

SCOPE OF WORK
TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 3312 DELANA WAY, ALVA, FL 33920, USA.
THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.
THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES.

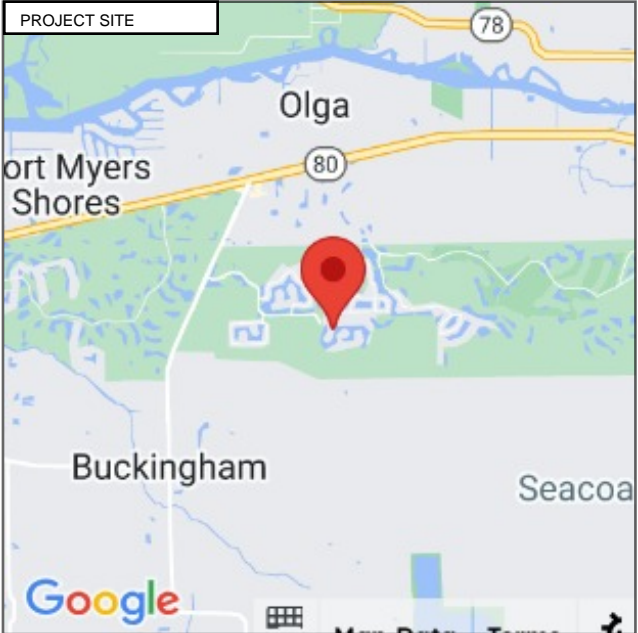
EQUIPMENT SUMMARY
14 URECO FBM445M7G-BB MODULES
29 EXISTING URECO FBM400MFG-BB MODULES
14 ENPHASE IQ8PLUS -72-2-US (240V) MICROINVERTERS
29 EXISTING ENPHASE IQ8PLUS -72-2-US (240V) MICROINVERTERS

- GENERAL NOTES**
- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS
 - CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAIN ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
 - CONTRACTOR SHALL OBTAIN BULDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
 - ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
 - IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
 - THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
 - THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
 - CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

- 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.
 - WHERE SIZES OF JUNCTION BOXES, 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 MANUFACTURERS INSTRUCTION.
 - MODULE SUPPORT RAIL SHALL BE BONDED TO THE MODULE

GOVERNING CODES
2021 NFPA 1 (FIRE CODE) 2020 NATIONAL ELECTRICAL CODE 2023 FLORIDA BUILDING CODE (8TH EDITION) 2023 FLORIDA FIRE PREVENTION CODE (8TH EDITION) FLORIDA ADMINISTRATIVE CODE(FAC)
AHJ NAME : LEE COUNTY

- WIRING AND CONDUIT NOTES**
- ALL CONDUIT SIZES AND TYPES SHALL BE LISTED FOR ITS PURPOSE AND APPROVAL FOR THE SITE APPLICATIONS
 - ALL PV CABLES AND HOMERUN WIRES BE #10AWG *USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO SOURCE CIRCUIT COMBINER BOXES AS REQUIRED
 - ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO AS PER LATEST NEC CODE.
 - EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES
 - PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UV RESISTANT, RATED FOR 1000V AS PER APPLICABLE NEC
 - 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS
 - ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION
 - VOLTAGE DROP LIMITED TO 2%
 - AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK, PHASE B OR L2- RED, PHASE C OR L3- BLUE, NEUTRAL- WHITE/GRAY



VICINITY MAP SCALE: NTS



HOUSE PHOTO SCALE: NTS

SYSTEM RATING	PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL 1703 STANDARD.
6.230 kWDC	
4.060 kWAC	
SHEET INDEX	
PV1	COVER PAGE
PV2	SITE PLAN
PV3	ROOF PLAN
PV4	STRING LAYOUT & BOM
PV5-PV6	ATTACHMENT DETAILS
PV7	ELECTRICAL LINE & CALCS.
PV8	SPECIFICATIONS & NOTES
PV9-PV10	SIGNAGE
PV11-PV17	EQUIPMENT SPECIFICATIONS

INFENERGY



INFENERGY
5448 PROVINE PL,
ALEXANDRIA, LA 71303, USA
PH# : (850) 693-0167
72494

SYSTEM INFO
(14) URECO FBM445M7G-BB
(14) ENPHASE IQ8PLUS -72-2-US (240V)
DC SYSTEM SIZE: 6.230 kWDC
AC SYSTEM SIZE: 4.060 kWAC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS

AVA MORALES
RESIDENCE

3312 DELANA WAY, ALVA, FL 33920, USA
EMAIL ID: AVA.MORALESCARDENEZ@VA.GOV
PHONE NO. (615) 717-8056

DATE: 8/20/2024
SHEET NAME COVER PAGE
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-1

