

SUPPLY AND INSTALLATION OF ROOF-TOP SOLAR PHOTOVOLTAIC SYSTEMS ON SCHOOLS IN GAZA STRIP

Tender Ref.: PZA1203211-10026

LOT 1 SCHOOLS

FAHMI EL GERGAWI HIGH SCHOOL, AL BORAGE HIGH SCHOOL,
HAMAD BEN KHALEFA HIGH SCHOOL, EL MANFALOTY HIGH SCHOOL,
AHMED EL SHOQERI HIGH SCHOOL

Contracting Authority:



Belgium
partner in development

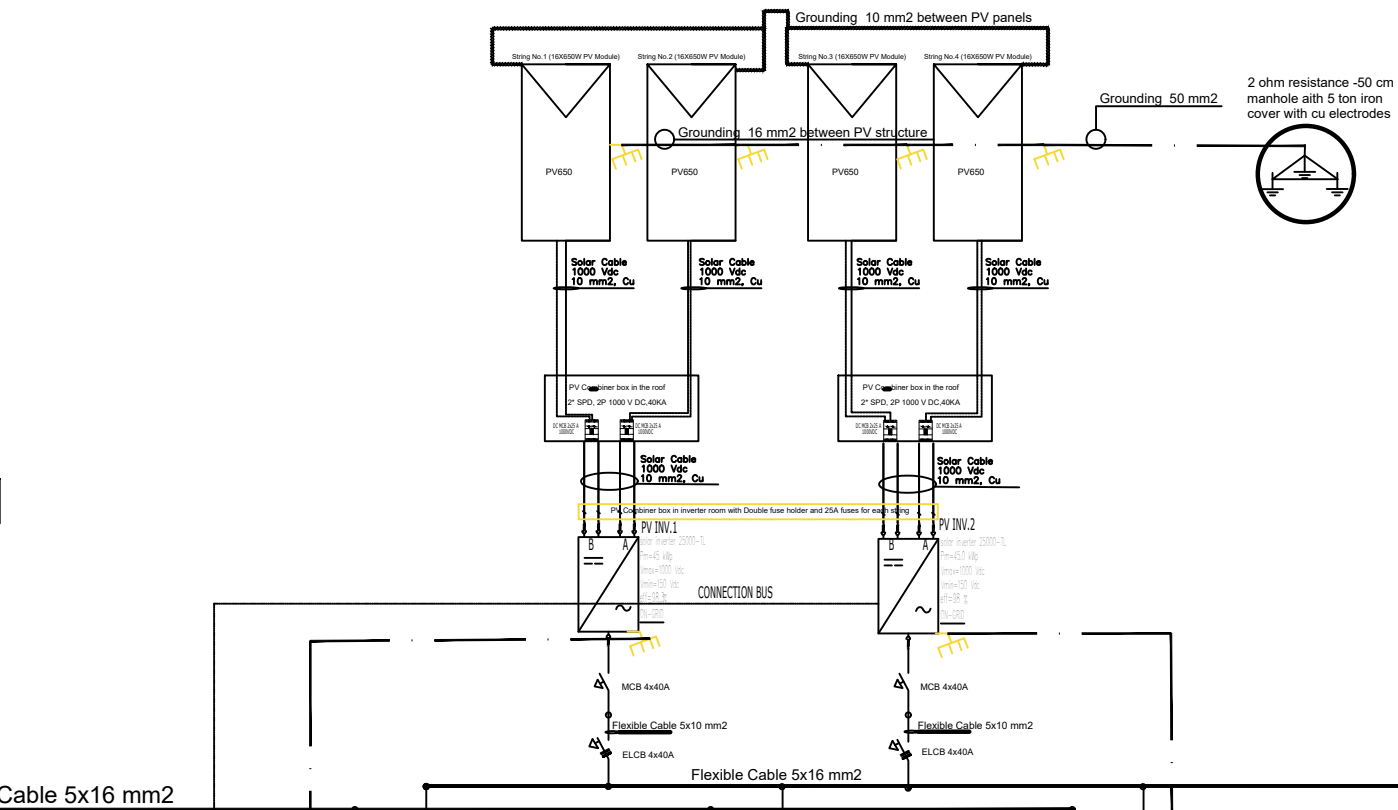
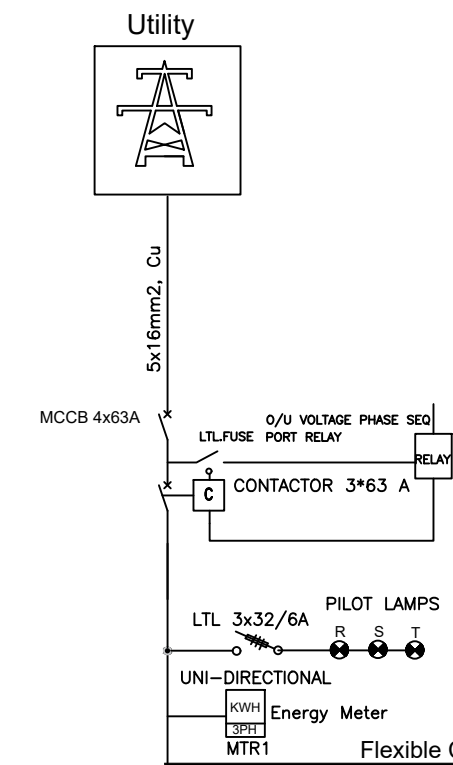
Designed by:



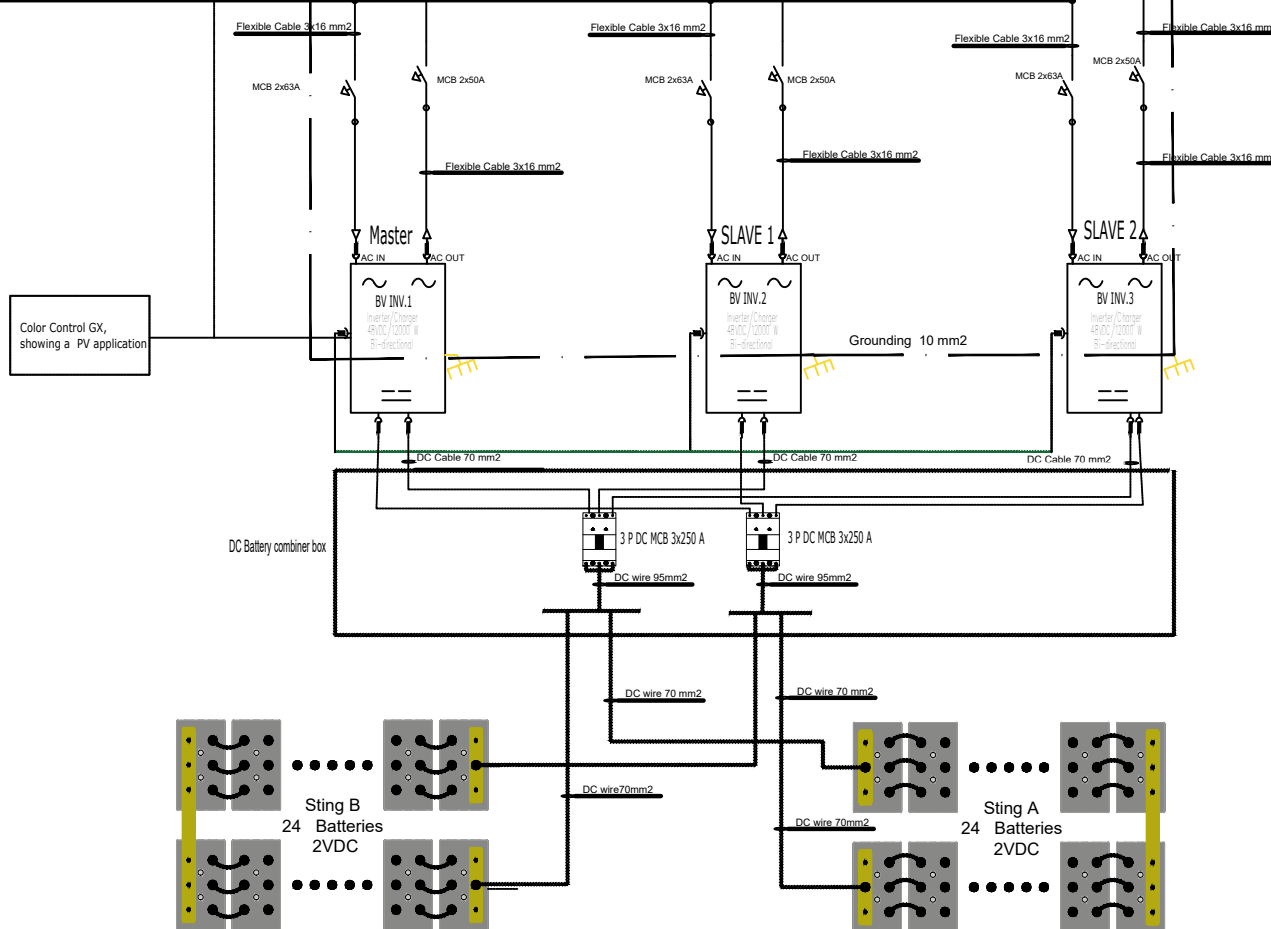
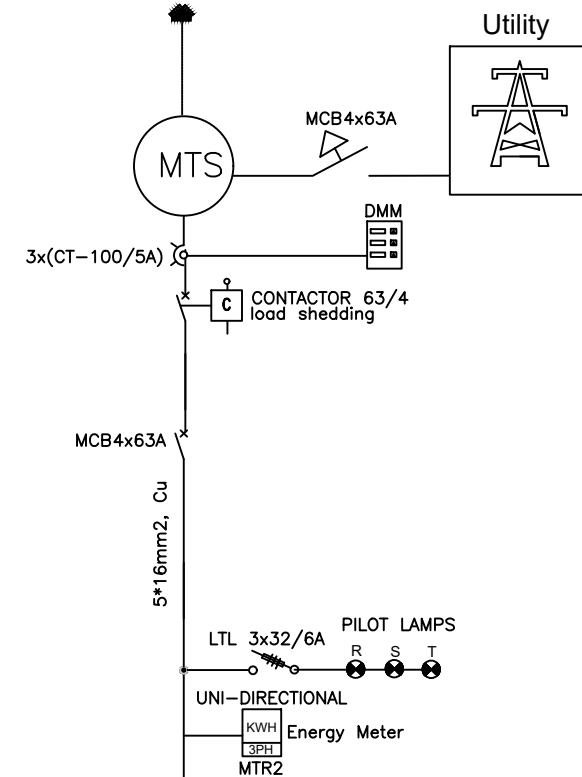
**Ministry of
Education**

