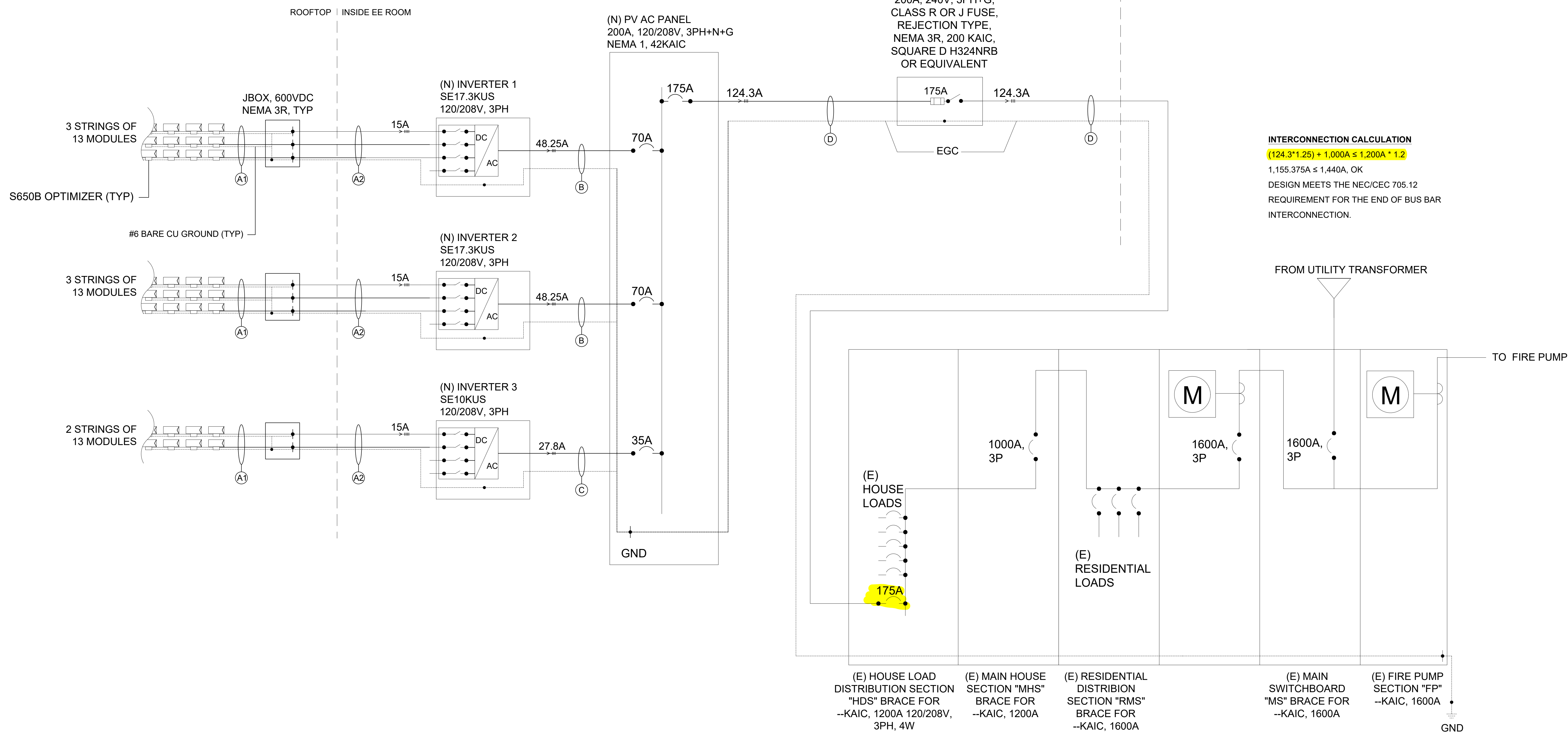


NOTE: SERVICE DISCONNECT SHALL BE AVAILABLE TO SCE  
INSIDE EE ROOM INSIDE MAIN EE ROOM

(N) PV AC DISCONNECT  
VISIBLE, LOCKABLE  
200A, 240V, 3PH+G,  
CLASS R OR J FUSE,  
REJECTION TYPE,  
NEMA 3R, 200 KAIC,  
SQUARE D H324NRB  
OR EQUIVALENT



**INTERCONNECTION CALCULATION**  
 $(124.3 \times 1.25) + 1,000A \leq 1,200A \times 1.2$   
1,155.375A ≤ 1,440A, OK  
DESIGN MEETS THE NEC/CEC 705.12  
REQUIREMENT FOR THE END OF BUS BAR  
INTERCONNECTION.

(E) HOUSE LOAD DISTRIBUTION SECTION "HDS" BRACE FOR --KAIC, 1200A 120/208V, 3PH, 4W  
(E) MAIN HOUSE SECTION "MHS" BRACE FOR --KAIC, 1200A  
(E) RESIDENTIAL DISTRIBUTION SECTION "RMS" BRACE FOR --KAIC, 1600A  
(E) MAIN SWITCHBOARD "MS" BRACE FOR --KAIC, 1600A  
(E) FIRE PUMP SECTION "FP" --KAIC, 1600A

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER	JA SOLAR
MODEL #	JAM72D30-550/MB
P <sub>MAX</sub>	550W
V <sub>MP</sub>	41.96V
I <sub>MP</sub>	13.11A
V <sub>OC</sub>	49.9V
I <sub>SC</sub>	14A

