC-72-M-US	
Ambient temperature range		−40°C to 65°C (−40°F to 149°F)	
Relative humidity range		4% to 100% (condensing)	

⁵ No enforced DC/AC ratio.

⁶ Nominal voltage range can be extended beyond nominal if required by the utility.

⁷ Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

Mechanical data		IQ8MC-72-M-US
DC connector type		Stäubli MC4
Dimensions (H x W x D); Weight		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2"); 1.1 kg (2.43 lb)
Cooling		Natural convection – no fans
Approved for wet locations; Pollution degree		Yes; PD3
Enclosure		Class II double-insulated, corrosion-resistant polymeric enclosure
Environ. category; UV exposure rating		NEMA Type 6; outdoor
Compliance		IQ8MC-72-M-US
Certifications	<p>CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB 3rd Ed.), FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01.</p> <p>This product is UL Listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020, and NEC 2023 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors when installed according to the manufacturer's instructions.</p>	

Revision history

Revision	Date	Description
DSH-00049-5.0	December 2024	Updated information on backward compatibility with IQ7 Series Microinverters.
DSH-00049-4.0	February 2024	Added information about IEEE 1547 interconnection standard requirements.
DSH-00049-3.0	October 2023	Included NEC 2023 specification in the “Compliance” section.
DSH-00049-2.0	September 2023	Updated module compatibility information.
DSH-00049-1.0	May 2023	Preliminary release.



X-IQ-AM1-240-5-HDK
X-IQ-AM1-240-5C-HDK
X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.



IQ Series Microinverters

The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.



IQ System Controller 3/3G

Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.



IQ Battery 5P

Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.



IQ Load Controller

Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.



5-year limited warranty



*For country-specific warranty information, see the <https://enphase.com/installers/resources/warranty> page.

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Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect (CELLMODEM-M1-06-SP-05), only with IQ Combiner 5C
- Supports flexible networking: Wi-Fi, Ethernet, or cellular
- Provides production metering (revenue grade) and consumption monitoring

Easy to install

- Mounts to one stud with centered brackets
- Supports bottom, back, and side conduit entries
- Supports up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV branch circuits
- Factory installed hold-down kit
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- 5-year limited warranty
- 2-year labor reimbursement program coverage included for IQ Combiner SKUs*
- UL1741 Listed

IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5/ X-IQ-AM1-240-5-HDK)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 $\pm 0.5\%$), consumption monitoring ($\pm 2.5\%$), and IQ Battery monitoring ($\pm 2.5\%$). Includes a silver solar shield to deflect heat. IQ-AM1-240-5-HDK includes a factory installed hold-down kit compatible with all the circuit breakers mentioned in the Accessories and Replacement Parts section.
IQ Combiner 5C (X-IQ-AM1-240-5C / X-IQ-AM1-240-5C-HDK)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 $\pm 0.5\%$), consumption monitoring ($\pm 2.5\%$), and IQ Battery monitoring ($\pm 2.5\%$). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05) ¹ . Includes a silver solar shield to deflect heat. IQ-AM1-240-5C-HDK includes a factory installed hold-down kit compatible with all the circuit breakers mentioned in the Accessories and Replacement Parts section.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for one IQ Gateway breaker and four 20 A breakers for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to $\pm 0.5\%$
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to $\pm 2.5\%$
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to $\pm 2.5\%$
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-2 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX, and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws). Not required for X-IQ-AM1-240-5-HDK/X-IQ-AM1-240-5C-HDK.
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-2 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC or 120/208 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway

¹ A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.

ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)		
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box	
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box	
MECHANICAL DATA		
Dimensions (W x H x D)	37.5 cm x 49.5 cm x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 53.5 cm (21.06") with mounting brackets.	
Weight	7.5 kg (16.5 lb)	
Ambient temperature range	-40°C to 46°C (-40°F to 115°F)	
Cooling	Natural convection, plus heat shield	
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction	
Wire sizes	<ul style="list-style-type: none"> 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 	
Communication (in-premise connectivity)	Built-in CTRL board for wired communication with the IQ Battery 5P and the IQ System Controller 3/3G. Integrated power line communication for IQ Series Microinverters.	
Altitude	Up to 2,600 meters (8,530 feet)	
COMMUNICATION INTERFACES		
Integrated Wi-Fi	802.11b/g/n (dual band 2.4 GHz/5 GHz) for connecting the Enphase Cloud through the internet.	
Wi-Fi range (recommended)	10 m (32.8 feet)	
Bluetooth	BLE4.2, 10 m range to configure Wi-Fi SSID	
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included) for connecting to the Enphase Cloud through the internet.	
Cellular/Mobile Connect	CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05 (included with the IQ Combiner 5C)	
Digital I/O	Digital input/output for grid operator control	
USB 2.0	Mobile Connect, COMMS-KIT-01 for IQ Battery 3/3T/10/10T, COMMS-KIT-02 for IQ Battery 5P	
Access point (AP) mode	For connection between the IQ Gateway and a mobile device running the Enphase Installer App	
Metering ports	Up to two Consumption CTs, one IQ Battery CT, and one Production CT	
Power line communication	90–110 kHz	
Web API	See https://developer-v4.enphase.com	
Local API	See Guide for local API	
COMPLIANCE		
IQ Combiner with IQ Gateway	UL 1741, CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 003, NOM-208-SCFI-2016, UL 61010-1, CAN/CSA 22.2 No. 61010-1, IEEE 1547: 2018 (UL 1741-SB, 3rd Ed.), IEEE 2030.5/CSIP Compliant, Production metering: ANSI C12.20 accuracy class 0.5 (PV production)	
COMPATIBILITY		
PV	Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
COMMS-KIT-01 ²	IQ System Controller	EP200G101-M240US00
	IQ System Controller 2	EP200G101-M240US01
	IQ Battery	ENCHARGE-3-1P-NA, ENCHARGE-10-1P-NA, ENCHARGE-3T-1P-NA, ENCHARGE-10T-1P-NA
COMMS-KIT-02 ³	IQ System Controller 3	SC200D111C240US01, SC200G111C240US01
	IQ Battery	IQBATTERY-5P-1P-NA

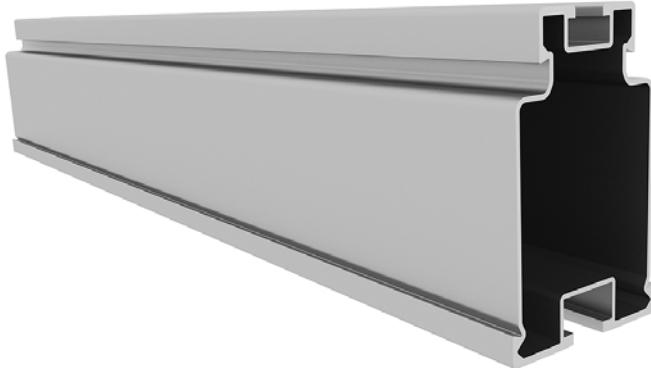
² For information about IQ Combiner 5/5C compatibility with the 2nd-generation batteries, refer to the [compatibility matrix](#).

³ IQ Combiner 5/5C comes pre-equipped with COMMS-KIT-02.

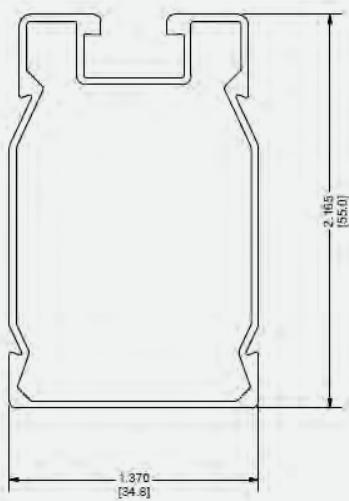
SMR100 Rail



SMR300 Rail



SMR100 Rail



Mechanical Properties

Material: 6005-T5 Aluminum

Weight: 0.4126 lbs/ft (0.614 kg/m)

Ultimate Tensile Strength: 37.7 ksi (260 MPa)

Yield Strength: 34.8 ksi (240 MPa)

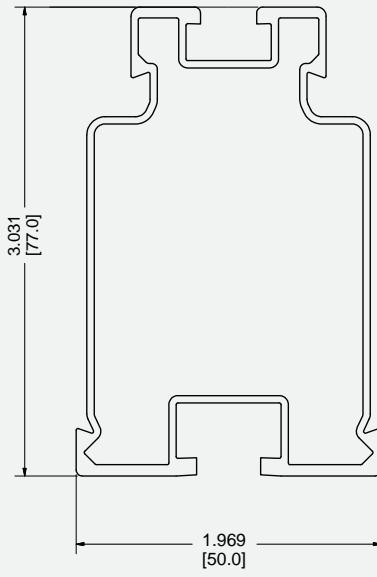
Section Properties

Sx: 0.196 in³ (3.21 cm³)