- SITE NOTES**
- A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
 - THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS AN UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
 - THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
 - PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION [NEC 110.26]

LEGEND

JB

(N) JUNCTION BOX

UM

(E) UTILITY METER

MSP

(E) MAIN SERVICE PANEL

IQ

(E) ENPHASE IQ COMBINER

AC

(N) NON FUSED AC DISCONNECT

VENT, ATTIC FAN (ROOF OBSTRUCTION)

ROOF ATTACHMENT

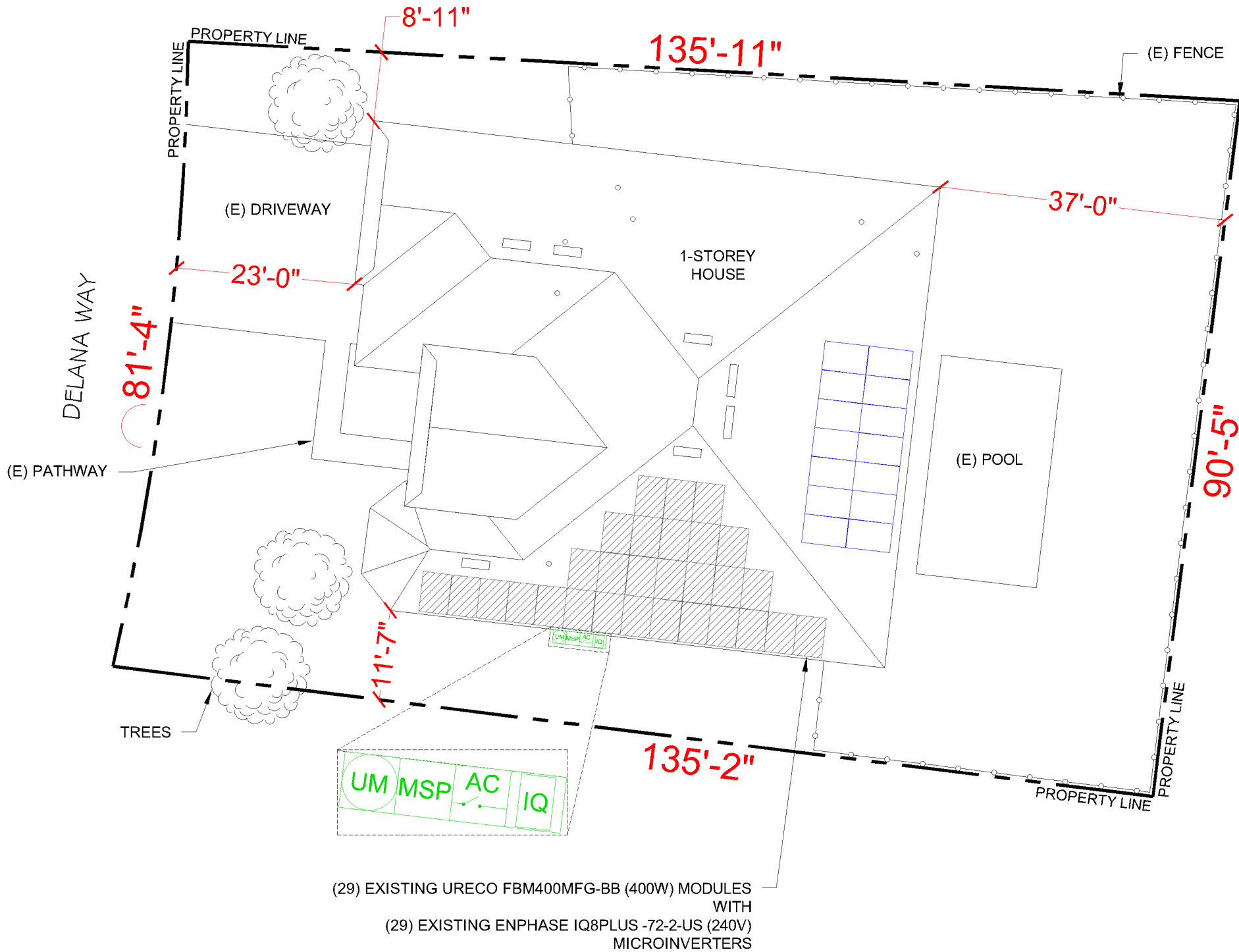
CONDUIT

ENPHASE IQ8PLUS -72-2-US (240V) MICROINVERTER

URECO FBM445M7G-BB MODULES

K2 CROSSRAIL 44-X

TRENCH



SCALE: 1/16"= 1'-0"

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DATE: 8/20/2024
SHEET NAME SITE PLAN
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-2

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE7-22):	0 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE7-22):	150 MPH