INVERTER SPECIFICATIONS	
MANUFACTURER	SOLAREEDGE TECHNOLOGIES LTD.
MODEL #	SE17.3KUS [208V]
NOMINAL AC POWER	17.3KW
NOMINAL OUTPUT VOLTAGE	120/208V 3PH
NOMINAL OUTPUT CURRENT	48.25A

(104) MODULES @ 550W = 57.2 KW DC  
(2) SE17.3K-US INVERTER, (1) SE10K-US INVERTER  
TOTAL (43.161) PER INVERTER KW AC  
CEC-KW AC RATING  
(84 \* 516.4W \* 0.975)/1000 + (20 \* 516.4W \* 0.97)/1000  
= (42.29 + 10.01) = 52.321 KW

OPTIMIZER SPECIFICATIONS	
MANUFACTURER	SOLAREEDGE TECHNOLOGIES LTD.
MODEL #	S650B
MAX DC INPUT VOLTAGE	85VDC
MAX MODULE I <sub>SC</sub>	15A
MAX STRING CURRENT	15A

INVERTER SPECIFICATIONS	
MANUFACTURER	SOLAREEDGE TECHNOLOGIES LTD.
MODEL #	SE10KUS [208V]
NOMINAL AC POWER	10KW
NOMINAL OUTPUT VOLTAGE	120/208V 3PH
NOMINAL OUTPUT CURRENT	27.8A

NOTE: ADJUSTED V<sub>OC</sub> = 49.9V \* 1.14 (BASED ON -7°C) = 56.89V < 85VDC

INVERTER SCHEDULE AND CALCULATIONS									
NAME	TYPE AND SIZE	AC VOLTAGE	AC CURRENT	MAX MODULES PER STRING	MAX POWER PER STRING	DC VOLTAGE	DC CURRENT	DC SHORT CIRCUIT CURRENT	
INVERTER 1	SOLAREEDGE SE17.3KUS	208 V	48.3 A	13	7150 W	370 V	15.0 A	15.0 A	
INVERTER 2	SOLAREEDGE SE17.3KUS	208 V	48.3 A	13	7150 W	370 V	15.0 A	15.0 A	
INVERTER 3	SOLAREEDGE SE10KUS	208 V	27.8 A	13	7150 W	370 V	15.0 A	15.0 A	

VOLTAGE DROP CALCULATIONS													
CABLE ID	CABLE TYPE	CABLE TEMP RATING	PHASE	CONDUIT TYPE	#	WIRE/BUS SIZE	L-L VOLTS E(LV)	CIRCUIT LENGTH*** FT	LOAD POWER FACTOR (pf)	CIRCUIT RESISTANCE A	CONDUCTOR REACTANCE X	VOLTAGE DROP %VD	TOTAL %VD CUM.
B	THWN-2 (Cu)	Cu	3	EMT	1	Set(s) of #4	208	5	0.99	48.3	0.000310	0.000060	0.08%
C	THWN-2 (Cu)	Cu	3	EMT	1	Set(s) of #8	208	10	0.99	27.8	0.000780	0.000065	0.18%
D	THWN-2 (Cu)	Cu	3	EMT	1	Set(s) of 2/0	208	140	0.99	124.3	0.000100	0.000054	1.54%

CABLE SCHEDULE, BREAKER SIZING AND AMPACITY CALCULATIONS																						
CABLE	CABLE TYPE	CABLE TEMP RATING	AMBIENT TEMP. (°C)	DISTANCE ABOVE ROOF TO BOTTOM OF CONDUIT	ADJUSTED AMBIENT TEMP. (°C)	CONDUIT	CONDUIT TYPE	# OF CONDUCTORS PER PHASE	WIRE/BUS SIZE	NEUTRAL	GROUND	TOTAL CC CONDUCTORS IN RACEWAY	BASE AMPACITY A	DERATING FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	DERATING FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	OVERALL DERATING FACTOR	DERATED AMPACITY A	CIRCUIT LOAD (A)	CIRCUIT LOAD (A)	MINIMUM BREAKER PER ICSAD	MAXIMUM BREAKER PER DERATED CABLE	CONDUIT FILL PERCENT
A1	PV WIRE	90°C (194°F) Cu	39	ABOVE 7/8"	39		FREE AIR	1	Set(s) of #10		#6	6	40	80%	91%	72.800%	29.1	15.0	18.8	20	30	13.55%
A2	THWN-2 (Cu)	90°C (194°F) Cu	39	ABOVE 7/8"	39		EMT	1	Set(s) of #10		#6	6	40	80%	91%	72.800%	29.1	15.0	18.8	20	30	13.55%
B	THWN-2 (Cu)	90°C (194°F) Cu	39	NOT ON ROOF	39		EMT	1	Set(s) of #4	#8	#8	3	95	100%	91%	91.000%	86.5	48.3	60.4	70	90	26.66%
C	THWN-2 (Cu)	90°C (194°F) Cu	39	NOT ON ROOF	39		EMT	1	Set(s) of #8	#8	#8	3	55	100%	91%	91.000%	50.1	27.8	34.9	35	60	16.49%
D	THWN-2 (Cu)	90°C (194°F) Cu	39	NOT ON ROOF	39		EMT	1	Set(s) of 2/0	#6	#6	3	195	100%	91%	91.000%	177.5	124.3	155.4	175	200	20.29%

NOTE: IN THE CASE CABLE/CONDUIT CANNOT BE INSTALLED ABOVE 7/8", A +33 °C TEMP ADDER MUST BE ADDED TO THE AMBIENT USED FOR TEMPERATURE DERATE. CONSULT WITH ENGINEERING TO DETERMINE CORRECT CABLE SIZE.

SINGLE LINE DIAGRAM

PV-4.1