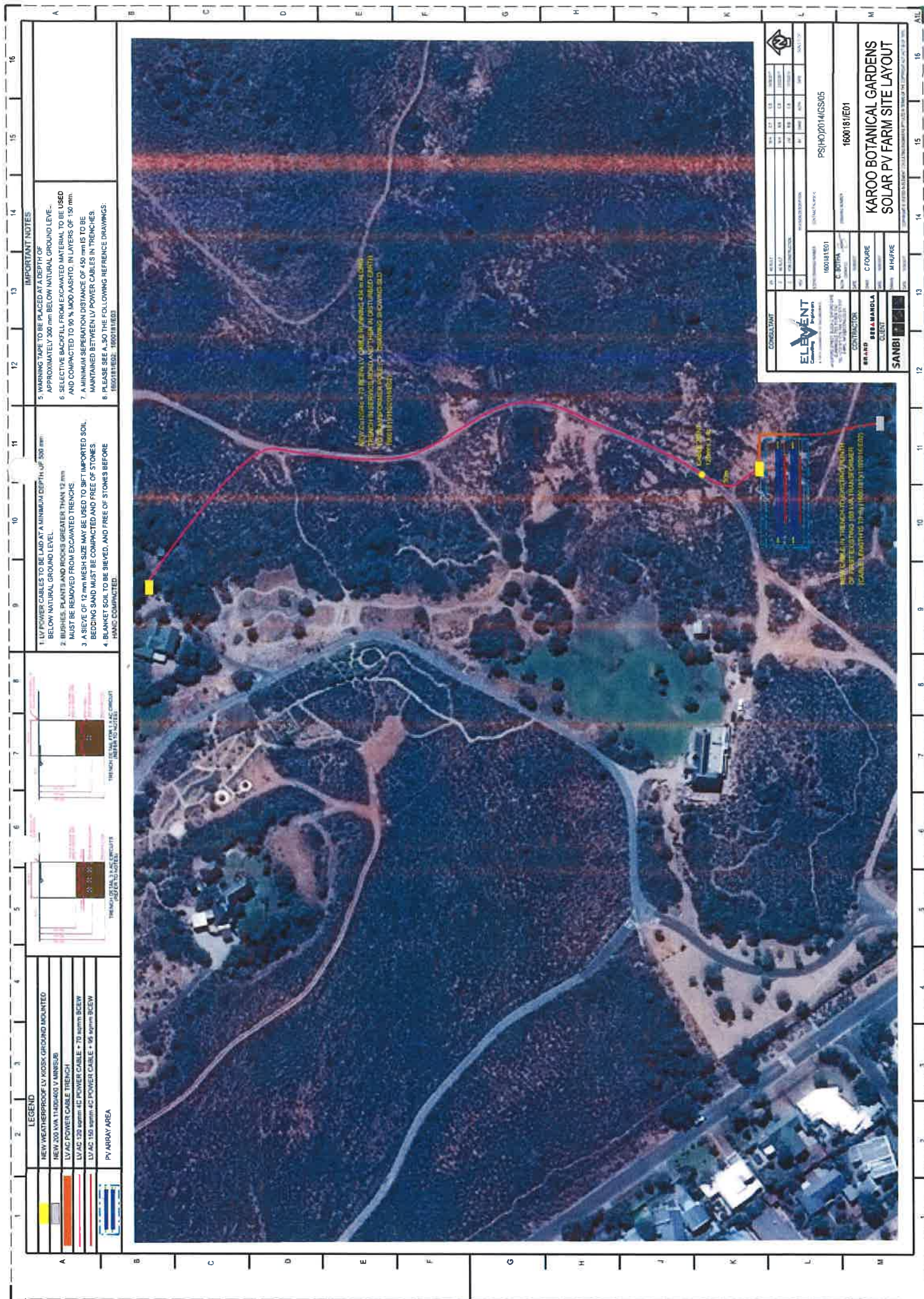


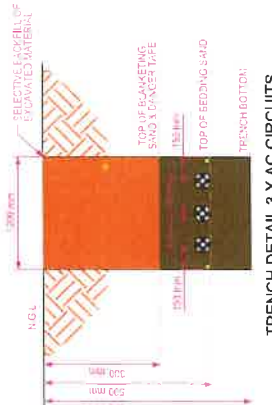
KAROO BOTANICAL GARDEN