Sy: 0.146 in³ (2.39 cm³)

Area (X-section): 0.352 in² (2.27 cm²)

SMR300 Rail



Mechanical Properties

Material: 6005-T5 Aluminum

Weight: 0.783 lbs/ft (1.167 kg/m)

Ultimate Tensile Strength: 37.7 ksi (260 MPa)

Yield Strength: 34.8 ksi (240 MPa)

Section Properties

Sx: 0.527 in³ (8.64 cm³)

Sy: 0.303 in³ (4.97 cm³)

Area (X-section): 0.669 in² (4.32 cm²)

Part Number	Description
A20422-168-BK	SMR100 Rail, 168", Black Anodized
A20422-168-ML	SMR100 Rail, 168", Mill Finish
A20444-174-ML	SMR300 Rail, 174", Mill Finish
A20444-212-ML	SMR300 Rail, 212", Mill Finish

Dimensions shown are inches (and millimeters)

Details are subject to change without notice

Mid Clamp



End Clamp

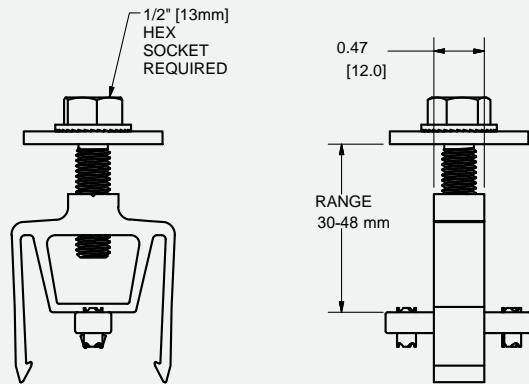


Bottom End Clamp



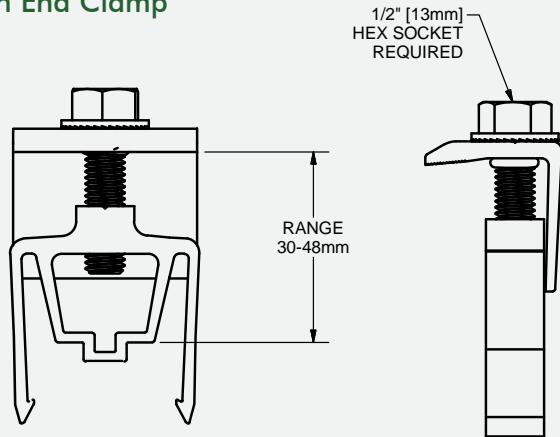
Part Number	Description
K10417-004	Mid Clamp, SMR Pop-On, Silver
K10417-BK4	Mid Clamp, SMR Pop-On, Black
K10418-004	End Clamp, SMR Pop-On, Silver
K10418-BK4	End Clamp, SMR Pop-On, Black
K10505-001	Bottom End Clamp, SMR100, Silver
K10505-BK1	Bottom End Clamp, SMR100, Black

Pop-On Bonding Mid Clamp



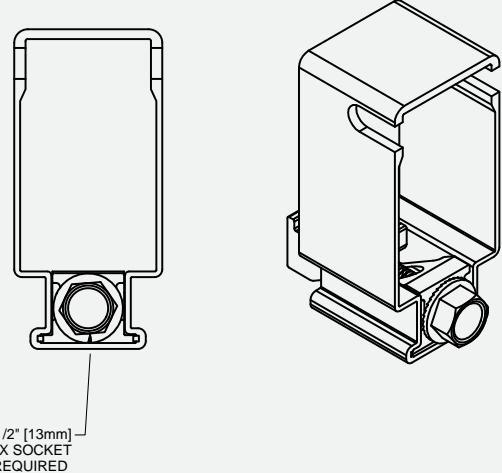
Material: Aluminum and Stainless Steel hardware

