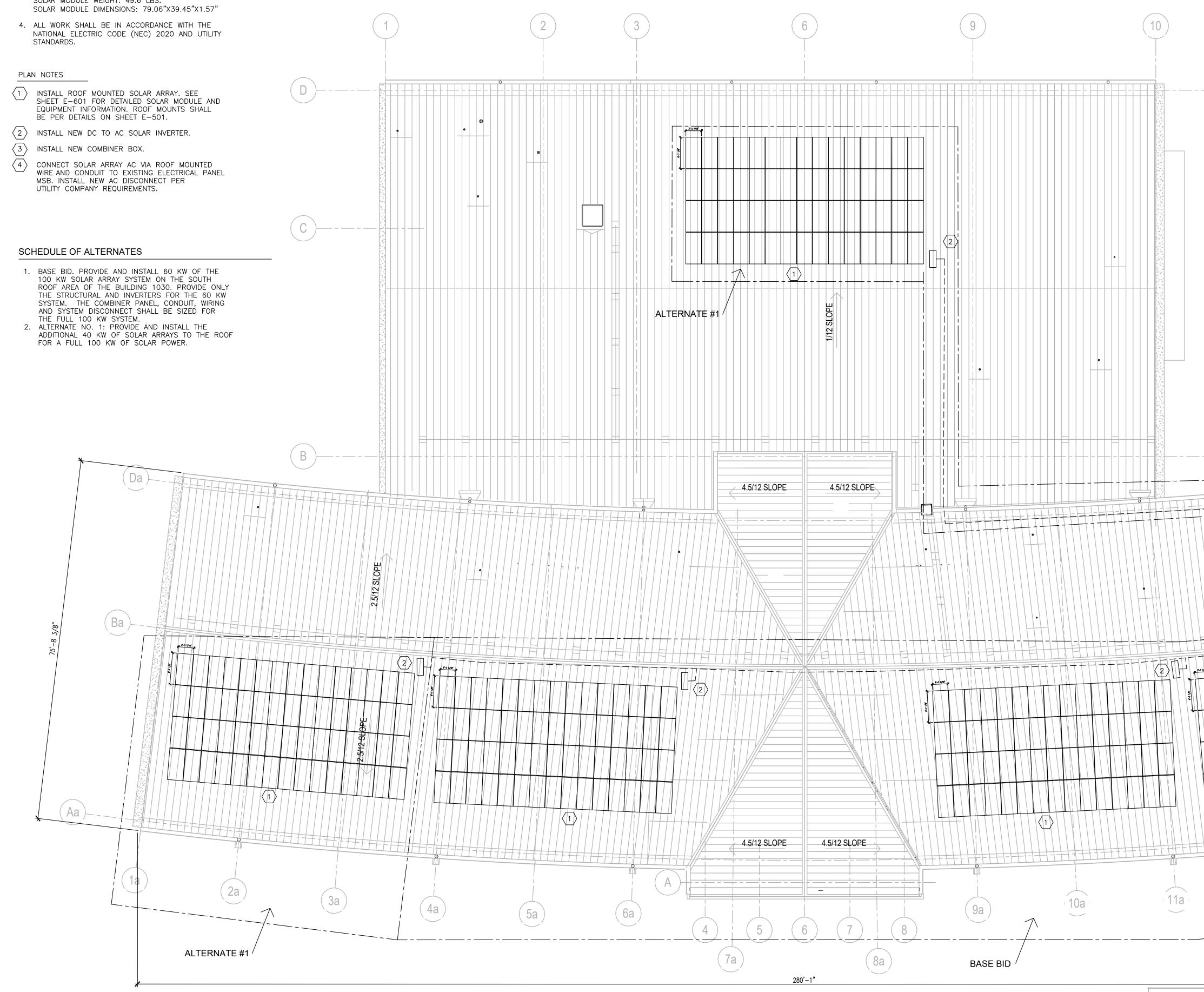
GENERAL NOTES

- 1. SEE GENERAL NOTES SHEET E-001 FOR ADDITIONAL INFORMATION
- 2. ALL CONDUIT RUNS ABOVE GRADE.
- 3. SYSTEM INFORMATION. (FOR REFERENCE ONLY) SOLAR MODULE WEIGHT: 49.6 LBS.
- 4. ALL WORK SHALL BE IN ACCORDANCE WITH THE

