

SOLAR PHOTOVOLTAIC SYSTEM FOR OAHS 321 JOHN STREET

321 JOHN STREET | COBOURG ON | CANADA K9A 3T3

SYSTEM CHARACTERISTICS

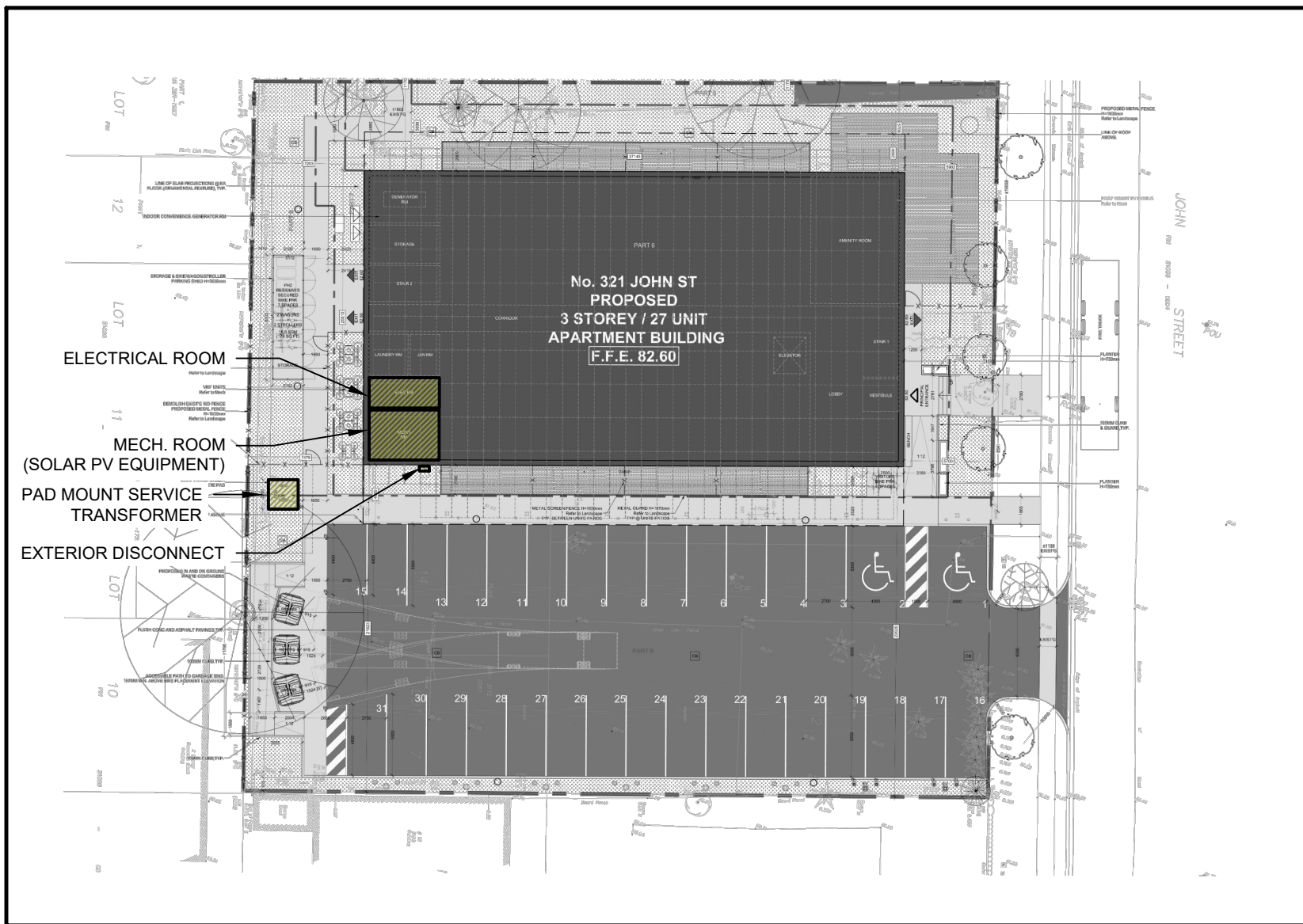
ARRAY SIZE:	
DC SIZE	186 KW
CEC AC SIZE	149.4 KW
DC/AC RATIO	1.24
NUMBER OF MODULES:	300
MANUFACTURER	TBD
MODEL NUMBER	TBD
STC RATING	620 W
NUMBER OF INVERTERS:	3
MANUFACTURER	SOLIS
MODEL NUMBER	S5-GC60K-LV-US
AC SIZE	60 kW (DERATE FOR 49.8 kW)
CEC EFFICIENCY	98.1 %
CSA AND UL CERTIFICATION	UL1741SA/SB CSA 22.2107.1-1 IEEE1547 UL1699B
RACKING SYSTEM:	PORTRAIT
MANUFACTURER	TBD
ROW SPACING	20mm
TILT ANGLE	9° (FLUSH)
ARRAY AZIMUTH	21° E OF S