MAY 2023

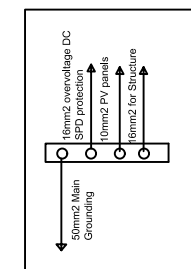
AC -input TO Battery inverter



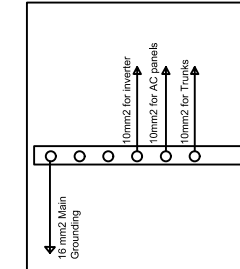
AC -OUT TO Load



Grounding Bonding Busbar



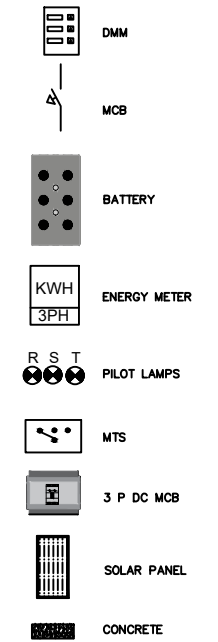
Grounding Bonding Busbar



Notes

- (1) All Dimensions Are In Cm.
- (2) All Levels Are In Meter
- (3) Any Missing or Unclear Detail And All Fastening Systems For All Elements Shall be Approved by The Supervisor.

Legend:



REVISIONS

NO.	DRAWINGS	DATE
(1)	Final Design	1-MAY-2023
(2)		
(3)		

Project Name:

SUPPLY AND INSTALLATION OF
ROOF-TOP SOLAR PHOTOVOLTAIC
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Funded by:



Contracting Authority:



Project:

Lot 1 - School Names:

Fahmi Elgergawi School
El Borage High School
Hamad Ben Khalaida School
Al Manfaloty High School
Ahmad El Shoqari School

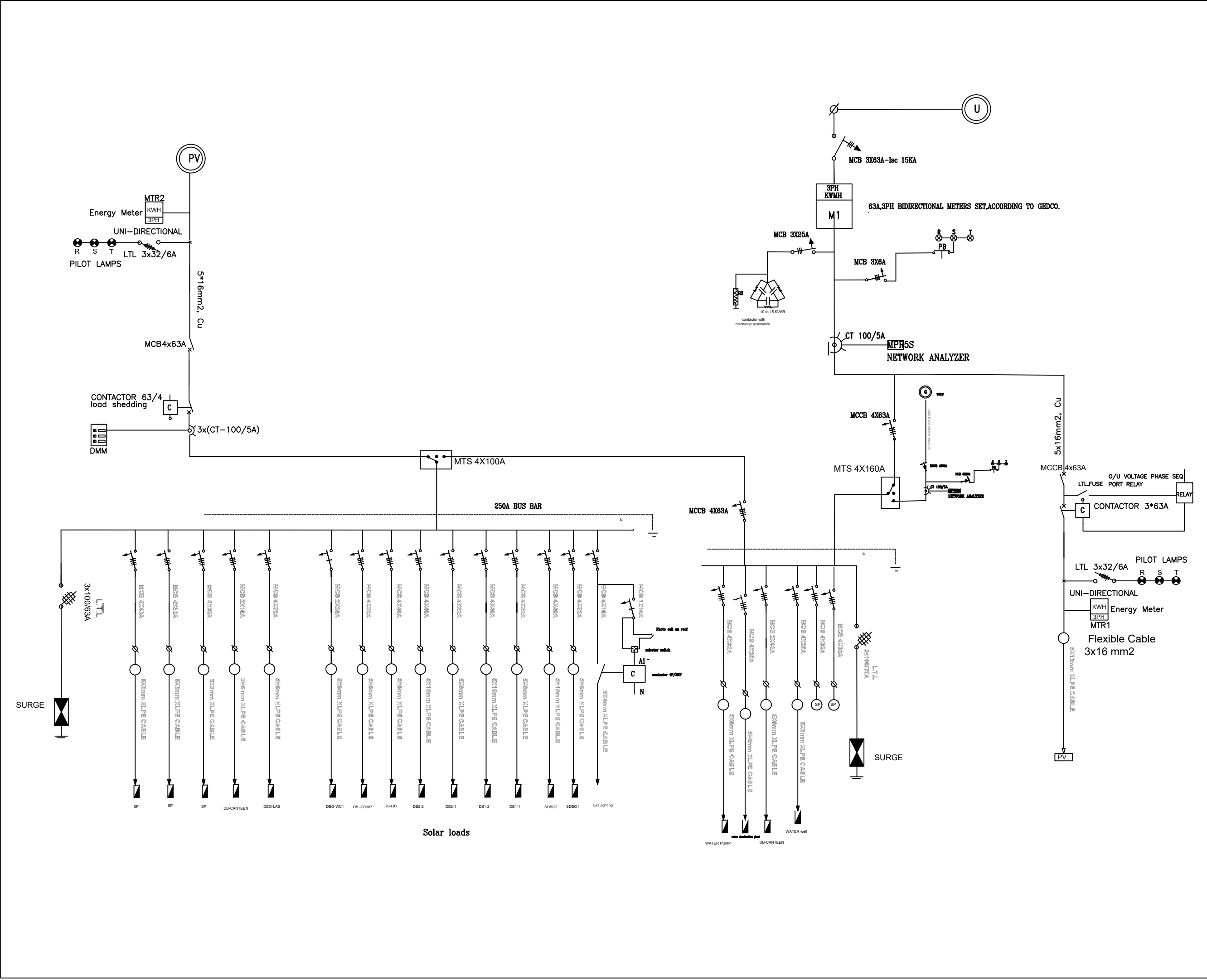
Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps
Tel: 08-2641260
Fax: 08-2641292

Drawing Title	OVERALL SYSTEM SINGLE LINE DIAGRAM	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	E01
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	



Notes

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Legend:

- DMM
- MCB
- BATTERY
- KWH ENERGY METER
- PILOT LAMPS
- MTS
- 3 P DC MCB
- SOLAR PANEL
- CONCRETE

REVISIONS		
NO.	DRAWINGS	DATE
(1)	Final Design	1-MAY-2023
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Funded by:

 **Belgium**
partner in development

Contracting Authority:

 **Enabel**

Project:

Lot 1 - School Names:

Fahmi Elgerawi School
El Borage High School
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Al Manfaloty High School
Ahmad El Shogari School

Tender No.: PZA1203211-10026

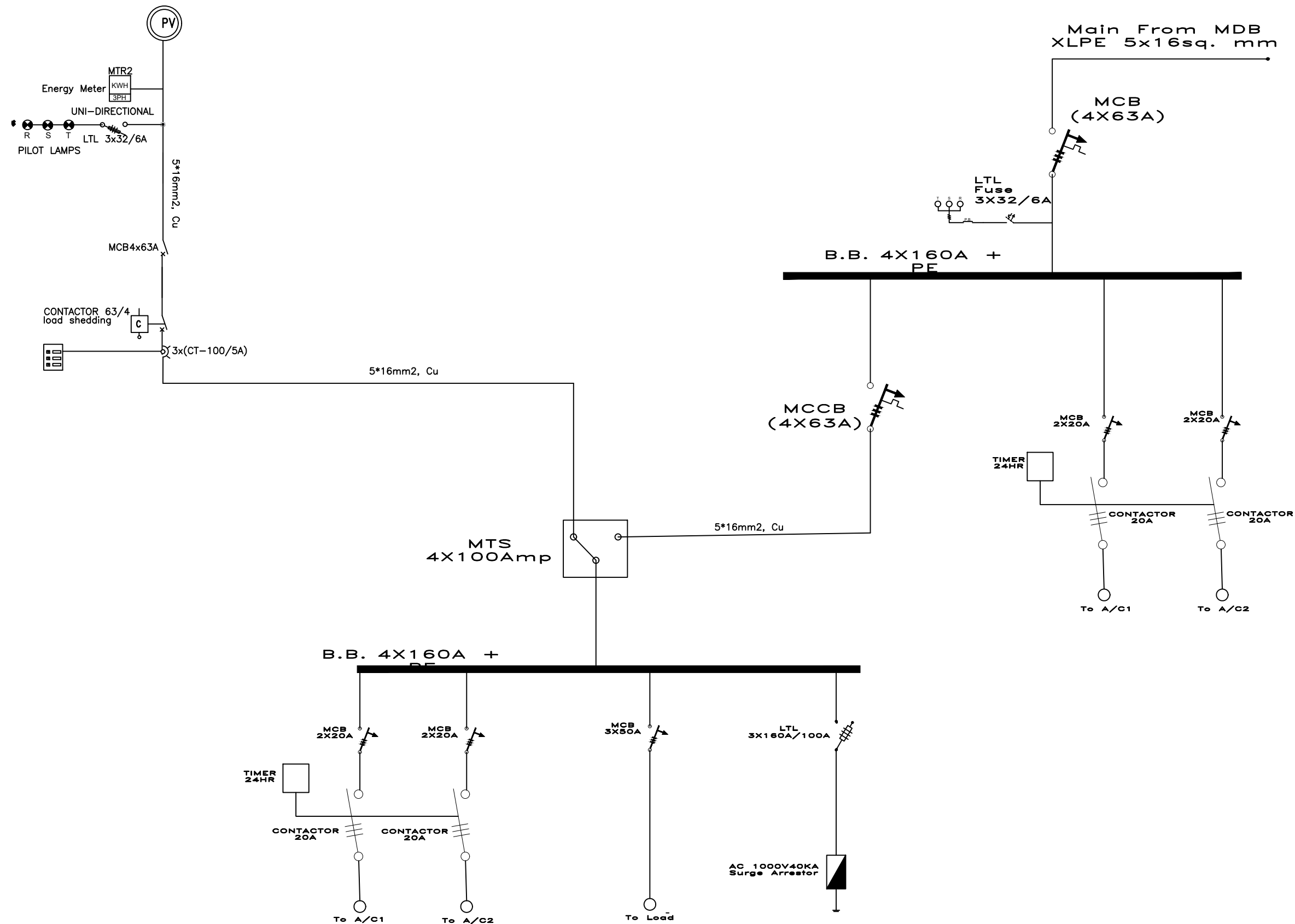
Designed by:

 **Ministry of Education**

Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

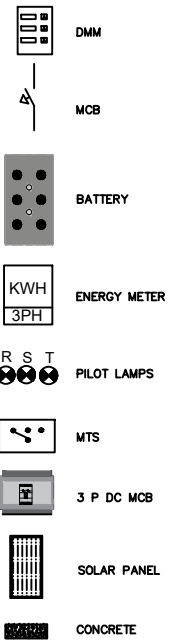
Drawing Title	LOADS RATED - SINGLE LINE DIAGRAM	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No: E02
Checked by:	Eng. Feras Baharat	
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	



Notes

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Legend:



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(1)	Final Design	1-MAY-2023
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Project:

Lot 1 - School Names:

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Ahmad El Shogari School

Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing Title

MTS SYSTEM AND
CONDITIONS CONTROL
SYSTEM - SINGLE LINE
DIAGRAM

Date:
27-02-2023
Scale:
NA

Designed by:

Eng. Mohammed Ghabn

Drawing No:

Checked by:

Eng. Feras Baharat

E03

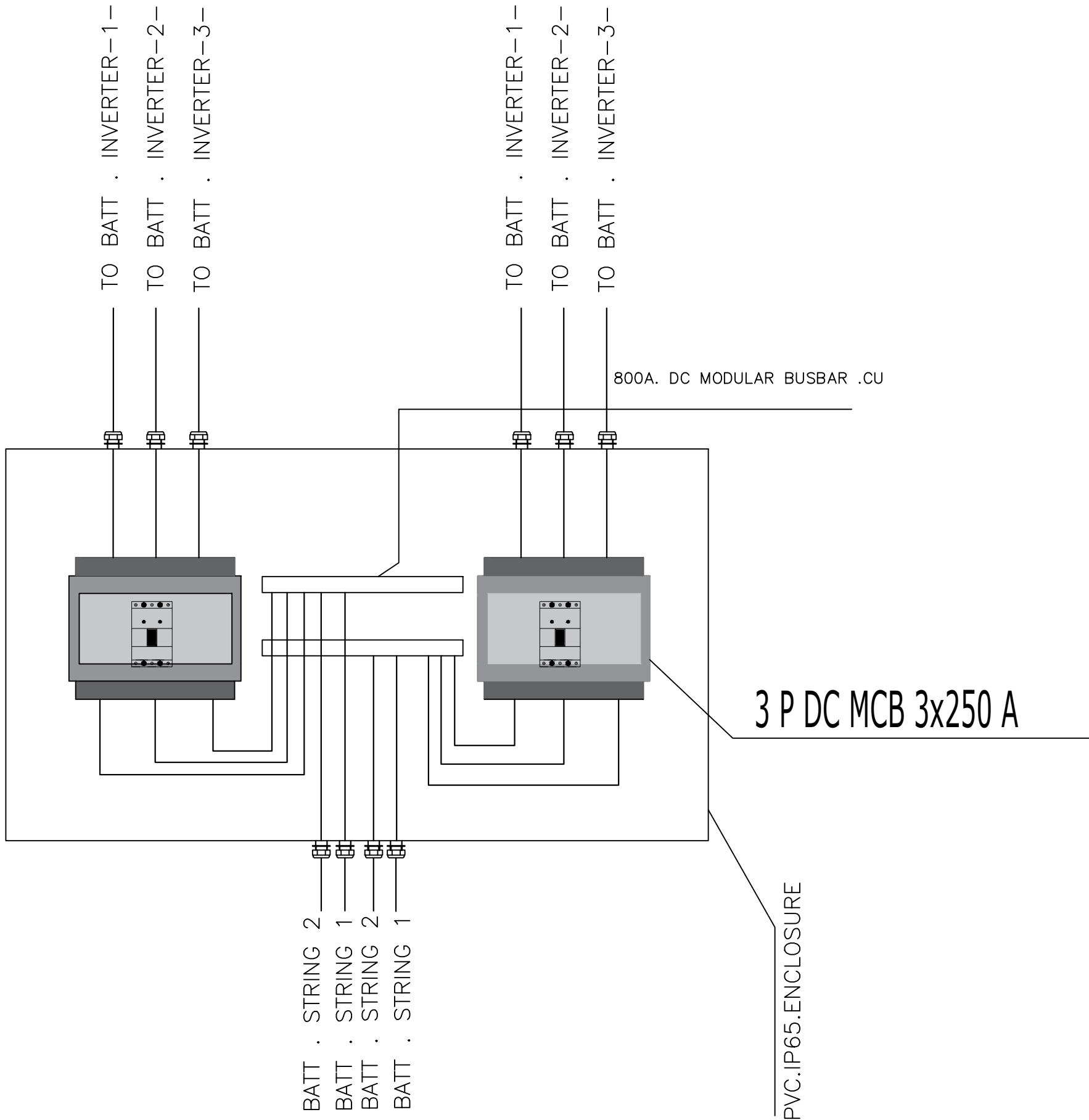
Approved by:

Eng. Feras Baharat

Coordinate Manager:

Alexis Doucet

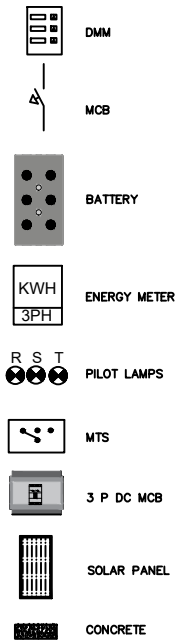
BATTERY BOX



Notes

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Legend:



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Hamad Ben Khalaida School
Al Manfaloty High School
Ahmad El Shoqari SCHOOL

Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing
Title

BATTERY DC BOX -
SINGLE LINE DIAGRAM

Date:
27-02-2023
Scale:
NA

Designed by:

Eng. Mohammed Ghobn

Drawing No:

Checked by:

Eng. Feras Baharat

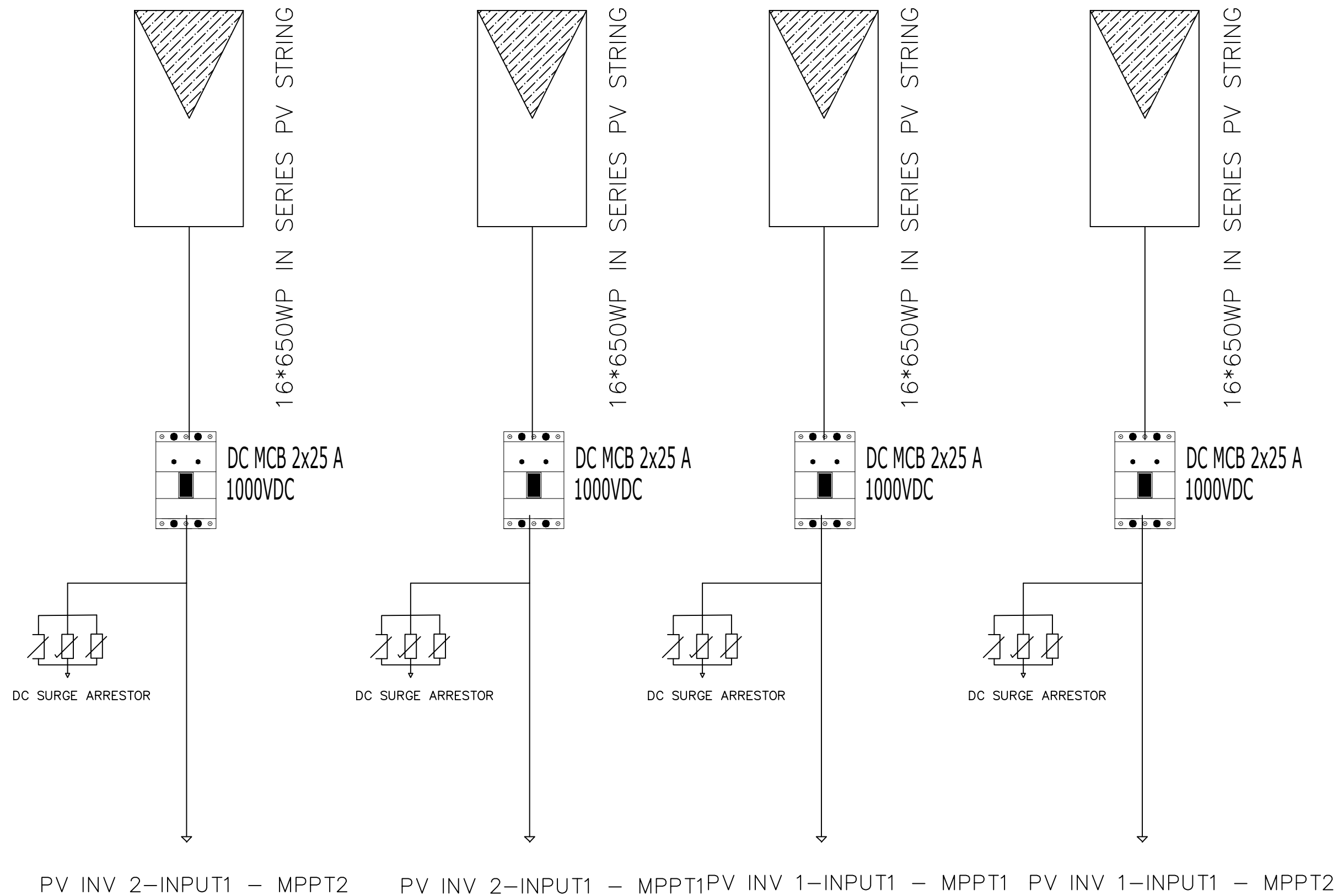
E04

Approved by:

Eng. Feras Baharat

Coordinate Manager:

Alexis Doucet



Notes

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Legend:

- DMM
- MCB
- BATTERY
- ENERGY METER
- PILOT LAMPS
- MTS
- 3 P DC MCB
- SOLAR PANEL
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Enabel

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Tender No.: PZA1203211-10026

Designed by:

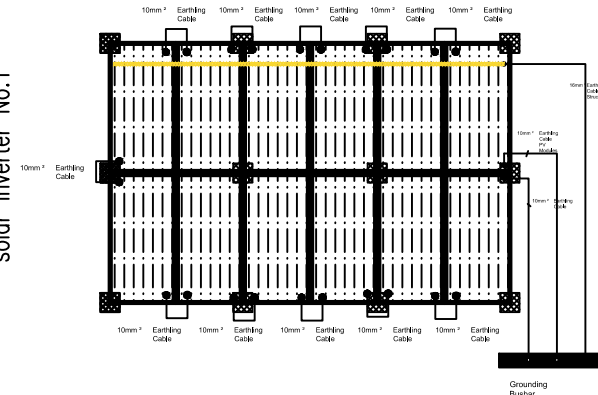
**Ministry of
Education**

Location: Gaza
Email: info@mohe.ps

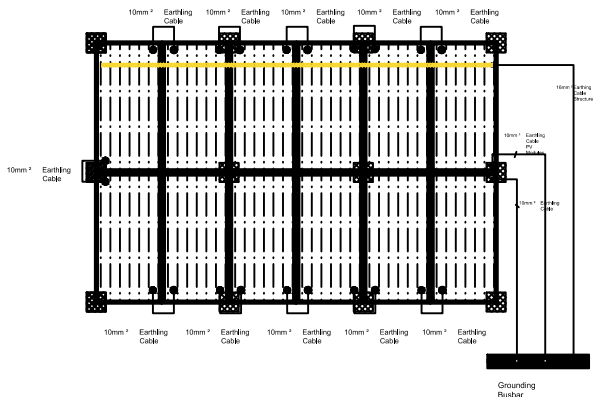
Tel: 08-2641260
Fax: 08-2641292

Drawing Title	PV COMBINER BOX - SINGLE LINE DIAGRAM	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	E05
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	

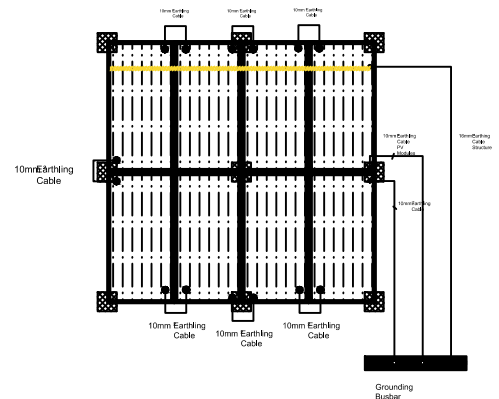
solar PV panels string 1 for
solar inverter No.1



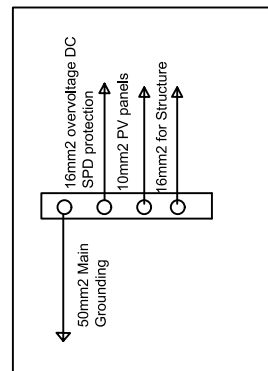
solar PV panels string 2 for
solar inverter No.1



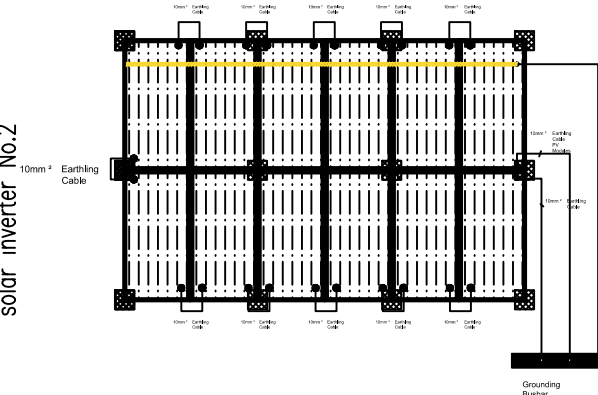
solar PV panels for string
1 and 2 for solar inverter
No.1



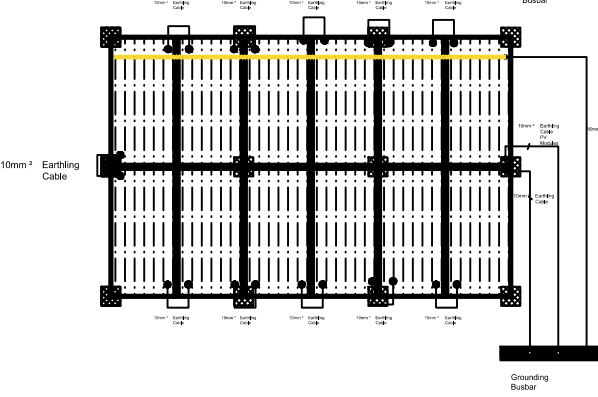
Grounding Bonding Busbar



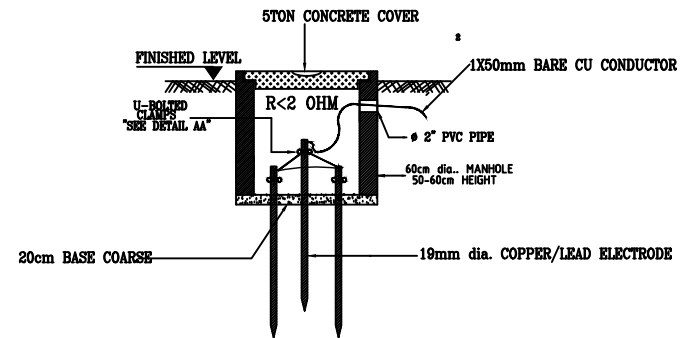
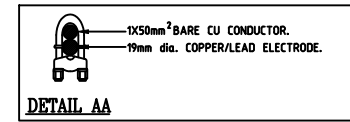
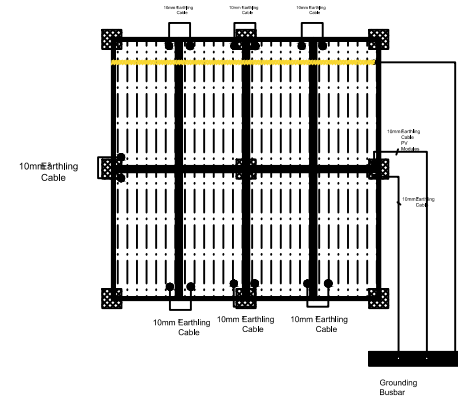
solar PV panels string 1 for
solar inverter No.2



solar PV panels string 2 for
solar inverter No.2



solar PV panels string 1 and
2 for solar inverter No.2

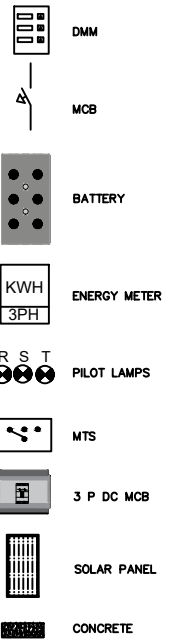


EARTHING MANHOLE DETAIL

Notes

- (1) All Dimensions Are In Cm.
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Legend:



REVISIONS

NO.	DRAWINGS	DATE
(1)	Final Design	1-MAY-2023
(2)		
(3)		

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Funded by:



Contracting Authority:



Project:

Lot 1 - School Names:

Fahmi Elgergawi School
El Borage High School
Hamad Ben Khalaida School
Al Manfaloty High School
Ahmad El Shoqari School