Pop-On End Clamp



Materials: Aluminum and Stainless Steel hardware

Bottom End Clamp

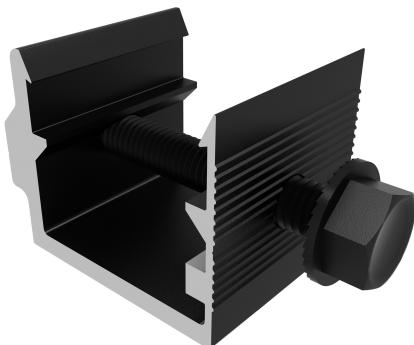


Materials: Aluminum and Stainless Steel hardware

SMR Rail Splices

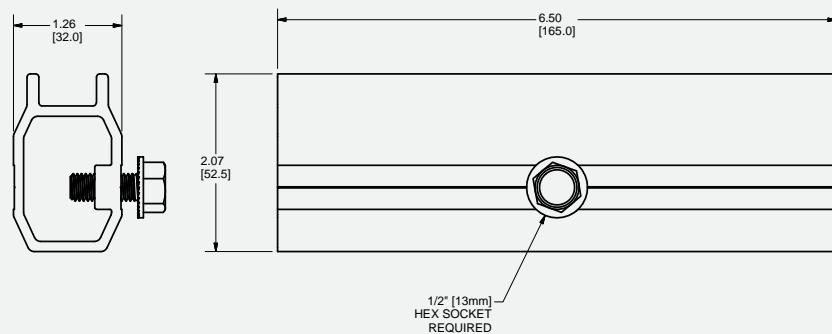


L-Foot Adaptors

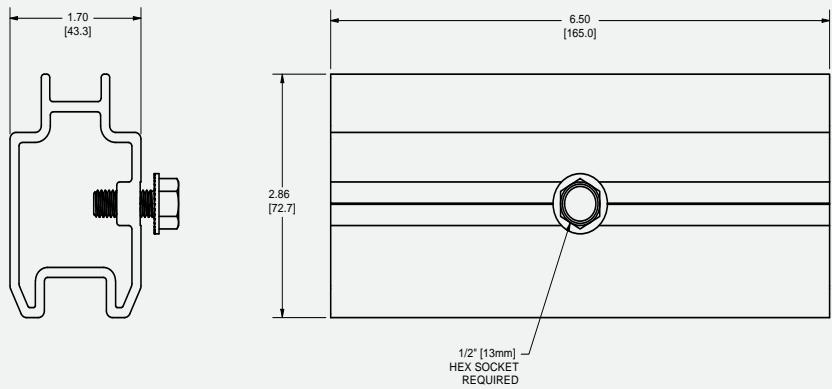


Part Number	Description
K10421-004	Rail Splice, SMR100
K10485-002	Rail Splice, SMR300
K10433-002	L Foot Adaptor, SMR100, Silver
K10433-BK2	L Foot Adaptor, SMR100, Black
K10434-002	L Foot Adaptor, SMR300, Silver

SMR100 Rail Splice

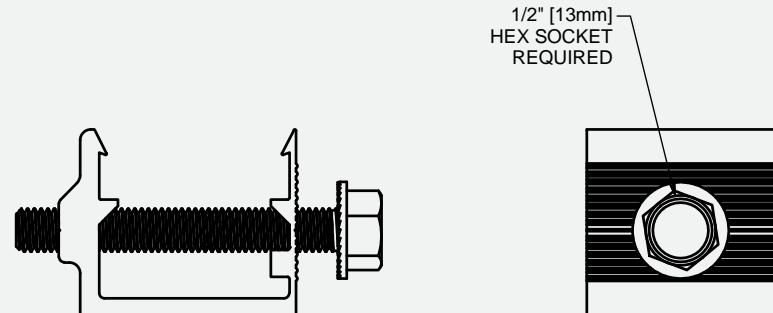


SMR300 Rail Splice



Material: Aluminum and Stainless Steel hardware

SMR100 L-Foot Adaptor



Material: Aluminum and Stainless Steel hardware

NanoMount™ (Rafter)