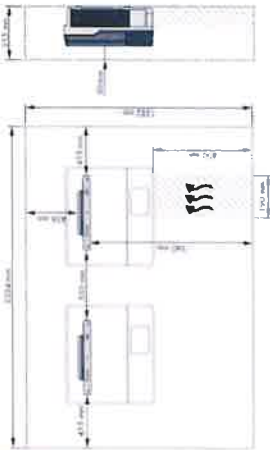
CONSTRUCTION DRAWINGS

KAROO BOTANICAL GARDEN

AS-BUILT DRAWINGS







LABEL SAMPLE FOR EG

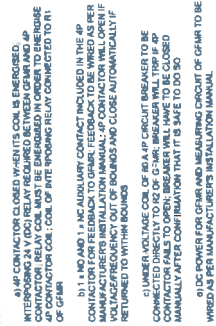
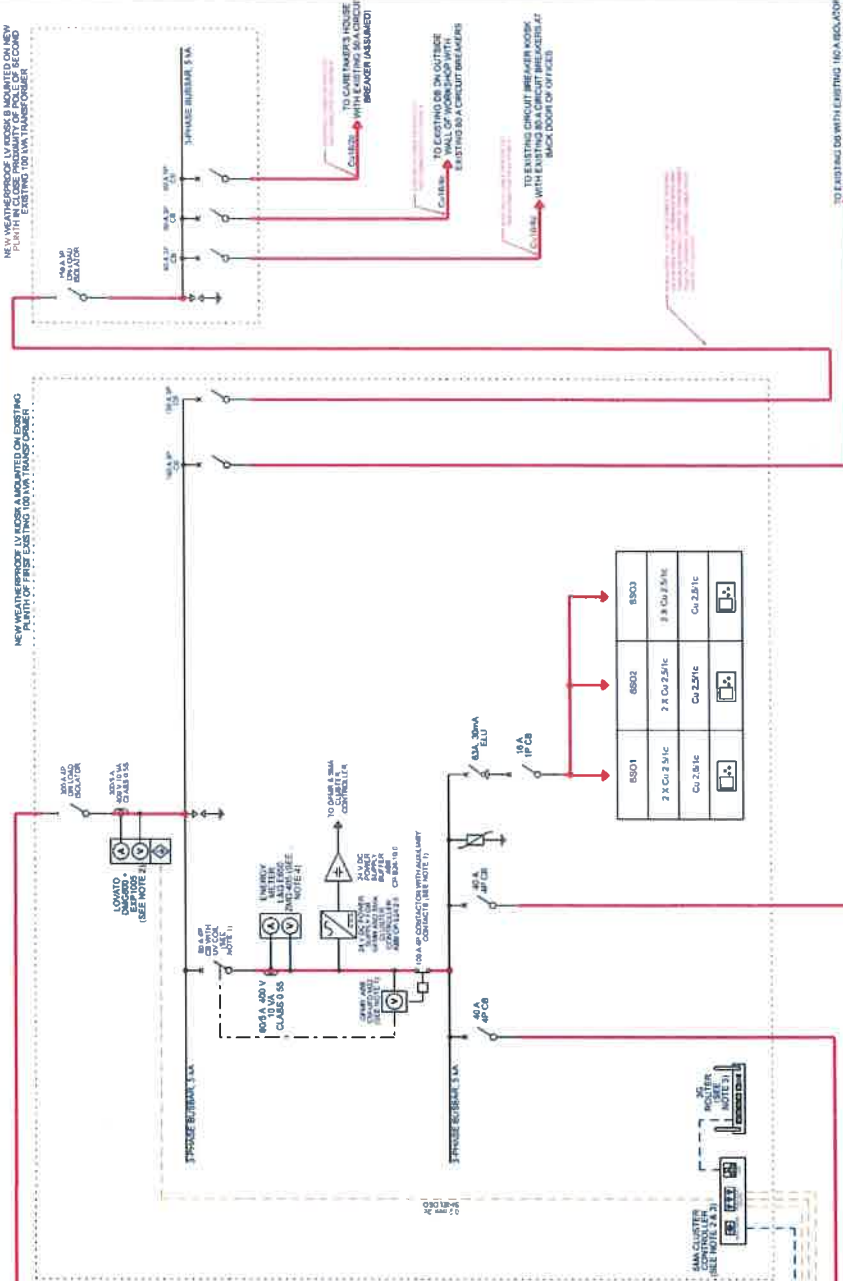
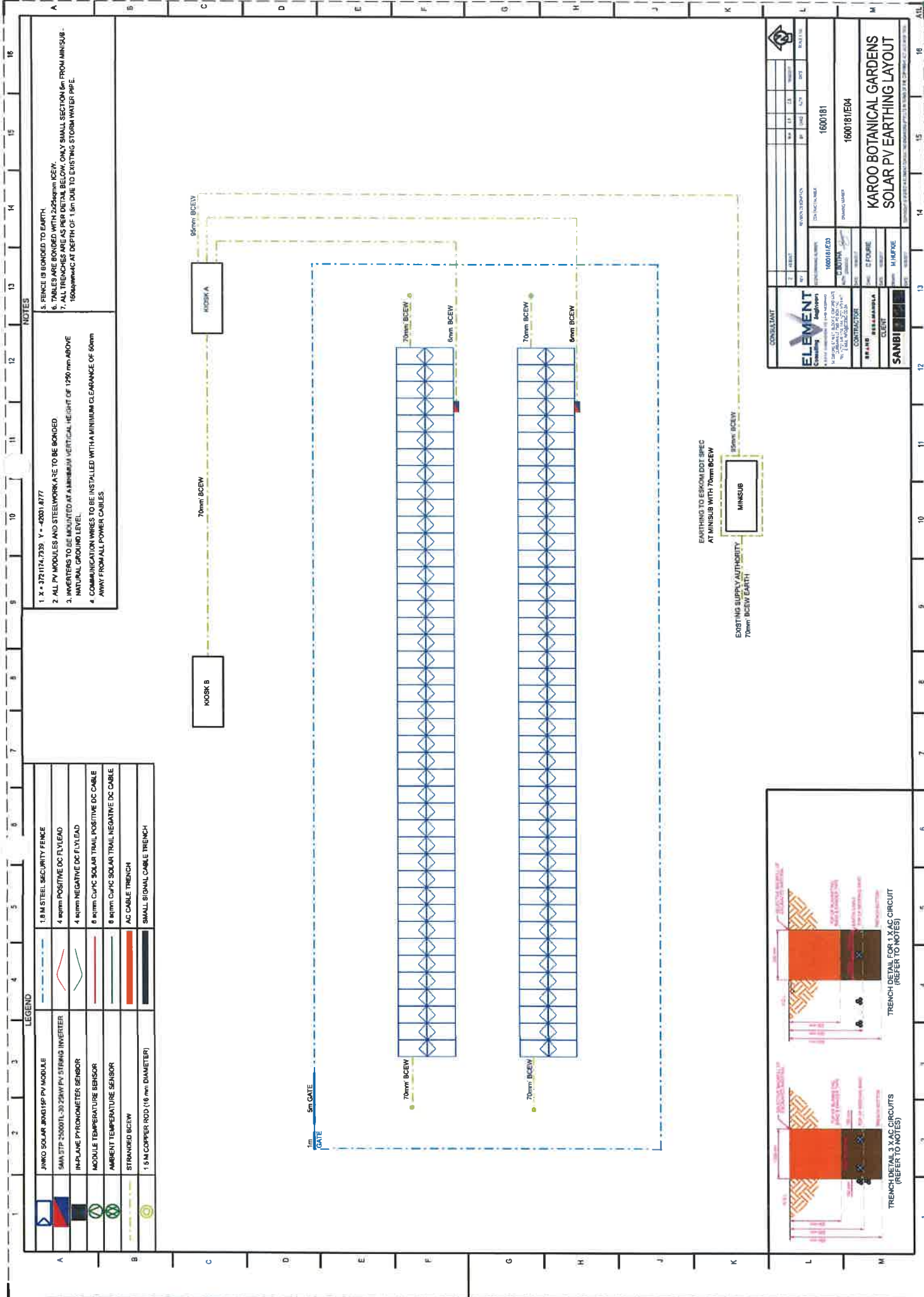