ELECTRICAL DRAWING LIST

PV-101 SOLAR PHOTOVOLTAIC ROOF PLAN
PV-201 SINGLE LINE DIAGRAM

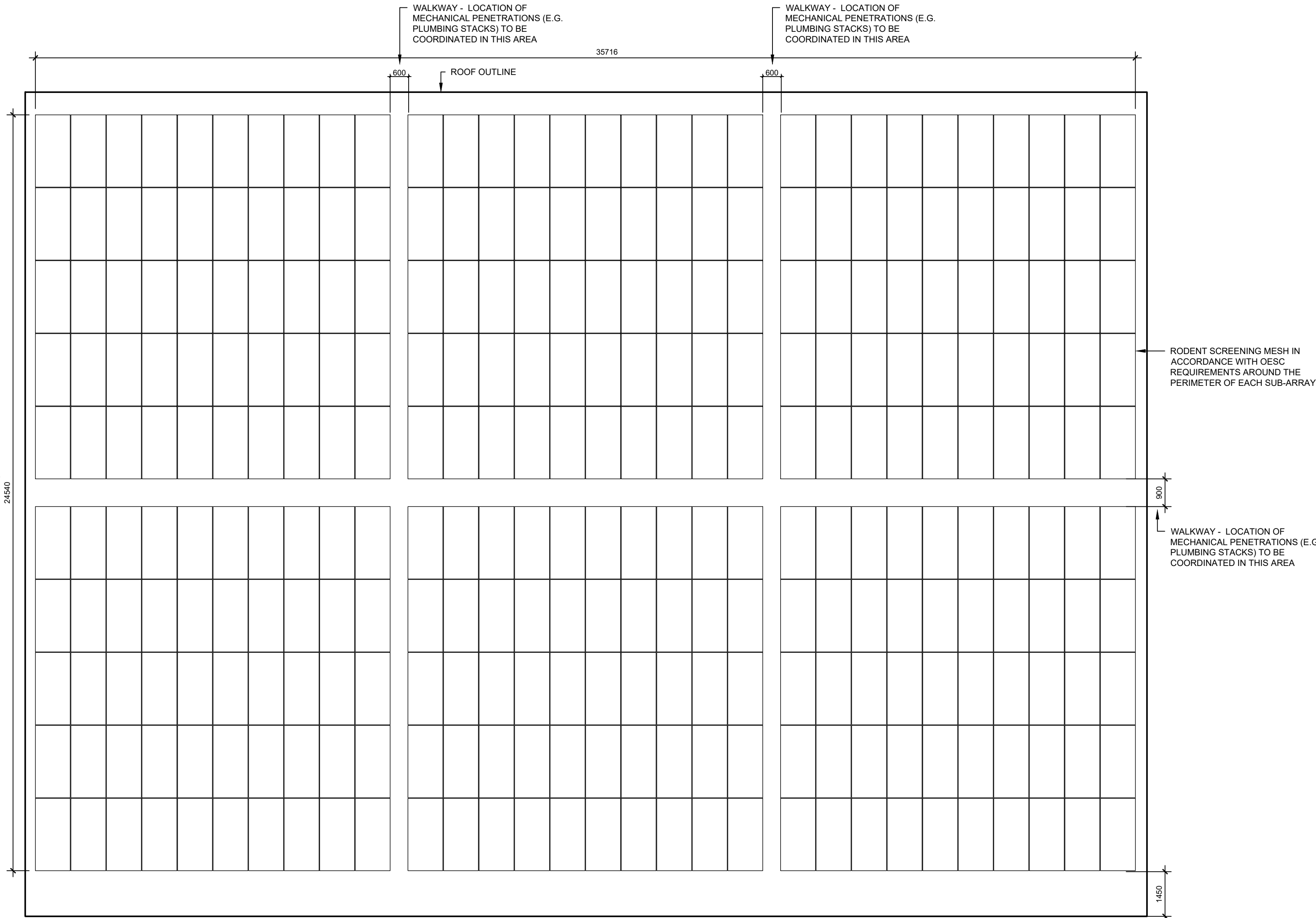
GENERAL NOTES

- ALL LOCATIONS, DIMENSIONS, AND SITE CONDITIONS INCLUDING ROOFTOP OBSTRUCTIONS AND SHADING PROFILES ARE TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FINAL RACKING ENGINEERING, PROCUREMENT, AND INSTALLATION.
- THIS DRAWING HAS BEEN PREPARED SOLELY FOR THE SOLAR PV ELECTRICAL WORK THAT WILL TAKE PLACE AS PART OF THIS PROJECT OF WHICH IS SUBJECT TO THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE. IT DOES NOT PROVIDE ANY INFORMATION REGARDING STRUCTURAL ASPECTS OF THE DESIGN, NOR SHOULD IT BE USED TO DEMONSTRATE COMPLIANCE WITH THE ONTARIO BUILDING CODE.
- SLACK TO BE INCORPORATED IN ALL WIRING TO ALLOW FOR THERMAL EXPANSION.
- ALL CONSTRUCTION MUST BE CARRIED OUT IN AN APPROVED MANNER THAT DOES NOT VOID ANY EXISTING MANUFACTURER WARRANTY ON THE PROJECT SITE, SPECIFICALLY BUT NOT LIMITED TO THE BUILDING ROOF AND ANY/ALL WALL PENETRATIONS.