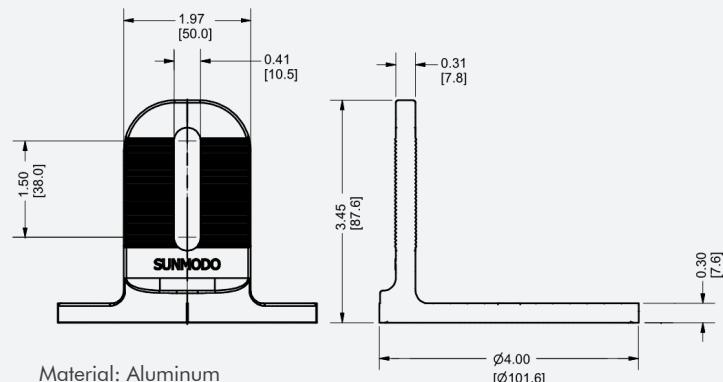


Part Description: Nano Rafter Mount, Black

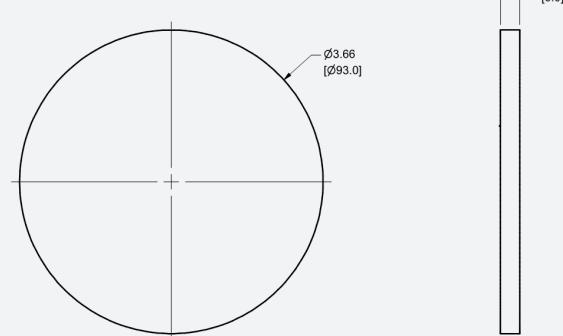
Part No.: K50044-BK1

Item No.	Description	Qty in Kit
1	Nano Rafter Mount Assembly <ul style="list-style-type: none"> • Nano Rafter Mount • Nano Gasket 	1
2	Lat Bolt Assembly <ul style="list-style-type: none"> • Hex Lag Bolt M8X115, DIN 571, 304S • Sealing Washer .33 ID X .75 X .157 	1

1. Nano Mount

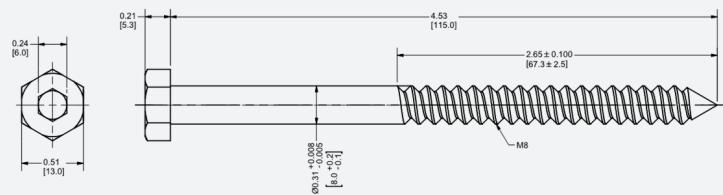


2. Nano Gasket



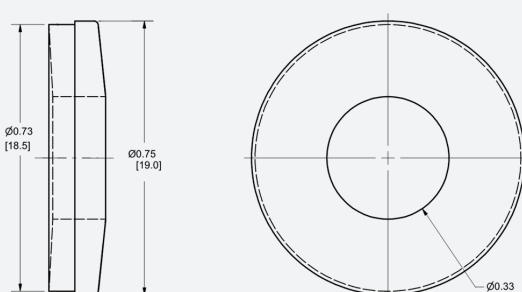
Material: USWR Silicone Foam Gasket with Adhesive

3. Hex Lag Bolt M8X115, DIN 571, 304SS



Material: Stainless Steel
Finish: Clear

4. Sealing Washer .33ID X .75X.157



Material: EPDM + Stainless Steel

NanoMount™ (Decking)