Tender No.: PZA1203211-10026

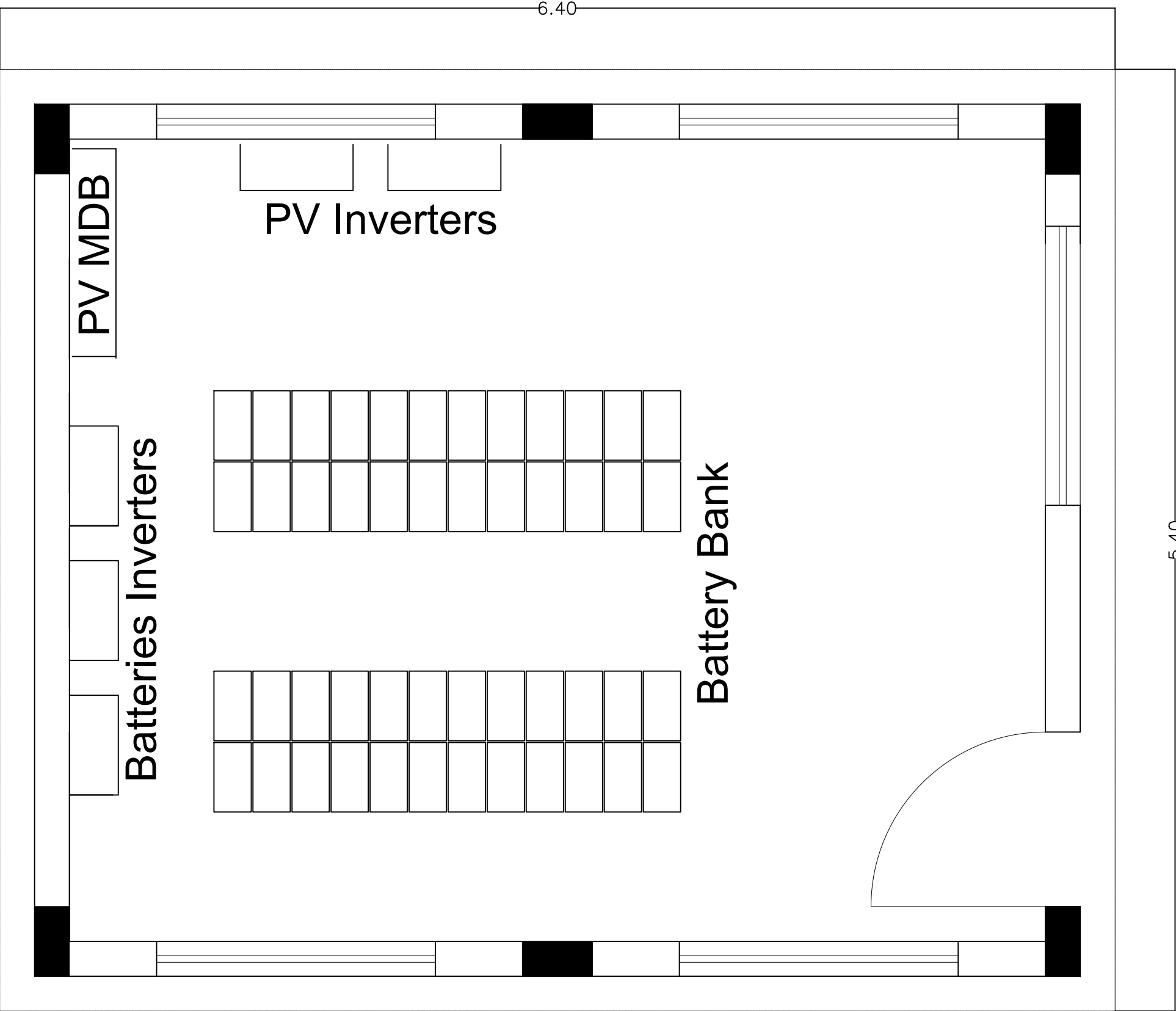
Designed by:



Location: Gaza
Email: info@moe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing Title	EARTHING SYSTEM - SINGLE LINE DIAGRAM	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	E06
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	



Notes

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Legend:

- DMM
- MCB
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- PILOT LAMPS
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- SOLAR PANEL
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 **Belgium**
partner in development

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 **Enabel**

Project:

Lot 1 - School Names:

Fahmi Elgergawi School
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Ahmad El Shoqari School

Tender No.: PZA1203211-10026

Designed by:

 **Ministry of Education**

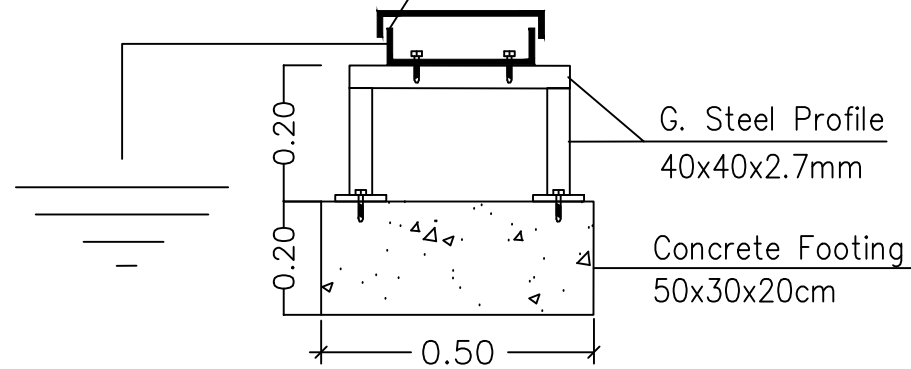
Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing Title	DISTRIBUTION OF INVERTERS AND PANELS AT THE PV ROOM	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	E07
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	

Hot dip galvanized Heavy Duty
Steel Cable Tray (20cm width)

With cover for DC and AC Cables



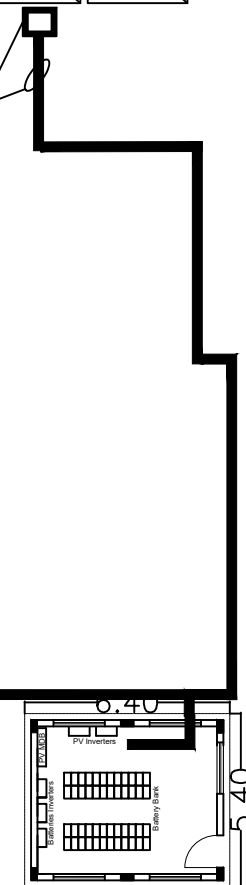
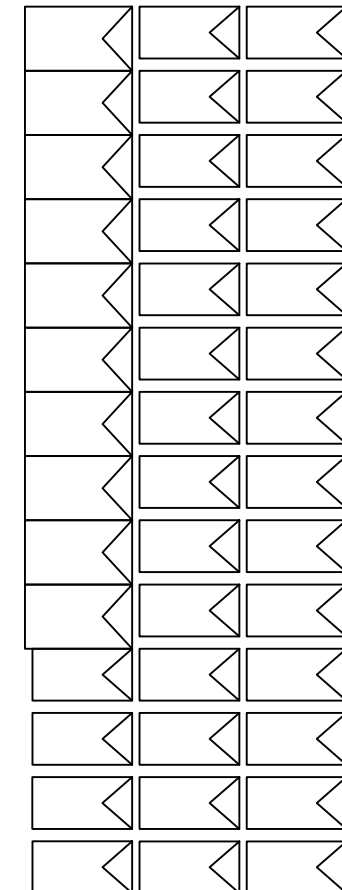
CABLE TRAY EXAMPLE DETAILS

20cmx8cm Covered perforated Cable Tray
For strings DC Cables

(1X50)mm² Cu

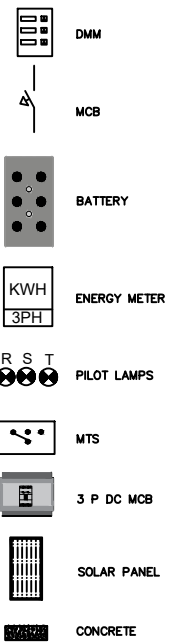
20cmx8cm Covered Cable Tray
For strings earthing Cables

Combiner Box



- Notes
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Ahmad El Shoqari School

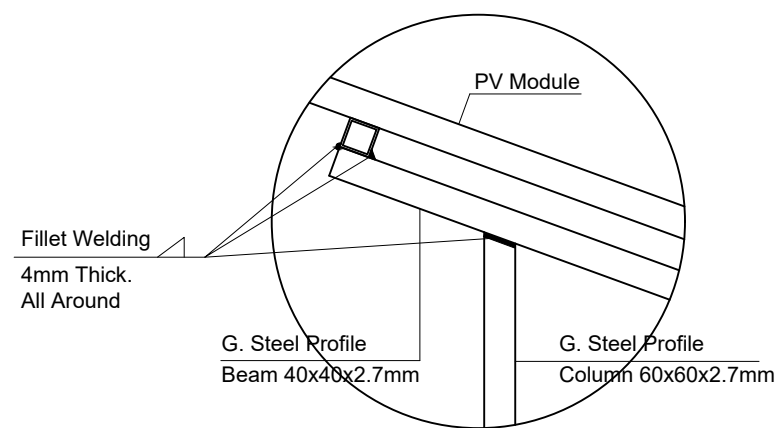
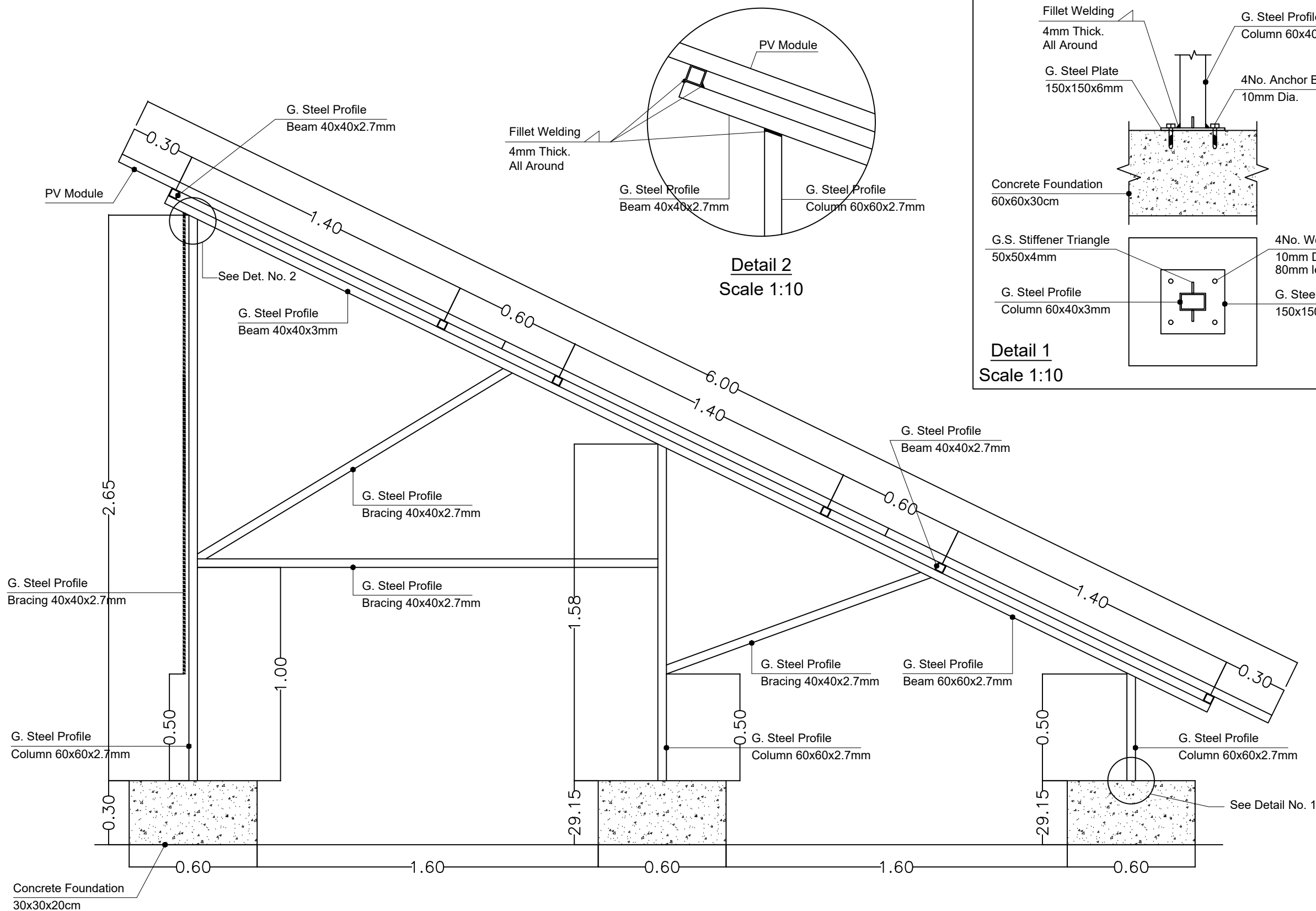
Tender No.: PZA1203211-10026