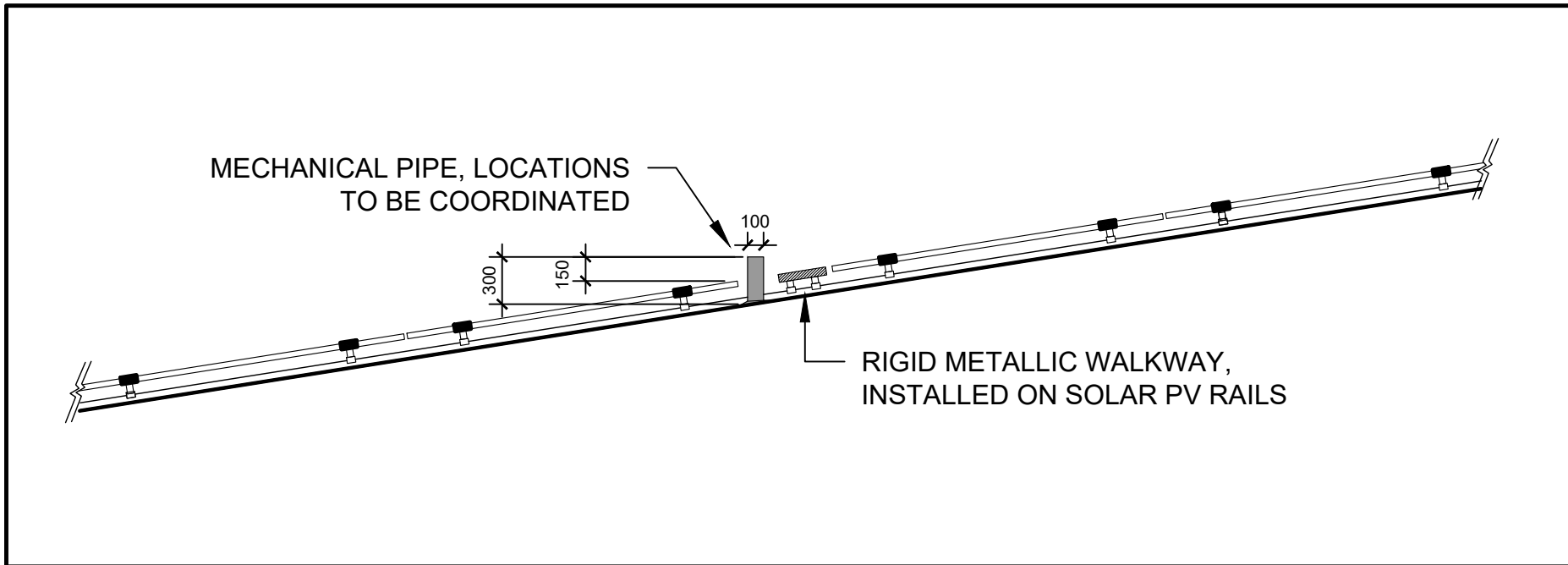
PLAN SITE

NTS



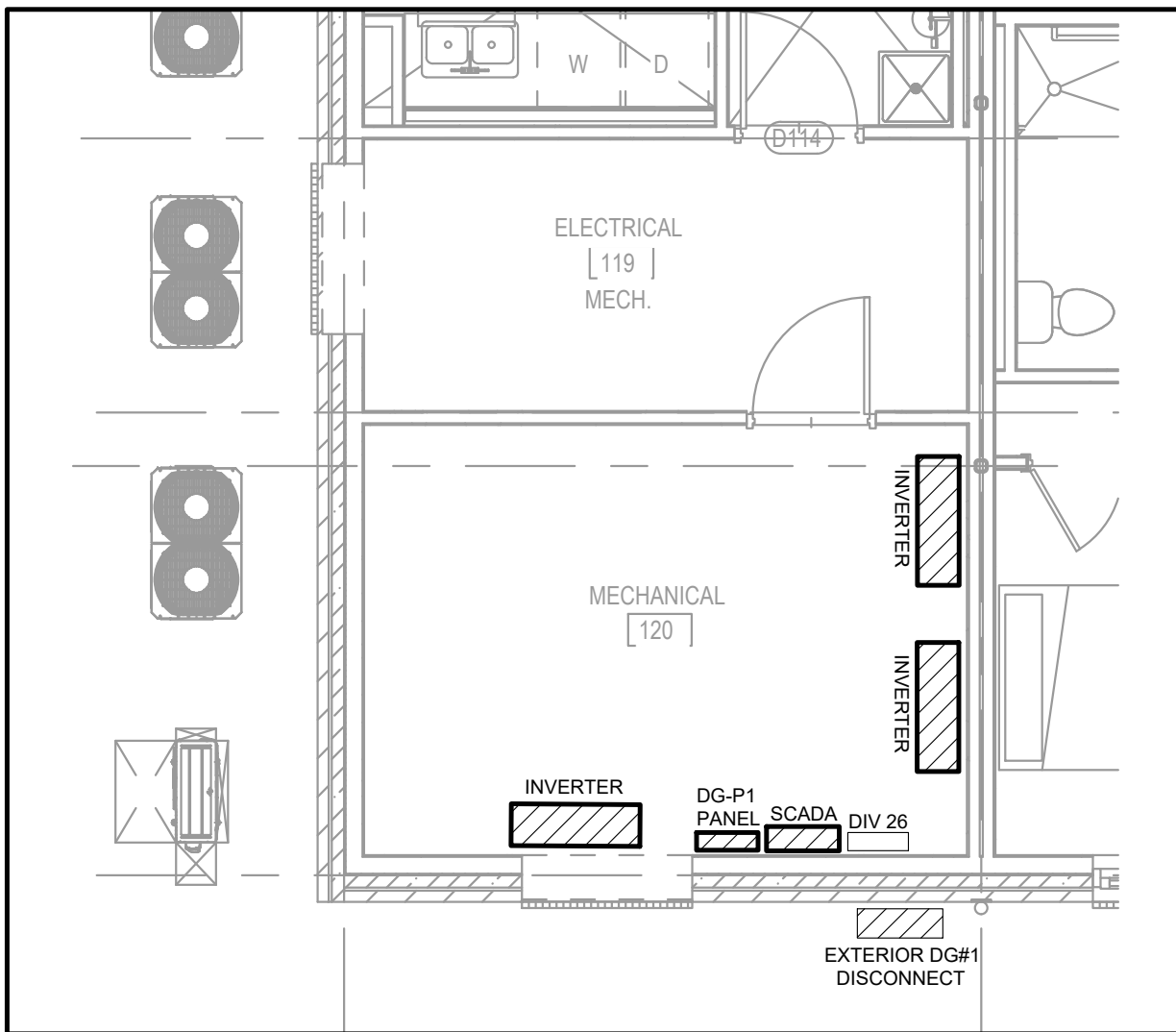
PLAN ROOF

1:100



DETAIL PV ARRAY WALKWAY & MECHANICAL LOCATIONS

NTS



PART PLAN ELECTRICAL / MECHANICAL ROOMS

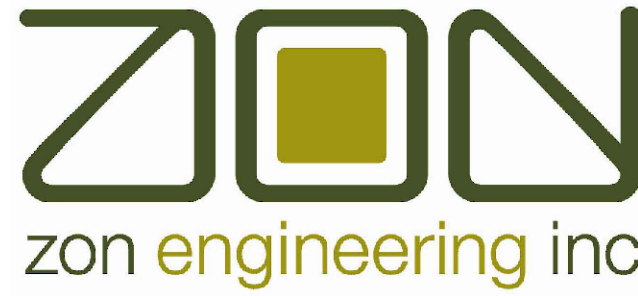
1:80

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ENGINEER:



727 Woolwich St, Unit 202 | Guelph, ON | N1H 3Z2
1.888.338.6363 | www.zonengineering.com

ENGINEERING SEAL:

ELECTRICAL SAFETY AUTHORITY (ESA) INFORMATION

LOW VOLTAGE REPORT NOTIFICATION #: TBD
CUSTOMER ID: 52079

-	-	-
-	-	-
4	17 JUN 2026	ISSUED FOR ADDENDA
3	29 MAY 2026	ISSUED FOR BASE BUILDING TENDER
2	29 MAY 2026	ISSUED FOR BUILDING PERMIT
1	27 FEB 2026	ISSUED FOR CIA

ISSUE:

PROJECT NAME:

OAHS 321 JOHN STREET

RENEWABLE ENERGY DG
NET-METERED SOLAR PV SYSTEM

ADDRESS:

OAHS 321 JOHN STREET
COBOURG ON K9A 3T3

PROJECT NUMBER:

LGA2501

PLOT DATE:

2026-06-17

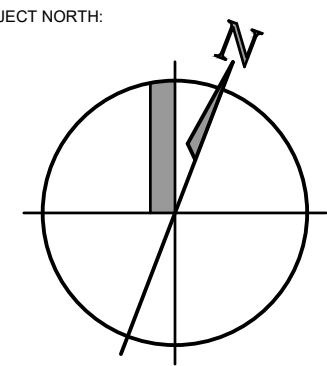
DRAWN BY:

C.D./A.W.

CHECKED BY:

J.H.

AS NOTED



DRAWING TITLE:

SOLAR PHOTOVOLTAIC
ROOF PLAN

DRAWING NUMBER:

PV-101

SYSTEM CHARACTERISTICS

TOTAL NO. OF MODULES IN SYSTEM	300
TILT ANGLE	9°
TOTAL NO. OF INVERTERS IN SYSTEM	3
TOTAL AC RATING	149.4 KW
TOTAL DC RATING	186 KW
DC/AC RATIO	1.24

NOTES

- N7

DC SYSTEM CONNECTION TO BE MADE ON THE LOAD SIDE OF SERVICE PANEL DP-1 ON DEDICATED 550A DG#1 BREAKER. THE PV DG BREAKER, CONNECTION CONFIGURATION AND LABELING TO MEET OESC 2018-64-112 REQUIREMENTS.
- N2

ALL CURRENT RATINGS FOR AC CIRCUITS ARE PER PHASE.
- N3

ALL OVER-CURRENT PROTECTION DEVICES ARE 80% RATED FOR OESC TABLE 2 & 4 UNLESS OTHERWISE NOTED.
- N4

CERTIFIED MATED DC CONNECTORS MUST BE USED FOR ALL FOR QUICK-CONNECT STYLE TERMINATIONS WITHIN THE PV ARRAY (INCLUDING PV MODULES, OPTIMIZERS, AND HOMERUNS).
- N5