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	14 MODULES
MODULE TYPE:	URECO FBM445M7G-BB
MODULE WEIGHT:	53.35 LBS
MODULE DIMENSIONS:	75.12" X 44.65" = 23.29 SF
UNIT WEIGHT OF AREA:	2.3 PSF

ROOF DESCRIPTION				
ROOF	ROOF TILT	RAFTER SIZE	RAFTER SPACING	ROOF MATERIAL
#1	24°	2" x 4"	24" o.c.	COMP SHINGLE

ARRAY AREA & ROOF AREA CALC'S		
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)
#1	14	326.1
(TOTAL ARRAY AREA/TOTAL ROOF AREA) X 100%		
= (620.28/4755) X 100% = 13.05%		

LEGEND

JB

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UM

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MSP

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IQ

(E) ENPHASE IQ COMBINER

AC

(N) NON FUSED AC DISCONNECT

○

VENT, ATTIC FAN (ROOF OBSTRUCTION)

●

ROOF ATTACHMENT

CONDUIT

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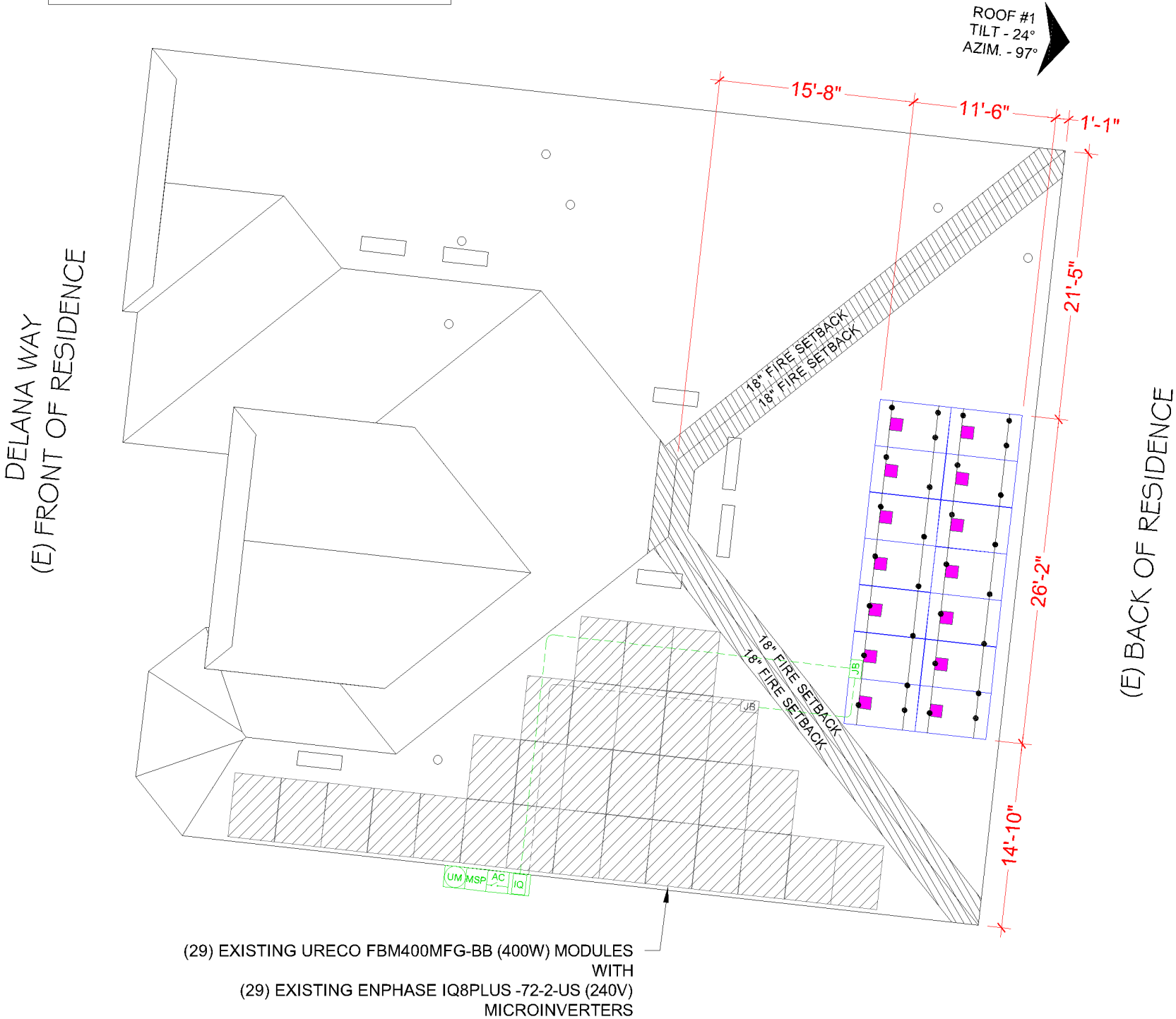
ENPHASE IQ8PLUS -72-2-US (240V) MICROINVERTER

URECO FBM445M7G-BB MODULES

K2 CROSSRAIL 44-X

TRENCH

NOTE:-ATTACHMENT SPACING @48" O.C. STAGGERED.



