

	PV MODULE
	LOAD BREAK DISCONNECTOR
	DC FUSE ENCLOSURE
	INVERTER
	SWITCHBOARD
	OBSTACLE
	DC CABLE TRAY
	AC CABLE TRAY
	PV ARRAY BOUNDARY

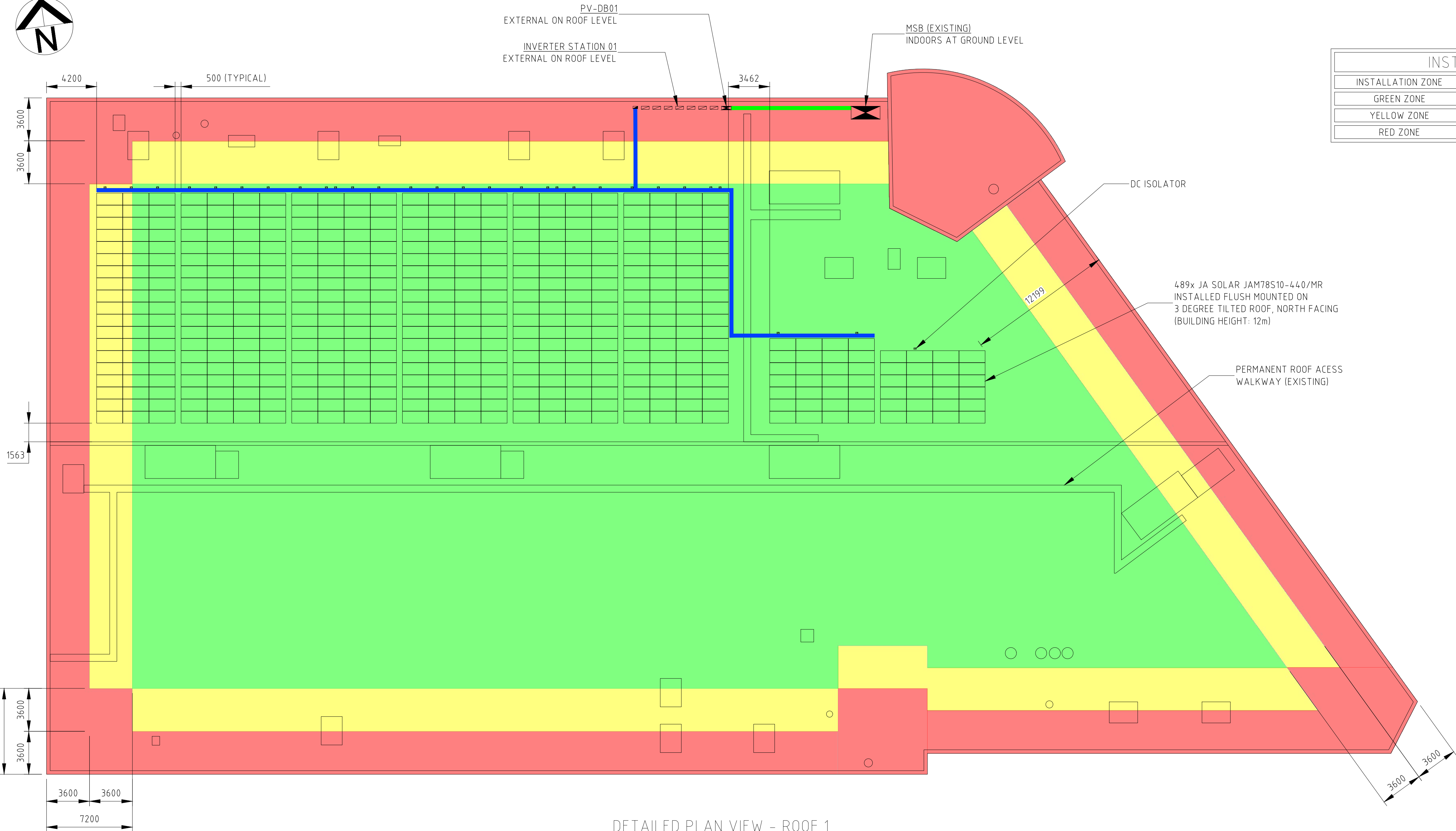
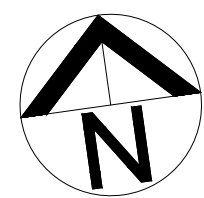
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REV	DATE	DRN	DETAILS	APR'D
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B

AUTHORISED		DESIGN PANEL		AUTHORISED	
06/11/2020		06/11/2020		06/11/2020	
A BONANNO		N.T.M		A BONANNO	
SIGNATURE		DRAWN		SIGNATURE	
		06/11/2020			
		N.T.M			
		REVIEWED			
		06/11/2020			
		H.SMITH			



A1 SHEET SIZE	TOTAL SHEETS:	0 REVISION
	PROJECT No: P1072	
SITE ID:		
SUPERSEDES:		
DRAWING NUMBER P1072-01-001-01		

CONSTRUCTION ISSUE



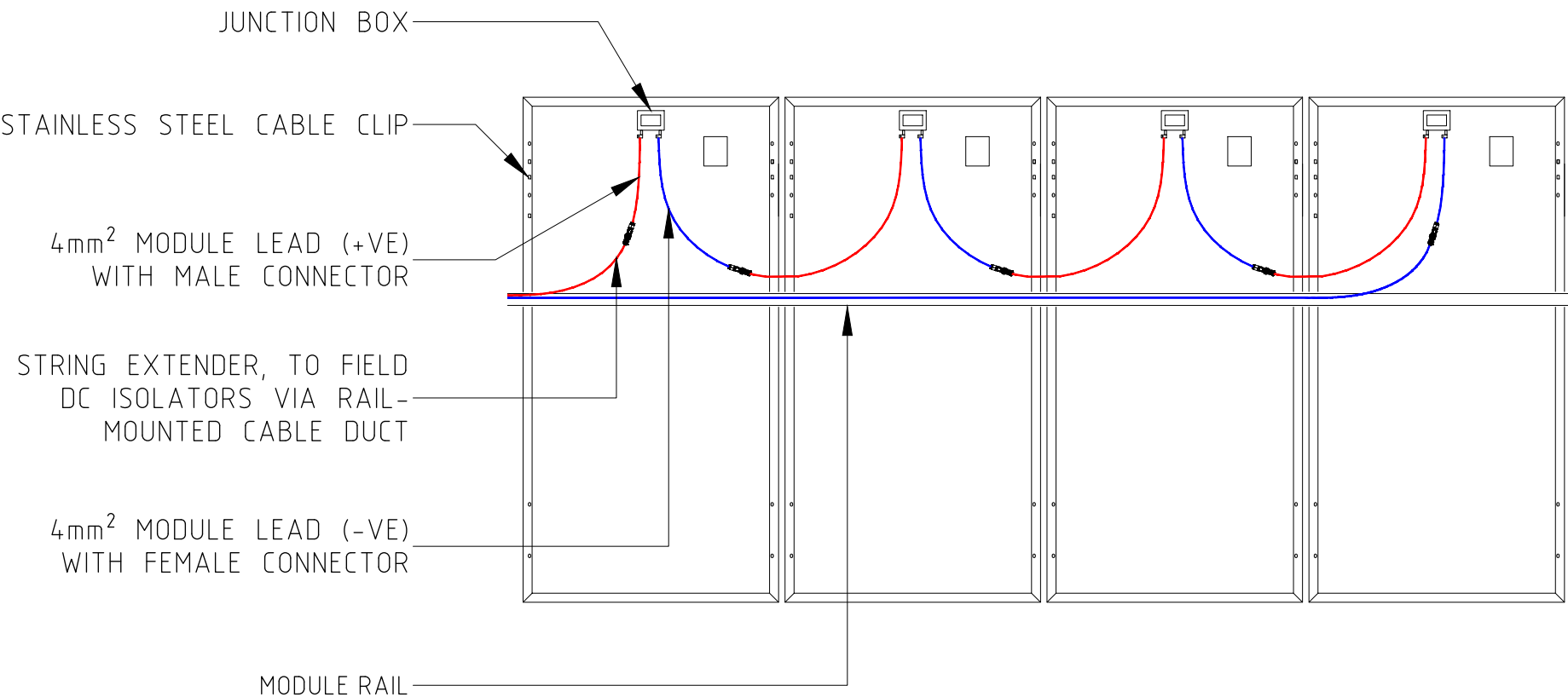
DETAILED PLAN VIEW - ROOF 1
SCALE 1:200

INSTALLATION DETAILS (PERPENDICULAR TO PURLIN)			
INSTALLATION ZONE	INSTALLATION CONDITIONS	PURLIN SPACING (mm)	NUMBER OF RAILS
GREEN ZONE	ENTIRE ZONE SUFFICIENT	1200	2 RAILS MINIMUM
YELLOW ZONE	ENTIRE ZONE SUFFICIENT		3 RAILS MINIMUM
RED ZONE	NO PV PANELS TO BE INSTALLED		-

ROOF 1 SYSTEM SPECIFICATION		
MODULE	489	JA SOLAR JAM78S10-440/MR
INVERTER	5	SMA STP 25000TL-30
	1	SMA STP 20000TL-30
DC CAPACITY	215.16	kWp
AC CAPACITY	165.00	kVA
DC/AC RATIO	1.30	

LEGEND:	
	PV MODULE
	LOAD BREAK DISCONNECTOR
	INVERTER
	SWITCHBOARD
	DC CABLE TRAY
	AC CABLE TRAY
	RED ZONE (NOTE 8)
	YELLOW ZONE (NOTE 8)
	GREEN ZONE (NOTE 8)

- NOTES:
- DO NOT SCALE FROM THIS DRAWING.
 - ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE VERIFIED ON SITE BY CONTRACTOR.
 - EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE
 - PRINT IN COLOUR.
 - THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
 - ALL EQUIPMENT TO BE INSTALLED AS PER MANUFACTURER SPECIFICATIONS.
 - ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
 - SOLAR ARRAY INSTALLATION DETAILS AS PER STRUCTURAL REPORT 8240-MOORABBIN-REV 1.



DAISY CHAIN WIRING METHOD EXAMPLE
SCALE 1:25

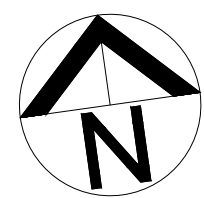
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SCALE (mm)

CONSTRUCTION ISSUE

REVISION PANEL				DESIGN PANEL				MOORABIN				A1	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	AUTHORISED	970 NEPEAN HWY				SHT SIZE	TOTAL SHEETS:
					A BONANNO	N.TAM	A BONANNO	MOORABBIN VIC 3189					0
					SIGNATURE	N.TAM	SIGNATURE	CIVIL/SITE					REVISION
						REVIEWED		DETAILED PLAN VIEW (ROOF 1)					
						H.SMITH							
0	06/11/2020	N.T.	ISSUED FOR REVIEW	A.B									



SUPERSEDES:
DRAWING NUMBER
P1072-01-002-01



ROOF 2 SYSTEM SPECIFICATION		
MODULE	425	JA SOLAR JAM78S10-440/MR
INVERTER	5	SMA STP 25000TL-30
	1	SMA STP 20000TL-30
DC CAPACITY	187.00	kWp
AC CAPACITY	145.00	kVA
DC/AC RATIO	1.29	

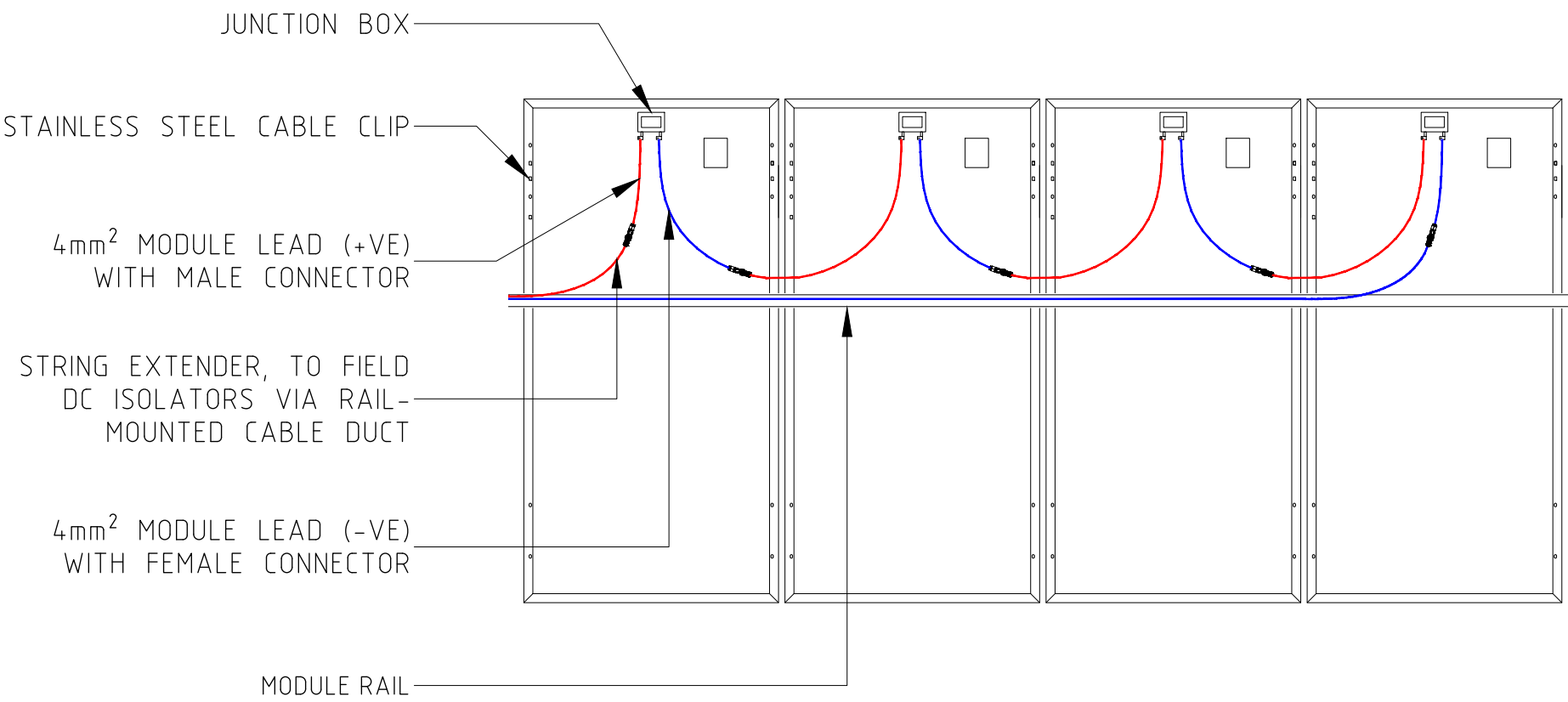
INSTALLATION DETAILS (PERPENDICULAR TO PURLIN)			
INSTALLATION ZONE	INSTALLATION CONDITIONS	PURLIN SPACING (mm)	NUMBER OF RAILS
GREEN ZONE	ENTIRE ZONE SUFFICIENT	1200	2 RAILS MINIMUM
YELLOW ZONE	ENTIRE ZONE SUFFICIENT		3 RAILS MINIMUM
RED ZONE	NO PV PANELS TO BE INSTALLED		-

NOTES:

- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE VERIFIED ON SITE BY CONTRACTOR.
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE
- PRINT IN COLOUR.
- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
- ALL EQUIPMENT TO BE INSTALLED AS PER MANUFACTURER SPECIFICATIONS.
- ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
- SOLAR ARRAY INSTALLATION DETAILS AS PER STRUCTURAL REPORT 8240-MOORABBIN-REV 1.

