



PROJECT COMPLETION REPORT

1223 kWp Rooftop Solar Power Plant

at

SRI HARMANDIR SAHIB

SHIROMANI GURDWARA PARBANDHAK COMMITTEE

SRI AMRITSAR, PUNJAB

by

UNITED SIKH MISSION

10656, CILANTRO CT, FONTANA CA 92337 USA

VPO BIAS PIND DISTRICT-JALANDHAR PUNJAB, INDIA

Project Commissioned by

HARTEK SOLAR PVT. LTD.



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SRI HARMANDIR SAHIB

Sri Harmandir Sahib (The Golden Temple) is a beautiful holy shrine situated in Amritsar, Punjab, India. It is the most sacred pilgrimage for people from all sects / religions especially Sikhs and as such large number of people visit the Golden Temple on daily basis. It is a major destination for Sikhs besides being a popular tourist attraction.

The creation of the Sikhism religion and “Golden Temple” took place during a time when the presence of the caste system in India was very strong. Due to the caste system, the low caste people had to suffer a lot. The Golden Temple is an open house of worship for people, from all walks of life and faiths.

The land that became Sri Amritsar Sahib was chosen by Guru Amar Das ji after he had asked his disciple, Ram Das, to find land to start a new town with a man-made pool (Amrit-Sarovar) as its central point, Continuing Guru Ram Das's efforts, Guru Arjan established



Amritsar as a primary Sikh pilgrimage destination. Maharaja Ranjit Singh has the privilege (service) for the building of the upper half of the building with a gold leaf.

An important reason for the origin of Sikhism was to give people equality irrespective of wealth, gender, caste, etc. Visitors from all religions / castes, male or female are welcome at The Golden Temple, should cover their heads before entering the temple premises. The ‘Guru Ka Langar’ offers free meals to around 1 lacs people every day.

The most famous and attractive aspect of the Golden temple is its glittering golden dome and appearance. The magnificent architecture of the temple gives it a unique look. During the night time, the golden reflection of the temple in the pool is indeed a sight to behold.

The rugged old Ber Tree in the north-east corner of the compound. It was planted 450 years ago, by the first head priest, Baba Buddha Sahib Ji.

The Golden Temple is one of the holiest religious sites of the Sikh community and continues to amaze and help people in achieving peace worldwide.

SHIROMANI GURDWARA PARBANDHAK COMMITTEE

SHIROMANI GURDWARA PARBANDHAK COMMITTEE (SGPC), a statutory body comprising elected representatives of the Sikhs concerned primarily with the management of sacred Sikh shrines under its control. It originated with the **Gurdwara Reform** or **Akali movement** of the early 1920's. The administration of Sri Harmandir Sahib (The Golden Temple) had been, since the annexation of the Punjab to the British territory in 1849, controlled by the British government through a committee of Sikh aristocrats and a manager.

On 15 November 1920, the Deputy Commissioner appointed a fresh committee, under the authority of the Akal Takht, a general assembly of the Sikhs to meet in front of the Akal Takht. The Sikh assembly, a committee of 175-members representing Sikh organisation in all districts, the Sikh states of the Punjab and other Indian provinces. The inaugural meeting of the SGPC was held at the Akal Takht on 12 December 1920. The Committee was registered on 30 April 1921 under the Societies Registration Act, 1860. Under its constitution, 80 per cent of the 175-member Committee were to be elected from various constituencies in and out of Punjab, including the princely states, and the remaining seats were to be nominated by the elected members. There had to be a president, a vice-president, a secretary and executive committee. The prime functions of the Committee were to manage all Gurdwaras under its control, free them from undesirable practices and to utilize all income appropriately for purposes such as propagation of religion and education, upkeep and improvement of buildings and operation of the Guru ka Langar.



UNITED SIKH MISSION

UNITED SIKH MISSION is a philanthropic charitable organization incorporated in Southern California, USA and also operating in Punjab, India since 2005 for the purposes of Human and Environmental Welfare.

USM is on mission to empower communities worldwide by addressing disparities in healthcare needs – eliminate preventable medial illnesses and taking the initiative to improve education in emerging and developing countries like India.

United Sikh Mission values the elements of optimism and service inspired by communities for the



benefit of all. With joint efforts through communities around the world, we envision to reshape our world with a positive impact to eliminate poverty while promoting peace and community to spread prosperity, kindness towards humanity and environmental welfare.

Sh Rashpal Singh Dhindsa Chairmen and board members United Sikh Mission (USM) are highly thankful to SGPC for providing this opportunity of building 1223kWp Solar Photovoltaics Power Plant at Sri Harmandir Sahib Complex Amritsar, Gurudwara Bir Baba Budha Sahib ji, Gurudwara Shaheed Baba Deep Singh ji and Gurudwara Bhai Gurdas Hall. We are grateful to the President, Secretary and other senior functionaries of SGPC for corporation and support extended during installation of solar power plant.



United Sikh Mission acknowledge the services of the following key persons

Key Supervising Members from United Sikh Mission:

- 1 Gurpal Singh Dhindsa – Vice President, USM India
2. Ranjit Singh Chadha – Gen. Sec. – USM India
3. Bhupinder Singh – Board Member – USM India
4. Avtar Singh Dhindsa – Member – USM India

Key Technical Persons:

1. Dr. M.P. Singh Former Dean Punjab Technical University Jalandhar
2. Mr. Balour Singh Former Director Punjab Energy Development Agency

Supported by:

1. Baldev Singh Kang – Cargo Solution Express INC. California, USA
2. Bicky Singh – SikhLens Foundation, California, USA
3. Ojaswwee Sharma – India Head, SikhLens

We are grateful and thank our board members and financial donors from across the world who have generously contributed to the cause of welfare for humanity towards Solar Panels

PROJECT AT GLANCE –

Solar Photovoltaic Power Plant -1223kWp

United Sikh mission has the privilege of providing solar photovoltaic power plant of 1233kWp on various roofs of Sri Harmandir Sahib Complex Amritsar, Gurudwara Bir Baba Budha Sahib ji, Gurudwara Shaheed Baba Deep Singh ji and Gurudwara Bhai Gurdas Hall.

The project conceptualize during March 2021 and successfully completed through an EPC company M/s Hartek solar private limited Mohali Punjab during the period as below.



SN	LOCATION	CAPACITY	DATE OF COMPLETION
1.	Sri Harmandir Sahib Complex Sri Amritsar	525 kWp	23-12-2021
2.	Gurudwara Bir Baba Budha Sahib Ji	520 kWp	26-05-2022
3.	Gurudwara Shaheed Baba Deep Singh Ji	138 kWp	06-04-2022 & 09-01-2023
4.	Gurudwara Bhai Gurdas Hall	40 kWp	25-04-2023
	Total	1223 kWp	

United Sikh Mission acknowledge the service offered by Hartek Solar Private Limited for operation and maintenance of plant for period of 10 years without any extra cost over and above of EPC cost. Also for providing extra materials like cables, breakers and LT panels at their own cost.

We are grateful to Sh. Hartek Singh-CMD, Sh. Simarpreet Singh-Director & Sh. Divanshu Gupta-Head Solar and entire technical team of Hartek Solar Private Limited.