Designed by:

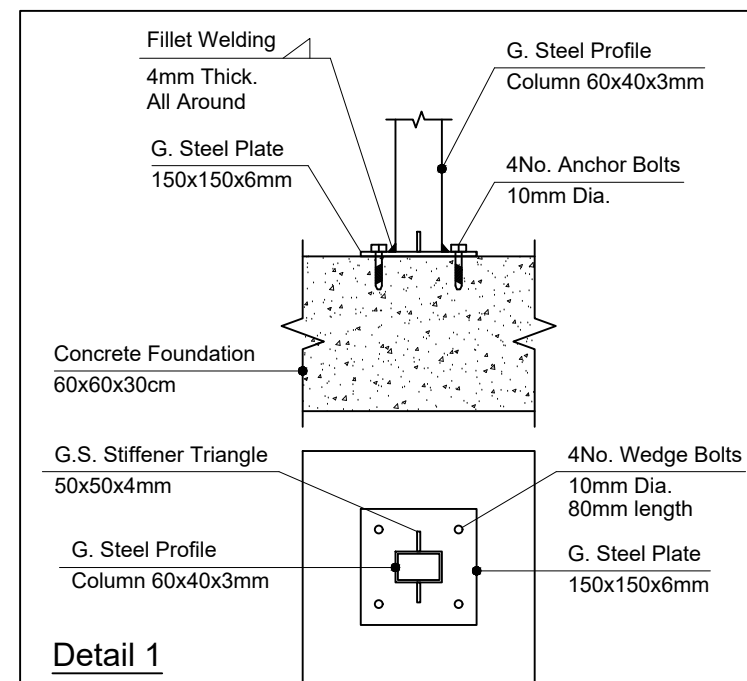


Location: Gaza
Email: info@mohe.ps
Tel: 08-2641260
Fax: 08-2641292

Drawing Title		Date: 27-02-2023 Scale: NA Drawing No: E08
Designed by:	Eng. Mohammed Ghabn	E08
Checked by:	Eng. Feras Baharat	
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	



Detail 2
Scale 1:10



Detail 1
Scale 1:10

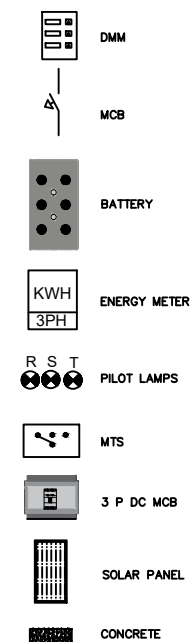
SIDE VIEW
Scale 1:20

MOUNTING STEEL STRUCTURE FOR PV STRINGS (1/2)

Notes

- (1) All Dimensions Are In Cm.
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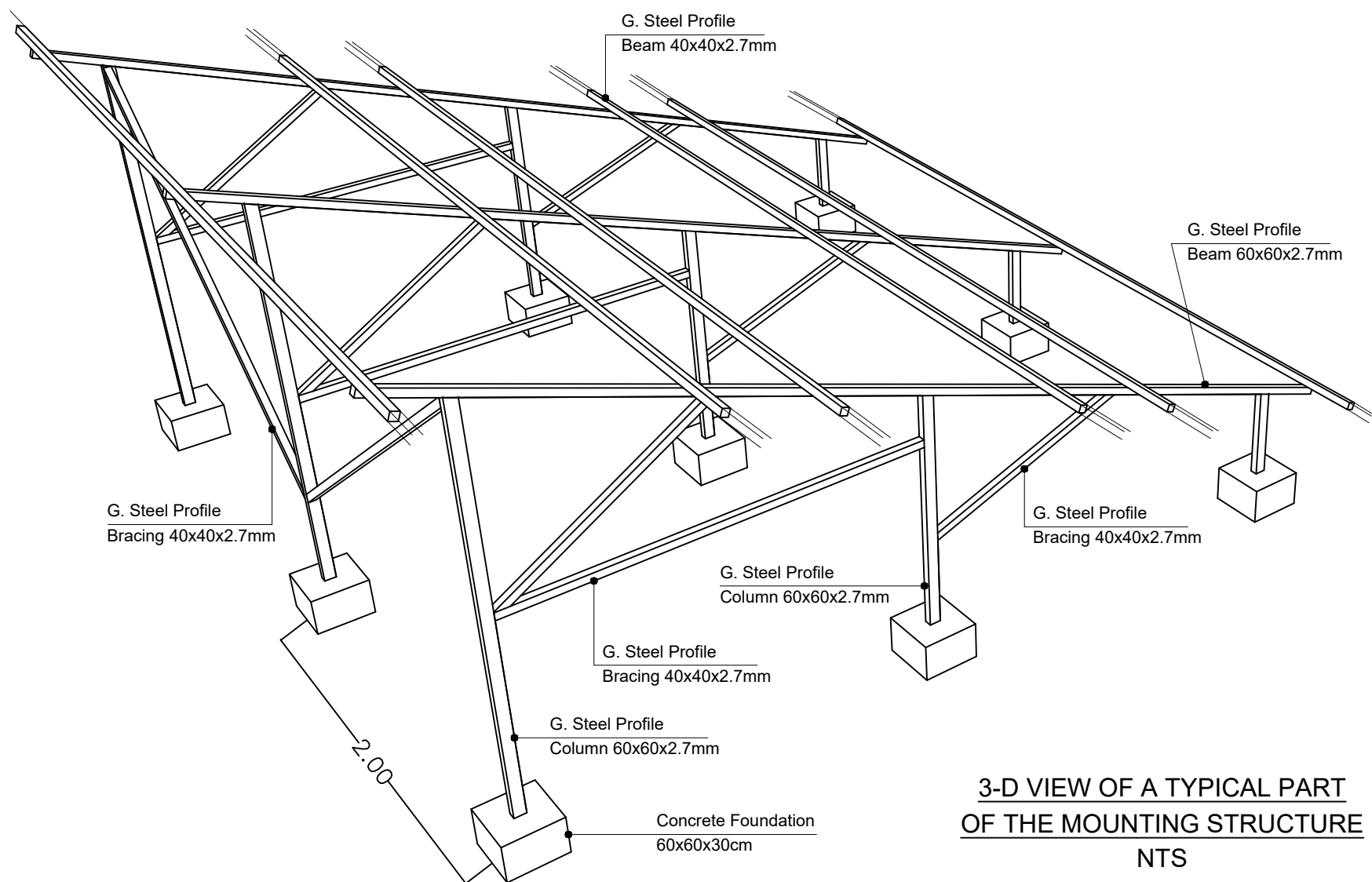
Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps
Tel: 08-2641260
Fax: 08-2641292

Drawing Title	MOUNTING STEEL STRUCTURE FOR PV STRINGS (1 of 5)	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	S01
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	



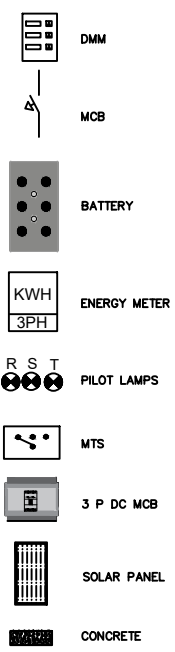
3-D VIEW OF A TYPICAL PART
OF THE MOUNTING STRUCTURE
NTS

MOUNTING STEEL STRUCTURE FOR PV STRINGS (2/2)

Notes

- (1) All Dimensions Are In Cm.
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Legend:



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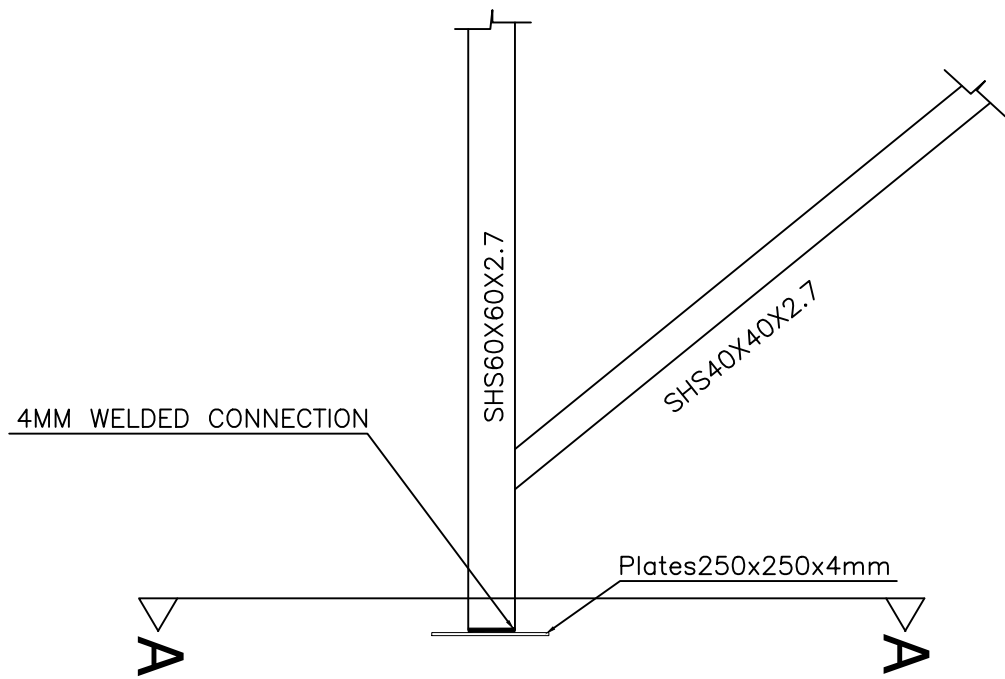
Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing Title	MOUNTING STEEL STRUCTURE FOR PV STRINGS (2 of 5)	Date: 27-02-2023 Scale: NA
Designed by:	Eng. Mohammed Ghabn	Drawing No:
Checked by:	Eng. Feras Baharat	S02
Approved by:	Eng. Feras Baharat	
Coordinate Manager:	Alexis Doucet	

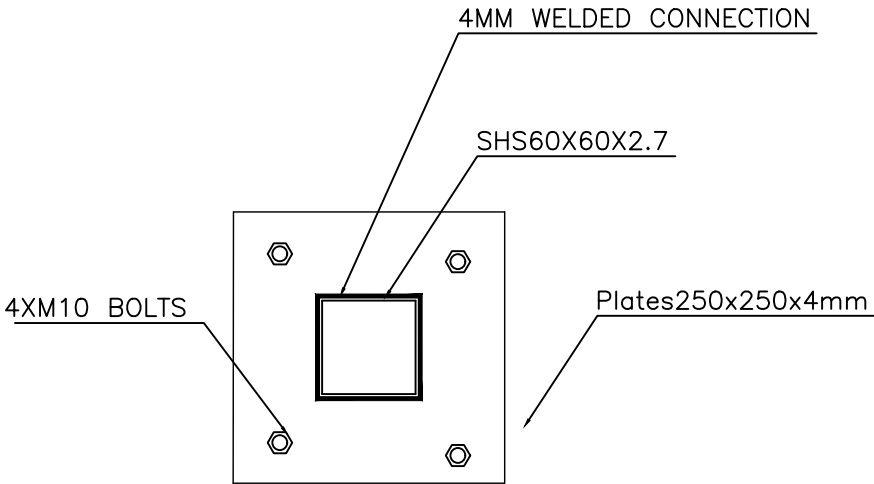
DETAIL 1

Scale 1:10



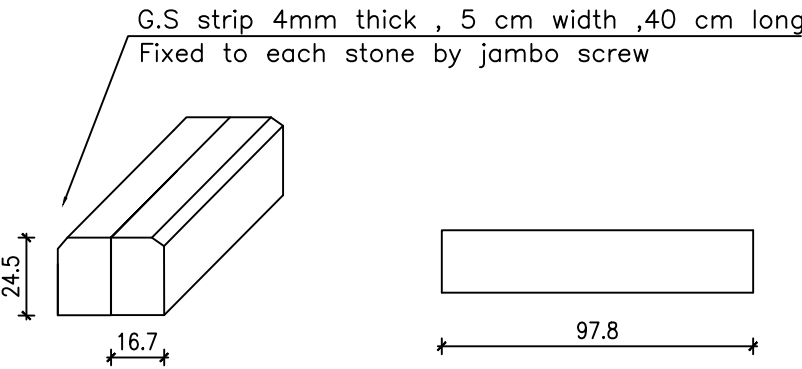
SECTION A-A

Scale 1:5



DETAIL 7

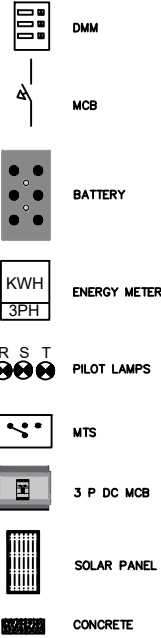
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Ahmad El Shoqari SCHOOL

Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing
Title

MOUNTING STEEL
STRUCTURE FOR PV
STRINGS (3 of 5)

Date:
27-02-2023
Scale:
NA

Designed by: Eng. Mohammed Ghabn

Checked by: Eng. Feras Baharat

Approved by: Eng. Feras Baharat

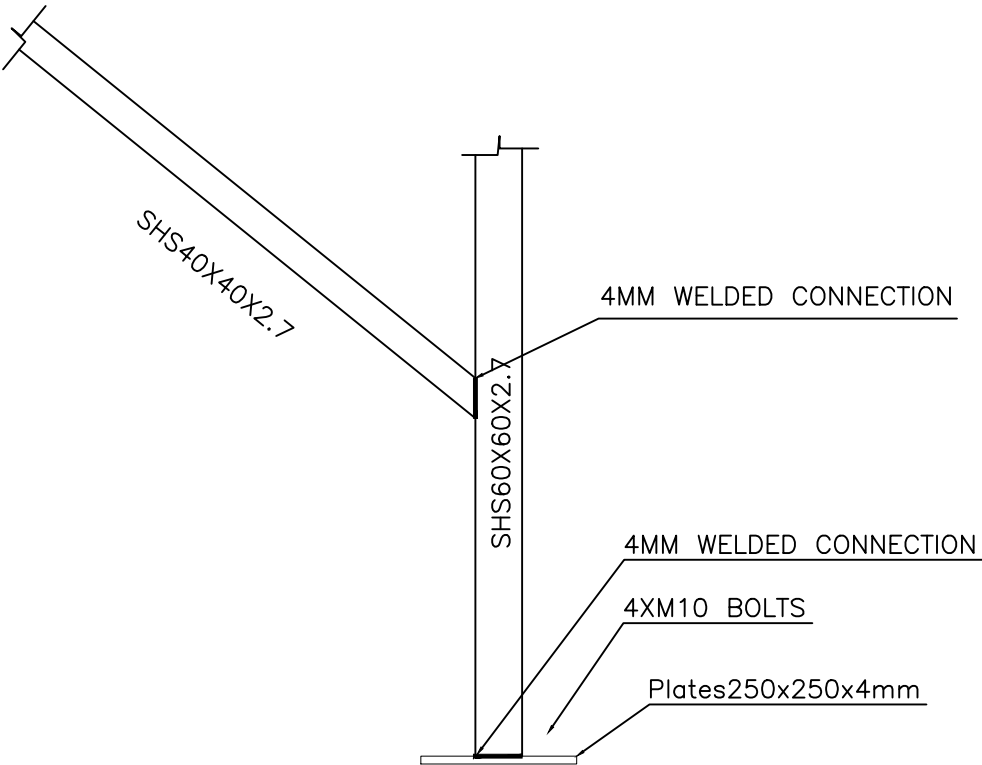
Coordinate Manager: Alexis Doucet

Drawing No:

S03

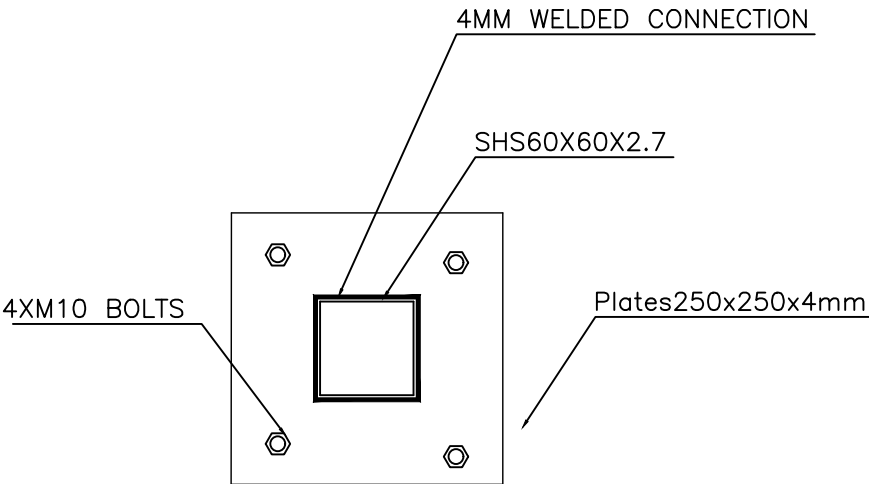
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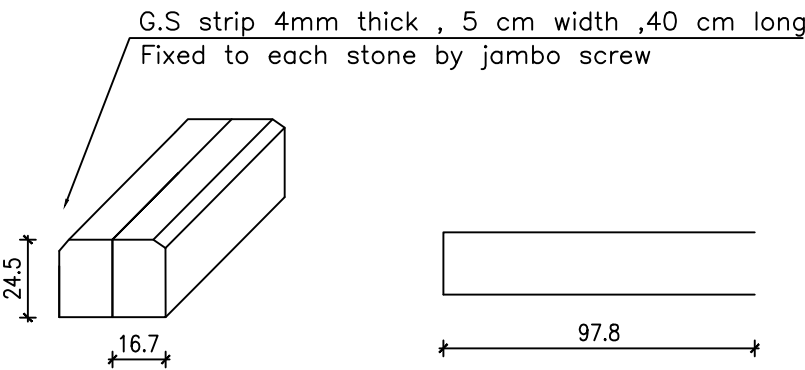
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DETAIL 6

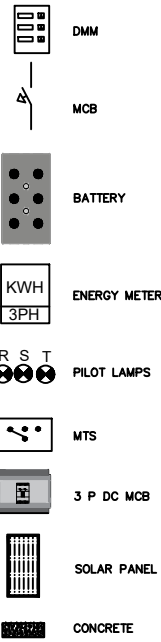
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Notes

- (1) All Dimensions Are In Cm.
- (2) All Levels Are In Meter
- (3) Any Missing or Unclear Detail And All Fastening Systems For All Elements Shall be Approved by The Supervisor.