SCALE: 3/32"= 1'-0"

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AC SYSTEM SIZE: 4.060 kWAC

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DESCRIPTION	DATE	REV

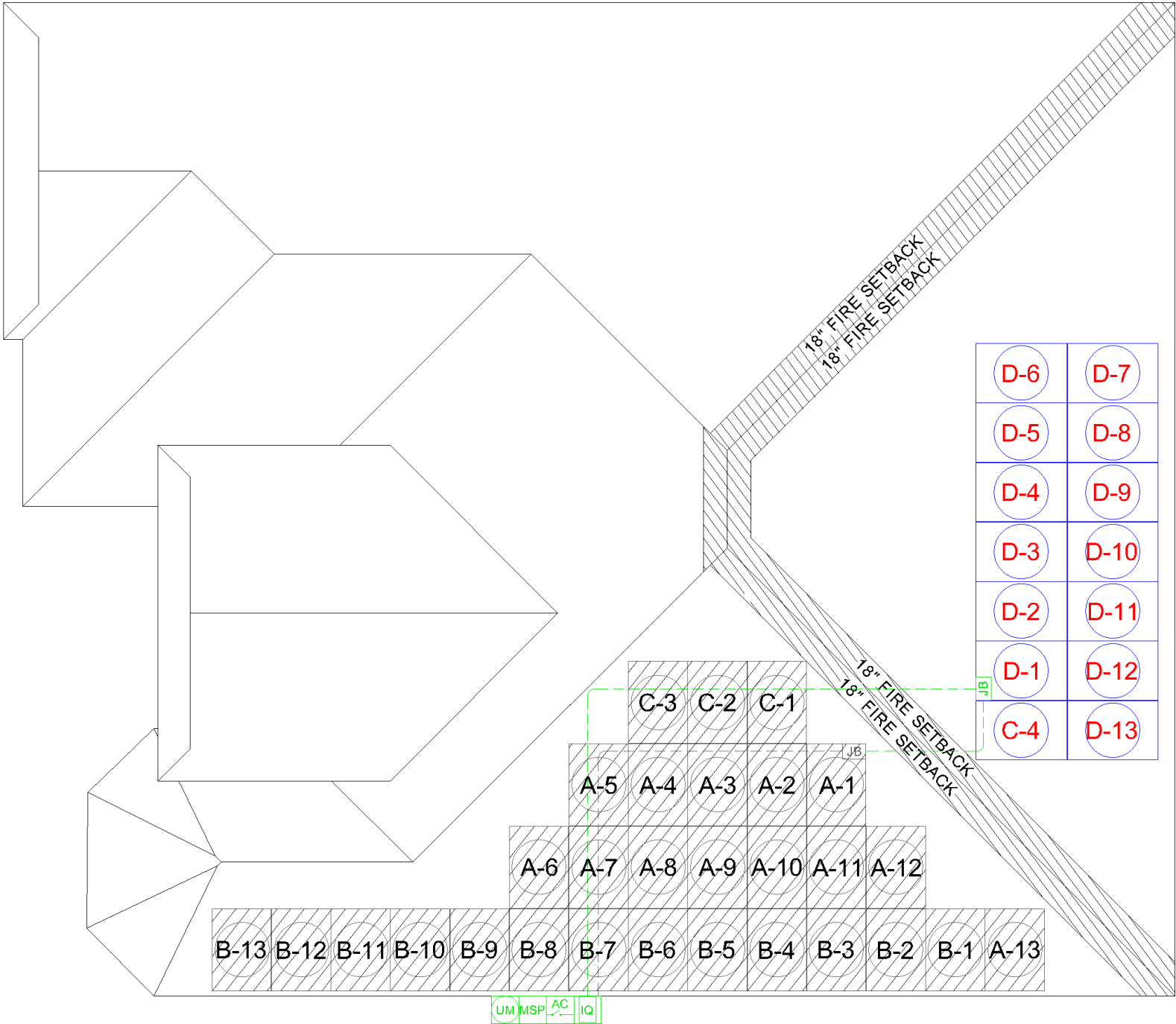
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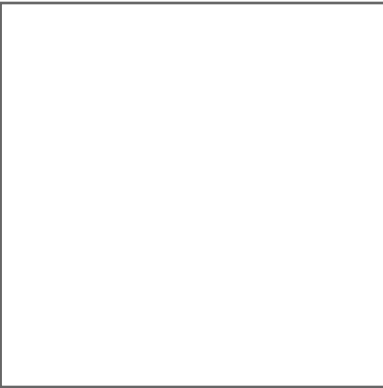
DATE: 8/20/2024
SHEET NAME ROOF PLAN
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-3