LEGEND:

- PV MODULE
- LOAD BREAK DISCONNECTOR
- INVERTER
- SWITCHBOARD
- DC CABLE TRAY
- AC CABLE TRAY
- RED ZONE (NOTE 8)
- YELLOW ZONE (NOTE 8)
- GREEN ZONE (NOTE 8)



DAISY CHAIN WIRING METHOD EXAMPLE
SCALE 1:25

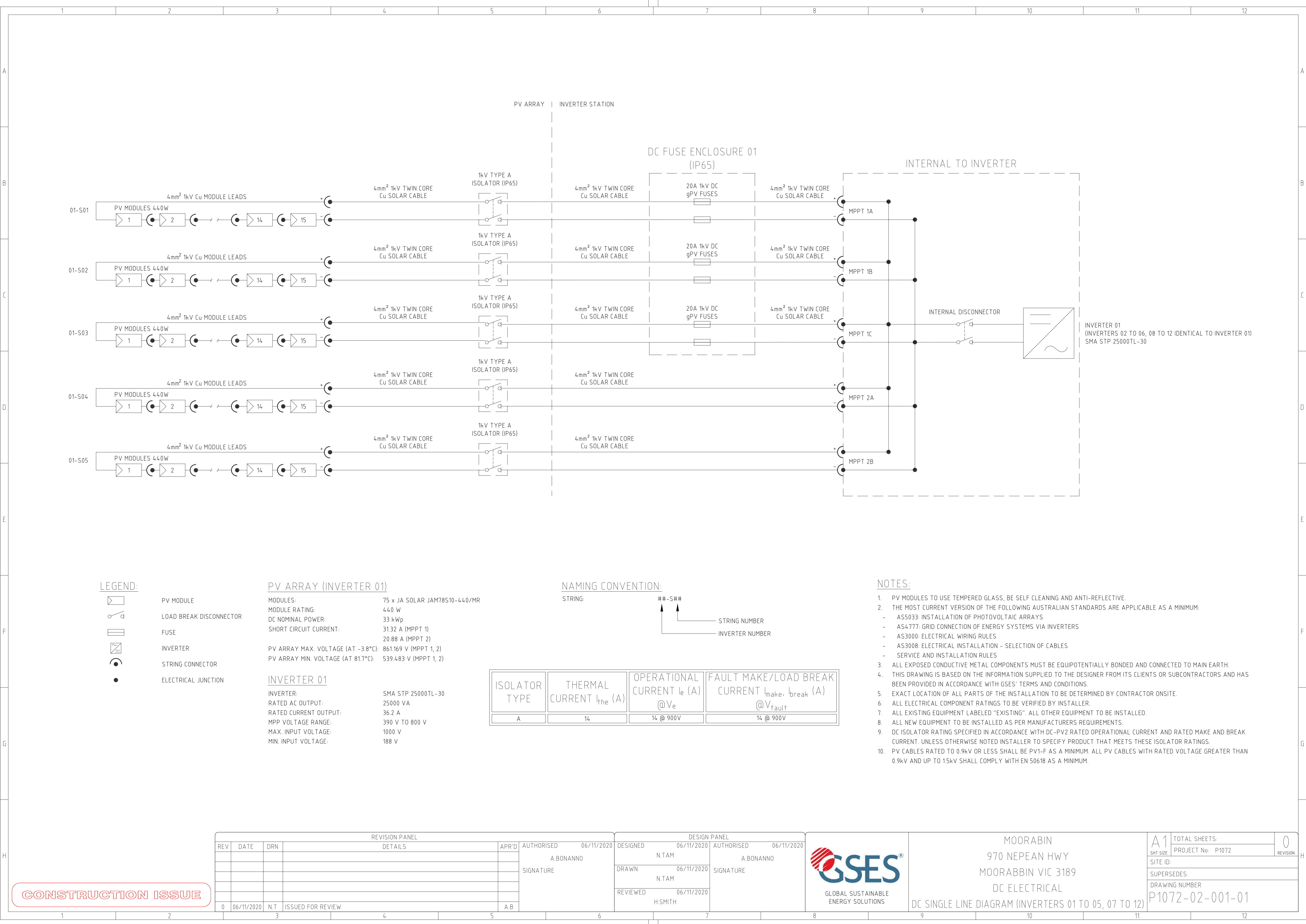
DETAILED PLAN VIEW - ROOF 2
SCALE 1:200

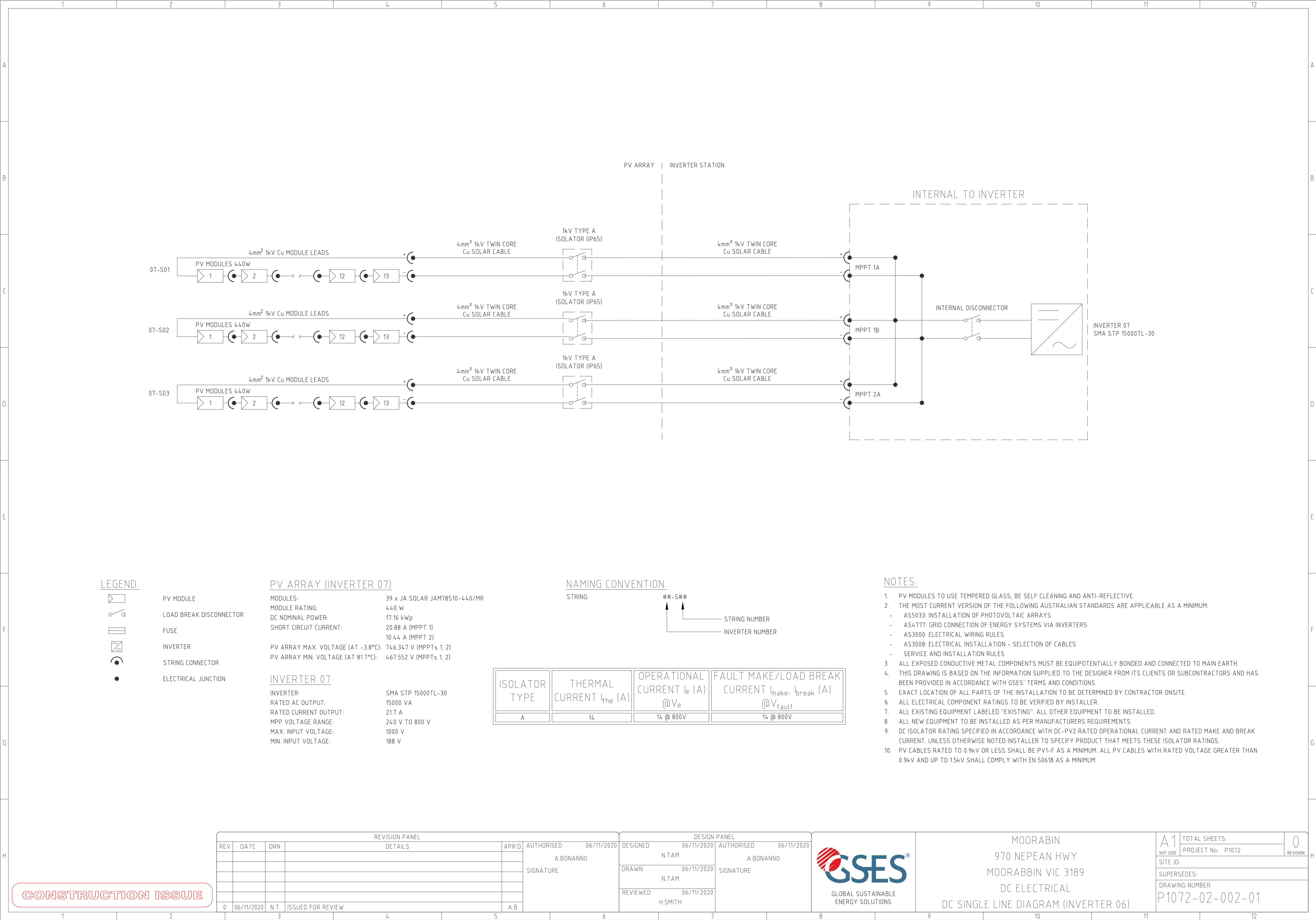
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SCALE (mm)

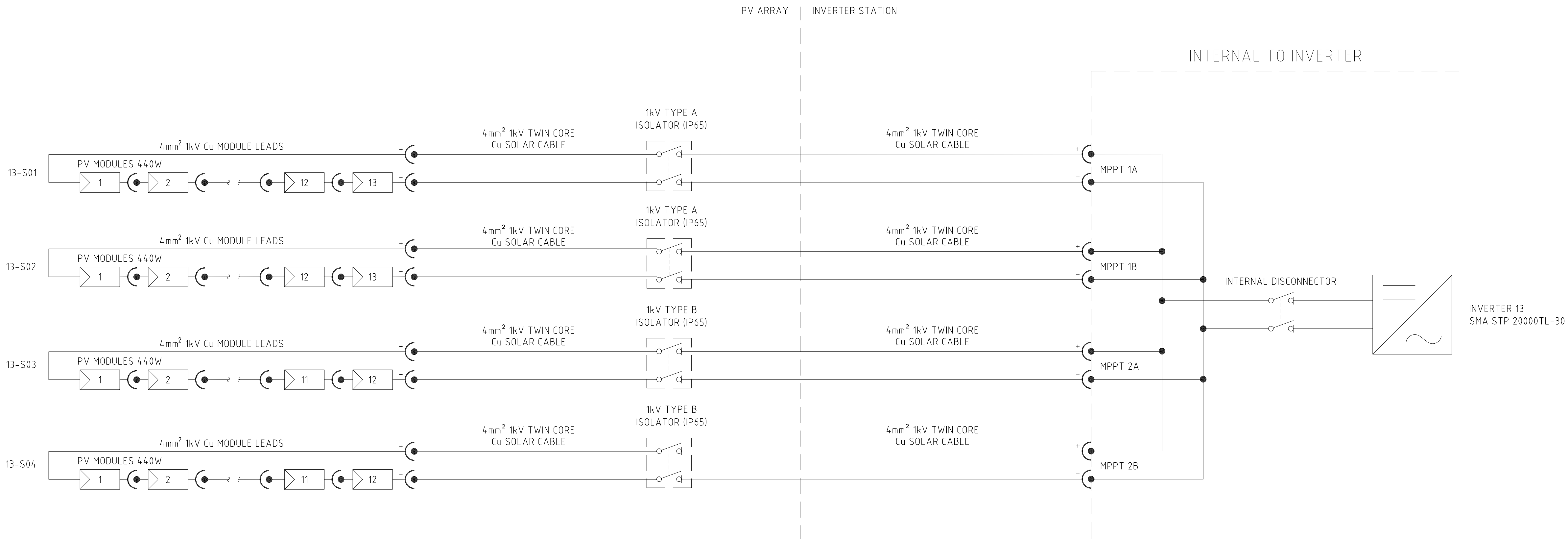
CONSTRUCTION ISSUE

REVISION PANEL				DESIGN PANEL				MOORABIN				A1	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	AUTHORISED	790 NEPEAN HWY				SHT SIZE	TOTAL SHEETS:
					A BONANNO	N.TAM	A BONANNO	MOORABBIN VIC 3189					0
					SIGNATURE	N.TAM	SIGNATURE	CIVIL/SITE					REVISION
						REVIEWED		DETAILED PLAN VIEW (ROOF 2)					
						H.SMITH							
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B									









LEGEND:

- PV MODULE
- LOAD BREAK DISCONNECTER
- FUSE
- INVERTER
- STRING CONNECTOR
- ELECTRICAL JUNCTION

PV ARRAY (INVERTER 13)

MODULES:	50 x JA SOLAR JAM78S10-440/MR
MODULE RATING:	440 W
DC NOMINAL POWER:	22 kWp
SHORT CIRCUIT CURRENT:	20.88 A (MPPTs 1, 2)
PV ARRAY MAX. VOLTAGE (AT -3.8°C):	746.347 V (MPPT 1)
	688.936 V (MPPT 2)
PV ARRAY MIN. VOLTAGE (AT 81.7°C):	467.552 V (MPPT 1)
	431.587 V (MPPT 2)

INVERTER 13

INVERTER:	SMA STP 20000TL-30
RATED AC OUTPUT:	20000 VA
RATED CURRENT OUTPUT:	29 A
MPP VOLTAGE RANGE:	320 V TO 800 V
MAX. INPUT VOLTAGE:	1000 V
MIN. INPUT VOLTAGE:	188 V

NAMING CONVENTION:

STRING:	##-S##
	↑ ↑
	STRING NUMBER
	INVERTER NUMBER

ISOLATOR TYPE	THERMAL CURRENT I_{the} (A)	OPERATIONAL CURRENT I_e (A) @ V_e	FAULT MAKE/LOAD BREAK CURRENT I_{make}, I_{break} (A) @ V_{fault}
A	14	14 @ 800V	14 @ 800V
B	14	14 @ 700V	14 @ 700V

NOTES:

- PV MODULES TO USE TEMPERED GLASS, BE SELF CLEANING AND ANTI-REFLECTIVE.
- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - SERVICE AND INSTALLATION RULES
- ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO MAIN EARTH.
- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
- ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
- ALL EXISTING EQUIPMENT LABELED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
- ALL NEW EQUIPMENT TO BE INSTALLED AS PER MANUFACTURERS REQUIREMENTS.
- DC ISOLATOR RATING SPECIFIED IN ACCORDANCE WITH DC-PV2 RATED OPERATIONAL CURRENT AND RATED MAKE AND BREAK CURRENT. UNLESS OTHERWISE NOTED INSTALLER TO SPECIFY PRODUCT THAT MEETS THESE ISOLATOR RATINGS.
- PV CABLES RATED TO 0.9kV OR LESS SHALL BE PV1-F AS A MINIMUM. ALL PV CABLES WITH RATED VOLTAGE GREATER THAN 0.9kV AND UP TO 15kV SHALL COMPLY WITH EN 50618 AS A MINIMUM.