REFERENCE SPECIFICATION ONLY. PLEASE REFER TO BASE ELECTRICAL ENG. DESIGN DOCUMENTS FOR CONTRACTUAL ENGINEER OF RECORD SPECIFICATIONS. REVERSE FEED RATED.
- N6

PV SYSTEM (DC VOLTAGE) WILL BE LIMITED TO 600VDC AS PER OESC 2018 62-202 (4)
- N7

BASE ELECTRICAL CONTRACTOR SHALL PROVIDE EXTERIOR DISCONNECT SWITCH (DG#2), LINE SIDE CONDUCTORS/CONDUIT AND PV INTERCONNECTION BREAKER (DG#1) IN THE MAIN SERVICE PANEL DP-1. PV CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE CONDUCTORS AND CONDUIT FROM DG SYSTEM TO THE LOAD SIDE OF THE PROVIDED DG#2 SWITCH.

MODULE SPECIFICATIONS

SPECIFICATIONS (@STC)	TBD - QTY 300
PV MODULE / CELL TYPE	MONO-FACIAL
NOMINAL POWER OUTPUT (W)	620 Wdc
MAXIMUM POWER VOLTAGE (Vmp)	-
MAXIMUM POWER CURRENT (Imp)	-
OPEN CIRCUIT VOLTAGE (Voc)	-
SHORT CIRCUIT CURRENT (Isc)	16.13 A MAX.
OESC RATED CURRENT (Isc x 1.25)	20.16 A MAX.
MAXIMUM SYSTEM VOLTAGE	1500 Vdc (UL) N6
CONNECTOR TYPE N4	MC4

MLPE SPECIFICATIONS

SPECIFICATIONS	AP SMART RSD-D-20
RATED INPUT DC POWER	-
MAX. INPUT VOLTAGE [Voc]	80 Vdc
MAX. DC SHORT CIRCUIT CURRENT	25 Adc PER CHANNEL
MAX. DC OUTPUT VOLTAGE	160 Vdc
MAX. DC OUTPUT CURRENT	20 Adc
CONNECTOR TYPE	MC4
NUMBER OF DEVICES	150

INVERTER SPECIFICATIONS

SPECIFICATIONS	SOLIS S5-GC60K-LV-US
EQUIPMENT LABEL	INVERTER #1 - #3
NOMINAL AC POWER OUTPUT	60.0 KW @ 208 Vac (DERATED TO 83% FOR 49.8 KW)
MAX. OUTPUT CURRENT	138.2 A
WIRING CONFIGURATION	3W + N
CEC WEIGHTED EFFICIENCY	98.1%
MAX. INPUT VOLTAGE [DC+ TO DC-]	1000 Vdc N6
OPERATING INPUT VOLTAGE	195 - 600 Vdc
MAX. DC SHORT CIRCUIT CURRENT	8 X 50 Adc
SAFETY STANDARD COMPLIANCE	UL1741SA/SB UL1699B CSA22.2 No.107.1-01 IEEE1547

DC WIRING SCHEDULE

ID	DESCRIPTION	VOLTAGE	RATED CURRENT	OVER-CURRENT PROTECTION	CONDUCTOR AMPACITY [°C / DERATE]	CONDUCTOR SIZE [MATERIAL]	BOND CONDUCTOR SIZE	CONDUCTOR JACKET [CONDUIT]	NUMBER OF CONDUCTORS
1	PV MODULE TO RSD DEVICE	600 Vdc	20.2 A	-	25.0 A [75°C / 100%]	12 AWG [COPPER]	N/A [ARRAY]	RPVU [PV ARRAY]	2C
2	RSD DEVICE TO EXTERIOR JUNCTION BOX	600 Vdc	20.2 A	-	25.0 A [75°C / 100%]	12 AWG [COPPER]	6 AWG [COPPER]	RPVU [PV ARRAY]	2C
3	EXTERIOR JUNCTION BOX TO INVERTER (TYPICAL OF 3)	600 Vdc	20.2 A	-	24.5 A [75°C / 70%]	10 AWG [COPPER]	6 AWG [COPPER]	RPVU [53MM EMT]	(3) 20C 1 BND