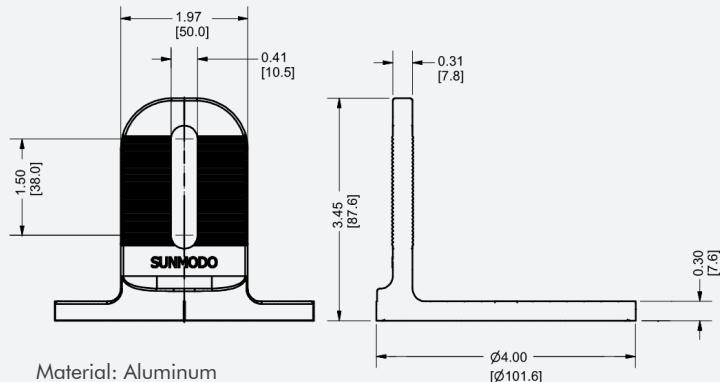


Part Description: Nano Deck Mount, Black

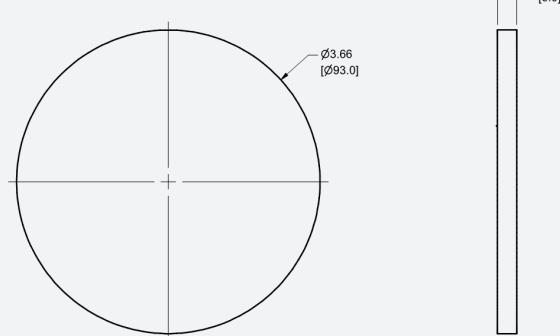
Part No.: K50044-BK2

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

1. Nano Mount

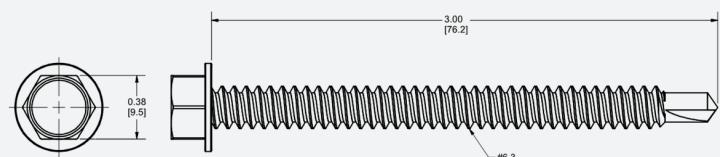


2. Nano Gasket



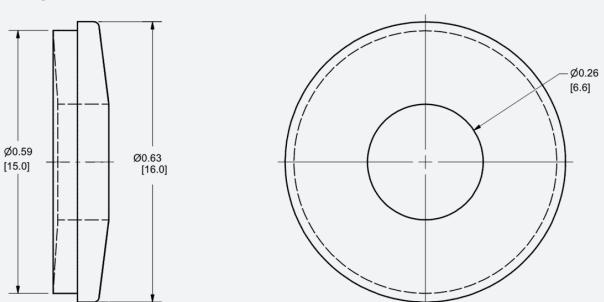
Material: USWR Silicone Foam Gasket with Adhesive

3. Self-Drilling Screw, #6.3 X 76



Material: Stainless Steel
Finish: Clear

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



Material: EPDM + Stainless Steel

List of Compliant PV Modules

UL 2703 Qualified Modules for use with SunModo PV Racking Systems

Evaluated PV Modules	
Module manufacturer	Model numbers
Aptos	DNA-108-BF10-xxxW, DNA-108-MF10-xxxW, DNA-120-BF10-xxxW, DNA-120-MF10-xxxW, DNA-120-BF23-xxxW, DNA-120-MF23-xxxW, DNA-144-BF23-xxxW, DNA-144-MF23-xxxW, DNA-120-BF26-xxxW, DNA-120-MF26-xxxW, DNA-144-BF26-xxxW, DNA-144-MF26-xxxW
Astronergy	CHSM6612M-xxx, CHSM6612M/HV-xxx
AXITec Solar	AC-xxxP/60S, AC-xxxMH/120S, AC-xxxMH/120V, AC-xxxMH/144S, AC-xxxMH/144V
Boviet Solar	BVM6610M-xxx, BVM6612M-xxx, BVM6610P-xxx, BVM6612P-xxx
BlueSun Solar	BSMxxxM10-54HPH, BSMxxxM10-54NHB, BSMxxxM10-54NHS, BSMxxxPMB7-46SC, BSMxxxPMB6-60SC, BSMxxxPMB6-70SDC
C-Sun	CSUNxxx-60M, CSUNxxx-60P, CSUNxxx-72M, CSUNxxx-72P
Canadian Solar	CS3K-xxxMS, CS3N-xxxMS, CS3W-xxxMB-AG, CS3W-xxxP, CS3W-xxxPB-AG, CS6K-xxxM, CS6K-xxxMS, CS6P-xxxM, CS6R-xxxMS, CS6U-xxxP, CS6V-xxxM, CS6V-xxxP, CS6W-xxxMB, CS6X-xxxP
ET Solar	ET-P672xxxWW
Hansol	HSxxxSE-V01
Hanwha Q Cells	Q.PEAK DUO-L-G4.2 xxxW, Q.PEAK DUO L-G5.2 xxxW, Q.PEAK DUO-G5-BLK xxxW, Q.PEAK DUO L-G6.2 xxxW, Q.PEAK DUO L-G7.3 xxxW, Q.PEAK DUO-G5 xxxW, Q.PRO L-G2 xxxW, Q.PEAK DUO ML-G10 xxxW, Q.PEAK DUO XL-G10 xxxW, Q.PEAK DUO XL-G11 xxxW, Q.PEAK DUO XR-G10 xxxW, Q.PEAK DUO BLK-G6 xxxW, Q.PEAK DUO L-G5.2 xxxW, Q.PEAK DUO L-G5.3 xxxW, Q.PEAK DUO L-G6.2 xxxW, Q.PEAK DUO BLK ML-G9 xxxW, Q.PEAK DUO BLK-G10 xxxW, Q.PEAK DUO BLK ML-G10 xxxW, Q.PEAK DUO BLK ML-G10+/AC xxxW, Q.TRON BLK M-G2+ xxxW
Hareon	HR-xxxP-24/Ba
Heliene	60M-320-G1-BLK, 66M-360-HJT-M2+BLK, 72M-xxx, 72M-BLK-xxx, 72P-xxx, 96M-xxx
Hyperion Solar	HY-DH108P8-xxxW-B, HY-DH144P8-xxxW
Hyundai	HiS-MxxxTI, HiS-SxxxTI, HiN-SxxxXG (BK), HiS-SxxxYH (BK), HiN-TxxxNF (BK)
Illuminate USA	IL5-72HBD-xxxM, IL8-66HGD-xxxM
Itek Energy	ITxxxHE, ITxxxSE
JA Solar	JAM60D00-xxx/BP, JAM66D45-xxx/LB, JAM72S09-xxx/PR, JAP6 72-xxx/3BB, JAM72D00-xxx/PR, JAM72S09 -xxx/PR