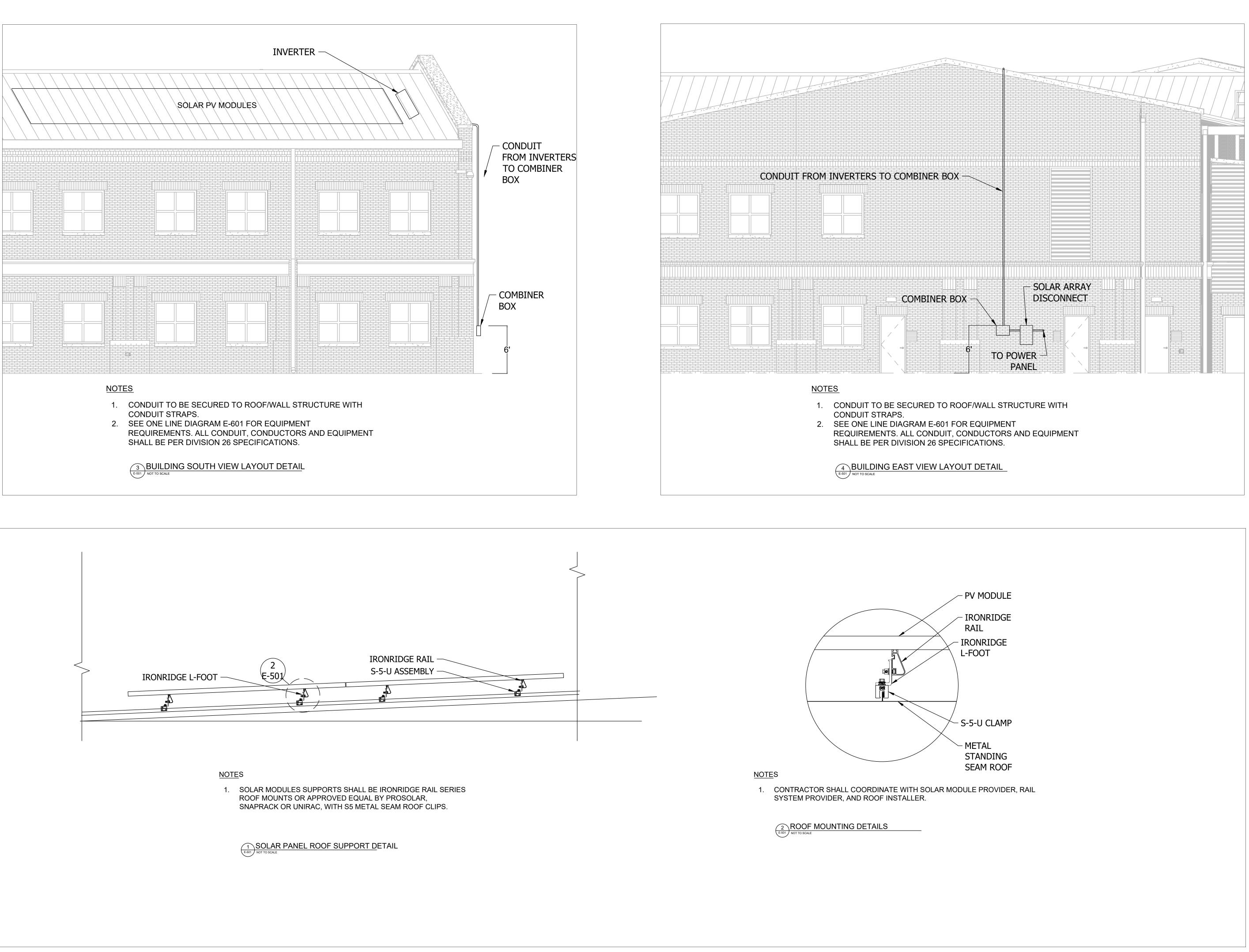
## PLAN NOTES

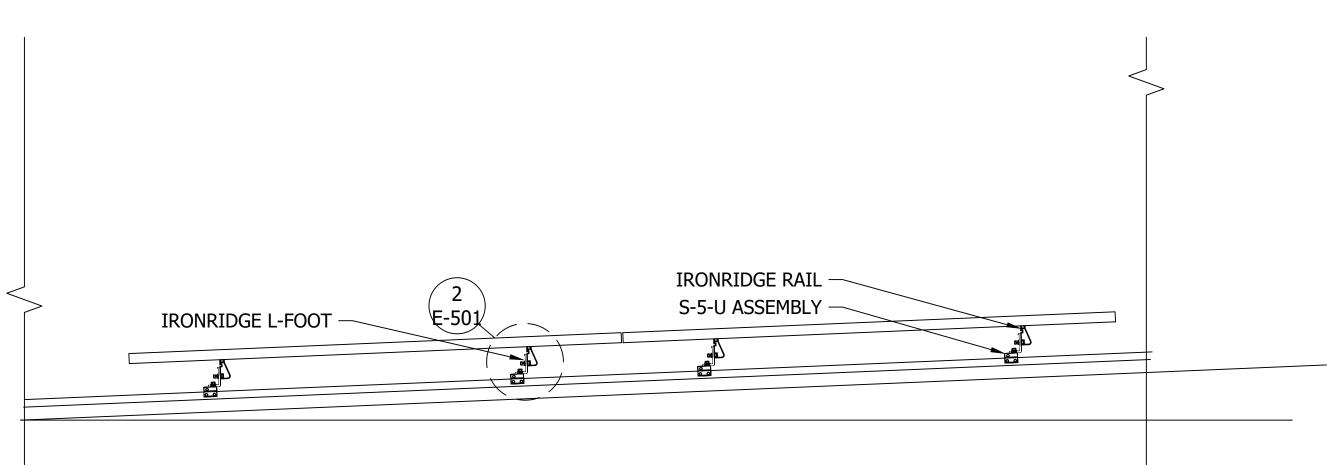
#### SCHEDULE OF ALTERNATES

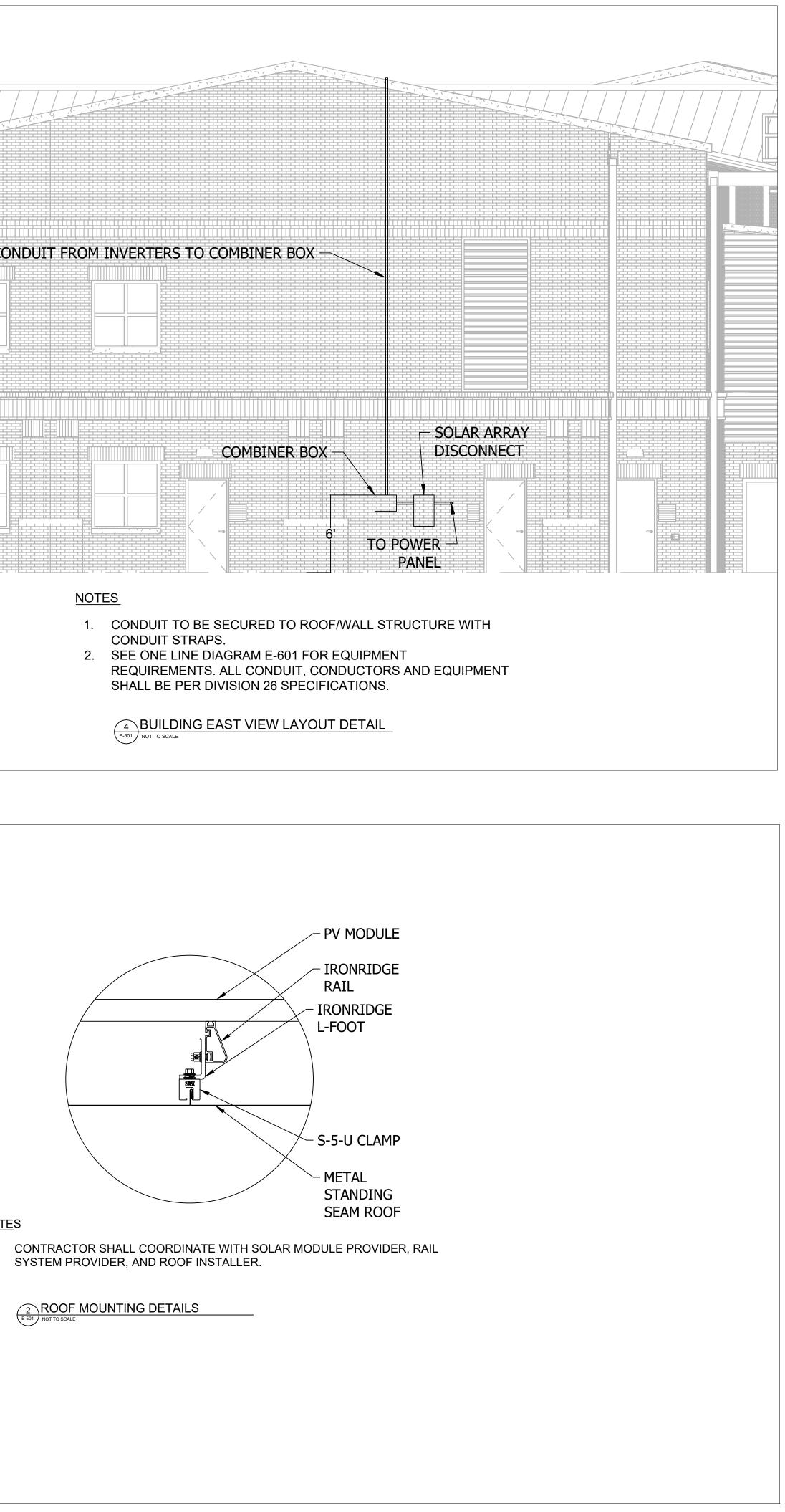
- 1. BASE BID. PROVIDE AND INSTALL 60 KW OF THE 100 KW SOLAR ARRAY SYSTEM ON THE SOUTH THE STRUCTURAL AND INVERTERS FOR THE 60 KW SYSTEM. THE COMBINER PANEL, CONDUIT, WIRING AND SYSTEM DISCONNECT SHALL BE SIZED FOR THE FULL 100 KW SYSTEM.



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	CROSSED SWORDS ENGINEERING 1619 NE OAK TREE DR. LEE'S SUMMIT MO 64086 (816) 309-0099 Robert7721@aol.com MO STATE CERTIFICATE OF AUTHORITY#2016003099
	OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION MISSOURI NATIONAL GUARD OFFICE OF THE ADJUTANT GENERAL FACILITIES MANAGEMENT OFFICE
	REGIONAL TRAINING INSTITUTE BUILDING 1030 FT. LEONARD WOOD, MO 65473 PROJECT # T2231-01 SITE # 6306 ASSET # 8136306003
	REVISION:
ROOF PLAN	SHEET NUMBER: E-101 3 OF 5 SHEETS FEBRUARY 13, 2023