GLOSSARY

AB	Air Breaker
ACB	Air Circuit Breaker
AC	Alternate current
ACSR	Aluminum Conductors Steel Reinforced
BOS	Balance of the System
CO ₂	Carbon Dioxide
CT	Current Transformer
DAS	Data Acquisition System
DC	Direct Current
DP	Double Pole
DPR	Detailed Project Report
HT	High Tension
LT	Low Tension
LV	Low Voltage
MNRE	Ministry of New and Renewable Energy
KWh	Kilo Watt Hour
MCB	Main Combiner Box / Miniature Circuit Breaker
MFM	Multi-Function Meters
PLF	Plant Load Factor
PFC	Power Finance Corporation
PPA	Power Purchase Agreement
PV	Photo Voltaic
PT	Power Transformer
SEB	State Electricity Board
SO ₂	Sulphur Dioxide
SP	Single Pole
VCB	Vacuum Circuit Breaker
XLPE	Cross Linked Polyethylene (Insulated Power cable for higher voltages)

UNITS

%	Percentage
*C	Degree Celsius
H	Hour
Kv	Kilo-Volt
MV	Medium Volt
HV	High Volt
Kw	kilo Watt
MW	Mega Watt
GW	Giga Watt
KWp	kilo Watt peak
M	Meter
m ²	Square meter
m ³	Cubic meter
Mg	Milligram
Mm	Milli-meter
MW	Mega Watt
MWp	Mega Watt peak
KWh	Kilo Watt Hour

PROJECT SUMMARY

1	System capacity	525 kWp + 520 kWp +138 kWp+ 40 kWp
2	Project Location	Sri Harmandir Sahib Complex Amritsar, Gurudwara Bir Baba Budha Sahib Ji, Gurudwara Shaheed Baba Deep Singh ji, Gurudwara Bhai Gurdas Hall
3	No of Roofs	17 Nos.
4	Technology	Solar Photovoltaic
5	Type of Module	Mono Crystalline silicon with PERC Technology- Framed
6	Make & Wattage of Modules	Trina Solar-500Wp & 550Wp
7	Type of Inverters	String Inverter
8	Make of Inverters and capacity	Havells, 20kw to 100kw range
9	Each Module Rating	500/550Wp Mono-PERC
10	Inverter nominal Rating and Qty.	AC String Inverter
11	Power Evacuation level	415V
12	Estimated total area (considered Shadow Free)	13000 Sq mtr
13	Location of place on Earth	Latitude 31.62° N Longitude 74.88° E
14	Nearest airport	Sri Guru Ram Das Ji International Airport
15	Estimated Generation of the Plant at the end of First Year- specific production	1300 kWh/kW/Year
16	Cost of Plant(INR)	4,31,00,000 (Four Crore Thirty-One Lakh Rupees only)

SRI HARMANDIR SAHIB COMPLEX AMRITSAR

No	Name of The Building	Solar Capacity (kW)	Solar Modules Tech Specification	Inverter Details	Expected 1st Year Generation (kWh)	Commissioning Date
1	Sri Guru Arjan Dev Ji Niwas	98.5	500Wp-197 Nos, Monoperc Technology	100kW-1No	128050	23-12-2021
2	Sri Guru Ram Das Ji Niwas	82	500Wp - 164Nos, Monoperc Technology	80kW-1No	106600	23-12-2021
3	Sri Guru Hargobind Ji Niwas	42.5	500Wp-85Nos, Monoperc Technology	50kW-1No	55250	23-12-2021
4	Sri Guru Nanak Dev Ji Niwas	83	500Wp-166Nos, Monoperc Technology	80kW-1No	107900	23-12-2021
5	Mata Ganga Ji Niwas	20	500Wp-40Nos, Monoperc Technology	20kW-1No	26000	23-12-2021
6	Teja Singh Samundri Hall & Dharam Prachar Block	74.5	500Wp-149Nos, Monoperc Technology	50kW-1No, 15kW-1No	96850	23-12-2021
7	SGPC President Office	25	500Wp-50Nos, Monoperc Technology	25kW-1No	32500	23-12-2021
8	Gathri Ghar	12	500Wp-24Nos, Monoperc Technology	10kW-1No	15600	23-12-2021
9	NRI Niwas	10.5	500Wp-21Nos, Monoperc Technology	10kW-1No	13650	23-12-2021
10	Jodha Gahr	77	500Wp-154Nos, Monoperc Technology	50kW-1No, 15kW-1No	100100	23-12-2021
	Total	525				



GURUDWARA BIR BABA BUDHA SAHIB JI

No	Name of The Building	Solar Capacity (kW)	Solar Modules Tech Specification	Inverter Details	Expected 1st Year Generation (kWh)	Commissioning Date
1	Mata Ganga Ji Niwas	51	500Wp-102Nos Monoperc Technology	50kW-1No	66300	26-05-2022
2	Diwan Hall	240	500Wp-480Nos, Monoperc Technology	100kW- 2Nos 20kW-1No	312000	26-05-2022
3	Hospital Building	20	500Wp -40Nos, Monoperc Technology	20kW-1No	26000	26-05-2022
4	Langer Hall	209	500Wp- 202Nos/550Wp 196Nos Monoperc Technology	100kW- 2nos	271700	26-05-2022
	Total	520				





GURUDWARA SHAHEED BABA DEEP SINGH JI

No	Name of The Building	Solar Capacity (kW)	Solar Modules Tech Specification	Inverter Details	Expected 1st Year Generation (kWh)	Commissioning Date
1	Gurudwara Baba Bota Singh ji	70	500Wp-84Nos/ 550Wp-51Nos Monoperc Technology	30kW- 2Nos	91000	06-04-2022
2	Baba Deep Singh Ji Niwas	68.45	500Wp-72Nos/ 550Wp-59Nos Monoperc Technology	15kW- 1No, 30kW- 1No, 25kW- 1No	88985	09-01-2023
	Total	138.45				





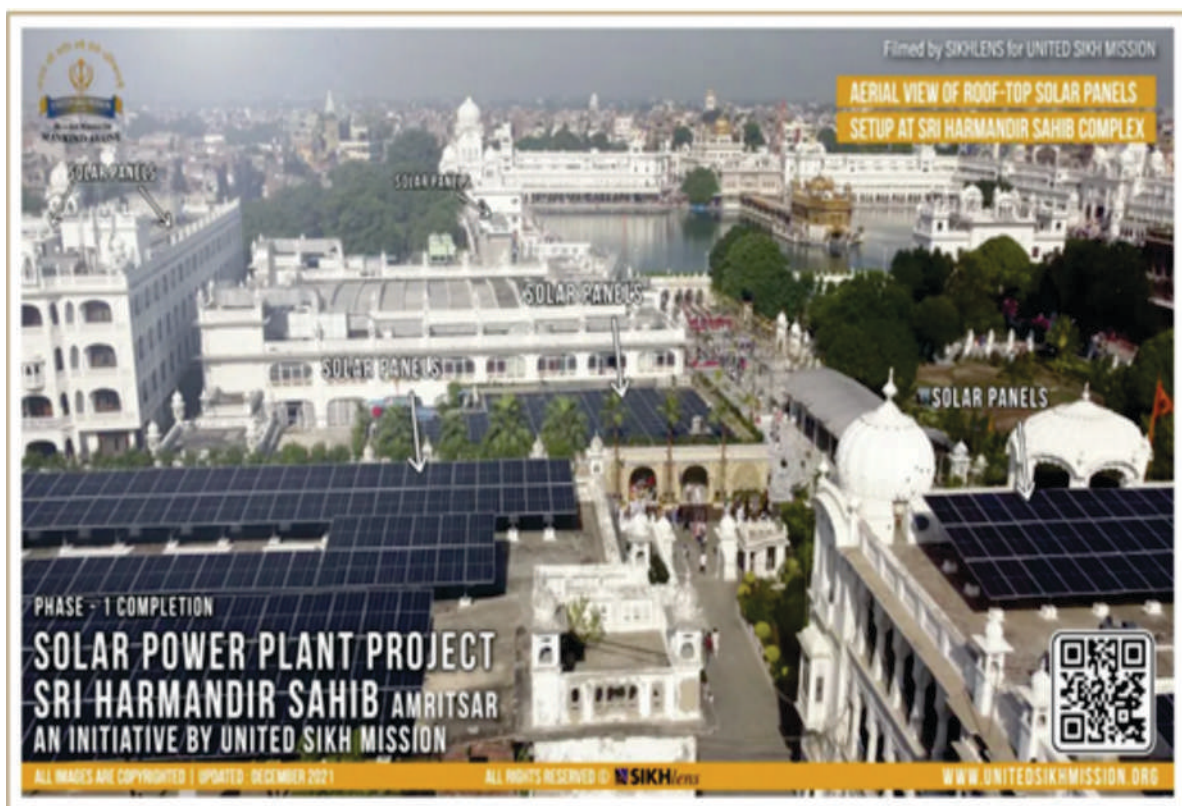
GURUDWARA BHAI GURDAS HALL

No	Name of The Building	Solar Capacity (kW)	Solar Modules Tech Specification	Inverter Details	Expected 1st Year Generation (kWh)	Commissioning Date
1	Bhai Gurdas hall	40	550Wp-73Nos, Monoperc Technology	20kW-2nos	52000	25-04-2023
	Total	40				