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	14	URECO FBM445M7G-BB
INVERTER	14	ENPHASE IQ8PLUS -72-2-US (240V)
JUNCTION BOX	1	JUNCTION BOX, NEMA 3R, UL LISTED
NON FUSED AC DISCONNECT	1	100A NON FUSED AC DISCONNECT, 240V, NEMA 3R, UL LISTED
ATTACHMENT	30	K2 SPLICEFOOT XL
ATTACHMENT	30	K2 EVERSEAL
ATTACHMENT	60	#14 X 3IN X 5/16IN HEX HEAD SCREW
ATTACHMENT	30	T-BOLT & HEX NUT SET
ENPHASE Q CABLE	15	ENPHASE Q CABLE 240V (PER CONNECTOR)
BRANCH TERMINATOR	2	BRANCH TERMINATOR
IQ WATER TIGHT CAP	1	IQ WATER TIGHT CAPS
RAILS	8	K2 CROSSRAIL 44-X
BONDED SPLICE	4	SPLICE KIT
MID CLAMP	24	MODULES MID CLAMPS
END CLAMP	8	MODULES END CLAMPS
GROUNDING LUG	2	GROUNDING LUG

DELANA WAY
(E) FRONT OF RESIDENCE



(E) BACK OF RESIDENCE



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DC SYSTEM SIZE: 6.230 kWDC
AC SYSTEM SIZE: 4.060 kWAC

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DATE: 8/20/2024

SHEET NAME
STRING LAYOUT
& BOM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4



SCALE: 3/32"= 1'-0"