National Historical Publications and Records Commission
National Archives and Records Administration
8601 Adelphi Road
College Park, MD 20740

Dear Commissioners,

It is my pleasure to write in support of the grant proposal submitted by the City of Grand Junction, Colorado, to the National Historical Publications and Records Commission.

This initiative will greatly advance opportunities for civic education and public engagement by expanding online access to historical records. The project's commitment to digitizing collections and developing user-friendly online resources aligns with our mission of fostering lifelong learning and community enrichment.

The materials included in this project are essential for understanding our nation's legal and cultural development from its earliest periods to the present. By making these records accessible to students, educators, and the general public, the project will contribute significantly to civic literacy and historical awareness.

The Historic Preservation Board fully supports this project and will help promote the availability of these online resources to our networks. We believe this work will have a lasting impact on both scholarship and public understanding of America's history and democracy.

Sincerely,

Dave Fishell, Chair
Grand Junction Historic Preservation Board



Grand Junction Planning Commission

Regular Session

Item #1.

Meeting Date: October 14, 2025

Presented By:

Department: Community Development

Submitted By: [AGENDA_ITEM_CUSTOM_TEXT_4]

Information

SUBJECT:

Certificate of Appropriateness - 640 N. 7th St.

RECOMMENDATION:

[ALTERNATIVE_ACTIONS]

EXECUTIVE SUMMARY:

[AGENDA_ITEM_CUSTOM_TEXT_1]

BACKGROUND OR DETAILED INFORMATION:

[AGENDA_ITEM_CUSTOM_TEXT_2]

SUGGESTED MOTION:

[AGENDA_ITEM_CUSTOM_TEXT_3]

Attachments

None



Grand Junction Planning Commission

Regular Session

Item #2.

Meeting Date: October 14, 2025

Presented By:

Department: Community Development

Submitted By: [AGENDA_ITEM_CUSTOM_TEXT_4]

Information

SUBJECT:

APA Conference — Walking History Tour

RECOMMENDATION:

[ALTERNATIVE_ACTIONS]

EXECUTIVE SUMMARY:

[AGENDA_ITEM_CUSTOM_TEXT_1]

BACKGROUND OR DETAILED INFORMATION:

[AGENDA_ITEM_CUSTOM_TEXT_2]

SUGGESTED MOTION:

[AGENDA_ITEM_CUSTOM_TEXT_3]

Attachments

None



Grand Junction Planning Commission

Regular Session

Item #3.

Meeting Date: October 14, 2025

Presented By:

Department: Community Development

Submitted By: [AGENDA_ITEM_CUSTOM_TEXT_4]

Information

SUBJECT:

Letter of Support - Records Archival Grant

RECOMMENDATION:

[ALTERNATIVE_ACTIONS]

EXECUTIVE SUMMARY:

[AGENDA_ITEM_CUSTOM_TEXT_1]

BACKGROUND OR DETAILED INFORMATION:

[AGENDA_ITEM_CUSTOM_TEXT_2]

SUGGESTED MOTION:

[AGENDA_ITEM_CUSTOM_TEXT_3]

Attachments

None