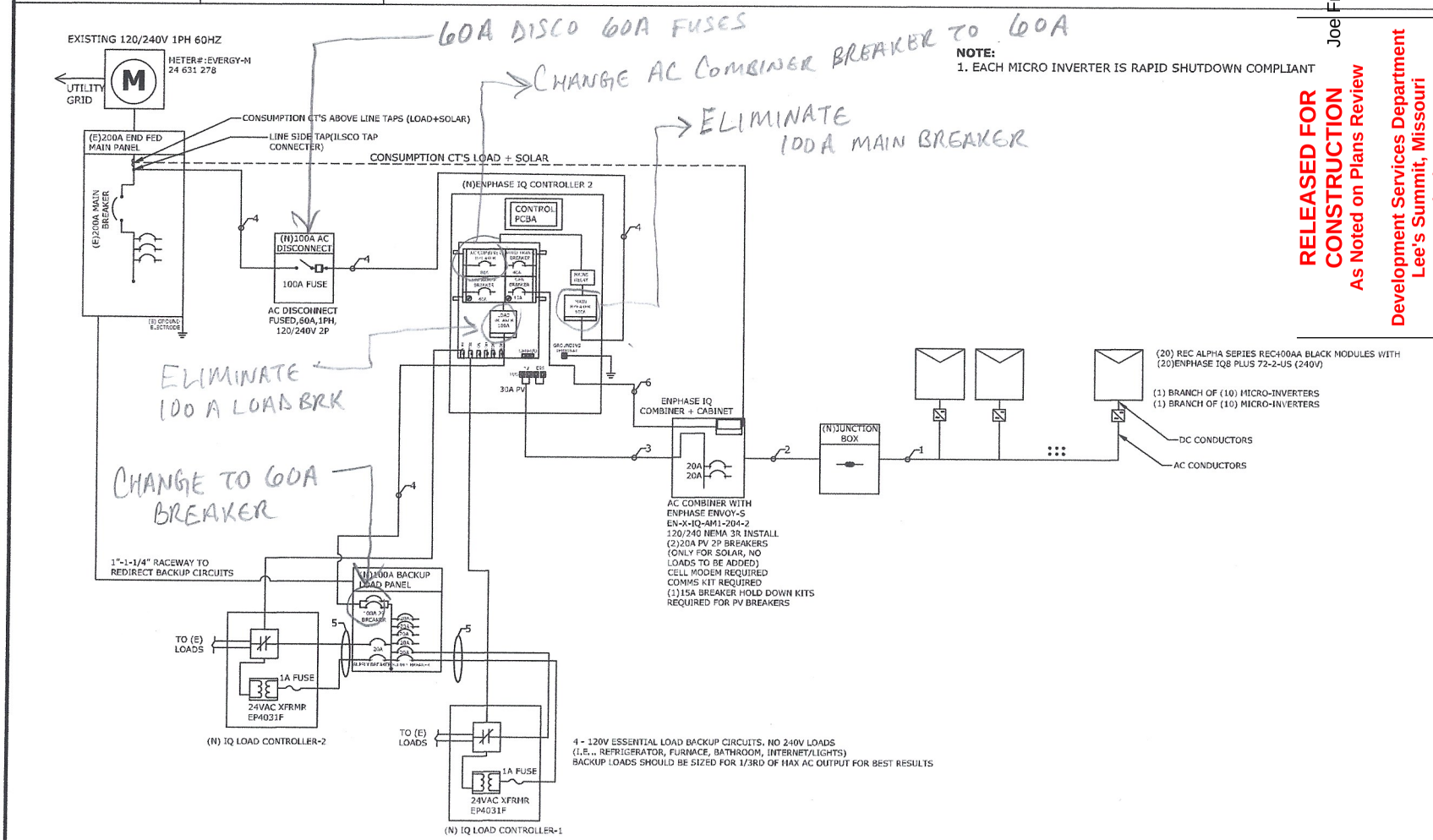
SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 8000W, AC SYSTEM SIZE - 5800W, 1933W DAYLIGHT BACKUP

MICRO INVERTER SPECIFICATIONS	
MODEL	ENPHASE IQ8 PLUS 72-2-US (240V)
MAX CONTINUOUS OUTPUT POWER	290VA
MAX OUTPUT CURRENT	1.21A
CEC WEIGHTED EFFICIENCY	97%
MAX NO OF MICRO INVERTERS/BRANCH	13
MAX DC VOLTAGE	60V