CONSTRUCTION ISSUE

REVISION PANEL					DESIGN PANEL					 GLOBAL SUSTAINABLE ENERGY SOLUTIONS MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DC ELECTRICAL DC SINGLE LINE DIAGRAM (INVERTER 13)					A1		TOTAL SHEETS:	0
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED						06/11/2020	SHT SIZE	PROJECT No: P1072	REVISION
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					SIGNATURE				SIGNATURE							SITE ID:		
							N.TAM									SUPERSEDES:		
											DRAWING NUMBER							
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B			REVIEWED	06/11/2020			P1072-02-003-01							
							H.SMITH											





DC STRING LAYOUT (ROOF 1)

SCALE 1:200

NOTES:

1. THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - SERVICE AND INSTALLATION RULES
2. ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO MAIN EARTH.
3. THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
4. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
5. ALL EQUIPMENT TO BE INSTALLED AS PER MANUFACTURER REQUIREMENTS
6. DRAWING COLOUR CODED. PRINT IN COLOUR.

NAMING CONVENTION:

STRING:

##-S##

— STRING NUMBER

— INVERTER NUMBER

LEGEND:



PV MODULE



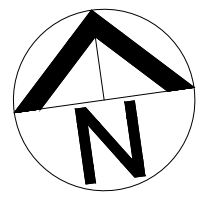
LOAD BREAK DISCONNECTOR

REVISION PANEL					DESIGN PANEL					 GLOBAL SUSTAINABLE ENERGY SOLUTIONS MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DC ELECTRICAL DC STRING LAYOUT (ROOF 1)		A1 TOTAL SHEETS:		0 REVISION	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED			06/11/2020	PROJECT No: P1072		
					A BONANNO		N.TAM		A BONANNO				SITE ID:		
					SIGNATURE		DRAWN	06/11/2020	SIGNATURE				SUPERSEDES:		
							N.TAM						DRAWING NUMBER		
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B			REVIEWED	06/11/2020			P1072-02-004-01				
							H.SMITH								

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SCALE (mm)

CONSTRUCTION ISSUE

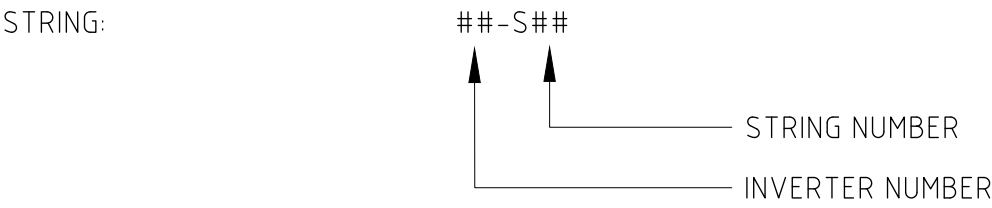




NOTES:

- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION – SELECTION OF CABLES
 - SERVICE AND INSTALLATION RULES
- ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO MAIN EARTH.
- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
- ALL EQUIPMENT TO BE INSTALLED AS PER MANUFACTURER REQUIREMENTS
- DRAWING COLOUR CODED. PRINT IN COLOUR.

NAMING CONVENTION:



LEGEND:

- PV MODULE
- LOAD BREAK DISCONNECTOR

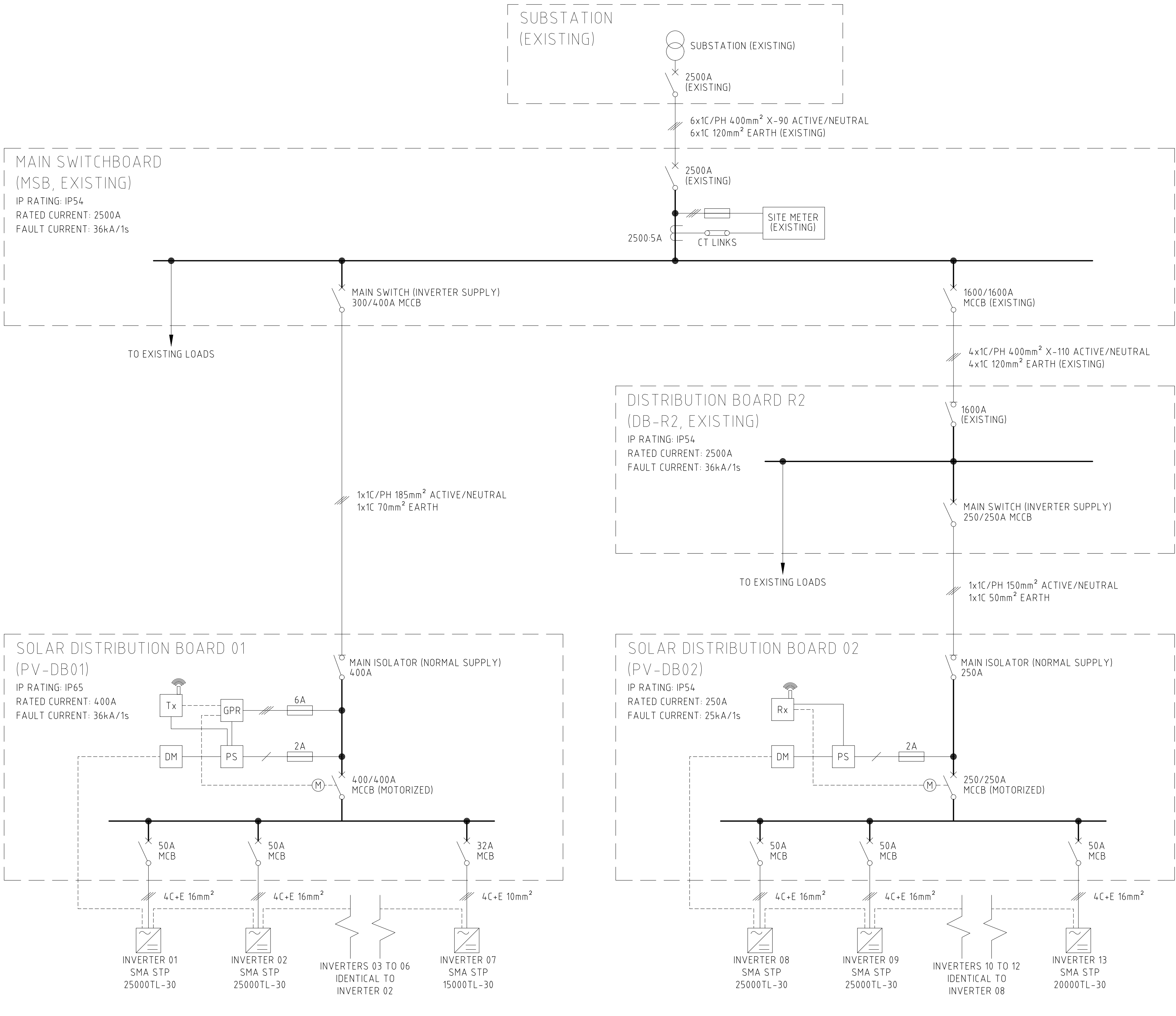
DC STRING LAYOUT (ROOF 2)
SCALE 1:200

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Full Size 1:200 ; Half Reduction 1:400
SCALE (mm)

CONSTRUCTION ISSUE

REVISION PANEL					DESIGN PANEL					MOORABIN					A1		TOTAL SHEETS:		0		
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED	06/11/2020	 GLOBAL SUSTAINABLE ENERGY SOLUTIONS	970 NEPEAN HWY MOORABBIN VIC 3189 DC ELECTRICAL DC STRING LAYOUT (ROOF 2)					SHT SIZE	PROJECT No:	P1072		REVISION
					A BONANNO	N.TAM			A BONANNO												
					SIGNATURE		DRAWN	06/11/2020		SIGNATURE											
							N.TAM														
							REVIEWED	06/11/2020													
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B			H.SMITH														
															SUPERSEDES:						
															DRAWING NUMBER						
															P1072-02-005-01						





NOTES:

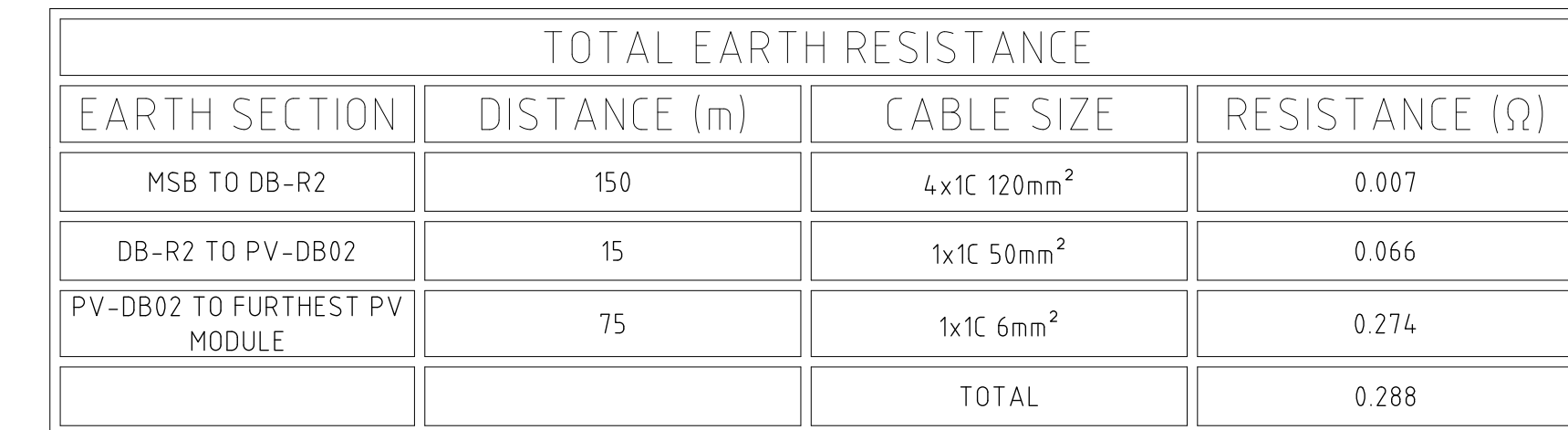
- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC
 - SERVICE AND INSTALLATION RULES
- ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO MAIN EARTH.
- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
- ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
- ALL NEW EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURERS REQUIREMENTS.
- ALL NEW EQUIPMENT SHALL BE RATED TO 230/400V UNLESS OTHERWISE NOTED.
- ALL NEW SWITCHGEAR SHALL BE THREE-POLE UNLESS OTHERWISE NOTED.
- ALL NEW POWER CABLES (INCLUDING EARTH) WITH CROSS-SECTIONAL AREA GREATER THAN 6mm² SHALL BE Cu 0.6/1kV, X-90 XLPE/PVC UNLESS OTHERWISE NOTED.
- ALL NEW POWER CABLES WITH CROSS-SECTIONAL AREA BETWEEN 15-6mm² SHALL BE Cu 450/750V, V-75 PVC/PVC UNLESS OTHERWISE NOTED.
- ALL NEW DATA CABLES WILL CROSS-SECTIONAL AREA OF 0.22mm² SHALL BE CAT 6a SCREENED CABLE UNLESS OTHERWISE NOTED.
- ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
- REFER TO EXISTING DRAWING E-CD-54-L0-0-41 FOR CONFIGURATION OF EXISTING ELECTRICAL NETWORK.

LEGEND:

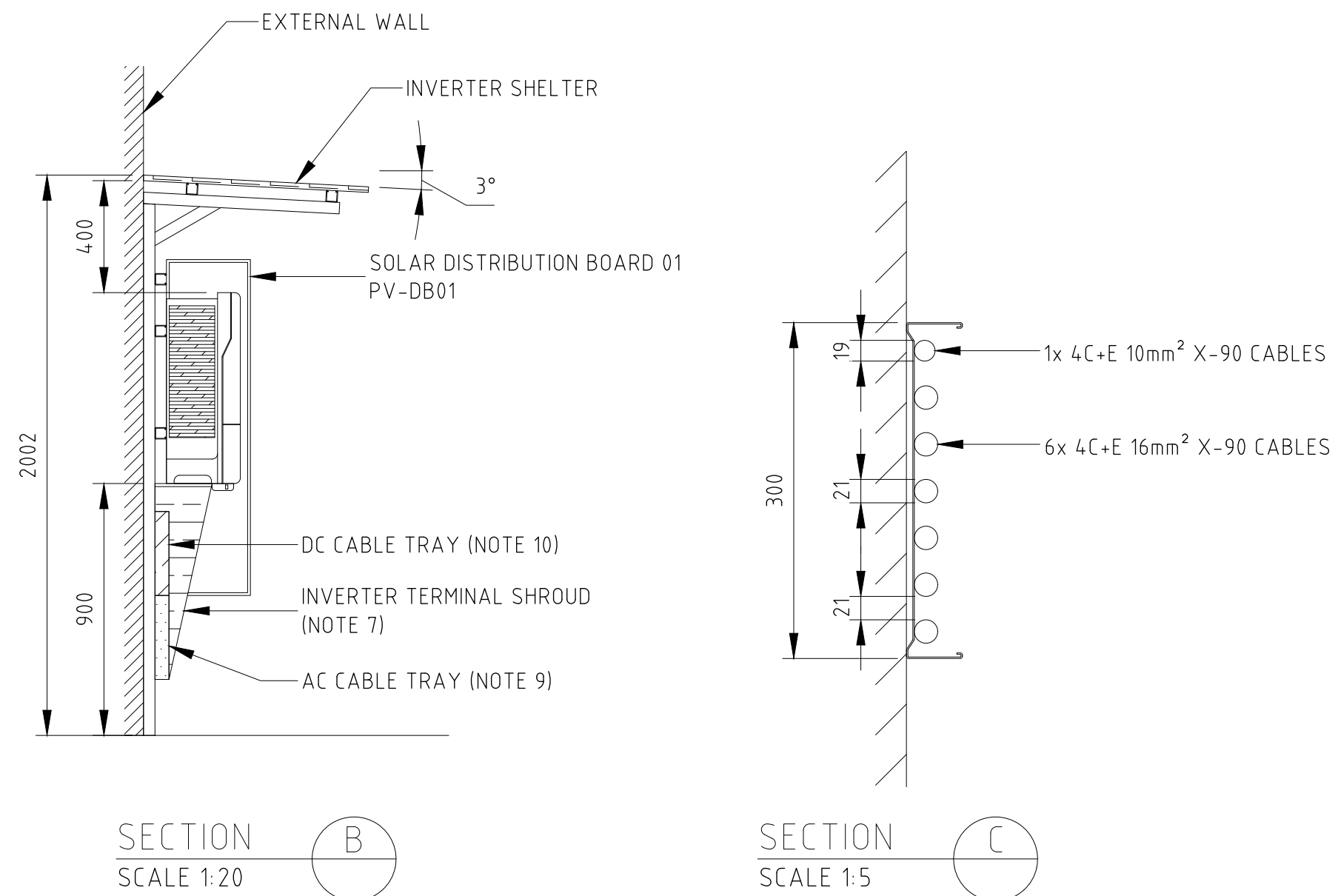
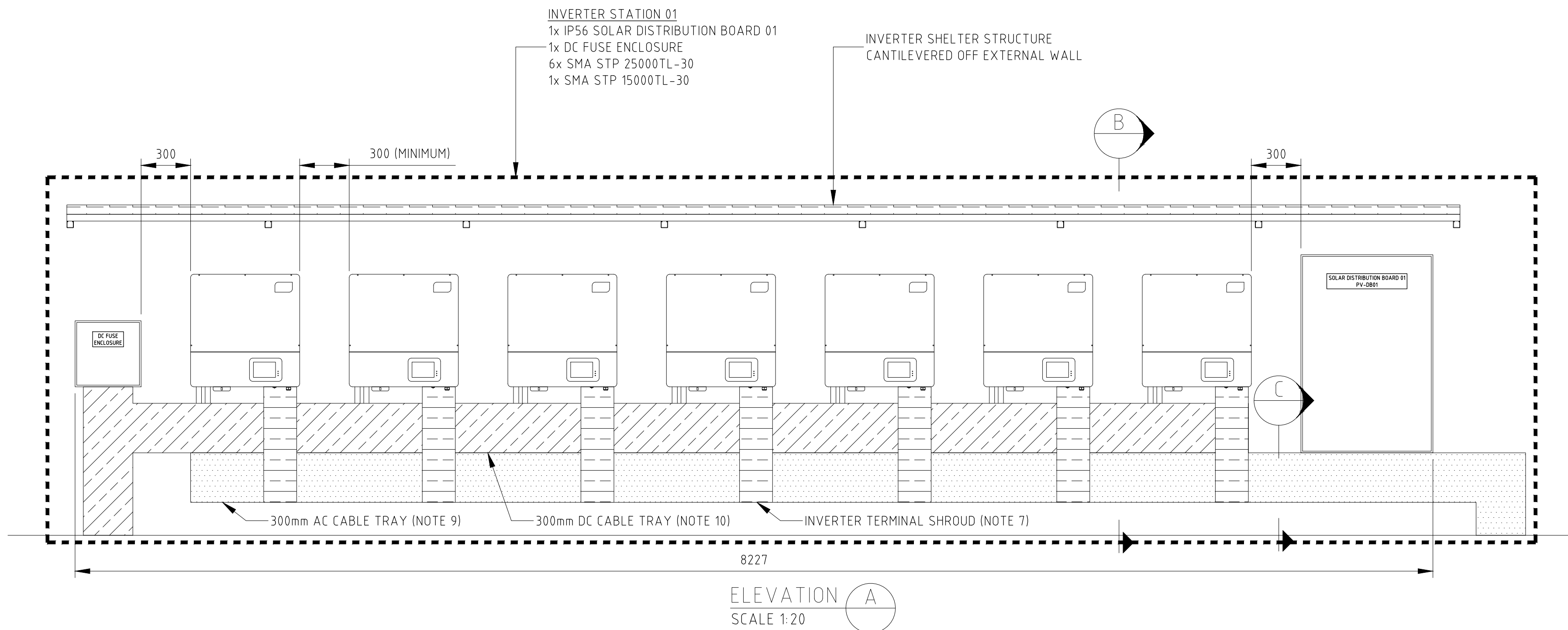
- Transformer
- Inverter
- Circuit Breaker
- Load Break Disconnect
- Fuse
- Test Link
- Motorized Trip Unit
- Power Supply
- Mainspro Grid Protection Relay
- SMA Data Manager
- Wireless Transmitter
- Wireless Receiver
- Single Phase Circuit
- Three Phase Circuit
- Control Circuit
- Electrical Junction
- Busbar

CONSTRUCTION ISSUE

REVISION PANEL					DESIGN PANEL					MOORABIN			A1	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	AUTHORISED	DRAWN	SIGNATURE	970 NEPEAN HWY			SHT SIZE	TOTAL SHEETS:
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					SIGNATURE		SIGNATURE			AC ELECTRICAL			SITE ID:	
										AC SINGLE LINE DIAGRAM			DRAWING NUMBER	
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B		REVIEWED		H.SMITH					P1072-03-001-01	



CONSTRUCTION ISSUE

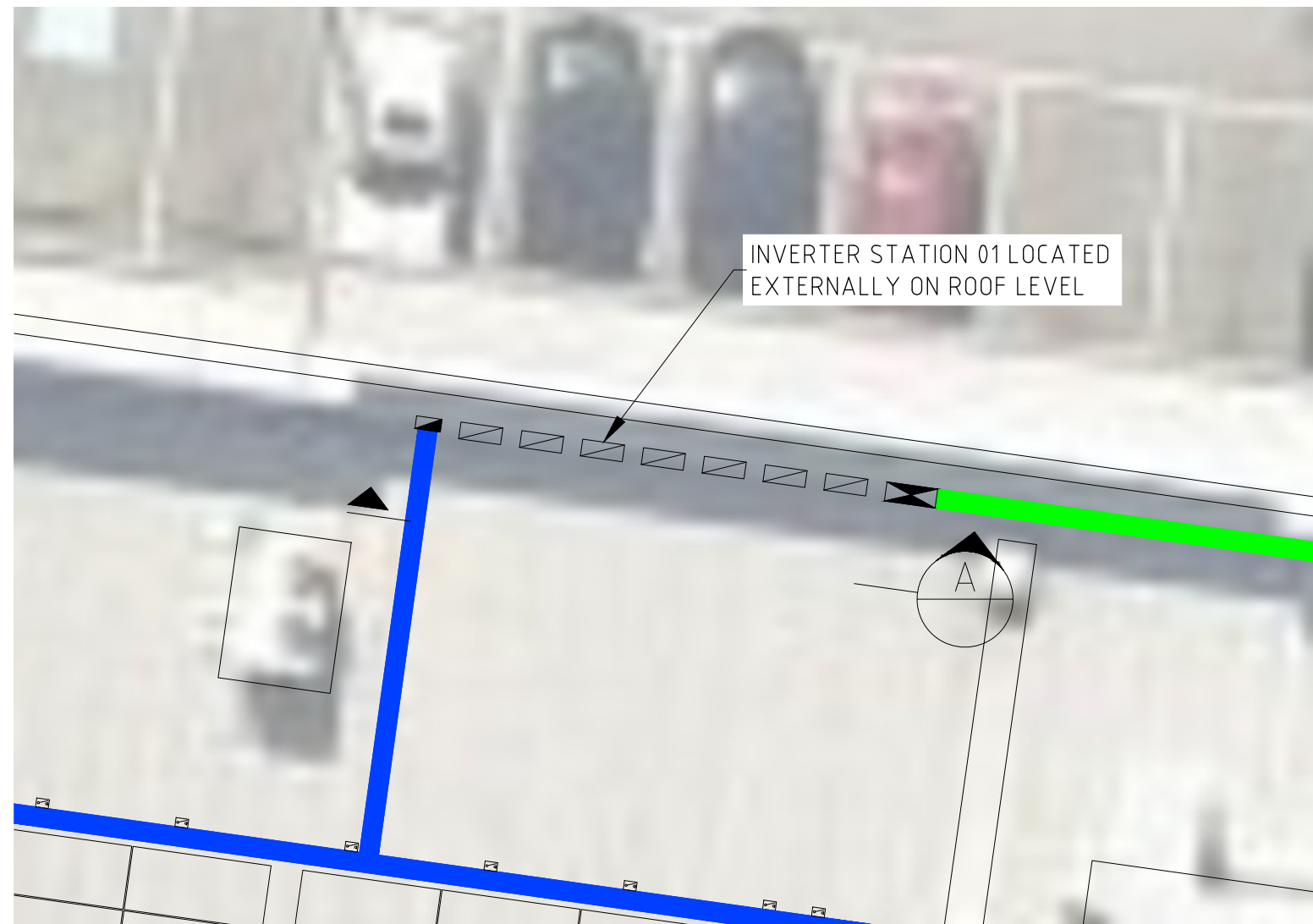
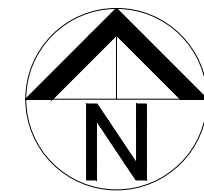


NOTES:

- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - SERVICE AND INSTALLATION RULES
- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
- ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
- ALL NEW EQUIPMENT TO BE INSTALLED AS PER MANUFACTURERS' REQUIREMENTS.
- ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO THE MAIN EARTH.
- WHERE AC AND DC CABLES ARE INSTALLED IN COMMON WIRING ENCLOSURES, SEGREGATION BETWEEN AC AND DC CIRCUITS SHALL BE MAINTAINED BY A CONTINUOUS, PHYSICAL BARRIER OR INSULATING MATERIAL.
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- INVERTER AC CABLES TO BE INSTALLED UNENCLOSED AND PROTECTED FROM DIRECT SOLAR RADIATION, WITH CABLES SPACED AT 1x LARGEST CABLE DIAMETER.
- SUB-ARRAY DC CABLES TO BE INSTALLED ENCLOSED IN LIDDED CABLE TRAY.

LEGEND:

- | | |
|--|-----------------------------|
| | PV MODULE |
| | LOAD BREAK DISCONNECTER |
| | DC FUSE ENCLOSURE |
| | INVERTER |
| | SWITCHBOARD |
| | DC CABLE TRAY |
| | AC CABLE TRAY |
| | DC CABLE TRAY |
| | AC CABLE TRAY |
| | INVERTER TERMINAL SHROUD |
| | INVERTER SHELTER ROOF SHEET |



INVERTER STATION 01 - PLAN VIEW
SCALE 1:100

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Full Size 1:5; Half Reduction 1:10
SCALE (mm)

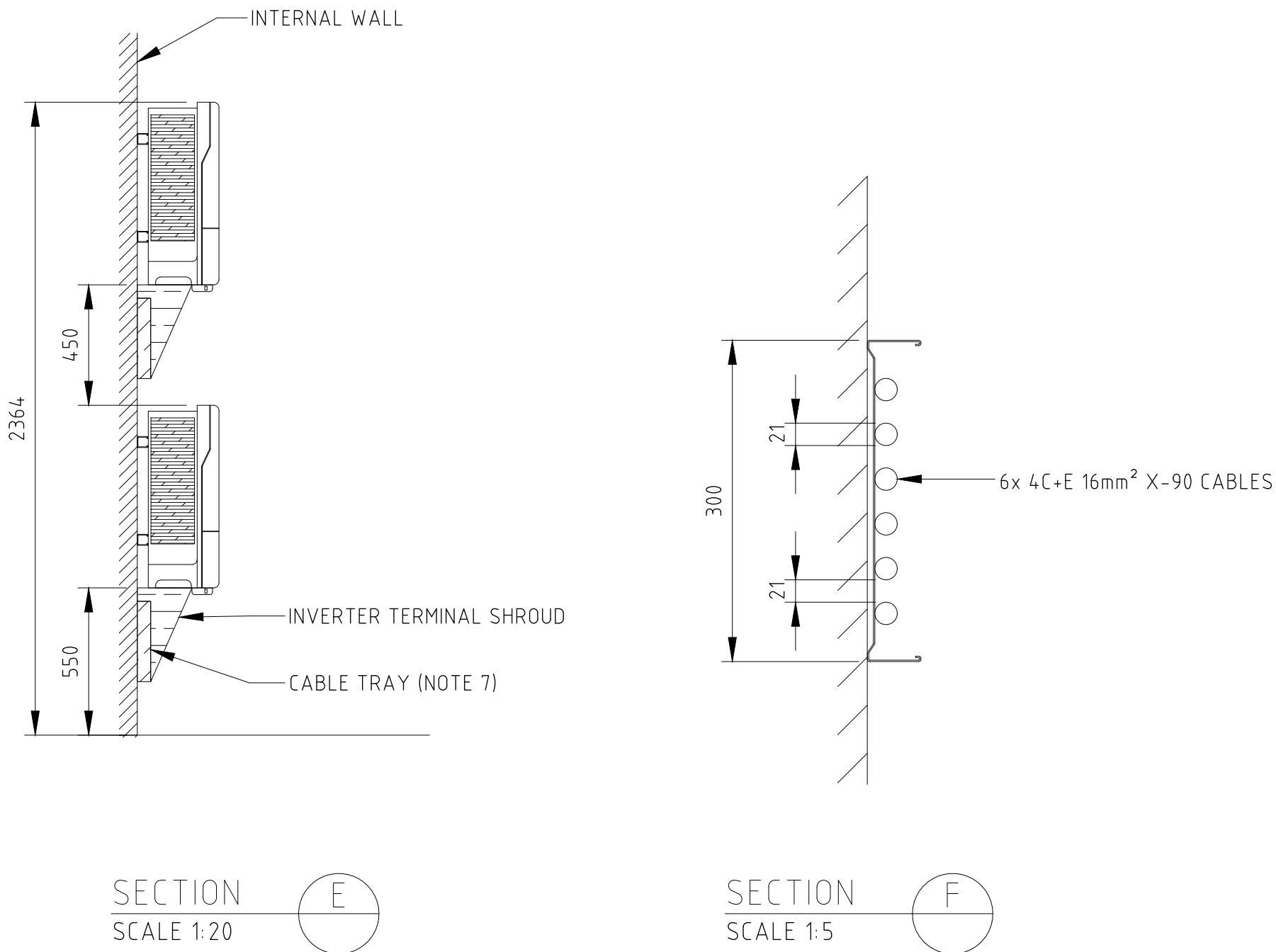
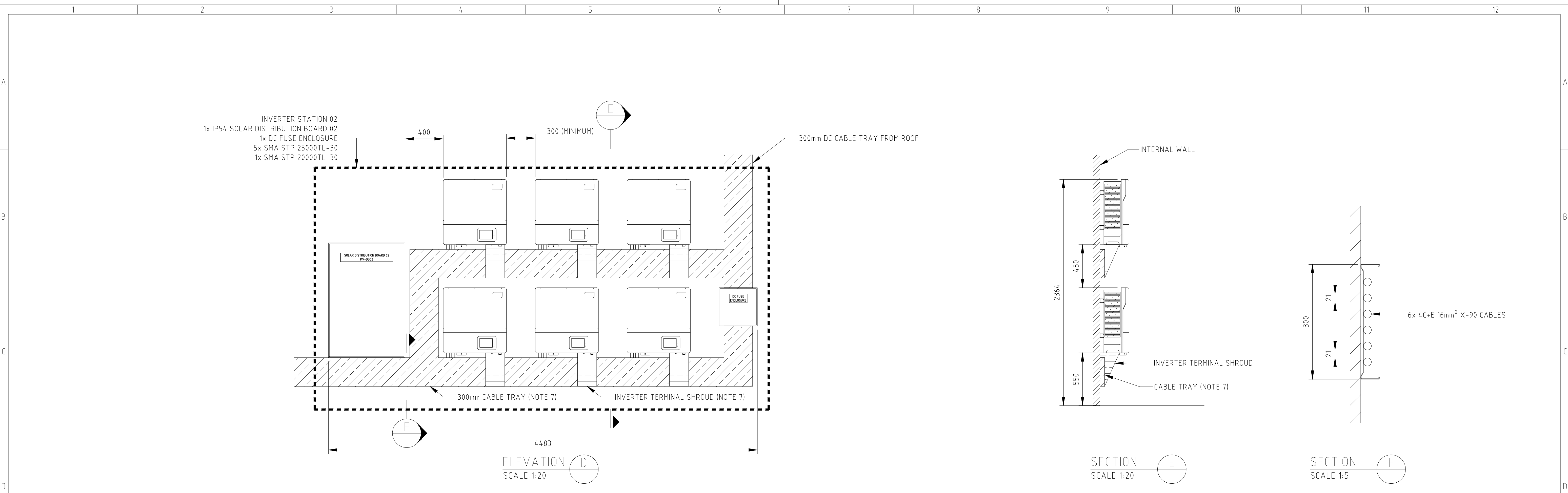
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SCALE (mm)