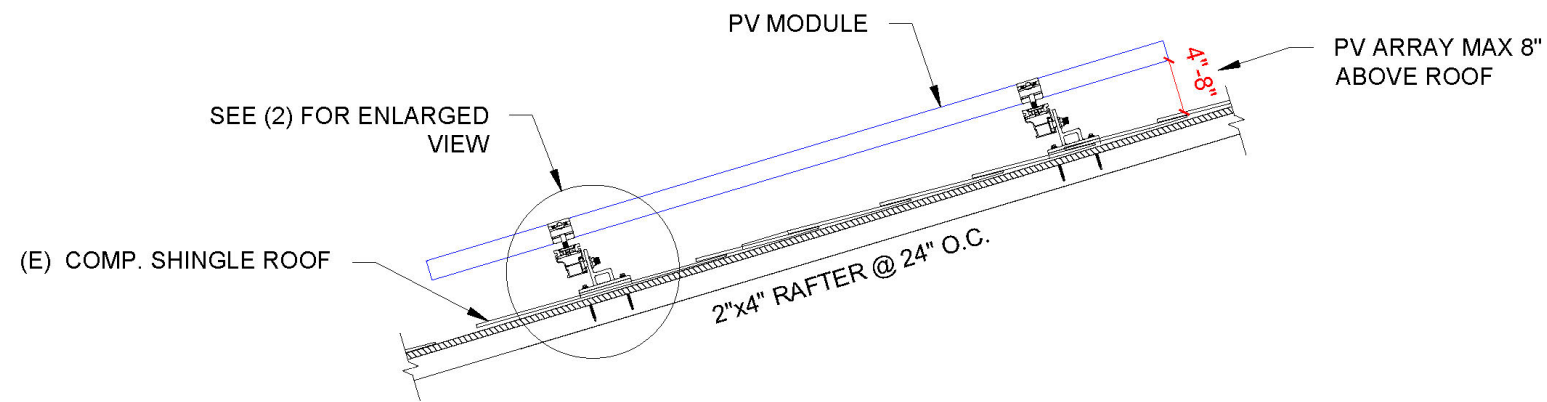
A

B

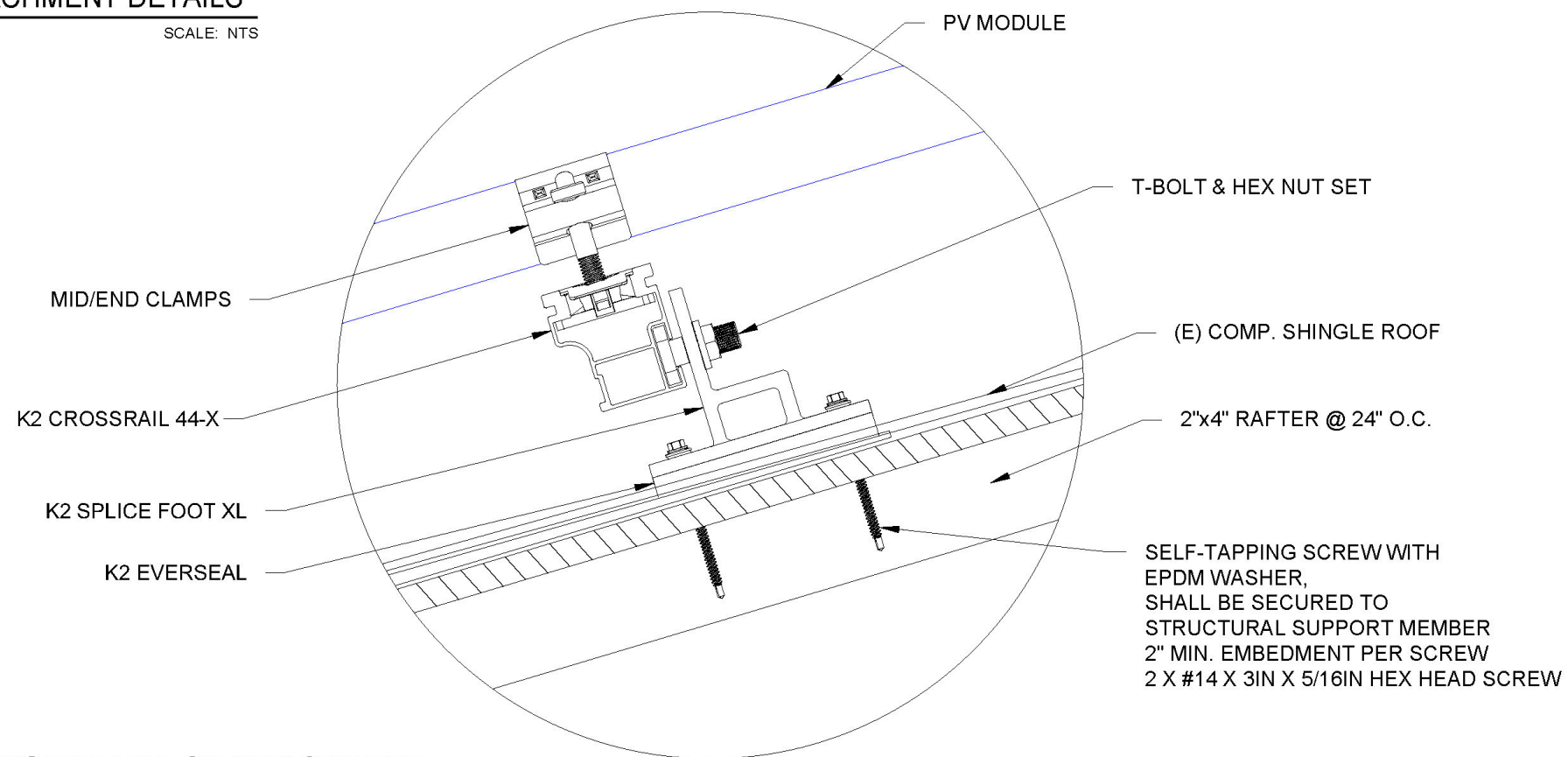
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D