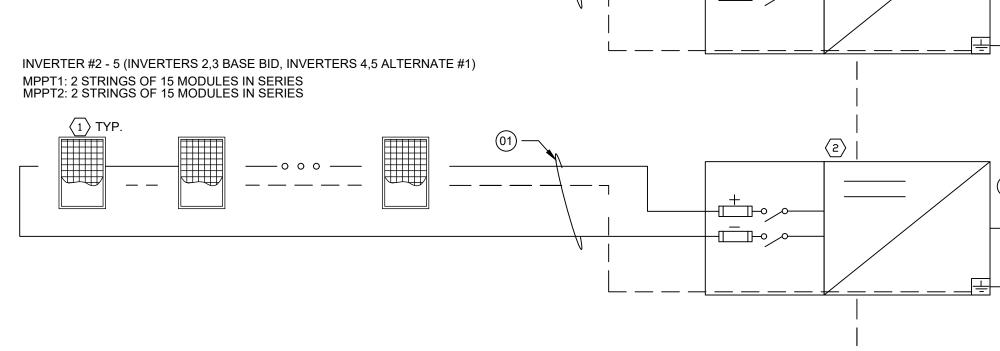


STATE OF MISSOURI MICHAEL L. PARSON, GOVERNOR
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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION
MISSOURI NATIONAL GUARD OFFICE OF THE ADJUTANT GENERAL FACILITIES MANAGEMENT OFFICE CONSTRUCT SOLAR ARRAY
REGIONAL TRAINING INSTITUTE BUILDING 1030 FT. LEONARD WOOD, MO 65473 PROJECT # T2231-01 SITE # 6306 ASSET # 8136306003
REVISION: DATE: REVISION: DATE: REVISION: DATE: DATE: ISSUE DATE: 2/13/2023
CAD DWG FILE: E-501.DWG DRAWN BY: RFS CHECKED BY: RFS DESIGNED BY: RFS SHEET TITLE: ELECTRICAL DETAILS
sheet number: E-501 4 of 5 sheets
FEBRUARY 13, 2023

(#)		PV EQUIPMENT LIST	
ID	QTY	DESCRIPTION	
1	300	JINKO JMK400M-72HL-V, SOLAR MODULE. QTY 200 BASE BID. QTY 100 ALTERNATE #1.	
2	5	20.0 kW STRING INVERTER. 2 MPPT WITH 6 INPUT PAIRS PER MPPT. 480V, 3 PHASE, 60 HZ. FRONIUS SYMO MODEL 20.0-3 480. QTY 3 BASE BID, QTY 2 ALTERNATE #1.	
3	1	AC COMBINING PANEL, 250A, 3P, 4W, WITH (5) 30 A CIRCUIT BREAKERS, NEMA 3R	
4	1	PV AC SOLAR SYSTEM DISCONNECT, FUSED 200A, 3 PHASE, NEMA 3R SQUARE D OR APPROVED EQUAL	
5	1	EXISTING MAIN PANEL LCS. 480V, 3PH, WYE.	
6	1	EXISTING METER LOCATED AT BUILDING 1030 TRANSFORMER	

(#)		PV EQUIPMENT LIST
	QTY	DESCRIPTION
	QIY	DESCRIPTION
1	300	JINKO JMK400M-72HL-V, SOLAR MODULE. QTY 200 BASE BID. QTY 100 ALTERNATE #1.
2	5	20.0 kW STRING INVERTER. 2 MPPT WITH 6 INPUT PAIRS PER MPPT. 480V, 3 PHASE, 60 HZ. FRONIUS SYMO MODEL 20.0-3 480. QTY 3 BASE BID, QTY 2 ALTERNATE #1.
3	1	AC COMBINING PANEL, 250A, 3P, 4 W, WITH (5) 30 A CIRCUIT BREAKERS, NEMA 3R
4	1	PV AC SOLAR SYSTEM DISCONNECT, FUSED 200A, 3 PHASE, NEMA 3R SQUARE D OR APPROVED EQUAL

TO CONTROLS MONITORING SYSTEM	/
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MPPT1: 2 STRINGS OF 15 MODULES IN SERIES MPPT2: 2 STRINGS OF 15 MODULES IN SERIES

INVERTER #1 (BASE BID)

POWER TO THE PANEL.

- 2. PV MODULES STRUNG IN SERIES. MODULE AND RACKING GROUNDING ACCOMPLISHED VIA CONTINUOUS CU CONDUCTOR. 3. MODIFY EXISTING ELECTRICAL PANEL AS REQUIRED FOR THE CONNECTION OF INVERTER OUTPUT
- FOR MODULE INTERCONNECTION. DO NOT REMOVE THE QUICK CONNECTS, OTHERWISE THE MODULE WARRANTY AND THE UL LISTING MAY BE INVALIDATED.