Figure 1 is a schematic diagram of the power distribution system for the test facility. It shows a 120 V AC source connected to a 300 A main breaker. The system is divided into three main sections: 1) A 120 V AC section with three 14-module, 100-watt solar panels connected to a 120 V AC source. 2) A 120 V AC section with three 14-module, 100-watt solar panels connected to a 120 V AC source. 3) A 120 V AC section with three 14-module, 100-watt solar panels connected to a 120 V AC source. The diagram also shows a 120 V AC source connected to a 120 V AC source. The diagram is labeled "SHEET 1 OF 2" and "SHEET 2 OF 2".

[illegible]



- NOTES
- 1. X = 3721174.7333 Y = 4200.8777
 - 2. ALL PV MODULES AND STEELWORK ARE TO BE BONDED
 - 3. INVERTERS TO BE MOUNTED AT MINIMUM VERTICAL HEIGHT OF 1200 mm ABOVE NATURAL GROUND LEVEL
 - 4. COMMUNICATION WIRES TO BE INSTALLED WITH A MINIMUM CLEARANCE OF 50mm AWAY FROM ALL POWER CABLES
 - 5. FENCE IS BONDED TO EARTH
 - 6. TABLES ARE BONDED WITH 225sqmm ICEW
 - 7. ALL TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 8. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 9. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 10. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 11. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 12. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 13. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 14. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 15. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB
 - 16. TRENCHES ARE AS PER DETAIL BELOW. ONLY SMALL SECTION 5m FROM MINISUB

LEGEND	
JINKO SOLAR JSM51SP PV MODULE	1.8 M STEEL SECURITY FENCE
SMA 577 25000TL 30 72kW PV STRING INVERTER	4 sqmm POSITIVE DC FLY LEAD
IN-PLANE PYROMETER SENSOR	4 sqmm NEGATIVE DC FLY LEAD
MODULE TEMPERATURE SENSOR	6 sqmm CUPIC SOLAR TRAIL POSITIVE DC CABLE
AMBIENT TEMPERATURE SENSOR	6 sqmm CUPIC SOLAR TRAIL NEGATIVE DC CABLE
STRANDED BCEW	AC CABLE TRENCH
1.6 IN COPPER ROD (16 mm DIAMETER)	SMALL SIGNAL CABLE TRENCH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

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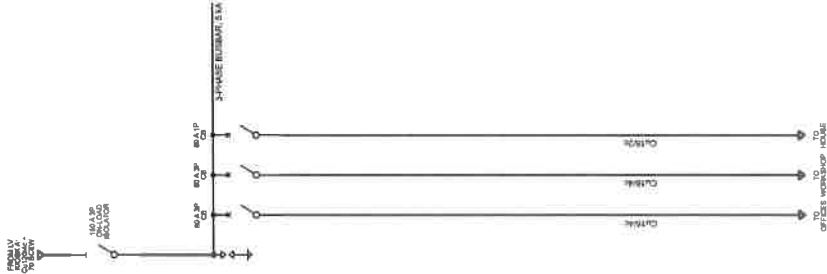
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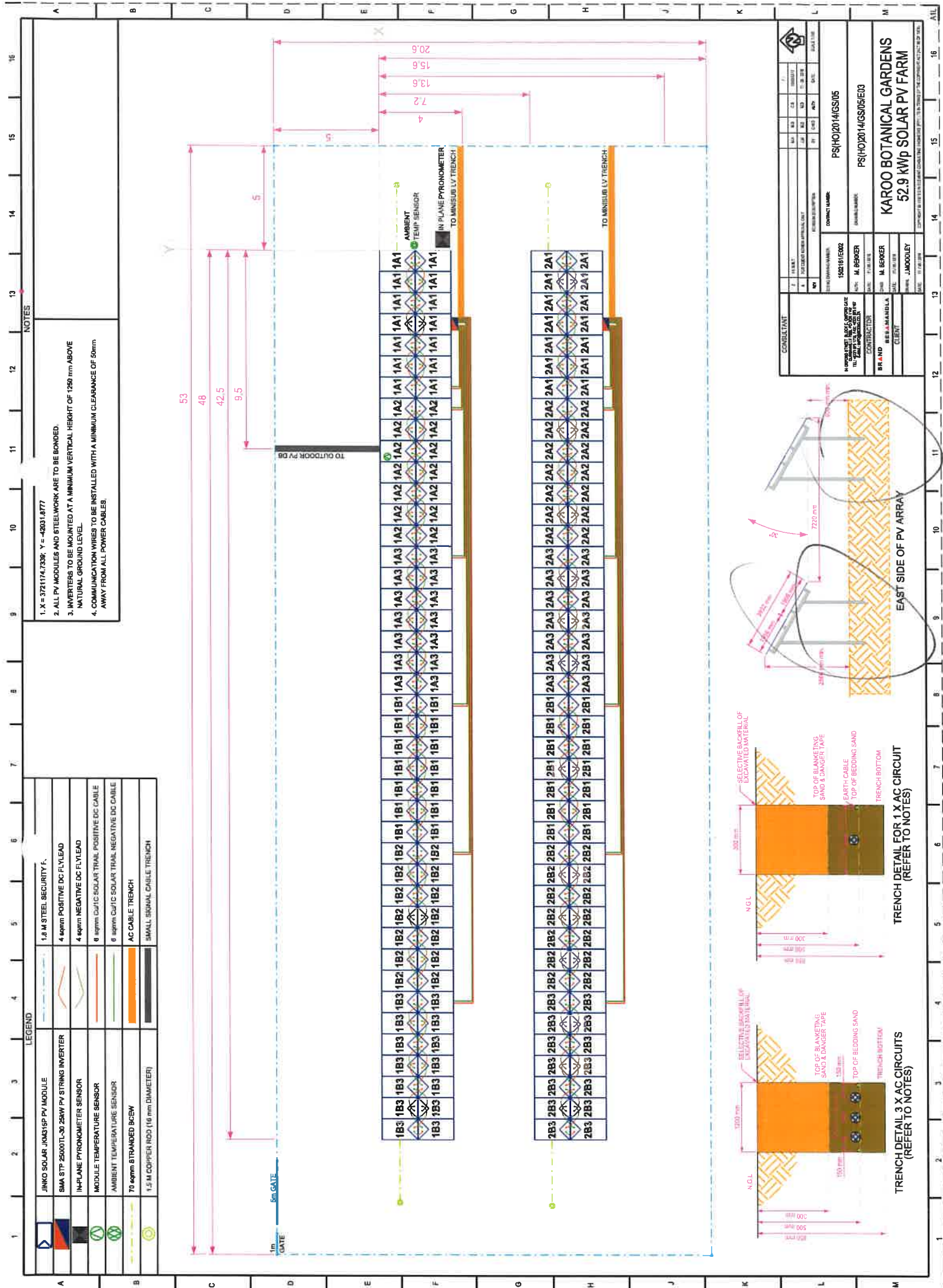
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

