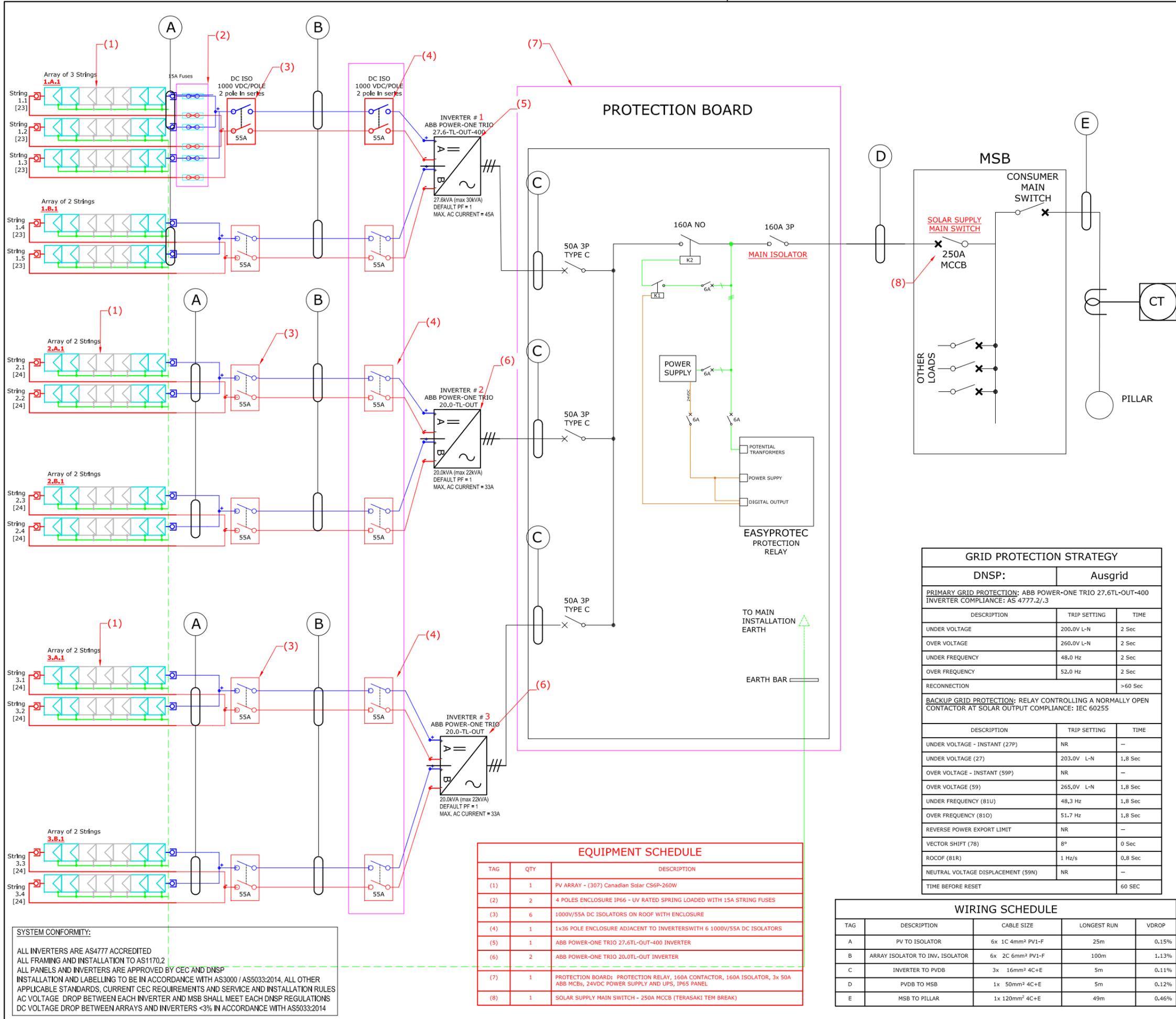


- 
1. Technology: Solar PV
  2. Maximum Power: 60 kW
  3. Contribution to fault levels: N/A
  4. Size & rating of the relevant Transformer: N/A
  5. Single line diagram: refer to following page
  6. Protection Systems & Communication Systems: refer to following page
  7. Voltage Control and reactive power capability: N/A
  8. Details specific to the location of facility: N/A



Rev	Date	Comments	Dwn	Chkd

**NOTES:**  
 ALL WIRING, COMPONENTS AND EARTHING MUST BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000 & 5033:2014 AND ALL THE CURRENT CEC REQUIREMENTS.  
 EARTHING CABLE RUNS ARE INDICATIVE ONLY. ONLY EARTH CABLES USED FOR PV MODULE BONDING ARE INDICATED FOR CLARITY.  
 AC VOLTAGE RISE TO MEET THE ASSOCIATED DNSP REGULATION. DC LOSSES BETWEEN ARRAYS (INCLUDING LOSSES IN STRING CABLES) AND INVERTERS TO BE <3%P.  
**NOTE - VOLTAGES OVER 600VDC**  
 SYSTEM MUST COMPLY WITH RESTRICTED ACCESS REQUIREMENTS. INSTALL PADLOCK ON ENCLOSURES IF REQUIRED AND ENSURE ALL WIRING AND SYSTEM COMPONENTS FOLLOW THE AS3000 DEFINITION OF RESTRICTED ACCESS. DOMESTIC DWELLING MUST NOT HAVE SYSTEMS OVER 600V.  
 CONDUITS, CABLE TRAYS AND ALL CABLE MANAGEMENT SYSTEMS MUST ALLOW FOR HEAT EXPANSION AS WELL TO AVOID DAMAGE TO CABLES AND SHALL BE INSTALLED SUCH THAT THEY WILL LAST FOR THE LIFE OF THE SYSTEM.