BILL OF MATERIAL FOR 1223 kWp ROOFTOP SOLAR POWER PLANT

Bill of Material-On Grid Rooftop Solar Power Plant						
S.NO	Item	Specification	MAKE	UOM	Quantity	Scope of work
MAJOR EQUIPMENT						
1	Solar PV Modules	500 WP High Power Mono PERC Module	Trina Solar	Nos	1990	HSPL
		550 WP High Power Mono PERC Module	Trina Solar	Nos	416	HSPL
2	Inverters 3 Phase Grid Tied Inverter	100Kw	Havells	Nos	5	HSPL
		80kW		Nos	2	
		50kW		Nos	4	
		30KW		Nos	3	
		25kw		Nos	2	
		20KW		Nos	5	
		15kw		Nos	2	
		10kw		Nos	2	
MOUNTING STRUCTURE/CIVIL						
3	Civil work foundations for MMS	As Per foundation Layout drawings	Standard	Lot	1	HSPL
4	Chemical	Chemical for leakage proof of fastening	Standard	Lot	1	HSPL
5	Waterproofing Solution	Chemical in civil work	Standard	Lot	1	HSPL
6	Civil Foundation Templates	As Per design	Standard	Lot	1	HSPL
7	Hot Dip Galvanized module mounting structure	Complete Hot Dip Galvanised structure with complete mounting hardware of SS304 as per approved structure drawings	Standard	Lot	1	HSPL
8	MMT Hardware	Complete Hardware like nutbolts, Plain washer & Spring Washer should be of Stainless steel 304	Standard	Lot	1	HSPL
9	Civil work foundations for ACCB M25	As Per Design layout	Standard	Lot	1	HSPL
10	White Paint on Civil Blocks	White Paint for Civil block	Standard	Lot	1	HSPL
11	Inverter Stand arrangement	as per drawing	Standard	Set	1	HSPL
12	DC Cable	1C X 4 SQMM , XLPE, Copper Cable, 1.1KV Grade	Polycab	Lot	1	HSPL

13	AC Cable - inverter to ACCB	3.5C X 95 SQMM XLPE AL. AR., 1.1KV Grade	Polycab	Lot	1	HSPL
14	AC Cable - ACCB to LT Panel	3.5C X 150 SQMM XLPE AL. AR., 1.1KV Grade	Polycab	Lot	1	HSPL
		3.5C X 300 SQMM XLPE AL. AR., 1.1KV Grade	Polycab	Lot	1	HSPL
15	Earthing Cable for ACDB/INV/As per layout	1C X 16 SQMM XLPE, copper (Green), 1.1KV Grade	Polycab	Lot	1	HSPL
16	MC4 Connector	MC4 Pair 1500V DC, 15Amp (For 4sq mm cable)	Standard	Lot	1	HSPL
17	Cable Tray-For DC Cables	50 x 40 x 1.6 mm GI Cable Tray	Standard	Lot	1	HSPL
18	Data Logger	Inputs from Inverter, Data monitoring system.	Havells Inbuilt	Nos	13	HSPL
19	Earthing Kit	Earthing Pits (separate for AC, DC and LA)	Standard	Nos	63	HSPL
20	Lightning Arrestor	As per SLD	Standard	Nos	8	HSPL
21	Strip	25 X 3 mm GI strip	Standard	Lot	1	HSPL
22	Strip	50 X 6 mm GI strip	Standard	Lot	1	HSPL
23	Screw, Gitti, Pench	As Required	Standard	Lot	1	HSPL
24	Insulator Block(T Type)	For mounting earthing strip to walls	Standard	Lot	1	HSPL
25	Water Pipe with accessories	Water Pipe shall be CPVC material 20/32 MM	Standard	Lot	1	HSPL
26	HDPE conduit Pipe and accessories- for DC Cable	32mm	Standard	Lot	1	HSPL
		20mm	Standard	Lot	1	HSPL
		20mm	Standard	Lot	1	HSPL
27	Flexible GI Conduit for DC/AC Cables Finishing	Size as per required	Standard	Lot	1	HSPL
28	ACCB Panels	As per approved SLD	HARTEK Make	Lot	1	HSPL
29	Bidirectional Meter	66KV HT Meter	Secure	Nos	5	HSPL
30	Bidirectional Meter	LT meter with with CT Ratio 200/5 Class 0.5s and 3 phase meters	Secure/L&T	Nos	1	HSPL
31	Solar meter	LT meter with with CT Ratio 200/5 Class 0.5s and 3 phase meters	Secure/L&T	Nos	12	HSPL





**Handing /Taking Over Report of the following Solar Photovoltaic Power Plants
of total Capacity 1223KWp**

SN	LOCATION	CAPACITY	DATE OF COMPLETION
1.	Sri Harmandir Sahib Complex, Sri Amritsar	525kWp	23-12-2021
2.	Gurudwara Bir Baba Budha Sahib Ji	520kWp	26-05-2022
3.	Gurudwara Shaheed Baba Deep Singh Ji	138kWp	06-04-2022 & 09-01-2023
4.	Gurudwara Bhai Gurdas Hall	40kWp	25-04-2023
	Total	1223kWp	

Funding/Donation:- United Sikh Mission, 10656, CILANTRO CT, FONTANA CA 92337 USA

VPO BIAS PIND DISTRICT –JALANDHAR PUNJAB, INDIA

Project Completion Cost: 431Laes

EPC Company: Hartek Solar Pvt. Ltd., Mohali, Punjab
F-322, Phase8b, Industrial Area, Mohali Punjab

Responsibilities and Duties:

Hartek Solar Pvt. Ltd.:

- i. O&M for a period of 10 years including routine and preventive maintenance.
- ii. Ensure annual generation as per Designed energy/simulation Reports and take immediate steps whenever there is any shortfall.
- iii. Directly communicate with OEM (Original Equipment Manufacturer) for enforcing Guarantee/Warranty clauses whenever needed.
- iv. Submit Quarterly generation reports in the enclosed prescribed format to USM and SGPC.

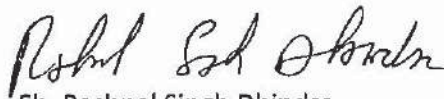
Shiromani Gurudwara Prabandhak Committee:

- i. Uninterrupted water supply for cleaning of modules.
- ii. Permanent roof access for cleaning of modules.
- iii. Ladders for cleaning of modules at roofs where elevated structure is installed.
- iv. Trimming of trees to minimize the shadow effect whenever required.
- v. Uninterrupted internet connections to all installed inverters for monitoring the generation part.
- vi. Proper security to all roof areas and inverter's locations to restrict unauthorized persons movements.

On expiry of 10 years operation & Maintenance period (March 2033), SGPC and Hartek Solar may mutually decide for continuation of these services.

Handing Over:

Taking Over:



Sh. Rashpal Singh Dhindsa

Chairmen United Sikh Mission

Signature & Name

on Behalf of SGPC

United Sikh Mission
PRESIDENT
Rashpal S. Dhindsa

Witness:

Witness:

Signature & Name _____

Signature & Name _____

EPC & O&M Services by:

Sh. Simarpreet Singh

Director- Hartek Solar Pvt. Ltd.

Witness:

Signature

Name _____

Dated: _____

Place: Office of the President, SGPC

Teja Singh Samundri Hall, Sri, Amritsar.



UNITED SIKH MISSION

Head Quarter: 10656 Cilantro CT, Fontana, CA 92337

Phone: 909-241-7449, 909-350-8687, Fax: 909-829-4268

Email: info@unitedsikhmission.org, Web site: www.unitedsikhmission.org

RASHPAL SINGH DHINDSA, FOUNDER

PURCHASE ORDER(R1)

UNITED SIKH MISSION

Dated-30-05-2021

10656, CILANTRO CT, FONTANA CA 92337 USA

VPO BIAS PIND, DISTRICT –JALANDHAR PUNJAB, INDIA

Contact - Mr. Rashpal Singh Dhindsa +1(909) 241-7449, Mr. Baldev Singh Kang +91808343700

Order To.