LEGEND			REFERENCED DRAWINGS	
SYMBOL	DESCRIPTION		DRAWING NUMBER	DESCRIPTION
—	AC CABLING		(1800181)1/10/2016/E02	OVERALL SCHEMATIC OF PV PLANT
→+→	CLASS I SURGE PROTECTION		(1800181)1/10/2016/E02a	SLD FOR LV KIOSK A



Detailed Cable Report

Project:	PV FOR WOCESTER BOTANICAL GARDENS										
Project No:	1600181		Document Number			1600171-CABLE SCHEDULE-18 AUGUST 2017					
Rev	Z										
Status	Date	Prepared	Checked	Approved	Remarks	Client Remarks / Date					
	18/08/2017	J Moody	C Foure	C Bolha 20090012	Issued for AS BUILT						
CABLE DETAIL											
AC/DC/Small signal/Communications	Cable type	From	To	Length (m)	Impedance (Ω/km)	Total impedance (Ω)	Typical Voltage (V)	Max Current PV Array (A)	Voltage drop (mV/A/m)	Voltage drop (V)	Loss (%)
DC CABLES											
DC	Cu 6mm ² Solar Trail	String 1/Inv 1(+)	Input A1/Inv 1(+)	6	3.39	0.02	470	9.01	8.65	0.47	0.09%
DC	Cu 6mm ² Solar Trail	String 1/Inv 1(-)	Input A1/Inv 1(-)	6	3.39	0.02	470	9.01	8.65	0.47	0.09%
DC	Cu 6mm ² Solar Trail	String 2/Inv 1(+)	Input A2/Inv 1(+)	8	3.39	0.03	470	9.01	8.65	0.62	0.13%
DC	Cu 6mm ² Solar Trail	String 2/Inv 1(-)	Input A2/Inv 1(-)	8	3.39	0.03	470	9.01	8.65	0.62	0.13%
DC	Cu 6mm ² Solar Trail	String 3/Inv 1(+)	Input A3/Inv 1(+)	15	3.39	0.05	470	9.01	8.65	1.17	0.24%
DC	Cu 6mm ² Solar Trail	String 3/Inv 1(-)	Input A3/Inv 1(-)	15	3.39	0.05	470	9.01	8.65	1.17	0.24%
DC	Cu 6mm ² Solar Trail	String 4/Inv 1(+)	Input B1/Inv 1(+)	22	3.39	0.07	470	9.01	8.65	1.71	0.36%
DC	Cu 6mm ² Solar Trail	String 4/Inv 1(-)	Input B1/Inv 1(-)	22	3.39	0.07	470	9.01	8.65	1.71	0.36%
DC	Cu 6mm ² Solar Trail	String 5/Inv 1(+)	Input B2/Inv 1(+)	29	3.39	0.10	470	9.01	8.65	2.26	0.48%
DC	Cu 6mm ² Solar Trail	String 5/Inv 1(-)	Input B2/Inv 1(-)	29	3.39	0.10	470	9.01	8.65	2.26	0.48%
DC	Cu 6mm ² Solar Trail	String 6/Inv 1(+)	Input B3/Inv 1(+)	36	3.39	0.12	470	9.01	8.65	2.81	0.59%
DC	Cu 6mm ² Solar Trail	String 6/Inv 1(-)	Input B3/Inv 1(-)	36	3.39	0.12	470	9.01	8.65	2.81	0.59%
DC	Cu 6mm ² Solar Trail	String 1/Inv 2(+)	Input A1/Inv 2(+)	6	3.39	0.02	470	9.01	8.65	0.47	0.09%