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1. SOLAR MODULES INCLUDE OUTDOOR RATED QUICK CONNECTS WITH MULTI CONTACT CONNECTORS

SHEET NOTES

	(#) WIRE AND CONDUIT SCHEDULE				
ID	CONDUCTOR	EGC	CONDUIT	CONDUCTORS IN CONDUIT	TEMPERATURE RATING
01	10 AWG PV WIRE	10 AWG			75C
02	8 AWG THWN-2	10 AWG	3/4"	4	75C
03	1 AWG	6 AWG	1 1/4"	4	75C
04	1 AWG	6 AWG	1 1/4"	4	75C
		-			

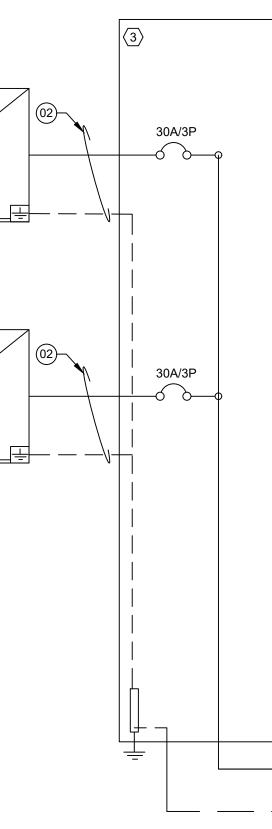
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# **BUILDING 1030 - 100 KW AC OUTPUT SOLAR ARRAY** DC TO AC RATIO 1.2

## SCHEDULE OF ALTERNATES

- DISCONNECT SHALL STILL BE SIZED FOR THE FULL 100 KW SYSTEM.



1. ALL EXPOSED SOURCE CIRCUIT CONDUCTORS SHALL BE 600V RATED PV-WIRE SUITABLE FOR USE WITH TRANSFORMLESS INVERTERS.

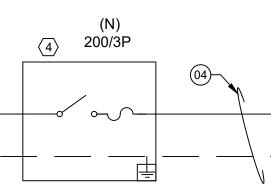
03-

2. ALL CONDUIT TO BE PER SPECIFICATIONS UNLESS OTHERWISE REQUIRED BY LOCAL AHJ. 3. ALL CONDUIT SIZES ARE BASED ON MINIMUM PER NEC CODE REQUIREMENTS.

4. WIRE AMPACITY IS BASED ON NUMBER OF WIRES PER CONDUIT. IF CONDUITS ARE INSTALLED DIFFERENTLY THAN SHOWN, WIRE SIZES MAY BE AFFECTED.