AC WIRING SCHEDULE

N5

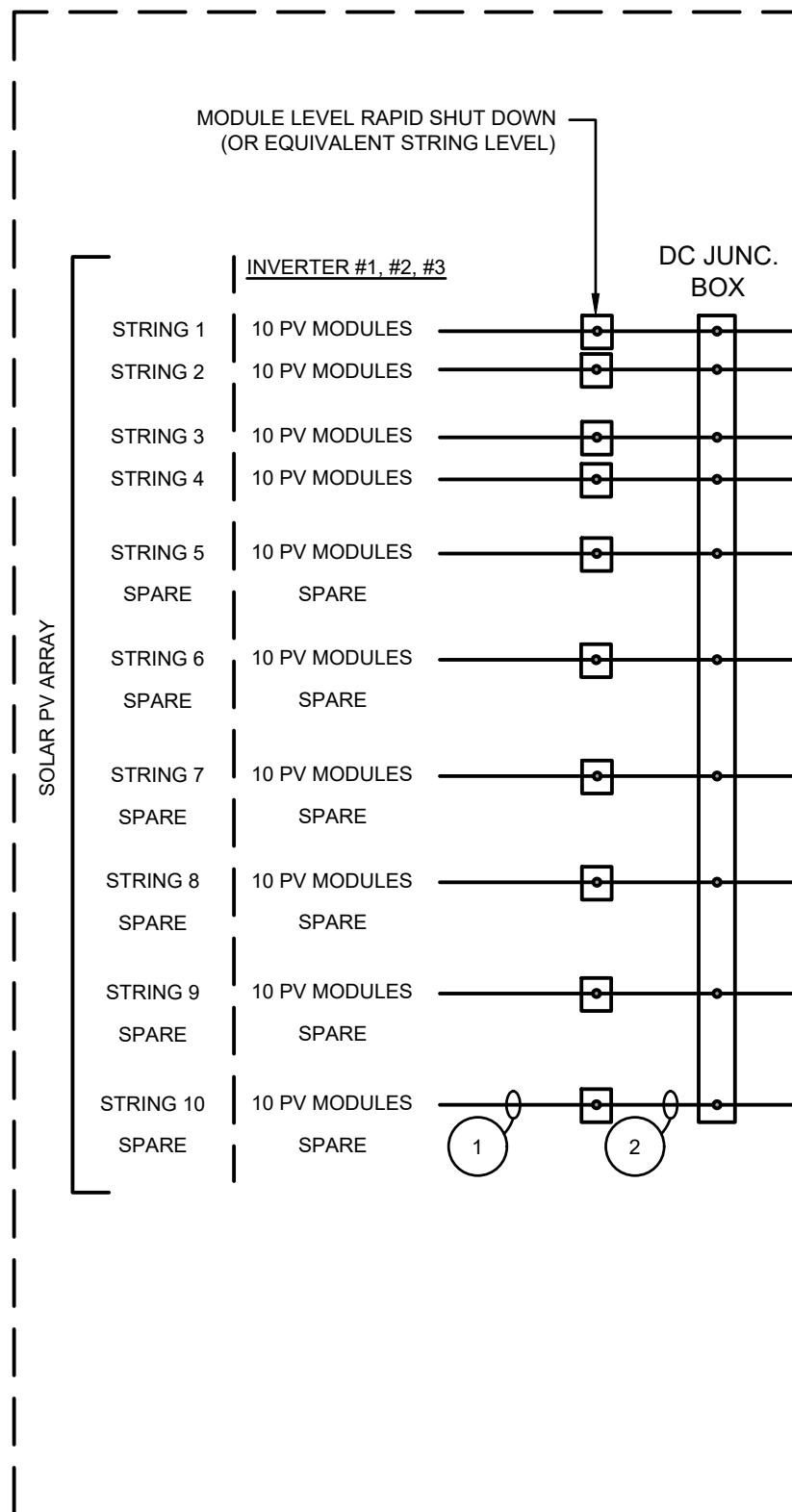
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4	INVERTER TO DG-P1 PANELBOARD	208 V	138.2 A	200 A	200 A [75°C / 100%]	3/0 AWG [COPPER]	6 AWG [COPPER]	RW90 [53MM EMT]	3C + 1N 1 BND
5	DG-P1 PANELBOARD TO EXTERIOR ISOLATION DISCONNECT	208 V	414.7 A	550 A	620 A [75°C / 100%]	2 x 350 MCM [COPPER]	2 x 3 AWG [COPPER]	RW90 [78MM EMT]	(2) 3C + 1N 1 BND