- MODULE STRINGING



1 ATTACHMENT DETAILS
SCALE: NTS



2 ENLARGED VIEW OF ATTACHMENT
SCALE: NTS

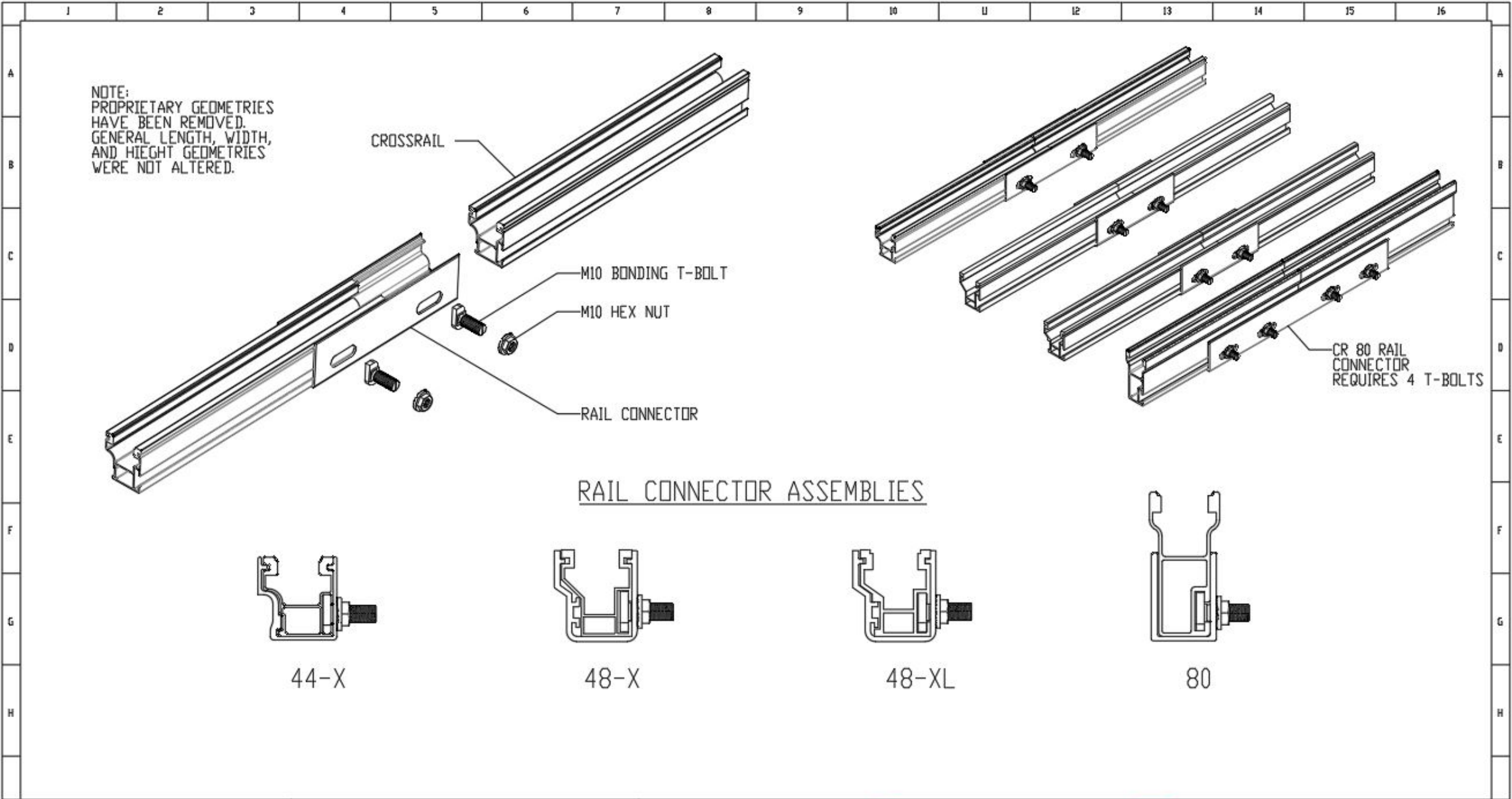
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AC SYSTEM SIZE: 4.060 kWAC

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DATE: 8/20/2024
SHEET NAME ATTACHMENT DETAILS
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-5



REVISION HISTORY			THIRD ANGLE	Everest Solar Systems, LLC. a division of K2 Systems International 2835 La Mirada, Jr Suite A Vista, CA 92081 phone 760.301.5300	K2	CROSSRAIL RAIL CONNECTOR ASSEMBLIES		
Revision	Date	Description				Size	B	
01								
02								
03								
04								
05								

Drawn	I. VIDAL	Date	07/29/2024
Checked	A. HAGEN	Date	08/07/2024
Approved	I. VIDAL	Date	08/07/2024
Last Revision			

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Scale:	1:25	Revision:	00	All Dimensions are in
				Feet 2 of 2

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72494

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(14) URECO
FBM445M7G-BB

(14) ENPHASE
IQ8PLUS-72-2-US (240V)