Vendor Name: HARTEK SOLAR PVT LTD. Address: F321, Phase 8b, Industrial Area,

MOHALI 160055

Contact. No. :9501144743

State :Punjab

GSTIN No. :03AABCU9005B1ZY

Shipped To.

Sri Harmander Sahib Complex

Address: Amritsar State: Punjab

Completion Time-3-4 months from site clearance

Payment Terms:

10% advance along with purchase order.

25% payment after structure delivery at site.

55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port.

10% after successful Installation of project.

ITEM	MATERIAL CODE & DESCRIPTION	UNIT	RATE/KW(INR)	QTY(KW)
1	Solar PV plant Supply and Installation	KW	32,000.00	1223
TOTAL				4,31,00,000/-
AMOUNT IN WORDS: RUPEES FOUR CRORES THIRTY ONE LAKHS ONLY				

Rashpal Singh Dhindsa

(Rashpal Singh Dhindsa)

Chairman, United Sikh Mission

United Sikh Mission, VPO Bias Pind, Dist. Jalandhar, Punjab- Pin. 144302

Contact: Pri. Ranjit Singh 9815498954 S. Avtar Singh 9815774829

United Sikh Mission, New Delhi, India, Contact: Bhupinder Singh, Ph: +91-8851315777



**Proposal for Design, Supply, Installation, Testing & Commissioning
(SITC) of On Grid Solar PV Power Plant.**

To UNITED SIKH MISSION
For GOLDEN TEMPLE, BABA DEEP
SINGH JI & BABA BEER BUDDA
SAHIB JI
At Amritsar, Punjab
Capacity 800kW+78kW+620kW
Dated 10-04-2021
Ref. No. 53/20-21/PB/1117/R-2



HARTEK Group Companies

Hartek Power Pvt. Ltd.
Hartek India Pvt. Ltd.
Hartek Solar Pvt. Ltd.
AMTEK Sales & Service

PROJECT SUMMARY

1	System capacity	800kW + 78kW + 620kW
2	Proposed Project Location	Amritsar, Punjab
3	Technology	Solar Photovoltaic
4	Type of Module proposed	Mono Crystalline silicon with PERC Technology- Framed, Cell type silicon semiconductor
5	Type of Inverters Proposed	String Inverter
6	Each Module Rating	495/500Wp-150Cells Mono-PERC
7	Inverter nominal Rating and Qty.	AC String Inverter
8	Power Evacuation level	415V
9	Estimated total area (considered Shadow Free & chemical environmental impact free Area)	Details given in Layout
10	Project implementation period (* Subject to Contract Closure date)	4-5 Months
11	Location of place on Earth	Latitude 31.62° N Longitude 74.88° E & OTHER
12	Nearest airport	Amritsar Airport
13	Horizontal Irradiance (kWh/m2)	1705 kWh/m2
15	Estimated Generation of the Plant at the end of First Year	As per PVsyst
16	Estimated PR at the end of First Year	78%
17	Specific Production	1300 kWh/kWp/Year

I. Bill of Material For 1498KW Roof Top On Grid Solar Power Project

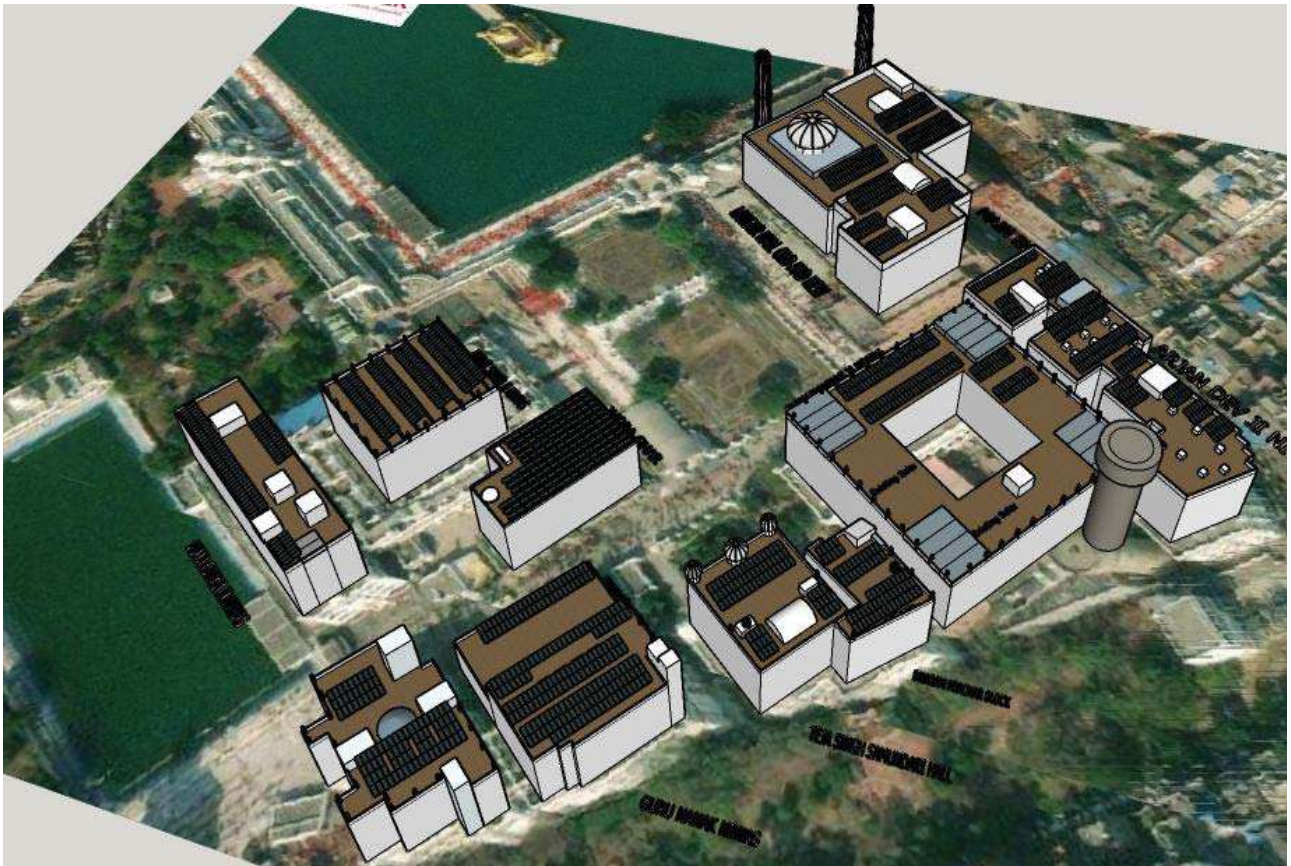
S.NO	Item	Specification	MAKE	UOM	Quantity	Scope of work
MAJOR EQUIPMENT						
1	Solar Panels	495/500 WP Super High Power Mono PERC Module	Trina Solar	Lot	1	HSPL
2	Inverter	3 Phase Grid Tied Inverter(Max DC/AC ratio-20%)	HSPL Approved make	Lot	1	HSPL
MOUNTING STRUCTURE						
3	Civil work foundations for LA and MMS	Nitro Bond Chemical for leakage proof for LA fastening and MMT Foundation	Standard	Lot	As per design layout	HSPL
4	Module Mounting Structure(Tin shed)	Module Mounting structure with Sttad analysis to with 170km/hr wind speed, Complete hardware shall be of SS304	Standard	Lot	As per design layout	HSPL
5	Hardware for Structure Mounting	Anchor fastners for high rise module mounting structure mounting	Standard	Lot	As per design layout	HSPL
6	Pasting Solution	for low highted module mounting structure mounting	Standard	Lot	As per design layout	HSPL
7	Load Bearing Capacity of roof	For mounting modules and other solar equipment's at roof area	Standard	Lot	As per design layout	Client
CABLES						
8	DC Cable	1C X 4 SQMM , XLPE, Copper Cable, 1.1KV Grade	Polycab/Havells/RR Cables	MTR	As per design layout	HSPL
9	AC Cable	XLPE AL. AR., 1.1KV Grade as per detail design	Polycab/Havells/RR Cables	MTR	As per design layout	HSPL
10	Earthing Cable for ACDB/INV	1C X 16 SQMM XLPE,copper (Green), 1.1KV Grade	Polycab/Havells/RR Cables	MTR	As per design layout	HSPL
ACCESSORIES						
11	MC4 Connector	MC4 Pair 1500V DC, 15Amp (For 4sq mm cable)	Standard	Nos.	As per design layout	HSPL
12	Lugs	AC Cable (AL Lugs) /Earthing Cable (Bimetallic Lugs)	Standard	Nos.	As per design layout	HSPL