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Full Size 1:100; Half Reduction 1:200
SCALE (mm)

CONSTRUCTION ISSUE

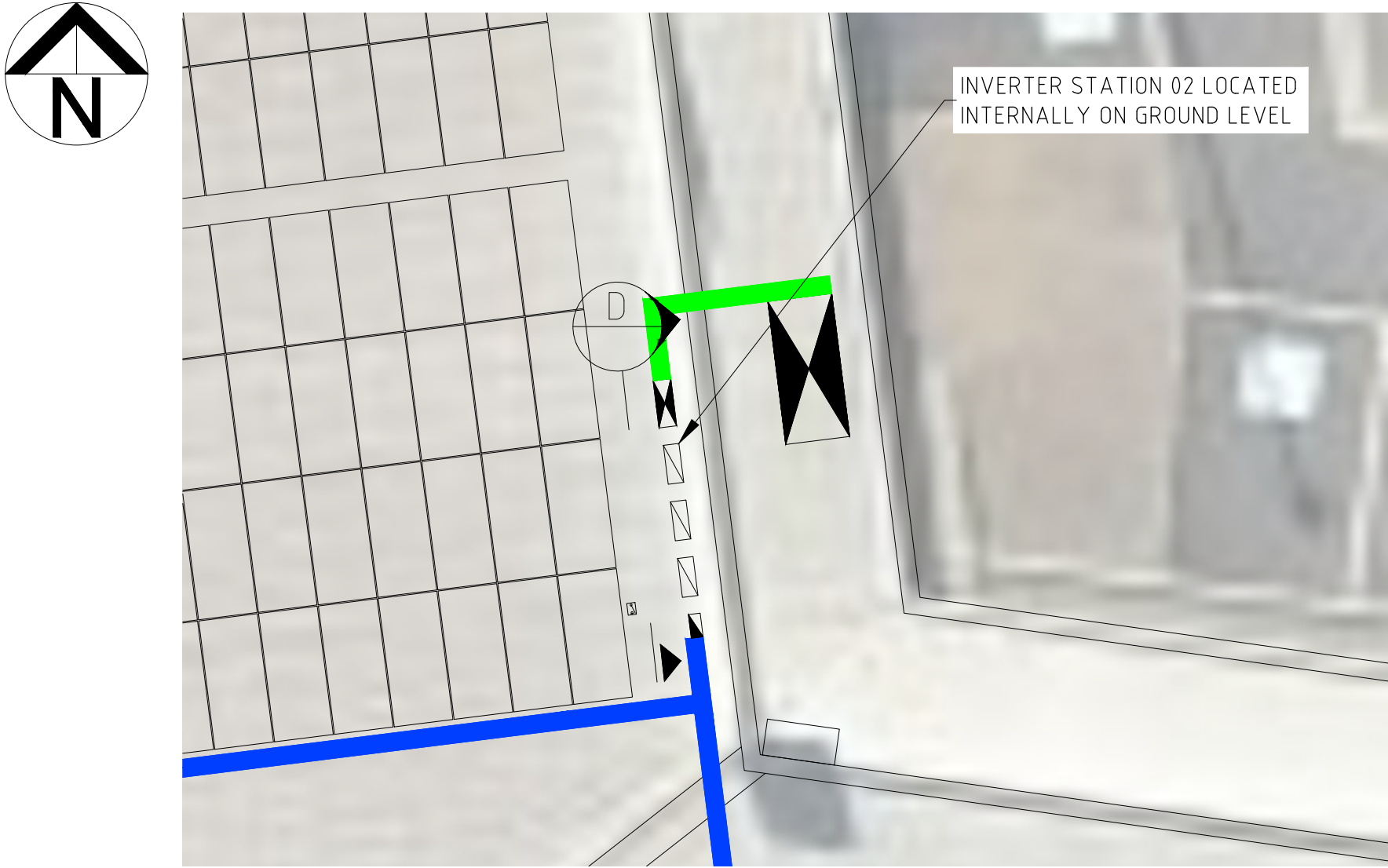
REVISION PANEL					DESIGN PANEL					 GLOBAL SUSTAINABLE ENERGY SOLUTIONS MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 EQUIPMENT DETAIL INVERTER STATION 01 ELEVATION			A1		TOTAL SHEETS:	0
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED				06/11/2020	SHT SIZE	PROJECT No: P1072	REVISION
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					SIGNATURE			06/11/2020	SIGNATURE					SITE ID:		
							N. TAM							SUPERSEDES:		
								06/11/2020			DRAWING NUMBER					
0	06/11/2020	N.T	ISSUED FOR REVIEW	A. B			H. SMITH				P1072-04-001-01					



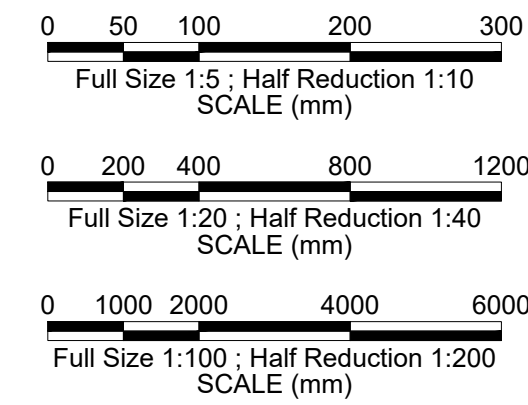


- NOTES:**
- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - SERVICE AND INSTALLATION RULES
 - THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS AND HAS BEEN PROVIDED IN ACCORDANCE WITH GSES' TERMS AND CONDITIONS.
 - EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ONSITE.
 - ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
 - ALL NEW EQUIPMENT TO BE INSTALLED AS PER MANUFACTURERS' REQUIREMENTS.
 - ALL EXPOSED CONDUCTIVE METAL COMPONENTS MUST BE EQUIPOTENTIALLY BONDED AND CONNECTED TO THE MAIN EARTH.
 - WHERE AC AND DC CABLES ARE INSTALLED IN COMMON WIRING ENCLOSURES, SEGREGATION BETWEEN AC AND DC CIRCUITS SHALL BE MAINTAINED BY A CONTINUOUS, PHYSICAL BARRIER OR INSULATING MATERIAL.
 - ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
 - INVERTER STATION 02 LOCATED INSIDE GROUND FLOOR PLANT ROOM. RESTRICTED ACCESS OF PV ARRAY WIRING AND PROTECTION PROVIDED BY LOCKED PLANT ROOM DOOR.

- LEGEND:**
- PV MODULE
 - LOAD BREAK DISCONNECTOR
 - DC FUSE ENCLOSURE
 - INVERTER
 - SWITCHBOARD
 - DC CABLE TRAY
 - AC CABLE TRAY
 - CABLE TRAY
 - INVERTER TERMINAL SHROUD



INVERTER STATION 02 - PLAN VIEW
SCALE 1:100



CONSTRUCTION ISSUE

REVISION PANEL					DESIGN PANEL					MOORABIN			A1	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	AUTHORISED	DRAWN	SIGNATURE	970 NEPEAN HWY			SHT SIZE	TOTAL SHEETS:
					A.BONANNO	N.TAM	A.BONANNO	N.TAM		MOORABBIN VIC 3189			PROJECT No: P1072	0
					SIGNATURE		SIGNATURE			EQUIPMENT DETAIL			SUPERSEDES:	REVISION
						REVIEWED				INVERTER STATION 02 ELEVATION			DRAWING NUMBER	
0	06/11/2020	N.T.	ISSUED FOR REVIEW	A.B		H.SMITH							P1072-04-002-01	



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CABLE LOCATION	CABLE SIZE (mm²)	CORE STRUCTURE	CONDUCTORS / PHASE	INSULATION	CONDUCTOR	L-L VOLTAGE (V)	INSTALLATION METHOD	CABLE ARRANGEMENT	NUMBER OF CIRCUITS PER TIER	POWER ON CIRCUIT (kVA)	CABLE LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	TOTAL DERATED CCC (A)	ACTUAL MAX. CURRENT (A)	PROTECTIVE DEVICE (A)	MAX. CURRENT/ CONDUCTOR (A)	Vc (mV/Am)	VOLTAGE RISE (%)
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	400	SINGLE-CORE	6	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	165	45	554	0.82	2724	238	2500	40	0.205	0.16%
SUBMAINS 01 MSB TO PV-DB01	185	SINGLE-CORE	1	X-90	Cu	400	SPACED FROM SURFACE	TOUCHING	1	165	45	459	0.83	379	238	300	238	0.285	0.76%
SUBMAINS 02 PV-DB01 TO INVERTERS	16	MULTICORE	1	X-90	Cu	400	TOUCHING	TOUCHING	4	25	7	81	0.66	53	36	50	36	2.550	0.16%
																		TOTAL	1.08%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	1 (2, 4)	-	-	0.82 26(2), (5, 3)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.82
SUBMAINS 01 MSB TO PV-DB01	-	0.94 (10, 6)	-	-	0.88 (3, 9)	-	-	-	0.827
SUBMAINS 02 PV-DB01 TO INVERTERS	0.75 (3, 7)	-	-	-	0.88 (3, 9)	-	-	-	0.66

NOTES:

- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.
- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.
- ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
- ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
- EXISTING CONSUMER MAINS ASSUMED TO BE INSTALLED WITH ONE CIRCUIT PER CONDUIT, BURIED AT 0.5m DEPTH, WITH 0.3m SPACING BETWEEN CONDUITS.

REVISION PANEL				DESIGN PANEL				 GLOBAL SUSTAINABLE ENERGY SOLUTIONS	MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DESIGN SPREADSHEET AC DESIGN CALCULATIONS (INVERTERS 01 TO 06)	A1	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	AUTHORISED			SHT SIZE	TOTAL SHEETS:
					A.BONANNO	N.TAM	A.BONANNO				PROJECT No: P1072
					SIGNATURE		SIGNATURE				SITE ID:
						N.TAM					SUPERSEDES:
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B		REVIEWED H.SMITH					DRAWING NUMBER P1072-05-001-01

CONSTRUCTION ISSUE

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CABLE LOCATION	CABLE SIZE (mm ²)	CORE STRUCTURE	CONDUCTORS / PHASE	INSULATION	CONDUCTOR	L-L VOLTAGE (V)	INSTALLATION METHOD	CABLE ARRANGEMENT	NUMBER OF CIRCUITS PER TIER	POWER ON CIRCUIT (kVA)	CABLE LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	TOTAL DERATED CCC (A)	ACTUAL MAX. CURRENT (A)	PROTECTIVE DEVICE (A)	MAX. CURRENT/ CONDUCTOR (A)	Vc (mV/Am)	VOLTAGE RISE (%)
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	400	SINGLE-CORE	6	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	165	45	554	0.82	2724	238	2500	40	0.205	0.16%
SUBMAINS 01 MSB TO PV-DB01	185	SINGLE-CORE	1	X-90	Cu	400	SPACED FROM SURFACE	TOUCHING	1	165	45	459	0.83	379	238	300	238	0.285	0.76%
SUBMAINS 02 PV-DB01 TO INVERTERS	10	MULTICORE	1	X-90	Cu	400	TOUCHING	TOUCHING	4	15	7	61	0.66	40	22	32	22	4.050	0.15%
																		TOTAL	1.08%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	1 (2, 4)	-	-	0.82 26(2), (5, 3)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.82
SUBMAINS 01 MSB TO PV-DB01	-	0.94 (10, 6)	-	-	0.88 (3, 9)	-	-	-	0.827
SUBMAINS 02 PV-DB01 TO INVERTERS	0.75 (3, 7)	-	-	-	0.88 (3, 9)	-	-	-	0.66

NOTES:

- THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.
- THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC
- EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.
- ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.
- ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.
- EXISTING CONSUMER MAINS ASSUMED TO BE INSTALLED WITH ONE CIRCUIT PER CONDUIT, BURIED AT 0.5m DEPTH, WITH 0.3m SPACING BETWEEN CONDUITS.