OVERCURRENT PROTECTION

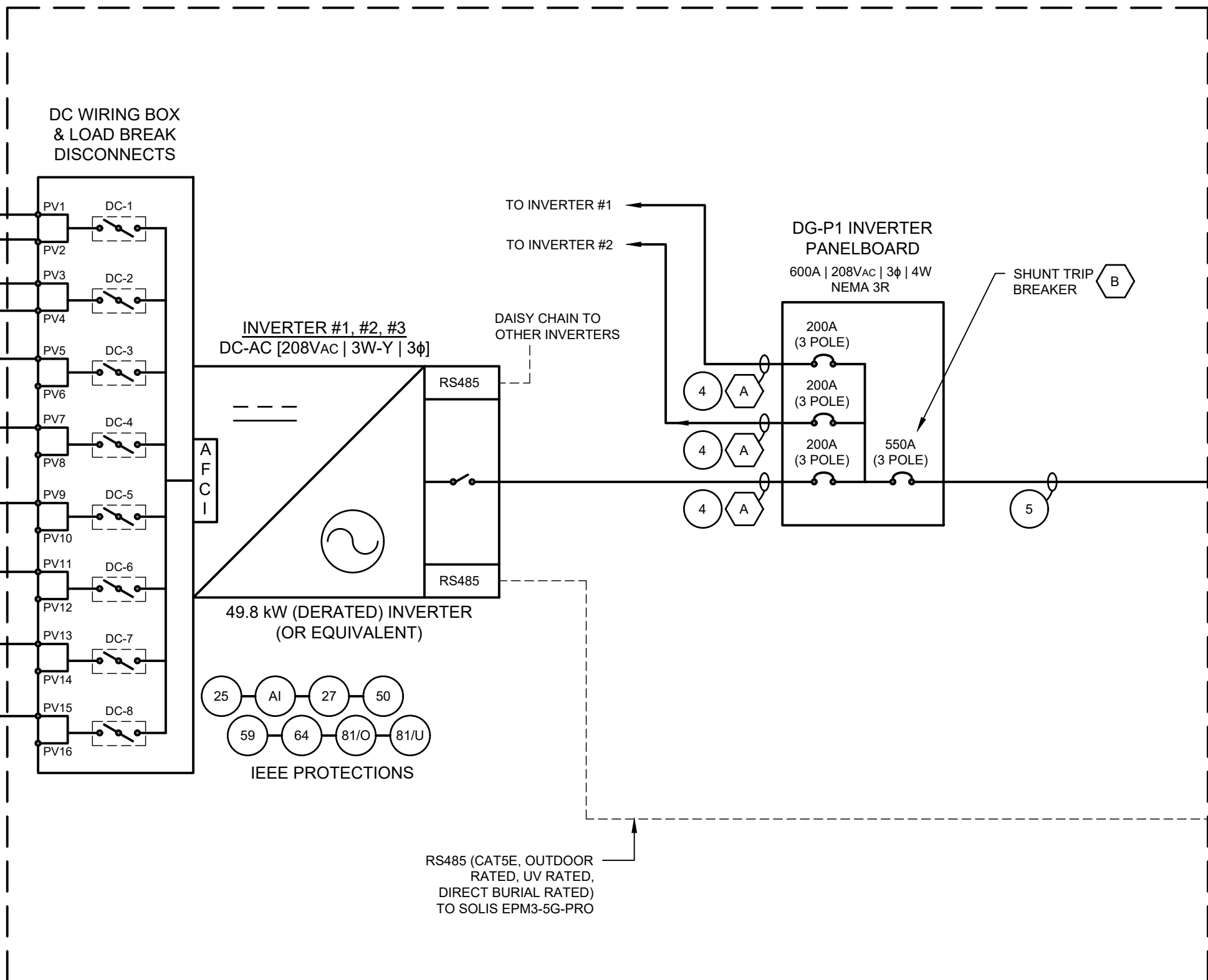
N7

ID	DESCRIPTION	NOMINAL VOLTAGE	SHORT CIRCUIT FAULT CURRENT	INTERRUPT RATING	OCPD AMPERE RATING	OVER-CURRENT DEVICE	NUMBER OF DEVICES
A	SUB-BREAKER - DG-P1 INVERTER PANELBOARD	208 V	TBD	35 KAIC	200 A [80%]	AC BREAKER	3
B	MAIN BREAKER - DG-P1 INVERTER PANELBOARD	208 V	TBD	35 KAIC	550 A [80%]	AC BREAKER	1

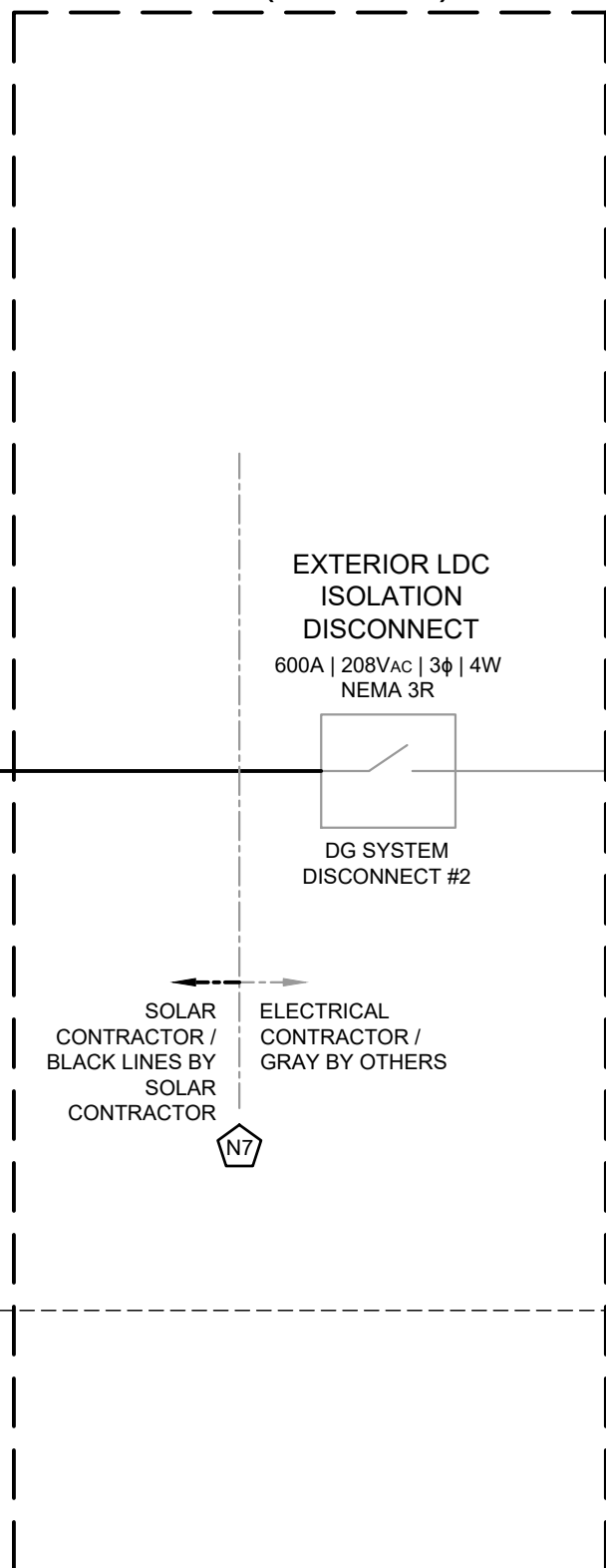
SOLAR PV ARRAY [ROOF]