13	Earthing Nut bolt	Module to Module Earthing M5 SS304 Nut Bolt	Standard	Nos.	As per design layout	HSPL
14	Star Washer	Used for Module to Module Earthing	Standard	Nos.	As per design layout	HSPL
15	Electrical Tape	RYB, green & Black	Standard	Nos.	As per design layout	HSPL
16	Sign Board	AC & DC Side Danger sign Board	Standard	Nos.	As per design layout	HSPL
17	Stickers	Inverter Nos Stickers	Standard	Nos.	As per design layout	HSPL
18	Cable Tag	AC cable Tag for Inverter Number marking & ACCB	Standard	Nos.	As per design layout	HSPL
19	Numbering Ferrules	A to Z & 0 to 9 (For 1CX4Sq mm DC Cable)	Standard	Lot	As per design layout	HSPL
20	Fire extinguisher	Co2 Type for Solar Inverter-1kg for two inverters junction	Standard	Nos.	As per design layout	HSPL
21	Glands for Cables (Double Compression, Weather proof Type)	As per AC Cable design	Comet	Nos.	As per design layout	HSPL
22	Conduit Pipes	For DC cable on roof area	Standard	Pack	As per design layout	HSPL
23	Anti-corrosive compound	Anticorrosive and oxidation compound paste	Standard	MTR	As per design layout	HSPL
DATA LOGGER						
24	Data Logger for remote monitoring	Inputs from Inverter	Reputed	QTY	1	HSPL
EARTHING SYSTEM & ACCESSORIES						
25	Lightning Arrester	*Lightening Arrester (ESE type) *Should be at least 5mtr above panel height *5 mtr Mast Height with 3 Nos Guy wire supports * Radius of Protection 107m	JMV/True power	No	As per design layout	HSPL
26	Earthing Kit	Chemical maintenance free-10feet earthing with 17mm dia of copper bonded rod	JMV/True power	Nos	As per design layout	HSPL
27	Strip	25 X 6 mm GI strip	Standard	MTR	As per design layout	HSPL

28	Strip	50 X 6 mm GI strip	Standard	MTR	As per design layout	HSPL
29	Screw,Gitti,Pench	As Required	Standard	Lot	As per design layout	HSPL
30	Insulator Block(T Type)	For mounting earthing strip to walls and Tin shed	Standard	Lot	As per design layout	HSPL
CONDUIT & ACCESSORIES						
31	Module Cleaning	Water pump along with PVC pipe for water cleaning system	Standard	Lot	1	HSPL
32	Water storage tank	As Required	Standard	Lot	1	Client
ACDB Panel						
33	ACDB	IP65, weather proof system for outdoor application with breaker MCB/MCCB and SPD fuses	HARTEK Make	Lot	1	HSPL
Solar Check Meters and Bi-Directional Meter						
34	Solar meter	3 phase Meters	HPL/Secure/L&T	Nos	1	HSPL
35	Bidirectional Meter	HT CT Meter	Secure/L&T	Nos	1	HSPL
Installation and Commissioning						
36	Installation and Commissioning	Complete RCC rooftop solar power plant	HARTEK Team	JOB	1	HSPL

I. EXCLUSIONS

- Any Ladder for roof access
- Wifi system/LAN cables
- Water storage tanks
- Area fencing
- Any handrail or scaffolding
- Any auxiliary power supply at site
- Suitable breaker in distribution panel is in Client scope
- CCTV Surveillance system
- Arrangement for cleaning water recycle
- Removal of objects from roof



HARTEK SOLAR PVT LTD			
GOLDEN TEMPLE, AMRITSAR			
S.NO	BUILDING NAME	HSPL SOLAR DC CAPACITY(KW)	REMARKS
1	Dharam Prachar Block	39	
2	Teja Singh Samundri Hall	39	
3	Guru Nanak dev ji Niwas	81	pipes in east direction and one pole need to remove
4	President Office	24.5	
5	Guru Hargovind ji Niwas	47.5	need to plan very height rise MS welded structure(3 mtr front leg)
6	Mata Ganga ji Niwas	58	exiting water heaters and Towers need to removed completely
7	Manji Sahib ji Niwas	94.5	
8	Jhora Ghar	75.5	
9	Guru Ramdas ji Niwas	82	Mr. Gurinder singh-Manager SGPC asked not to considered this roof
10	Guru Arjan Dev ji Niwas	109	
11	Langer Hall new	140	Clarity required on under construction building of langar hall for more capacity
12	NRI Niwas	10	
TOTAL		800KW	
13	Baba Deep singh Ji Niwas	43	
14	Baba Deep singh Ji Gurudwara	35	
TOTAL		78KW	
15	Gurudwara Beer Baba Budda Sahib ji	600	
16	Hospital-Beer Baba Buddha Sahib ji	20	
TOTAL		620KW	

1. COMMERCIAL OFFER

The scope of work will include the complete services from concept to commissioning of the solar power plant.

ITEM DESCRIPTION	RATE (RS /KW)	RATE (RS /KW)	TOTAL VALU(WITHOUT GST) RS	TOTAL AMOUNT(RS)
GOLDEN TEMPLE	800kW	₹ 32,000	₹ 2,56,00,000	₹ 2,78,78,400
BABA DEEP SINGH JI GURUDWARA SAHIB AND SARAI	78kW	₹ 32,000	₹ 24,96,000	₹ 27,18,144
BABA BEER BUDDA SAHIB JI GURUDWARA AND HOSPITAL	620kW	₹ 32,000	₹ 1,98,40,000	₹ 2,16,05,760
TOTAL	1498kW	₹ 32,000	₹ 4,79,36,000	₹ 5,22,02,304

“Any statutory variation in taxes and duties from the date of submission of this proposal including change of rates for Solar PV System and/or its parts/ components/ equipment under GST, imposition of Antidumping Duty (ADD) and/or Safeguard Duty (SDD) on imported modules/cells and/or Basic Customer Duty (BCD) on imported modules/cells/inverters/other equipment by the Government of India would be to the clients account and shall be payable by the client at actuals.”

I. Commercial Terms

Sr.no	Particulars	Terms & Conditions
1	Price Basis:	GST is Exclusive of above price. On 70% of project value 5% GST and On 30% of project value-18% GST is extra as applicable.
2	Taxes & Duties:	If during dispatch due to change of government policy, any new taxes are applicable or rates changed the same will be to your account.
3	Packing:	Prices are inclusive of Packing charges. Packing shall be done as per our standard practice.
4	Terms of Payment:	10% advance along with purchase order. 25% payment after structure delivery at site. 55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat. 10% after successful Installation of project.
5	Delivery Period:	From 8-12 weeks from the date of Purchase Order along with advance payment.
6	Inspections	Any type of inspection by third party/client is excluded from this offer, if it is required then all the terms and conditions will be decided after mutual discussion.
7	Force Majeure	HSPL shall not be liable for any failure of or delay in the performance of this agreement/proposal for the period that such failure or delay is due to causes beyond its reasonable control, including but limit to acts of God, war, strikes or labor dispute, embargoes, government orders or any other force majeure event.
8	Do not Disclose	All the information exchanges between the parties, either oral or written in connection with this offer, shall be maintained strictly confidential
9	Acceptance	All supplies of material or services works executed by contractor shall be certified by owner within 3 days of submission of its documents or invoices. Up on completion of the scope of work, the Owner shall issue a final acceptance certificate to the company
10	Warrantee /Guarantee:	<u>For Solar Modules -</u> 25 Yrs. linear performance warranty as below - First 1st Years -2% degradation and 0.55% Power degradation for another 24years. 12 Years Limited Product Warranty. Power Output <u>For Inverter -</u> 5 years warranty on inverter unit <u>The warranty shall not apply to defects resulting from:</u> <ul style="list-style-type: none"> - Willful damage or negligence, normal wear and tear - Installation and/or maintenance by Purchaser or a third party - Misuse or abuse of Equipment - Modifications or alterations made by Purchaser or a third party without supplier's written Consent. The warranty will be on back to back basis, i.e. whatever warranty is given by the equipment manufacturer will be passed on to you, to Contact them for any warranty issue.
11	Validity of Offer:	This offer is valid for 7 days from the date of offer and thereafter Subject to our reconfirmation.