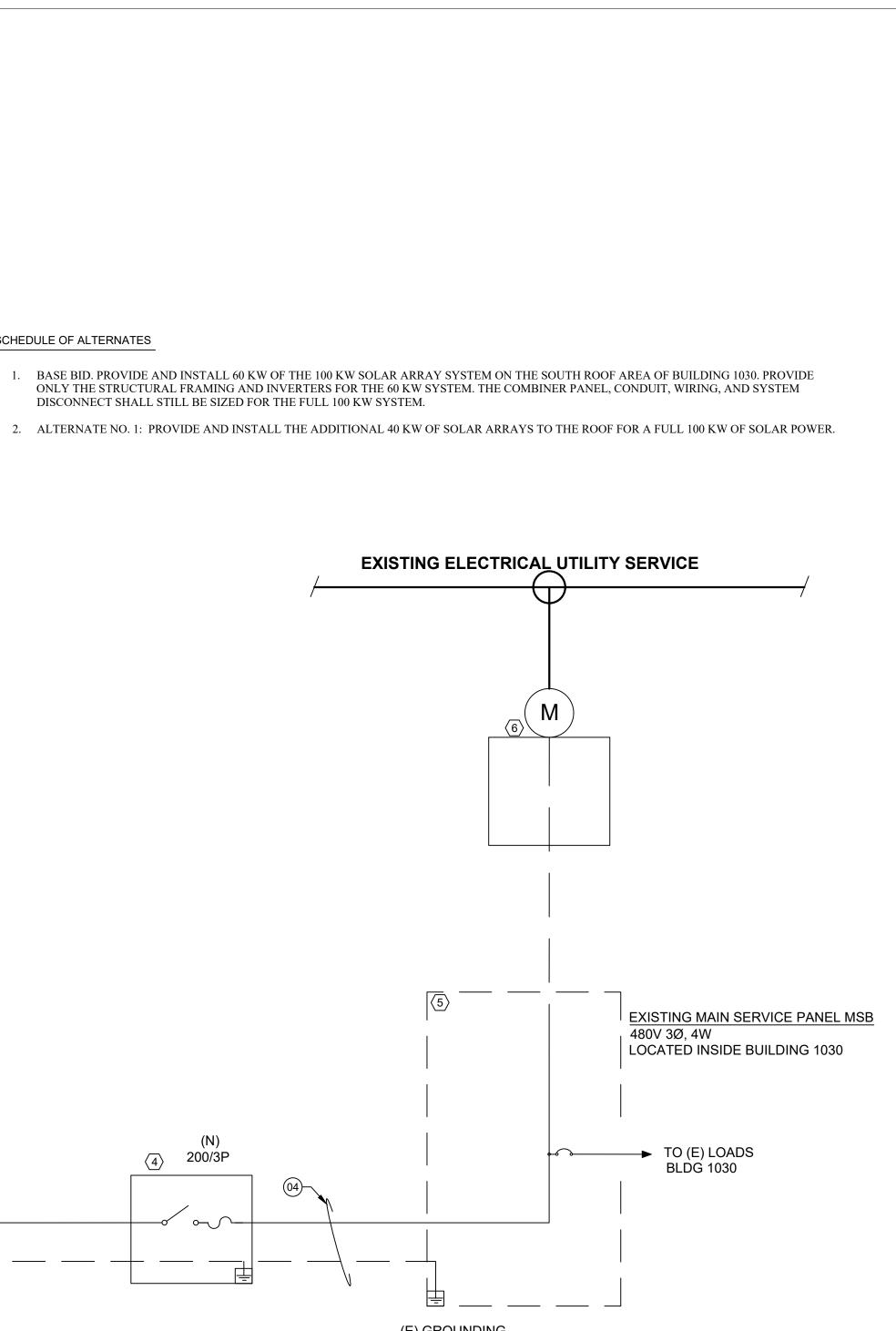
ASH ASHR TEMF OUTPUT CURRENT (A) 24 SOURCE CIRCUIT DETAILS MODULES PER STRING 15 TEMPERATURE ADJUSTED VOC 824.9

SHORT CIRCUIT CURRENT



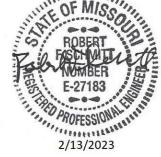
SITE CONDITIONS:			
HRAE MAX AVG. TEMP: 98.3°F			
RAE EXTREME MIN TEMP	-0.4°F		
PV MODULE OUTPUT			
VOC:	49.1 Vdc		
P. COEFFICIENT OF Voc	-0.29 %/°C		
ISC	10.61 Adc		
VMP	40.16 Vdc		
IMP	9.96 Adc		
INVERTER DETAILS			
RATED POWER OUTPUT (kW)		20.0	
OUTPUT VOLTAGE (V)		480	

49.1



(E) GROUNDING ÉLECTRODE

# **STATE OF MISSOURI** MICHAEL L. PARSON, GOVERNOR





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CONSTRUCT SOLAR ARRAY

**REGIONAL TRAINING** INSTITUTE BUILDING 1030 FT. LEONARD WOOD, MO 65473

PROJECT # T2231-01 SITE # 6306 ASSET # 8136306003

**REVISION:** DATE: **REVISION:** DATE: **REVISION**: DATE:

ISSUE DATE: 2/13/2023

CAD DWG FILE:E-601.DWG DRAWN BY: **RFS** CHECKED BY:  $\overline{J}$ DESIGNED BY: RFS

SHEET TITLE: ELECTRICAL ONE LINE DIAGRAM

SHEET NUMBER:

E-601

5 OF 5 SHEETS FEBRUARY 13, 2023