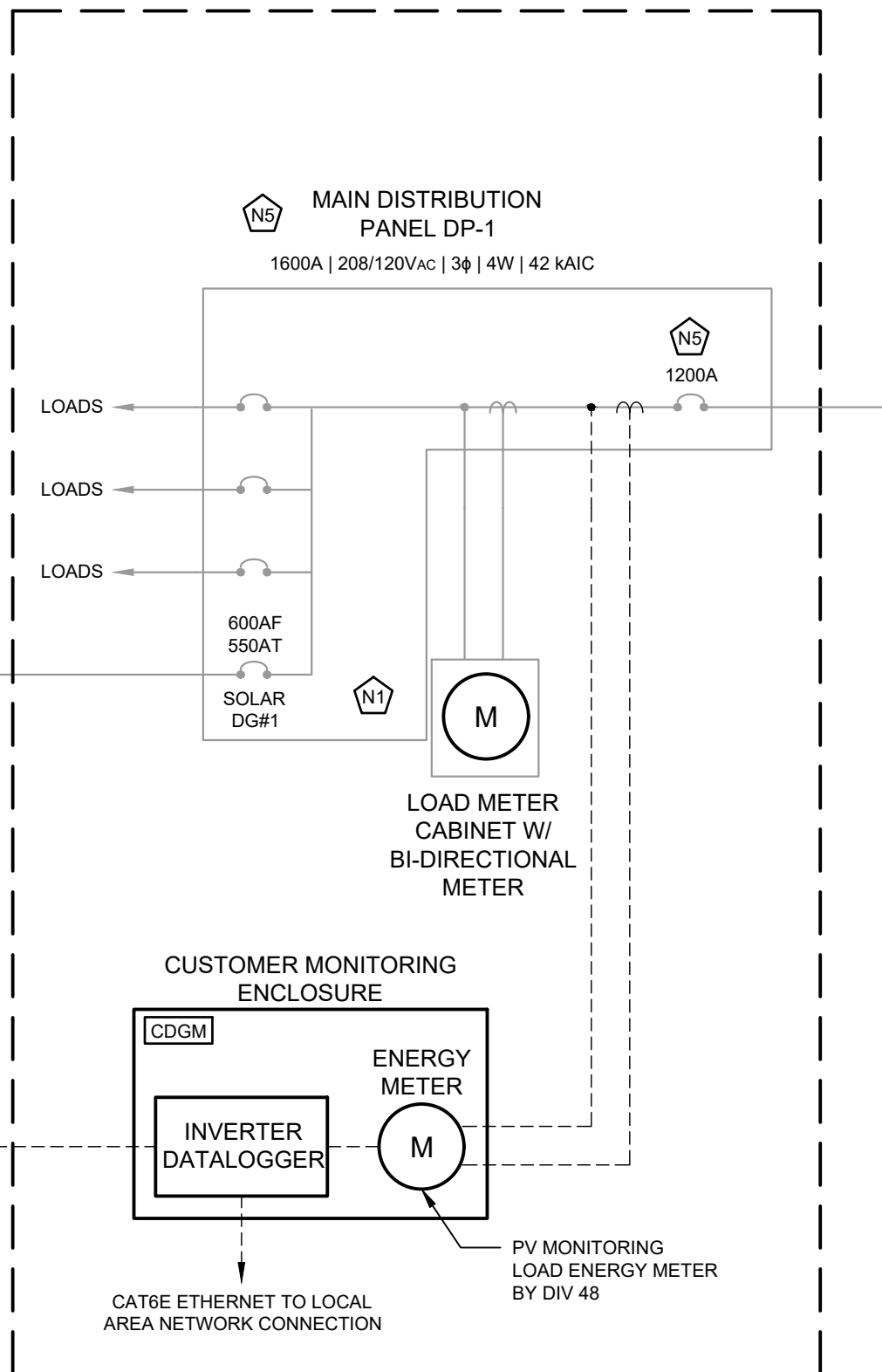
INTERIOR LOCATION [MECHANICAL 120]



EXTERIOR (SOUTH)



EQUIPMENT IN ELECTRICAL ROOM

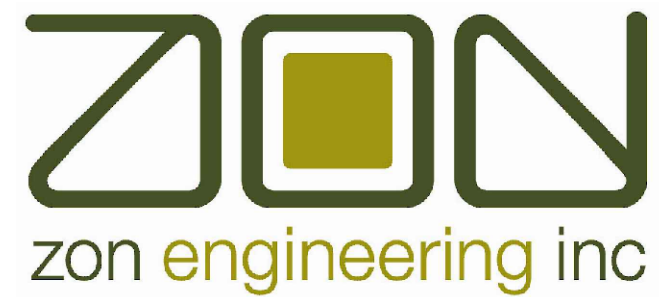


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DRAWING TITLE:

SINGLE LINE DIAGRAM

DRAWING NUMBER:

PV-201