Other Important Terms and Conditions

1	Cleaning system	In HSPL Scope. Client will arrange one water tank of sufficient capacity at one point near shed area.
2	Power and water	Power and water for construction will be provided by client at no charge.
3	Existing roof structure stability	Structure stability of existing roofs need to certify by client. Module mounting structure and modules load along with accessories shall be checked by client only.
4	Data Monitoring system renewal Charges	In Client Scope, if required for online monitoring.
5	Evacuation of system	Evacuation is at individual distributor panel positioned at building only.
6	DG Set Synchronize	Not part of this project
8	Cleaning of solar PV modules	Cleaning of solar PV modules is in Client scope. Effective cleaning shall be maintained at site (Once in a week) by Gurudwara committee.
9	Remote Monitoring Device	One dedicated internet connection to be given by Client. Or Sufficient Wi-Fi Connectivity/Wi-Fi Router is to provide by customer for remote monitoring to all inverters.
10	Operation & Maintenance	10 years plant maintenance is in Hartek Solar scope. Any physical damage caused to any of the component of Installed Solar System by client will not be covered in AMC Services and shall be charged extra as actual.
11	Drawings of site	Client shall be sharing CAD drawings of project site. Client shall be sharing Electrical drawing of HT/LT panel & plant wiring
12	Water Treatment(for cleaning)	Client has to make all sufficient arrangement for processing of waste water after cleaning of solar PV Modules
13	Leveling of site area and Fencing	Any permanent object removal from site and fencing arrangement shall be done by client only.
14	Voltage Fluctuation	Client shall make all necessary arrangement for Maintaining Power factor nearing to 1(one) and shall maintain Current & Voltage harmonic distortion <3% as per IEEE 5192014
15	Access To site	Sufficient site access (Ladders to roof) for working at sheds and transportation has to be given by client for installation and commissioning of solar power plant at site.
16	Unloading of Material	Unloading of project goods inside factory campus shall be done by HSPL only
17	Net-metering/ Statutory approval	Complete statutory approvals related to Solar installation shall be taken care by HSPL/Client (related to providing necessary documents) only.
18	Bidirectional meter	In HSPL Scope only.
19	Site Clearance	Client shall clear / dismantle / remove any permanent structures at site and Trimming of branches of trees if creating shadow.
21	Storage of Material	Necessary storage space to be provided along with security arrangement by client only.
22	Material Removal	Any extra material including tools and tackle, post site completion shall be taken back from site
23	Custody Transfer	Post installation activities, complete handover of the system shall be done to client.
24	Use of lifts	For material movement to site, client shall permit for use of lifts for material lifting.

PROJECT FINANCIAL SUMMARY

Dated-15-03-23

We Hartek Solar Private Limited F-321, Phase 8B, Industrial Area, Mohali Punjab installed cumulative capacity of 1223kWp rooftop Solar Power Plant at Sri Harmandir Sahib Complex Amritsar, Gurudwara Bir Baba Budha Sahib Jee, Gurudwara Shaheed Baba Deep Singh Jee, Gurudwara Bhai Gurdas Hall.

Final Project Invoice summary is enclosed herewith.

S.NO	INVOICE NO.	INVOICE DATE	INVOICE BASIC VALUE (INR)	CGST (INR)	SGST (INR)	NET AMOUNT (INR)
1	GT/2113100020/HS/PB	28-May-21	64,00,000	2,84,800	2,84,800	69,69,600
2	GT/2113100029/HS/PB	25-Jun-21	12,80,000	56,960	56,960	13,93,920
3	GT/2113100041/HS/PB	23-Jul-21	25,60,000	1,13,920	1,13,920	27,87,840
4	GT/2113100044/HS/PB	27-Jul-21	1,15,20,000	5,12,640	5,12,640	1,25,45,280
5	GT/2113100088/HS/PB	30-Sep-21	91,26,400	4,06,124	4,06,124	99,38,650
6	GT/2113100111/HS/PB	27-Oct-21	30,00,000	2,07,000	2,07,000	34,14,000
7	GT/2113100145/HS/PB	18-Dec-21	23,71,200	1,63,612	1,63,612	26,98,426
8	GT/2113100146/HS/PB	18-Dec-21	15,87,200	1,09,516.8	1,09,516.8	18,06,234
9	GT/2113100184/HS/PB	10-Feb-22	74,880	5,166.72	5,166.72	85,213
10	GT/211300185/HS/PB	10-Feb-22	3,96,800	27,379	27,379	4,51,558
11	221310150/HS/PB	27-Oct-22	1,98,2016	1,36,759.1	1,36,759.1	22,55,534
TOTAL		4,43,46,255/-				



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : GT/2113100020/HS/PB Invoice Date : 28-May-2021 Customer PO : 53/20-21/PB/1117/R-2/1 Customer Ref Date : 05-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 28-May-2021 16:25			
Details of Consignee (Shipped To)				Company Details			
GOLDEN TEMPLE Amritsar - 143006 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	SUPPLY OF 285.5 KW TRINA SOLAR 500Wp MODULE FOR SOLAR ROOFTOP COMMERCIAL 800 kW ON GRID	85411000	0.25 LOT	1,79,20,000.00 INR	44,80,000.00 INR	44,80,000.00 INR	1,12,000.00 2.50%	1,12,000.00 2.50%
2	1116B059X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 800 KW	00995442	0.25 JOB	76,80,000.00 INR	19,20,000.00 INR	19,20,000.00 INR	1,72,800.00 9.00%	1,72,800.00 9.00%
Total			0.50		64,00,000.00		2,84,800.00	2,84,800.00

Amount In Words: Sixty-Nine Lakhs Sixty-Nine Thousand Six Hundred Rupees Only

Sub Total	:	64,00,000.00
CGST Amount	:	2,84,800.00
SGST Amount	:	2,84,800.00
Invoice Total	:	69,69,600.00
Net Amount	:	69,69,600.00

Payment Terms : *

Remark: *Payment Terms:

- 10% advance along with purchase order.
- 25% payment after structure delivery at site.
- 55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.
- 10% after successful Installation of project.

Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED

Bank Name : HDFC BANK LTD
Account No. : 50200036641631
Branch : Chandigarh
IFSC Code : HDFC0000434

For HARTEK SOLAR PRIVATE LIMITED

Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Details of Receiver (Billed To)

Overseas-10656 Cilantro CT Fontana CA 92337 USA VPO BIAS PIND,
JALANDHAR - 143201
Punjab, India

State : Punjab

State Code : 3

PAN No.: PANAPPLIED

GSTIN No. :

Invoice No.	: GT/2113100029/HS/PB
Invoice Date	: 25-Jun-2021
Customer PO	: 53/20-21/PB/1117/R-2/1
Customer Ref Date	: 05-May-2021
Contact Person	: Baldev Singh Kang 8083437000
Email Id	: baldev.kang73@gmail.com
Place Of Supply	: Punjab-3
Date & Time Of Supply	: 25-Jun-2021 17:32

GOLDEN TEMPLE

Amritsar - 143006

Punjab, India

State : Punjab

State Code: 3

PAN No.: PANAPPLIED

GSTIN No. :

CIN No	: U40102PB2015PTC039880
Jurisdiction	: Chandigarh
MSME No:	: UDYAM-PB-20-0001219
GSTIN No.	: 03AABCU9005B1ZY
PAN No.	: AACBU9005B

Amount In Words: Thirteen Lakhs Ninety-Three Thousand Nine Hundred Twenty Rupees Only	Sub Total	:	12,80,000.00
	CGST Amount	:	56,960.00
	SGST Amount	:	56,960.00
Payment Terms : *	Invoice Total	:	13,93,920.00
	Net Amount	:	13,93,920.00

Remark: *Payment Terms:

10% advance along with purchase order.