REVISION PANEL					DESIGN PANEL					 GLOBAL SUSTAINABLE ENERGY SOLUTIONS					MOORABIN					A1		TOTAL SHEETS:		0	
REV	DATE	DRN	DETAILS		APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020						AUTHORISED	06/11/2020	970 NEPEAN HWY					SHT SIZE	PROJECT No: P1072	REVISION	
						A.BONANNO		N.TAM							A.BONANNO		MOORABBIN VIC 3189					SITE ID:			
						SIGNATURE		N.TAM							SIGNATURE		DESIGN SPREADSHEET					SUPERSEDES:			
																	AC DESIGN CALCULATIONS (INVERTER 07)					DRAWING NUMBER			
0	06/11/2020	N.T	ISSUED FOR REVIEW		A.B			REVIEWED	06/11/2020								P1072-05-002-01								

CABLE LOCATION	CABLE SIZE (mm²)	CORE STRUCTURE	CONDUCTORS / PHASE	INSULATION	CONDUCTOR	L-L VOLTAGE (V)	INSTALLATION METHOD	CABLE ARRANGEMENT	NUMBER OF CIRCUITS PER TIER	POWER ON CIRCUIT (kVA)	CABLE LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	TOTAL DERATED CCC (A)	ACTUAL MAX. CURRENT (A)	PROTECTIVE DEVICE (A)	MAX. CURRENT/ CONDUCTOR (A)	Vc (mV/Am)	VOLTAGE RISE (%)
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	400	SINGLE-CORE	6	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	145	45	554	0.82	2724	209	2500	35	0.205	0.14%
SUBMAINS 01 MSB TO DB-R2	400	SINGLE-CORE	4	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	145	150	554	0.79	1748	209	1600	52	0.205	0.40%
SUBMAINS 02 DB-R2 TO PV-DB02	150	SINGLE-CORE	1	X-90	Cu	400	SPACED FROM SURFACE	TOUCHING	1	145	15	400	0.83	330	209	250	209	0.330	0.26%
SUBMAINS 02 PV-DB02 TO INVERTERS	16	MULTICORE	1	X-90	Cu	400	SPACED	TOUCHING	6	25	7	87	0.64	55	36	50	36	2.55	0.16%
																		TOTAL	0.96%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	1 (2, 4)	-	-	0.82 26(2), (5, 3)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.82
SUBMAINS 01 MSB TO DB-R2	1 (2, 4)	-	-	0.79 26(2), (3, 2)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.79
SUBMAINS 02 DB-R2 TO PV-DB02	-	0.94 (10, 6)	-	-	0.88 (3, 9)	-	-	-	0.827
SUBMAINS 02 PV-DB02 TO INVERTERS	-	-	0.73 (19, 9)	-	0.88 (3, 9)	-	-	-	0.642

NOTES:

1. THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.

2. THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:

- AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS

- AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS

- AS3000: ELECTRICAL WIRING RULES

- AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES

- AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC

3. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.

4. ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.

5. ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.

6. EXISTING CONSUMER MAINS ASSUMED TO BE INSTALLED WITH ONE CIRCUIT PER CONDUIT, BURIED AT 0.5m DEPTH, WITH 0.3m SPACING BETWEEN CONDUITS.

REVISION PANEL					DESIGN PANEL					GSES® GLOBAL SUSTAINABLE ENERGY SOLUTIONS			MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DESIGN SPREADSHEET AC DESIGN CALCULATIONS (INVERTERS 08 TO 12)			A1		TOTAL SHEETS:	
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED							06/11/2020	SHT SIZE	PROJECT No: P1072	REVISION
					A.BONANNO SIGNATURE		N.TAM		A.BONANNO SIGNATURE			SITE ID:		SUPERSEDES:					
							N.TAM			DRAWING NUMBER		P1072-05-003-01							
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B															

CONSTRUCTION ISSUE

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CABLE LOCATION	CABLE SIZE (mm²)	CORE STRUCTURE	CONDUCTORS / PHASE	INSULATION	CONDUCTOR	L-L VOLTAGE (V)	INSTALLATION METHOD	CABLE ARRANGEMENT	NUMBER OF CIRCUITS PER TIER	POWER ON CIRCUIT (kVA)	CABLE LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	TOTAL DERATED CCC (A)	ACTUAL MAX. CURRENT (A)	PROTECTIVE DEVICE (A)	MAX. CURRENT/ CONDUCTOR (A)	Vc (mV/Am)	VOLTAGE RISE (%)
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	400	SINGLE-CORE	6	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	145	45	554	0.82	2724	209	2500	35	0.205	0.14%
SUBMAINS 01 MSB TO DB-R2	400	SINGLE-CORE	4	X-90	Cu	400	UNDERGROUND WIRING ENCLOSURE	TOUCHING	1	145	150	554	0.79	1748	209	1600	52	0.205	0.40%
SUBMAINS 02 DB-R2 TO PV-DB02	150	SINGLE-CORE	1	X-90	Cu	400	SPACED FROM SURFACE	TOUCHING	1	145	15	400	0.83	330	209	250	209	0.330	0.26%
SUBMAINS 02 PV-DB02 TO INVERTER	16	MULTICORE	1	X-90	Cu	400	SPACED	TOUCHING	6	20	7	87	0.64	55	29	50	29	2.55	0.13%
																		TOTAL	0.93%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
CONSUMER MAINS TRANSFORMER TO MSB (EXISTING)	1 (2, 4)	-	-	0.82 26(2), (5, 3)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.82
SUBMAINS 01 MSB TO DB-R2	1 (2, 4)	-	-	0.79 26(2), (3, 2)	-	1 (2, 5)	1 28(2), (1, 2)	1 (4, 6)	0.79
SUBMAINS 02 DB-R2 TO PV-DB02	-	0.94 (10, 6)	-	-	0.88 (3, 9)	-	-	-	0.827
SUBMAINS 02 PV-DB02 TO INVERTERS	-	-	0.73 (19, 9)	-	0.88 (3, 9)	-	-	-	0.642

NOTES:

1. THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.

2. THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:

- AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS

- AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS

- AS3000: ELECTRICAL WIRING RULES

- AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES

- AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC

3. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.

4. ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.

5. ALL EXISTING EQUIPMENT LABELLED "EXISTING". ALL OTHER EQUIPMENT TO BE INSTALLED.

6. EXISTING CONSUMER MAINS ASSUMED TO BE INSTALLED WITH ONE CIRCUIT PER CONDUIT, BURIED AT 0.5m DEPTH, WITH 0.3m SPACING BETWEEN CONDUITS.

REVISION PANEL					DESIGN PANEL					GSES® GLOBAL SUSTAINABLE ENERGY SOLUTIONS	MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DESIGN SPREADSHEET AC DESIGN CALCULATIONS (INVERTER 13)	A1		TOTAL SHEETS: 0
REV	DATE	DRN	DETAILS		APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020			SHT SIZE	PROJECT No: P1072	
						A.BONANNO		N.TAM						REVISION
						SIGNATURE								
								N.TAM						
0	06/11/2020	N.T	ISSUED FOR REVIEW		A.B			06/11/2020	H.SMITH					

CONSTRUCTION ISSUE

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CABLE LOCATION	CABLE SIZE (mm ²)	CORE STRUCTURE	CONDUCTOR	INSULATION	# PARALLEL STRINGS	CIRCUIT ISC (A)	INSTALLATION METHOD	NUMBER OF ADJACENT CIRCUITS	CABLE ARRANGEMENT	LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	DERATED CCC/ CONDUCTOR (A)	CIRCUIT IMP (A)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
MODULE LEADS	4	SINGLE-CORE	Cu	X-90	1	10.44	TOUCHING	4	TOUCHING	18	36	0.572	20.592	9.81	1.94	0.29%
STRING CABLE FROM ROOFTOP ISOLATOR TO INVERTER	4	TWIN	Cu	X-90	1	10.44	WIRING ENCLOSURE IN AIR	16	TOUCHING	60	37	0.3608	13.3496	9.81	6.45	0.96%
	Modules in series: 15	Array Vmp: 673.05V	Module Isc: 10.44A	Module Imp: 9.81A											TOTAL	1.25%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
MODULE LEADS	0.65 (2, 7)	-	-	-	0.88 (3, 9)	-	-	-	0.572
STRING CABLE FROM ROOFTOP ISOLATOR TO INVERTER	0.41 (2, 16)	-	-	-	0.88 (3, 9)	-	-	-	0.361

NOTES:

1. THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.

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- AS3000: ELECTRICAL WIRING RULES
- AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
- AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC

3. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.

4. ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	DESIGNED	DESIGN PANEL
					06/11/2020	06/11/2020	AUTHORISED
					A.BONANNO	N.TAM	A.BONANNO
					SIGNATURE	N.TAM	SIGNATURE
						06/11/2020	
						06/11/2020	
0	06/11/2020	N.T.	ISSUED FOR REVIEW	A.B		H.SMITH	

GSES

GLOBAL SUSTAINABLE ENERGY SOLUTIONS

MOORABIN

970 NEPEAN HWY

MOORABBIN VIC 3189

DESIGN SPREADSHEET

DC DESIGN CALCULATIONS (INVERTERS 01 TO 06, 08 TO 12)

A1

TOTAL SHEETS:

PROJECT No: P1072

SITE ID:

SUPERSEDES:

DRAWING NUMBER

P1072-05-005-01

0

REVISION

CABLE LOCATION	CABLE SIZE (mm ²)	CORE STRUCTURE	CONDUCTOR	INSULATION	# PARALLEL STRINGS	CIRCUIT ISC (A)	INSTALLATION METHOD	NUMBER OF ADJACENT CIRCUITS	CABLE ARRANGEME NT	LENGTH (m)	RATED CCC/ CONDUCTOR (A)	COMBINED DERATING	DERATED CCC/ CONDUCTOR (A)	CIRCUIT IMP (A)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
MODULE LEADS	4	SINGLE-CORE	Cu	X-90	1	10.44	TOUCHING	4	TOUCHING	13	36	0.572	20.592	9.81	1.40	0.24%
STRING CABLE FROM ROOFTOP ISOLATOR TO INVERTER	4	TWIN	Cu	X-90	1	10.44	WIRING ENCLOSURE IN AIR	16	TOUCHING	55	37	0.3608	13.3496	9.81	5.92	1.01%
	Modules in series: 13	Array Vmp: 583.31V	Module Isc: 10.44A	Module Imp: 9.81A											TOTAL	1.25%

CABLE LOCATION	TABLE 22 BUNCHED CIRCUITS	TABLE 23 SINGLE-CORE IN CABLE TRAY	TABLE 24 MULTICORE IN CABLE TRAY	TABLE 26 UNDERGROUND WIRING ENCLOSURES	TABLE 27(1) AIR AMBIENT TEMPERATURE	TABLE 27(2) SOIL AMBIENT TEMPERATURE	TABLE 28 DEPTH OF LAYING	TABLE 29 SOIL THERMAL RESISTIVITY	COMBINED DERATING
	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING SUB-TABLE, (ROW, COLUMN)	DERATING (ROW, COLUMN)	DERATING
MODULE LEADS	0.65 (2, 7)	-	-	-	0.88 (3, 9)	-	-	-	0.572
STRING CABLE FROM ROOFTOP ISOLATOR TO INVERTER	0.41 (2, 16)	-	-	-	0.88 (3, 9)	-	-	-	0.361

NOTES:

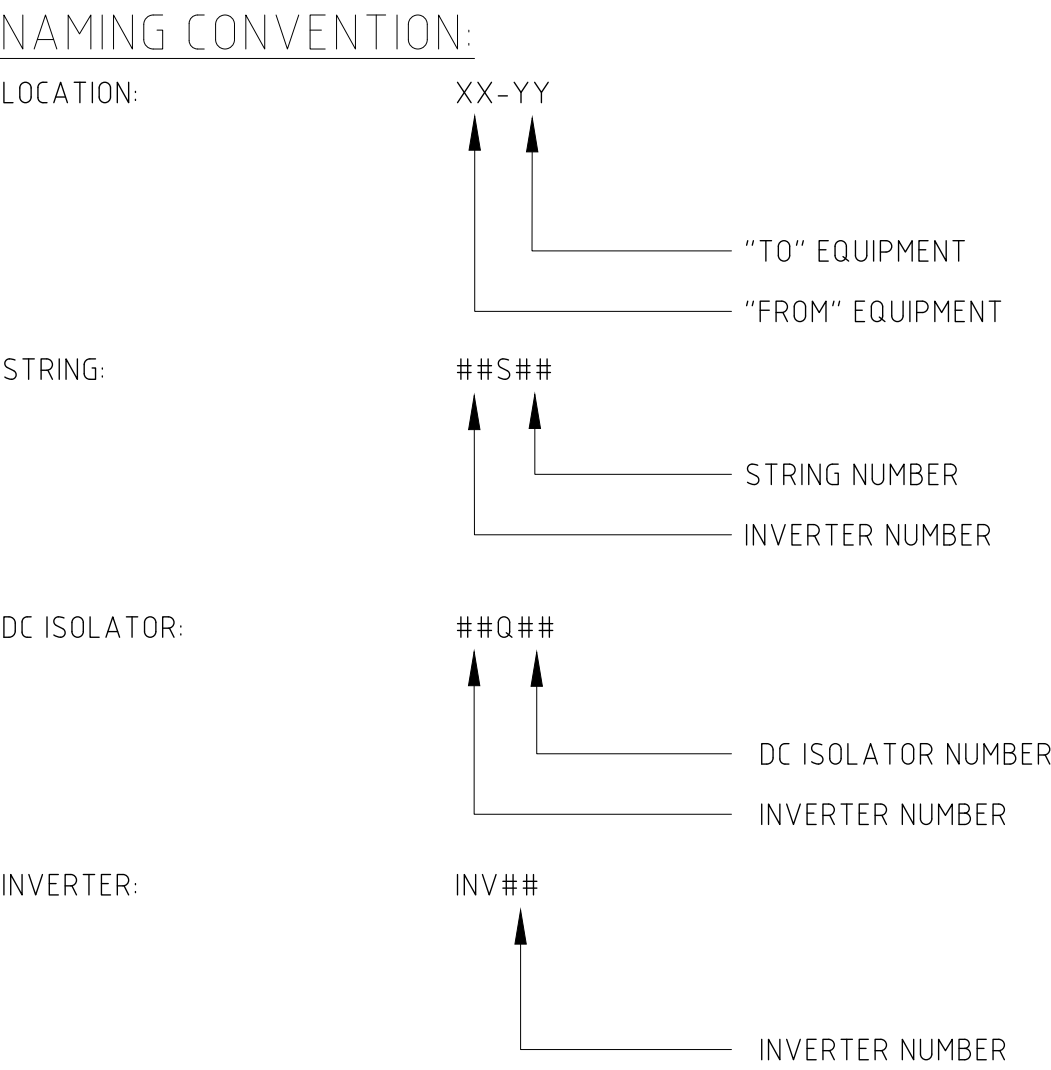
1. THIS DRAWING IS BASED ON THE INFORMATION SUPPLIED TO THE DESIGNER FROM ITS CLIENTS OR SUBCONTRACTORS.
2. THE MOST CURRENT VERSION OF THE FOLLOWING AUSTRALIAN STANDARDS ARE APPLICABLE AS A MINIMUM:
 - AS5033: INSTALLATION OF PHOTOVOLTAIC ARRAYS
 - AS4777: GRID CONNECTION OF ENERGY SYSTEMS VIA INVERTERS
 - AS3000: ELECTRICAL WIRING RULES
 - AS3008: ELECTRICAL INSTALLATION - SELECTION OF CABLES
 - AS2067: SUBSTATION AND HIGH VOLTAGE INSTALLATIONS EXCEEDING 1kA AC
3. EXACT LOCATION OF ALL PARTS OF THE INSTALLATION TO BE DETERMINED BY CONTRACTOR ON SITE.
4. ALL ELECTRICAL COMPONENT RATINGS TO BE VERIFIED BY INSTALLER.