DC SYSTEM SIZE: 6.230 kWDC

AC SYSTEM SIZE: 4.060 kWAC

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DATE: 8/20/2024

SHEET NAME

ATTACHMENT
DETAILS

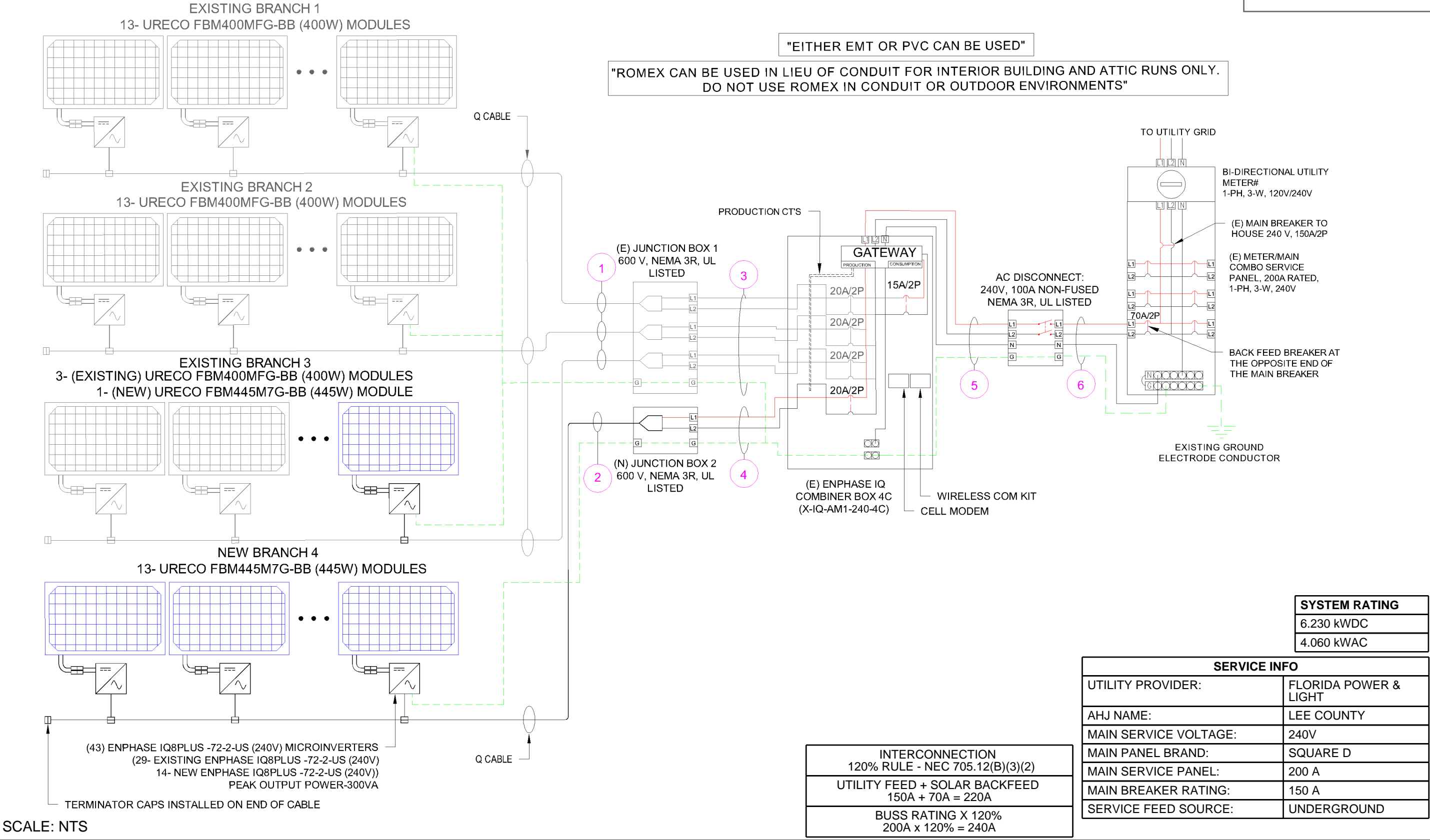
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-6

ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CIRCUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	LENGTH	VOTAGE DROP
1	3	ARRAY	(E) JUNCTION BOX	12 AWG	Q CABLE	-	-	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(56°C)	N/A	15.73A	19.66A	N/A	N/A	59FT	0.76%
2	1	ARRAY	(N) JUNCTION BOX	12 AWG	Q CABLE	-	-	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(56°C)	N/A	15.73A	19.66A	N/A	N/A	47FT	0.76%
3	1	(E) JUNCTION BOX	IQ COMBINER BOX 4C	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	3	6	31.71%	20A	10 AWG	THWN-2 COPPER	0.96	(34°C)	0.8	15.73A	19.66A	35A	26.88A	40FT	0.68%
4	1	(N) JUNCTION BOX	IQ COMBINER BOX 4C	10 AWG	THWN 2	COPPER	MIN 0.75" DIA EMT	1	2	21.76%	20A	10 AWG	THWN-2 COPPER	0.96	(34°C)	1	15.73A	19.66A	35A	26.88A	53FT	0.89%
5	1	IQ COMBINER BOX 4C	NON FUSED AC DISCONNECT	4 AWG	THWN 2	COPPER	MIN 1" DIA EMT	1	3	31.94%	N/A	6 AWG	THWN-2 COPPER	0.96	(34°C)	1	52.03A	65.04A	85A	81.60A	5FT	0.06%
6	1	NON FUSED AC DISCONNECT	MSP	4 AWG	THWN 2	COPPER	MIN 1" DIA EMT	1	3	31.94%	70A	6 AWG	THWN-2 COPPER	0.96	(34°C)	1	52.03A	65.04A	85A	81.60A	5FT	0.06%



SCALE: NTS

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(14) ENPHASE IQ8PLUS -72-2-US (240V)
DC SYSTEM SIZE: 6.230 kWDC
AC SYSTEM SIZE: 4.060 kWAC

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PHONE NO. (615) 717-8056

DATE: 8/20/2024
SHEET NAME ELECTRICAL LINE & CALCS.
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-7