DC	Cu 6mm ² Solar Trail	String 1/Inv 2(-)	Input A1/Inv 2(-)	6	3.39	0.02	470	9.01	8.65	0.47	0.09%
DC	Cu 6mm ² Solar Trail	String 2/Inv 2(+)	Input A2/Inv 2(+)	8	3.39	0.03	470	9.01	8.65	0.62	0.13%
DC	Cu 6mm ² Solar Trail	String 2/Inv 2(-)	Input A2/Inv 2(-)	8	3.39	0.03	470	9.01	8.65	0.62	0.13%
DC	Cu 6mm ² Solar Trail	String 3/Inv 2(+)	Input A3/Inv 2(+)	15	3.39	0.05	470	9.01	8.65	1.17	0.24%
DC	Cu 6mm ² Solar Trail	String 3/Inv 2(-)	Input A3/Inv 2(-)	15	3.39	0.05	470	9.01	8.65	1.17	0.24%
DC	Cu 6mm ² Solar Trail	String 4/Inv 2(+)	Input B1/Inv 2(+)	22	3.39	0.07	470	9.01	8.65	1.71	0.36%
DC	Cu 6mm ² Solar Trail	String 4/Inv 2(-)	Input B1/Inv 2(-)	22	3.39	0.07	470	9.01	8.65	1.71	0.36%
DC	Cu 6mm ² Solar Trail	String 5/Inv 2(+)	Input B2/Inv 2(+)	29	3.39	0.10	470	9.01	8.65	2.26	0.48%
DC	Cu 6mm ² Solar Trail	String 5/Inv 2(-)	Input B2/Inv 2(-)	29	3.39	0.10	470	9.01	8.65	2.26	0.48%
DC	Cu 6mm ² Solar Trail	String 6/Inv 2(+)	Input B3/Inv 2(+)	36	3.39	0.12	470	9.01	8.65	2.81	0.59%
DC	Cu 6mm ² Solar Trail	String 6/Inv 2(-)	Input B3/Inv 2(-)	36	3.39	0.12	470	9.01	8.65	2.81	0.59%
AS CABLES											
AC	Cu 10mm ²	Inverter 1	LV KIOSK A	45	2.19	0.10	400	40	3.793	6.83	1.70%
AC	Cu 10mm ²	Inverter 2	LV KIOSK A	52	2.19	0.11	400	40	3.793	7.89	1.97%
AC	Cu 150mm ²	NEW 200kVA 11400/400V MINISUB	LV KIOSK A	73	0.1698	0.01	400	300	0.294	6.44	1.61%
	Cu 95mm ² BCEW	NEW 200kVA 11400/400V MINISUB	LV KIOSK A	73							
AC	Cu 120mm ²	LV KIOSK A	LV KIOSK B	349	0.2012	0.07	400	150	0.348	18.22	4.55%
AC	Cu 70mm ² BCEW	LV KIOSK A	LV KIOSK B	349							
COMMS CABLES											
SMALL SIGNAL (mV)	Cu 0.2mm ² SHIELDED	IN PLANE PYRANOMETER	CLUSTER CONTROLLER	16							
SMALL SIGNAL (mA)	Cu 0.2mm ² SHIELDED	MOD. TEMP SENSOR	CLUSTER CONTROLLER	14							
SMALL SIGNAL (mA)	Cu 0.2mm ² SHIELDED	AMB. TEMP SENSOR	CLUSTER CONTROLLER	16							
COMMS CABLES	CAT6 SHIELDED	CLUSTER CONTROLLER	Inverter 1	45							
COMMS CABLES	CAT6 SHIELDED	Inverter 1	Inverter 2	36							

[illegible]