REVISION PANEL					DESIGN PANEL					 GLOBAL SUSTAINABLE ENERGY SOLUTIONS	MOORABIN 970 NEPEAN HWY MOORABBIN VIC 3189 DESIGN SPREADSHEET DC DESIGN CALCULATIONS (INVERTER 13)	A1		TOTAL SHEETS:	0
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED			06/11/2020	SHT SIZE	PROJECT No: P1072	REVISION
					A.BONANNO		N.TAM		A.BONANNO						
					SIGNATURE		DRAWN	06/11/2020							
							N.TAM								
							REVIEWED	06/11/2020							
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B			H.SMITH								
												SITE ID:			
												SUPERSEDES:			
												DRAWING NUMBER		P1072-05-007-01	

CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

1	2	3	4	5	6	7	8	9	10	11	12
A											A
B											B
C											C
D											D
E											E
F											F
G											G
H											H
CONSTRUCTION ISSUE											
1	2	3	4	5	6	7	8	9	10	11	12

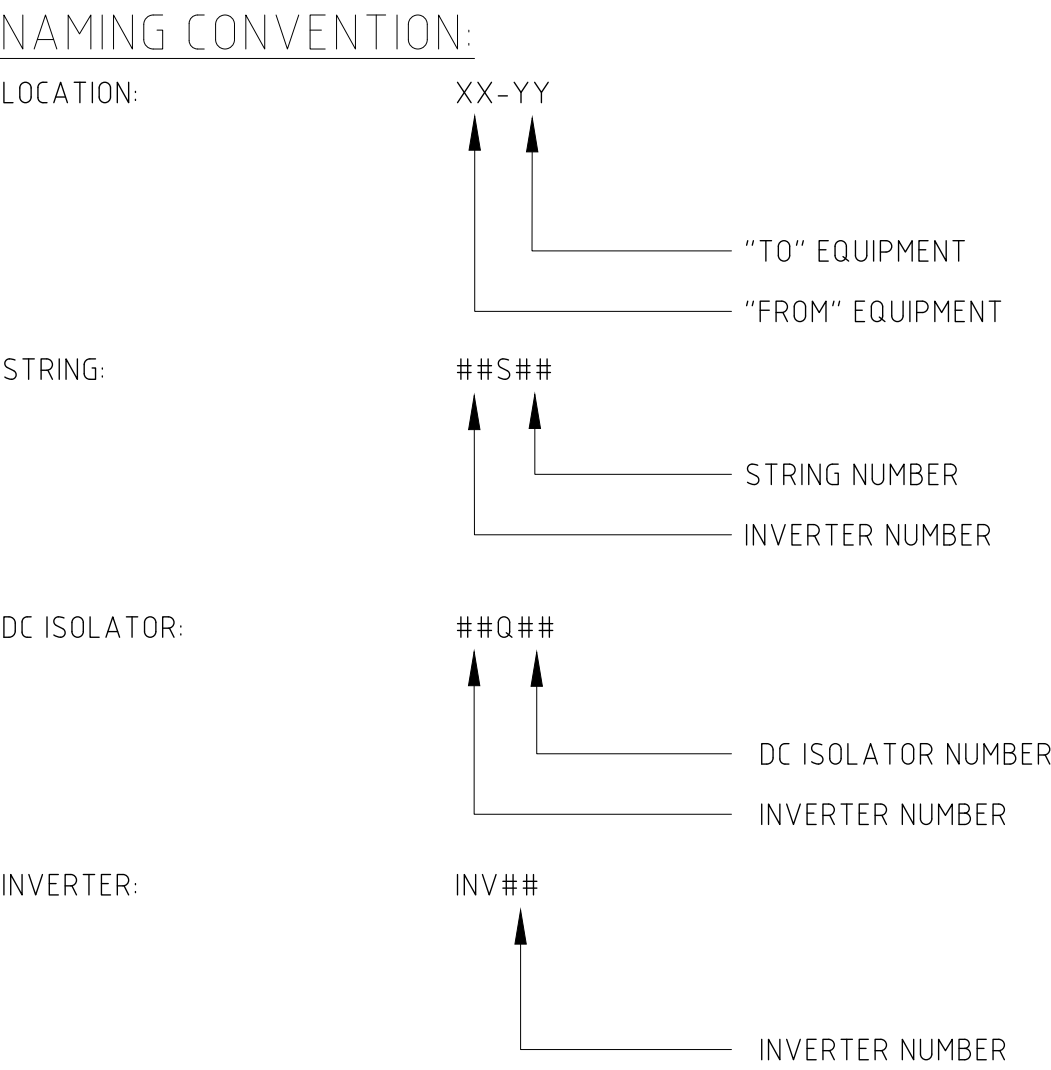
CABLE NUMBER	LOCATION	RATED VOLTAGE	CONDUCTOR	CORE STRUCTURE	SIZE (mm²)	INSULATION	LENGTH (m)	INSTALLATION METHOD
1	01Q01-01S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
2	01Q02-01S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
3	01Q03-01S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
4	01Q04-01S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
5	01Q05-01S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
6	02Q01-02S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
7	02Q02-02S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
8	02Q03-02S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
9	02Q04-02S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
10	02Q05-02S05	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
11	03Q01-03S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
12	03Q02-03S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
13	03Q03-03S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
14	03Q04-03S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
15	03Q05-03S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
16	04Q01-04S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
17	04Q02-04S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
18	04Q03-04S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
19	04Q04-04S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
20	04Q05-04S05	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
21	05Q01-05S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
22	05Q02-05S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
23	05Q03-05S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
24	05Q04-05S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
25	05Q05-05S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
26	06Q01-06S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
27	06Q02-06S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
28	06Q03-06S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
29	06Q04-06S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
30	06Q05-06S05	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
31	07Q01-07S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
32	07Q02-07S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
33	07Q03-07S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
34	07Q04-07S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
35	07Q05-07S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
36	08Q01-08S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
37	08Q02-08S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
38	08Q03-08S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
39	08Q04-08S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
40	09Q01-09S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
41	09Q02-09S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
42	09Q03-09S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
43	09Q04-09S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
44	09Q05-09S05	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
45	10Q01-10S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
46	10Q02-10S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
47	10Q03-10S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
48	10Q04-10S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
49	10Q05-10S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
50	11Q01-11S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING



REVISION PANEL					DESIGN PANEL					MOORABIN		A1 SHT SIZE SITE ID: SUPERSEDES: DRAWING NUMBER P1072-05-008-01	TOTAL SHEETS: PROJECT No: P1072 REVISION 0
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED	06/11/2020	970 NEPEAN HWY		
					A.BONANNO		N.TAM		A.BONANNO		MOORABBIN VIC 3189		
					SIGNATURE				SIGNATURE		DESIGN SPREADSHEET		
0	06/11/2020	N.T.	ISSUED FOR REVIEW	A.B.			REVIEWED	06/11/2020			CABLE SCHEDULE (1 TO 50)		
							H.SMITH						

1	2	3	4	5	6	7	8	9	10	11	12
A											A
B											B
C											C
D											D
E											E
F											F
G											G
H											H
CONSTRUCTION ISSUE											
1	2	3	4	5	6	7	8	9	10	11	12

CABLE NUMBER	LOCATION	RATED VOLTAGE	CONDUCTOR	CORE STRUCTURE	SIZE (mm ²)	INSULATION	LENGTH (m)	INSTALLATION METHOD
51	11Q02-11S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
52	11Q03-11S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
53	11Q04-11S04	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
54	11Q05-11S05	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
55	12Q01-12S01	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
56	12Q02-12S02	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
57	12Q03-12S03	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
58	12Q04-12S04	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
59	12Q05-12S05	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
60	13Q01-13S01	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
61	13Q02-13S02	1 kV	Cu	TWIN CORE	4	X-90	20	UNENCLOSED TOUCHING
62	13Q03-13S03	1 kV	Cu	TWIN CORE	4	X-90	22	UNENCLOSED TOUCHING
63	INV01-01Q01	1 kV	Cu	TWIN CORE	4	X-90	50	WIRING ENCLOSURE IN AIR
64	INV01-01Q02	1 kV	Cu	TWIN CORE	4	X-90	46	WIRING ENCLOSURE IN AIR
65	INV01-01Q03	1 kV	Cu	TWIN CORE	4	X-90	42	WIRING ENCLOSURE IN AIR
66	INV01-01Q04	1 kV	Cu	TWIN CORE	4	X-90	38	WIRING ENCLOSURE IN AIR
67	INV01-01Q05	1 kV	Cu	TWIN CORE	4	X-90	34	WIRING ENCLOSURE IN AIR
68	INV02-02Q01	1 kV	Cu	TWIN CORE	4	X-90	30	WIRING ENCLOSURE IN AIR
69	INV02-02Q02	1 kV	Cu	TWIN CORE	4	X-90	26	WIRING ENCLOSURE IN AIR
70	INV02-02Q03	1 kV	Cu	TWIN CORE	4	X-90	22	WIRING ENCLOSURE IN AIR
71	INV02-02Q04	1 kV	Cu	TWIN CORE	4	X-90	18	WIRING ENCLOSURE IN AIR
72	INV02-02Q05	1 kV	Cu	TWIN CORE	4	X-90	14	WIRING ENCLOSURE IN AIR
73	INV03-03Q01	1 kV	Cu	TWIN CORE	4	X-90	10	WIRING ENCLOSURE IN AIR
74	INV03-03Q02	1 kV	Cu	TWIN CORE	4	X-90	14	WIRING ENCLOSURE IN AIR
75	INV03-03Q03	1 kV	Cu	TWIN CORE	4	X-90	18	WIRING ENCLOSURE IN AIR
76	INV03-03Q04	1 kV	Cu	TWIN CORE	4	X-90	22	WIRING ENCLOSURE IN AIR
77	INV03-03Q05	1 kV	Cu	TWIN CORE	4	X-90	26	WIRING ENCLOSURE IN AIR
78	INV04-04Q01	1 kV	Cu	TWIN CORE	4	X-90	30	WIRING ENCLOSURE IN AIR
79	INV04-04Q02	1 kV	Cu	TWIN CORE	4	X-90	34	WIRING ENCLOSURE IN AIR
80	INV04-04Q03	1 kV	Cu	TWIN CORE	4	X-90	38	WIRING ENCLOSURE IN AIR
81	INV04-04Q04	1 kV	Cu	TWIN CORE	4	X-90	42	WIRING ENCLOSURE IN AIR
82	INV04-04Q05	1 kV	Cu	TWIN CORE	4	X-90	46	WIRING ENCLOSURE IN AIR
83	INV05-05Q01	1 kV	Cu	TWIN CORE	4	X-90	50	WIRING ENCLOSURE IN AIR
84	INV05-05Q02	1 kV	Cu	TWIN CORE	4	X-90	54	WIRING ENCLOSURE IN AIR
85	INV05-05Q03	1 kV	Cu	TWIN CORE	4	X-90	58	WIRING ENCLOSURE IN AIR
86	INV05-05Q04	1 kV	Cu	TWIN CORE	4	X-90	62	WIRING ENCLOSURE IN AIR
87	INV05-05Q05	1 kV	Cu	TWIN CORE	4	X-90	26	WIRING ENCLOSURE IN AIR
88	INV06-06Q01	1 kV	Cu	TWIN CORE	4	X-90	30	WIRING ENCLOSURE IN AIR
89	INV06-06Q02	1 kV	Cu	TWIN CORE	4	X-90	34	WIRING ENCLOSURE IN AIR
90	INV06-06Q03	1 kV	Cu	TWIN CORE	4	X-90	38	WIRING ENCLOSURE IN AIR
91	INV06-06Q04	1 kV	Cu	TWIN CORE	4	X-90	42	WIRING ENCLOSURE IN AIR
92	INV06-06Q05	1 kV	Cu	TWIN CORE	4	X-90	46	WIRING ENCLOSURE IN AIR
93	INV07-07Q01	1 kV	Cu	TWIN CORE	4	X-90	50	WIRING ENCLOSURE IN AIR
94	INV07-07Q02	1 kV	Cu	TWIN CORE	4	X-90	54	WIRING ENCLOSURE IN AIR
95	INV07-07Q03	1 kV	Cu	TWIN CORE	4	X-90	58	WIRING ENCLOSURE IN AIR
96	INV07-07Q04	1 kV	Cu	TWIN CORE	4	X-90	62	WIRING ENCLOSURE IN AIR
97	INV07-07Q05	1 kV	Cu	TWIN CORE	4	X-90	66	WIRING ENCLOSURE IN AIR
98	INV08-08Q01	1 kV	Cu	TWIN CORE	4	X-90	53	WIRING ENCLOSURE IN AIR
99	INV08-08Q02	1 kV	Cu	TWIN CORE	4	X-90	49	WIRING ENCLOSURE IN AIR
100	INV08-08Q03	1 kV	Cu	TWIN CORE	4	X-90	45	WIRING ENCLOSURE IN AIR