MODULE SPECIFICATION	
MODEL	REC ALPHA SERIES REC400AA BLACK
MODULE POWER @ STC	400W
OPEN CIRCUIT VOLTAGE:**Voc**	48.8V
MAX POWER VOLTAGE:**Vmp**	42.1V
SHORT CIRCUIT CURRENT:**Isc**	10.10A
MAX POWER CURRENT:**Imp**	9.51A



NOTE:
1. EACH MICRO INVERTER IS RAPID SHUTDOWN COMPLIANT

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
05/10/2022

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Departme
04/12/2022

Digitally signed by Joe Frogge
DN: CN=Joe Frogge, OU=Development, OU=LS Users, DC=COUS, DC=LOC
Date: 2022.05.10 15:24:44-05'00'
Joe Frogge

ELECTRICAL NOTES

1.CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
2.CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
3.MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
4.ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5.BREAKER/FUSE SIZES PER NEC 240.
6.AC EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC 250.122.
7.AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
8.AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
9.MAX. SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
10.CONDUCTORS ARE SIZED PER NEC TABLE 310.15(B)(16).

RISINGSUN SOLAR

CUSTOMER INFORMATION

NAME: MICHAEL HANLEY

ADDRESS:1509 SOUTHWEST GEORGETOWN DRIVE, LEES SUMMIT, MO 64082

38.841118, -94.409673

AHJ:MO-CITY OF LEE'S SUMMIT

UTILITY:EVERGY-M

PRN NUMBER: RGS-47106

ILLUMINE i
Because quality matters

SINGLE LINE DIAGRAM

DRAFTED BY: N. KUMAR QC'ED BY:S. KISHORE	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:G
DATE:4/7/2022	E-01

ELECTRICAL CALCULATION

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(2) 12AWG ENPHASE Q CABLE PER BRANCH CIRCUIT	NONE	(1) 10AWG BARE COPPER
2	3/4"EMT	(4) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
3	3/4"EMT	(2) 10 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	(1) 10AWG THHN/THWN-2
4	1-1/4"EMT	(2)1 AWG THHN/THWN-2	(1)1 AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2
5	3/4"EMT	(2)10 AWG THHN/THWN-2	(1)10 AWG THHN/THWN-2	(1) 10AWG THHN/THWN-2
6	3/4"EMT	(2)10 AWG THHN/THWN-2	(1)10 AWG THHN/THWN-2	NONE

NOTE:
MAIN PANEL RATING:200A, MAIN BREAKER RATING:200A
LINE SIDE TAP: 100% ALLOWABLE BACKFEED IS =200A

OCPD CALCULATIONS:
INVERTER OVERCURRENT PROTECTION= INVERTER O/P I X CONTINUOUS LOAD(1.25)
=1.21x1.25x20=30.25A=>PV BREAKER = 100A
TOTAL REQUIRED PV BREAKER SIZE / FUSE SIZE=>100A PV BREAKER

ELECTRICAL CALCULATIONS

AC WIRE SIZING CALCULATIONS BASED OF FOLLOWING EQUATIONS >>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK			
1	1.21	X	10	=	12.10	X	1.25	=	15.13A	30	X	0.87	X	1	=	26.10A	15.13A	<	26.10A
2	1.21	X	10	=	12.10	X	1.25	=	15.13A	40	X	0.87	X	0.8	=	27.84A	15.13A	<	27.84A
3	1.21	X	20	=	24.20	X	1.25	=	30.25A	40	X	0.87	X	1	=	34.80A	30.25A	<	34.80A
4	1.21	X	20	=	24.20	X	1.25	=	30.25A	145	X	0.87	X	1	=	126.15A	30.25A	<	126.15A

TAG ID			
3	1" EMT	(2) #6 AWG THHN-THWN-2	(1) #6 AWG THHN-THWN-2	(1) #6 AWG THHN-THWN-2
4	1" EMT	(2) #6 AWG THHN-THWN-2	(1) #6 AWG THHN-THWN-2	(1) #6 AWG THHN-THWN-2

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ELECTRICAL CALCULATION

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