THIS DRAWING AND ALL SUPPORTING DOCUMENTS ARE THE INTELLECTUAL PROPERTY OF TODAE SOLAR AND PROTECTED BY COPYRIGHT. THESE SHALL NOT BE COPIED IN PART OR IN WHOLE WITHOUT THE WRITTEN CONSENT OF TODAE SOLAR

GRID PROTECTION STRATEGY		
DNSP:	Ausgrid	
PRIMARY GRID PROTECTION: ABB POWER-ONE TRIO 27.6TL-OUT-400 INVERTER COMPLIANCE: AS 4777.2/.3		
DESCRIPTION	TRIP SETTING	TIME
UNDER VOLTAGE	200.0V L-N	2 Sec
OVER VOLTAGE	260.0V L-N	2 Sec
UNDER FREQUENCY	48.0 Hz	2 Sec
OVER FREQUENCY	52.0 Hz	2 Sec
RECONNECTION		>60 Sec
BACKUP GRID PROTECTION: RELAY CONTROLLING A NORMALLY OPEN CONTACTOR AT SOLAR OUTPUT COMPLIANCE: IEC 60255		
DESCRIPTION	TRIP SETTING	TIME
UNDER VOLTAGE - INSTANT (27P)	NR	-
UNDER VOLTAGE (27)	203.0V L-N	1.8 Sec
OVER VOLTAGE - INSTANT (59P)	NR	-
OVER VOLTAGE (59)	265.0V L-N	1.8 Sec
UNDER FREQUENCY (81U)	48.3 Hz	1.8 Sec
OVER FREQUENCY (81O)	51.7 Hz	1.8 Sec
REVERSE POWER EXPORT LIMIT	NR	-
VECTOR SHIFT (78)	8°	0 Sec
ROCOF (81R)	1 Hz/s	0.8 Sec
NEUTRAL VOLTAGE DISPLACEMENT (59N)	NR	-
TIME BEFORE RESET		60 SEC

EQUIPMENT SCHEDULE		
TAG	QTY	DESCRIPTION
(1)	1	PV ARRAY - (307) Canadian Solar CS6P-260W
(2)	2	4 POLES ENCLOSURE IP66 - UV RATED SPRING LOADED WITH 15A STRING FUSES
(3)	6	1000V/55A DC ISO ISOLATORS ON ROOF WITH ENCLOSURE
(4)	1	1x36 POLE ENCLOSURE ADJACENT TO INVERTERS WITH 6 1000V/55A DC ISOLATORS
(5)	1	ABB POWER-ONE TRIO 27.6TL-OUT-400 INVERTER
(6)	2	ABB POWER-ONE TRIO 20.0TL-OUT INVERTER
(7)	1	PROTECTION BOARD: PROTECTION RELAY, 160A CONTACTOR, 160A ISOLATOR, 3x 50A ABB MCBs, 24VDC POWER SUPPLY AND UPS, IP65 PANEL
(8)	1	SOLAR SUPPLY MAIN SWITCH - 250A MCCB (TERASAKI TEM BREAK)

WIRING SCHEDULE				
TAG	DESCRIPTION	CABLE SIZE	LONGEST RUN	VDROP
A	PV TO ISOLATOR	6x 1C 4mm² PV1-F	25m	0.15%
B	ARRAY ISOLATOR TO INV. ISOLATOR	6x 2C 6mm² PV1-F	100m	1.13%
C	INVERTER TO PVDB	3x 16mm² 4C+E	5m	0.11%
D	PVDB TO MSB	1x 50mm² 4C+E	5m	0.12%
E	MSB TO PILLAR	1x 120mm² 4C+E	49m	0.46%

**SYSTEM CONFORMITY:**  
 ALL INVERTERS ARE AS4777 ACCREDITED  
 ALL FRAMING AND INSTALLATION TO AS1170.2  
 ALL PANELS AND INVERTERS ARE APPROVED BY CEC AND DNSP  
 INSTALLATION AND LABELLING TO BE IN ACCORDANCE WITH AS3000 / AS5033:2014. ALL OTHER APPLICABLE STANDARDS, CURRENT CEC REQUIREMENTS AND SERVICE AND INSTALLATION RULES  
 AC VOLTAGE DROP BETWEEN EACH INVERTER AND MSB SHALL MEET EACH DNSP REGULATIONS  
 DC VOLTAGE DROP BETWEEN ARRAYS AND INVERTERS <3% IN ACCORDANCE WITH AS5033:2014

PROJECT NAME:  
**MCPV1357**

CLIENT'S NAME:  
 [REDACTED]

Project Address:  
 [REDACTED]

Sheet Title:  
**ELECTRICAL SCHEMATIC**  
**DC and AC**

Drawn	Date	Checked	Date
[REDACTED]	23/03/2016	JJ	23/03/2016

Status:  
**GRID CONNECTION**

Scale:  
 NTS@A3

Drawing No.  
 300

Revision  
 0