REVISION PANEL					DESIGN PANEL					MOORABIN		A1 SHT SIZE SITE ID: SUPERSEDES: DRAWING NUMBER P1072-05-009-01	TOTAL SHEETS: PROJECT No: P1072 REVISION 0
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED	06/11/2020	970 NEPEAN HWY		
					A BONANNO		N.TAM		A BONANNO		MOORABBIN VIC 3189		
					SIGNATURE		N.TAM		SIGNATURE		DESIGN SPREADSHEET		
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B			REVIEWED	06/11/2020			CABLE SCHEDULE (51 TO 100)		
							H.SMITH						

1	2	3	4	5	6	7	8	9	10	11	12	
A												A
B												B
C												C
D												D
E												E
F												F
G												G
H												H

CABLE NUMBER	LOCATION	RATED VOLTAGE	CONDUCTOR	CORE STRUCTURE	SIZE (mm ²)	INSULATION	LENGTH (m)	INSTALLATION METHOD
101	INV08-08Q04	1 kV	Cu	TWIN CORE	4	X-90	41	WIRING ENCLOSURE IN AIR
102	INV09-09Q01	1 kV	Cu	TWIN CORE	4	X-90	37	WIRING ENCLOSURE IN AIR
103	INV09-09Q02	1 kV	Cu	TWIN CORE	4	X-90	33	WIRING ENCLOSURE IN AIR
104	INV09-09Q03	1 kV	Cu	TWIN CORE	4	X-90	29	WIRING ENCLOSURE IN AIR
105	INV09-09Q04	1 kV	Cu	TWIN CORE	4	X-90	25	WIRING ENCLOSURE IN AIR
106	INV09-09Q05	1 kV	Cu	TWIN CORE	4	X-90	21	WIRING ENCLOSURE IN AIR
107	INV10-10Q01	1 kV	Cu	TWIN CORE	4	X-90	17	WIRING ENCLOSURE IN AIR
108	INV10-10Q02	1 kV	Cu	TWIN CORE	4	X-90	13	WIRING ENCLOSURE IN AIR
109	INV10-10Q03	1 kV	Cu	TWIN CORE	4	X-90	17	WIRING ENCLOSURE IN AIR
110	INV10-10Q04	1 kV	Cu	TWIN CORE	4	X-90	21	WIRING ENCLOSURE IN AIR
111	INV10-10Q05	1 kV	Cu	TWIN CORE	4	X-90	25	WIRING ENCLOSURE IN AIR
112	INV11-11Q01	1 kV	Cu	TWIN CORE	4	X-90	29	WIRING ENCLOSURE IN AIR
113	INV11-11Q02	1 kV	Cu	TWIN CORE	4	X-90	33	WIRING ENCLOSURE IN AIR
114	INV11-11Q03	1 kV	Cu	TWIN CORE	4	X-90	37	WIRING ENCLOSURE IN AIR
115	INV11-11Q04	1 kV	Cu	TWIN CORE	4	X-90	41	WIRING ENCLOSURE IN AIR
116	INV11-11Q05	1 kV	Cu	TWIN CORE	4	X-90	45	WIRING ENCLOSURE IN AIR
117	INV12-12Q01	1 kV	Cu	TWIN CORE	4	X-90	49	WIRING ENCLOSURE IN AIR
118	INV12-12Q02	1 kV	Cu	TWIN CORE	4	X-90	53	WIRING ENCLOSURE IN AIR
119	INV12-12Q03	1 kV	Cu	TWIN CORE	4	X-90	57	WIRING ENCLOSURE IN AIR
120	INV12-12Q04	1 kV	Cu	TWIN CORE	4	X-90	61	WIRING ENCLOSURE IN AIR
121	INV12-12Q05	1 kV	Cu	TWIN CORE	4	X-90	65	WIRING ENCLOSURE IN AIR
122	INV13-13Q01	1 kV	Cu	TWIN CORE	4	X-90	69	WIRING ENCLOSURE IN AIR
123	INV13-13Q02	1 kV	Cu	TWIN CORE	4	X-90	73	WIRING ENCLOSURE IN AIR
124	INV13-13Q03	1 kV	Cu	TWIN CORE	4	X-90	77	WIRING ENCLOSURE IN AIR
125	PVDB01-INV01	0.6 kV	Cu	4C+E	16	X-90	1	UNENCLOSED TOUCHING
126	PVDB01-INV02	0.6 kV	Cu	4C+E	16	X-90	2	UNENCLOSED TOUCHING
127	PVDB01-INV03	0.6 kV	Cu	4C+E	16	X-90	3	UNENCLOSED TOUCHING
128	PVDB01-INV04	0.6 kV	Cu	4C+E	16	X-90	4	UNENCLOSED TOUCHING
129	PVDB01-INV05	0.6 kV	Cu	4C+E	16	X-90	5	UNENCLOSED TOUCHING
130	PVDB01-INV06	0.6 kV	Cu	4C+E	16	X-90	6	UNENCLOSED TOUCHING
131	PVDB01-INV07	0.6 kV	Cu	4C+E	10	X-90	7	UNENCLOSED TOUCHING
132	PVDB02-INV08	0.6 kV	Cu	4C+E	16	X-90	1	WIRING ENCLOSURE IN AIR
133	PVDB02-INV09	0.6 kV	Cu	4C+E	16	X-90	2	WIRING ENCLOSURE IN AIR
134	PVDB02-INV10	0.6 kV	Cu	4C+E	16	X-90	3	WIRING ENCLOSURE IN AIR
135	PVDB02-INV11	0.6 kV	Cu	4C+E	16	X-90	4	WIRING ENCLOSURE IN AIR
136	PVDB02-INV12	0.6 kV	Cu	4C+E	16	X-90	5	WIRING ENCLOSURE IN AIR
137	PVDB02-INV13	0.6 kV	Cu	4C+E	16	X-90	6	WIRING ENCLOSURE IN AIR
138	MSB-PVDB01	0.6 kV	Cu	SINGLE CORE	185	X-90	45	WIRING ENCLOSURE IN AIR
139	MSB-PVDB01	0.6 kV	Cu	SINGLE CORE	185	X-90	45	WIRING ENCLOSURE IN AIR
140	MSB-PVDB01	0.6 kV	Cu	SINGLE CORE	185	X-90	45	WIRING ENCLOSURE IN AIR
141	MSB-PVDB01	0.6 kV	Cu	SINGLE CORE	185	X-90	45	WIRING ENCLOSURE IN AIR
142	MSB-PVDB01	0.6 kV	Cu	SINGLE CORE	70	V-75	45	WIRING ENCLOSURE IN AIR
143	DBR2-PVDB02	0.6 kV	Cu	SINGLE CORE	150	X-90	45	WIRING ENCLOSURE IN AIR
144	DBR2-PVDB02	0.6 kV	Cu	SINGLE CORE	150	X-90	45	WIRING ENCLOSURE IN AIR
145	DBR2-PVDB02	0.6 kV	Cu	SINGLE CORE	150	X-90	45	WIRING ENCLOSURE IN AIR
146	DBR2-PVDB02	0.6 kV	Cu	SINGLE CORE	150	X-90	45	WIRING ENCLOSURE IN AIR
147	DBR2-PVDB02	0.6 kV	Cu	SINGLE CORE	50	V-75	45	WIRING ENCLOSURE IN AIR
148	PVDB01-INV01	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
149	INV01-INV02	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
150	INV02-INV03	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR

NAMING CONVENTION:

LOCATION:

XX-YY

"TO" EQUIPMENT

"FROM" EQUIPMENT

STRING:

##S##

STRING NUMBER

INVERTER NUMBER

DC ISOLATOR:

##Q##

DC ISOLATOR NUMBER

INVERTER NUMBER

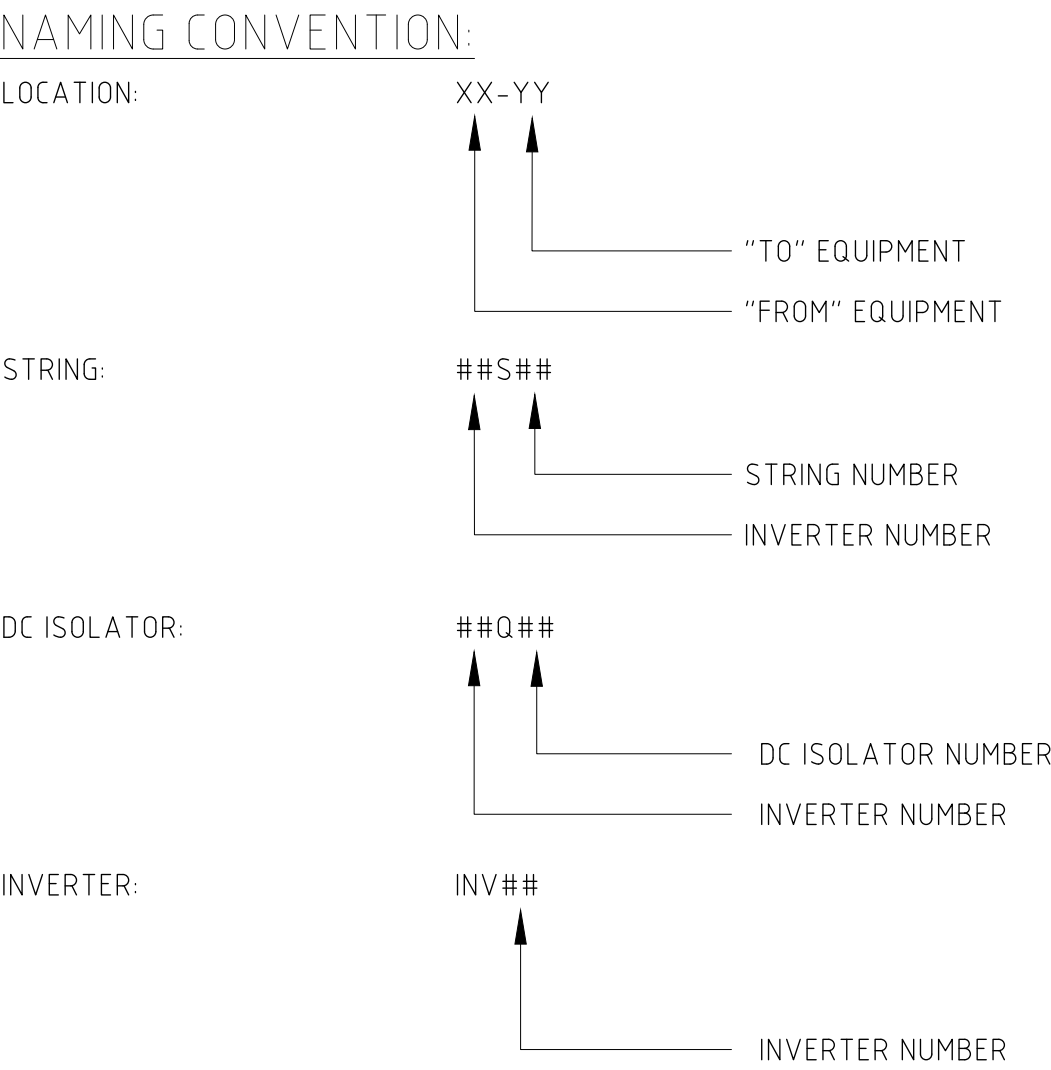
INVERTER:

INV##

INVERTER NUMBER

REVISION PANEL					DESIGN PANEL					GSES® GLOBAL SUSTAINABLE ENERGY SOLUTIONS	MOORABIN			A1		TOTAL SHEETS:	0 REVISION
REV	DATE	DRN	DETAILS	APR'D	AUTHORISED	06/11/2020	DESIGNED	06/11/2020	AUTHORISED		06/11/2020	970 NEPEAN HWY		PROJECT No: P1072			
					A.BONANNO SIGNATURE		N.TAM		A.BONANNO SIGNATURE			SITE ID:		SUPERSEDES:			
							N.TAM						DRAWING NUMBER				
0	06/11/2020	N.T	ISSUED FOR REVIEW	A.B				REVIEWED			06/11/2020						
													P1072-05-010-01				
1	2	3	4	5	6	7	8	9	10	11	12						

CONSTRUCTION ISSUE



MOORABIN
970 NEPEAN HWY
MOORABBIN VIC 3189
DESIGN SPREADSHEET
CABLE SCHEDULE (101 TO 150)

A1	TOTAL SHEETS:	0
SHT SIZE	PROJECT No: P1072	REVISION
SITE ID:		
SUPERSEDES:		
DRAWING NUMBER		
P1072-05-010-01		

1	2	3	4	5	6	7	8	9	10	11	12
A											A
B											B
C											C
D											D
E											E
F											F
G											G
H											H
CONSTRUCTION ISSUE											
1	2	3	4	5	6	7	8	9	10	11	12

CABLE NUMBER	LOCATION	RATED VOLTAGE	CONDUCTOR	CORE STRUCTURE	SIZE (mm²)	INSULATION	LENGTH (m)	INSTALLATION METHOD
151	INV03-INV04	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
152	INV04-INV05	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
153	INV05-INV06	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
154	INV06-INV07	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
155	PVDB02-INV08	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
156	INV08-INV09	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
157	INV09-INV10	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
158	INV10-INV11	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
159	INV11-INV12	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
160	INV12-INV13	-	Cu	CAT6A	0.22	V-75	1	WIRING ENCLOSURE IN AIR
161	PVDB01-ARRAY	1 kV	Cu	SINGLE CORE	6	V-75	90	WIRING ENCLOSURE IN AIR
162	PVDB02-ARRAY	1 kV	Cu	SINGLE CORE	6	V-75	120	WIRING ENCLOSURE IN AIR
163	(NOT USED)							
164	(NOT USED)							
165	(NOT USED)							
166	(NOT USED)							
167	(NOT USED)							
168	(NOT USED)							
169	(NOT USED)							
170	(NOT USED)							
171	(NOT USED)							
172	(NOT USED)							
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200	(NOT USED)							