Legend:



REVISIONS

NO.	DRAWINGS	DATE
(1)	Final Design	1-MAY-2023
(2)		
(3)		

Project Name:

SUPPLY AND INSTALLATION OF
ROOF-TOP SOLAR PHOTOVOLTAIC
SYSTEMS ON SCHOOLS IN GAZA STRIP

Funded by:



Contracting Authority:



Project:

Lot 1 - School Names:

Fahmi Elgergawi School
El Borage High School
Hamad Ben Khalaida School
Al Manfaloty High School
Ahmad El Shogari School

Tender No.: PZA1203211-10026

Designed by:



Location: Gaza
Email: info@mohe.ps

Tel: 08-2641260
Fax: 08-2641292

Drawing
Title

MOUNTING STEEL
STRUCTURE FOR PV
STRINGS (4 of 5)

Date:
27-02-2023
Scale:
NA

Designed by: Eng. Mohammed Ghabn

Checked by: Eng. Feras Baharat

Approved by: Eng. Feras Baharat

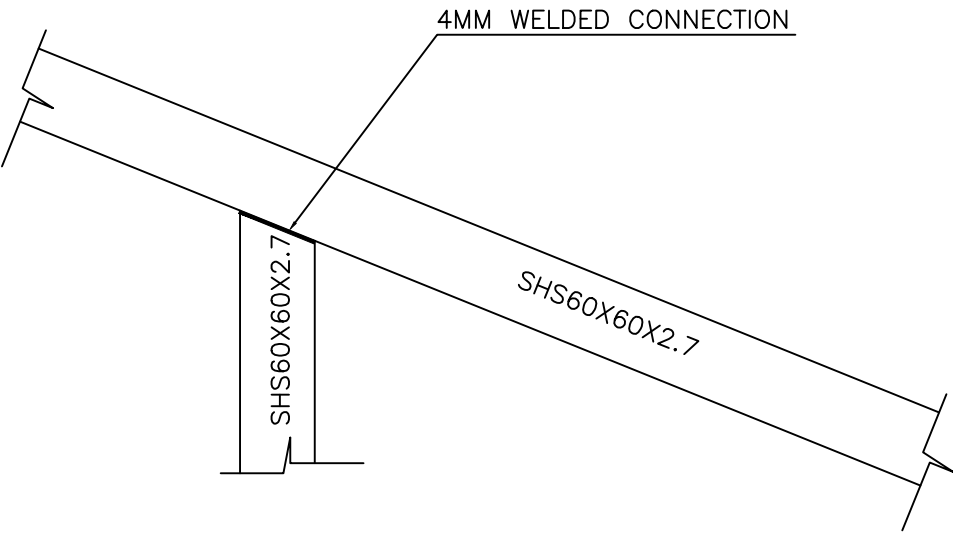
Coordinate Manager: Alexis Doucet

Drawing No:

S04

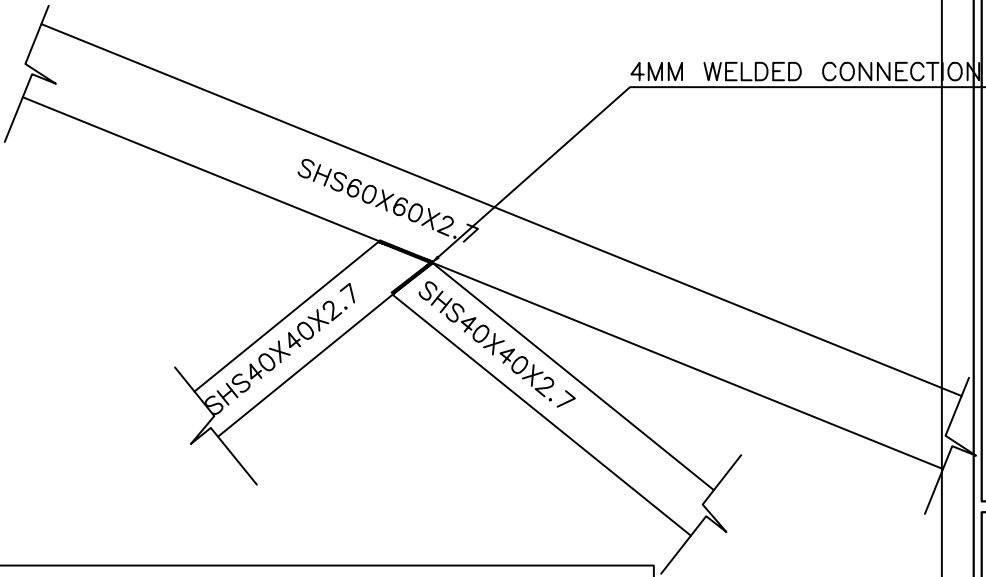
DETAIL 3

Scale 1:10



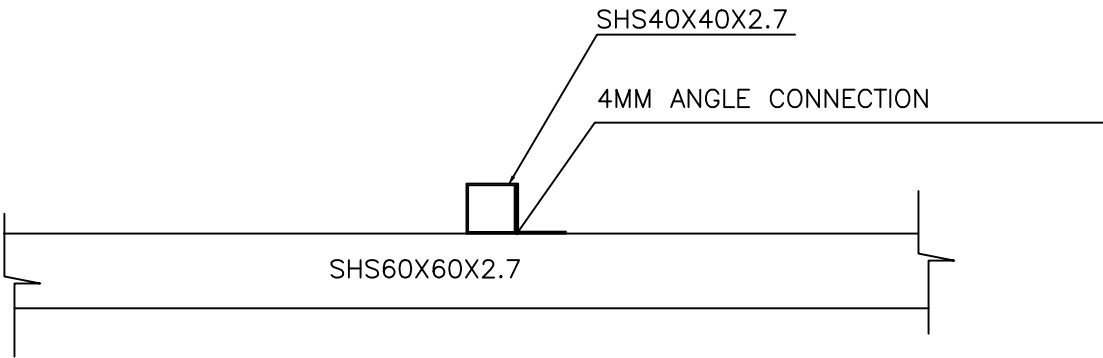
DETAIL 4

Scale 1:10



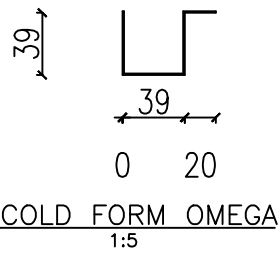
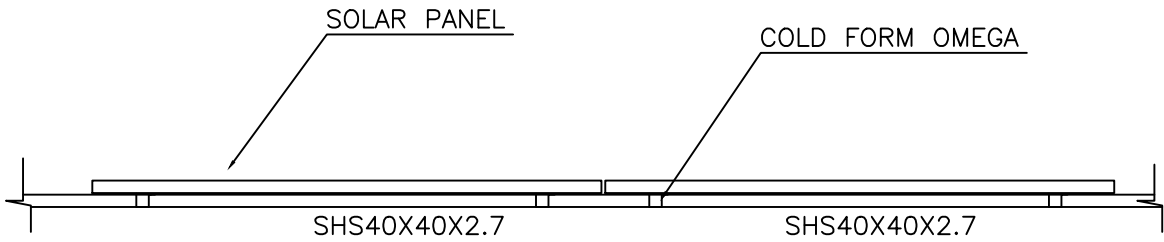
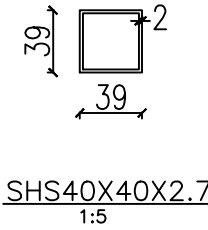
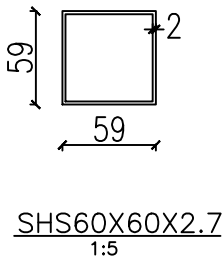
DETAIL 5

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SECTIONS DETAIL

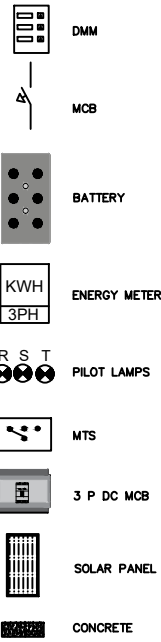
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Notes

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- (2) All Levels Are In Meter
- (3) Any Missing or Unclear Detail And All Fastening Systems For All Elements Shall be Approved by The Supervisor.

Legend:



REVISIONS

NO.	DRAWINGS	DATE
(1)	Final Design	1-MAY-2023
(2)		
(3)		

Project Name:

SUPPLY AND INSTALLATION OF
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Ahmad El Shoqari School

Tender No.: PZA1203211-10026

Designed by:



Location: Gaza Tel: 08-2641260
Email: info@mohe.ps Fax: 08-2641292

Drawing Title

MOUNTING STEEL
STRUCTURE FOR PV
STRINGS (5 of 5)

Date:
27-02-2023
Scale:
NA

Designed by: Eng. Mohammed Ghabn

Checked by: Eng. Feras Baharat

Approved by: Eng. Feras Baharat

Coordinate Manager: Alexis Doucet

Drawing No:

S05