25% payment after structure delivery at site.

55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.

10% after successful Installation of project.

Terms & Conditions

1. Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.

2. Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED

Bank Name	: HDFC BANK LTD
------------------	-----------------

Account No. : 50200036641631

Branch : Chandigarh

IFSC Code : HDFC0000434

For HARTEK SOLAR PRIVATE LIMITED

Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India

**HARTEK SOLAR PRIVATE LIMITED**

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : GT/2113100044/HS/PB Invoice Date : 27-Jul-2021 Customer PO : 53/20-21/PB/1117/R-2/1 Customer Ref Date : 05-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 27-Jul-2021 18:15			
Details of Consignee (Shipped To)				Company Details			
GOLDEN TEMPLE Amritsar - 143006 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	1052B059B00X00UND00X- SUPPLY OF SOLAR ROOFTOP COMMERCIAL 800 kW ON GRID	85411000	0.45 LOT	1,79,20,000.00 INR	80,64,000.00 INR	80,64,000.00 INR	2,01,600.00 2.50%	2,01,600.00 2.50%
2	1116B059X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 800 KW	00995442	0.45 JOB	76,80,000.00 INR	34,56,000.00 INR	34,56,000.00 INR	3,11,040.00 9.00%	3,11,040.00 9.00%
Total			0.90		1,15,20,000.00		5,12,640.00	5,12,640.00

Amount In Words: One Crore Twenty-Five Lakhs Forty-Five Thousand Two Hundred Eighty Rupees Only				Sub Total :	1,15,20,000.00
				CGST Amount :	5,12,640.00
				SGST Amount :	5,12,640.00
Payment Terms : *				Invoice Total :	1,25,45,280.00
				Net Amount :	1,25,45,280.00

Remark: *Payment Terms: 10% advance along with purchase order. 25% payment after structure delivery at site. 55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat. 10% after successful Installation of project.	
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Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED	
Bank Name : HDFC BANK LTD		Authorised Signatory	
Account No. : 50200036641631			
Branch : Chandigarh			
IFSC Code : HDFC0000434			

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : GT/2113100088/HS/PB Invoice Date : 30-Sep-2021 Customer PO : 53/20-21/PB/1117/R-2/2 Customer Ref Date : 27-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 30-Sep-2021 13:50			
Details of Consignee (Shipped To)				Company Details			
BEER BABA BUDDA SAHIB GURUDWARA Taran Taran - 143301 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	1052B060B00X00UND00X- SUPPLY OF SOLAR ROOFTOP COMMERCIAL 620 kW ON GRID	85411000	0.46 LOT	1,38,88,000.00 INR	63,88,480.00 INR	63,88,480.00 INR	1,59,712.00 2.50%	1,59,712.00 2.50%
2	1116B060X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 620 KW	00995442	0.46 JOB	59,52,000.00 INR	27,37,920.00 INR	27,37,920.00 INR	2,46,412.80 9.00%	2,46,412.80 9.00%
Total			0.92		91,26,400.00		4,06,124.80	4,06,124.80

Amount In Words: Ninety-Nine Lakhs Thirty-Eight Thousand Six Hundred Fifty Rupees Only						Sub Total :	91,26,400.00
						CGST Amount :	4,06,124.80
						SGST Amount :	4,06,124.80
						Rounding :	0.40
Payment Terms : *						Invoice Total :	99,38,650.00
						Net Amount :	99,38,650.00

Remark: *Payment Terms	
10% advance along with purchase order.	
25% payment after structure delivery at site.	
55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.	
10% after successful Installation of project.	

Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED	
Bank Name	: HDFC BANK LTD	Authorised Signatory	
Account No.	: 50200036641631		
Branch	: Chandigarh		
IFSC Code	: HDFC0000434		

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)	Invoice Details
UNITED SIKH MISSION VPO BIAS PIND, JALLANDER, PUNJAB-143201 OVERSEAS OFFICE - 10656 CILANTRO CT FONATAN CA 92337 USA - Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :	Invoice No. : GT/2113100111/HS/PB Invoice Date : 27-Oct-2021 Customer PO : 53/20-21/PB/1117/R-2/2 Customer Ref Date : 27-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 27-Oct-2021 12:36
Details of Consignee (Shipped To)	Company Details
BEER BABA BUDDA SAHIB GURUDWARA Taran Taran - 143301 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :	CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	SUPPLY OF SOLAR ROOFTOP COMMERCIAL 620 kW ON GRID, Against supply of Structure & other material.	85411000	0.15 LOT	1,38,88,888.89 INR	21,00,000.00 INR	21,00,000.00 INR	1,26,000.00 6.00%	1,26,000.00 6.00%
2	1116B060X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 620 KW	00995442	0.15 JOB	59,52,380.95 INR	9,00,000.00 INR	9,00,000.00 INR	81,000.00 9.00%	81,000.00 9.00%
	Total		0.30		30,00,000.00		2,07,000.00	2,07,000.00
Amount In Words: Thirty-Four Lakhs Fourteen Thousand Rupees Only						Sub Total :	30,00,000.00	
						CGST Amount :	2,07,000.00	
						SGST Amount :	2,07,000.00	
Payment Terms : *						Invoice Total :	34,14,000.00	
						Net Amount :	34,14,000.00	

Remark: *Payment Terms

- 10% advance along with purchase order.
25% payment after structure delivery at site.
55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujarat.
10% after successful Installation of project.

Terms & Conditions

1. Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
2. Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED

Bank Name : HDFC BANK LTD
Account No. : 50200036641631
Branch : Chandigarh
IFSC Code : HDFC0000434

For HARTEK SOLAR PRIVATE LIMITED

Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)		Invoice Details	
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :		Invoice No. : GT/2113100145/HS/PB Invoice Date : 18-Dec-2021 Customer PO : 53/20-21/PB/1117/R-2 Customer Ref Date : 10-Apr-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 18-Dec-2021 11:32	
Details of Consignee (Shipped To)		Company Details	
BABA DEEP SINGH JI GURUDWARA AMRITSAR - 143006 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :		CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B	

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	1052B061B00X00UND00X- SUPPLY OF SOLAR ROOFTOP COMMERCIAL 78 kW ON GRID	85411000	0.95 LOT	17,47,200.00 INR	16,59,840.00 INR	16,59,840.00 INR	99,590.40 6.00%	99,590.40 6.00%
2	1116B061X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 78 KW	00995442	0.95 JOB	7,48,800.00 INR	7,11,360.00 INR	7,11,360.00 INR	64,022.40 9.00%	64,022.40 9.00%
Total			1.90		23,71,200.00		1,63,612.80	1,63,612.80

Amount In Words: Twenty-Six Lakhs Ninety-Eight Thousand Four Hundred Twenty-Six Rupees Only		Sub Total :	23,71,200.00
		CGST Amount :	1,63,612.80
		SGST Amount :	1,63,612.80
		Rounding :	0.40
Payment Terms : *		Invoice Total :	26,98,426.00
		Net Amount :	26,98,426.00

Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED
Bank Name :	HDFC BANK LTD	
Account No. :	50200036641631	
Branch :	Chandigarh	
IFSC Code :	HDFC0000434	Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : GT/2113100146/HS/PB Invoice Date : 18-Dec-2021 Customer PO : 53/20-21/PB/1117/R-2/2 Customer Ref Date : 27-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 18-Dec-2021 11:33			
Details of Consignee (Shipped To)				Company Details			
BEER BABA BUDDA SAHIB GURUDWARA Taran Taran - 143301 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	1052B060B00X00UND00X- SUPPLY OF SOLAR ROOFTOP COMMERCIAL 620 kW ON GRID	85411000	0.08 LOT	1,38,88,000.00 INR	11,11,040.00 INR	11,11,040.00 INR	66,662.40 6.00%	66,662.40 6.00%
2	1116B060X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 620 KW	00995442	0.08 JOB	59,52,000.00 INR	4,76,160.00 INR	4,76,160.00 INR	42,854.40 9.00%	42,854.40 9.00%
Total			0.16		15,87,200.00		1,09,516.80	1,09,516.80

Amount In Words: Eighteen Lakhs Six Thousand Two Hundred Thirty-Four Rupees Only						Sub Total :	15,87,200.00
						CGST Amount :	1,09,516.80
						SGST Amount :	1,09,516.80
						Rounding :	0.40
Payment Terms : *						Invoice Total :	18,06,234.00
						Net Amount :	18,06,234.00

Remark: *Payment Terms	
10% advance along with purchase order.	
25% payment after structure delivery at site.	
55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.	
10% after successful Installation of project.	

Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED	
Bank Name	: HDFC BANK LTD	Authorised Signatory	
Account No.	: 50200036641631		
Branch	: Chandigarh		
IFSC Code	: HDFC0000434		

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)	Invoice Details
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :	Invoice No. : GT/2113100184/HS/PB Invoice Date : 10-Feb-2022 Customer PO : 53/20-21/PB/1117/R-2 Customer Ref Date : 10-Apr-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 10-Feb-2022 17:09
Details of Consignee (Shipped To)	Company Details
BABA DEEP SINGH JI GURUDWARA AMRITSAR - 143006 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :	CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	SUPPLY OF ACCB FOR SOLAR ROOFTOP COMMERCIAL 78 kW ON GRID	85411000	0.03 LOT	17,47,200.00 INR	52,416.00 INR	52,416.00 INR	3,144.96 6.00%	3,144.96 6.00%
2	1116B061X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 78 KW	00995442	0.03 JOB	7,48,800.00 INR	22,464.00 INR	22,464.00 INR	2,021.76 9.00%	2,021.76 9.00%
	Total		0.06		74,880.00		5,166.72	5,166.72

Amount In Words: Eighty-Five Thousand Two Hundred Thirteen Rupees Only

Sub Total	:	74,880.00
CGST Amount	:	5,166.72
SGST Amount	:	5,166.72
Rounding	:	-0.44
Invoice Total	:	85,213.00
Net Amount	:	85,213.00

Payment Terms : *

Terms & Conditions

- Interest @ 18% pa will be applicable if the payment is not received as per terms of purchase order.
- Goods once sold will not be taken.

Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED

Bank Name : HDFC BANK LTD
Account No. : 50200036641631
Branch : Chandigarh
IFSC Code : HDFC0000434

For HARTEK SOLAR PRIVATE LIMITED

Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : GT/2113100185/HS/PB Invoice Date : 10-Feb-2022 Customer PO : 53/20-21/PB/1117/R-2/2 Customer Ref Date : 27-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 10-Feb-2022 17:14			
Details of Consignee (Shipped To)				Company Details			
BEER BABA BUDDA SAHIB GURUDWARA Taran Taran - 143301 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	SUPPLY OF ACCB FOR SOLAR ROOFTOP COMMERCIAL 620 kW ON GRID	85411000	0.02 LOT	1,38,88,000.00 INR	2,77,760.00 INR	2,77,760.00 INR	16,665.60 6.00%	16,665.60 6.00%
2	1116B060X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 620 KW	00995442	0.02 JOB	59,52,000.00 INR	1,19,040.00 INR	1,19,040.00 INR	10,713.60 9.00%	10,713.60 9.00%
	Total		0.04		3,96,800.00		27,379.20	27,379.20

Amount In Words: Four Lakhs Fifty-One Thousand Five Hundred Fifty-Eight Rupees Only				Sub Total :	3,96,800.00
				CGST Amount :	27,379.20
				SGST Amount :	27,379.20
				Rounding :	-0.40
Payment Terms : *				Invoice Total :	4,51,558.00
				Net Amount :	4,51,558.00

Remark: *Payment Terms	
10% advance along with purchase order.	
25% payment after structure delivery at site.	
55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.	
10% after successful Installation of project.	

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Declaration : GST : Applicable as per HSN code.

Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED
Bank Name	: HDFC BANK LTD	
Account No.	: 50200036641631	
Branch	: Chandigarh	
IFSC Code	: HDFC0000434	Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India



HARTEK SOLAR PRIVATE LIMITED

Plot No F 322,Phase 8 B,Sas Nagar Mohali,160055,Punjab,India

Contact No.:0172 4004121-26 Email ID:info@hartek.com

Tax Invoice

Details of Receiver (Billed To)				Invoice Details			
UNITED SIKH MISSION VPO BIAS PIND, JALANDHAR - 143201 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				Invoice No. : 221310150/HS/PB Invoice Date : 27-Oct-2022 Customer PO : 53/20-21/PB/1117/R-2/2 Customer Ref Date : 27-May-2021 Contact Person : Baldev Singh Kang 8083437000 Email Id : baldev.kang73@gmail.com Place Of Supply : Punjab-3 Date & Time Of Supply : 27-Oct-2022 16:27			
Details of Consignee (Shipped To)				Company Details			
BEER BABA BUDDA SAHIB GURUDWARA Taran Taran - 143301 Punjab, India State : Punjab State Code : 3 PAN No.: PANAPPLIED GSTIN No. :				CIN No : U40102PB2015PTC039880 Jurisdiction : Chandigarh MSME No: : UDYAM-PB-20-0001219 GSTIN No. : 03AABCU9005B1ZY PAN No. : AABCU9005B			

Sr. No.	Product No. & Description	HSN/SAC	Quantity (UOM)	Rate	Total	Total Taxable Value	CGST (Amount/Rate)	SGST (Amount/Rate)
1	Delivery of Solar Modules.	85411000	0.10 LOT	1,38,88,000.00 INR	13,87,411.20 INR	13,87,411.20 INR	83,244.67 6.00%	83,244.67 6.00%
2	1116B060X00X00UND00X- I&C OF SOLAR ROOFTOP COMMERCIAL 620 KW	00995442	0.10 JOB	59,52,000.00 INR	5,94,604.80 INR	5,94,604.80 INR	53,514.43 9.00%	53,514.43 9.00%
	Total		0.20		19,82,016.00		1,36,759.10	1,36,759.10

Amount In Words: Twenty-Two Lakhs Fifty-Five Thousand Five Hundred Thirty-Four Rupees Only						Sub Total :	19,82,016.00
						CGST Amount :	1,36,759.10
						SGST Amount :	1,36,759.10
						Rounding :	-0.20
Payment Terms : *						Invoice Total :	22,55,534.00
						Net Amount :	22,55,534.00

Remark : *Payment Terms	
10% advance along with purchase order.	
25% payment after structure delivery at site.	
55% along with sharing of Proforma Invoice of solar Modules and Inverters once reach at Indian Port Mundra, Gujrat.	
10% after successful Installation of project.	

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Name Of Beneficiary : HARTEK SOLAR PRIVATE LIMITED		For HARTEK SOLAR PRIVATE LIMITED
Bank Name	: HDFC BANK LTD	
Account No.	: 50200036641631	
Branch	: Chandigarh	
IFSC Code	: HDFC0000434	Authorised Signatory

Registered Address : F-321, Phase-8B, Industrial Focal Point, SAS Nagar Mohali - 160055, Punjab, India

PAYMENT RECEIPT DETAILS	
DATE	AMOUNT
15-May-21	₹ 5,00,000
03-Jun-2021	₹ 10,00,000
03-Jun-2021	₹ 10,00,000
03-Jun-2021	₹ 10,00,000
03-Jun-2021	₹ 10,00,000
03-Jun-2021	₹ 10,00,000
03-Jun-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
06-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
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22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
22-Jul-2021	₹ 10,00,000
11-Oct-2021	₹ 10,00,000
11-Oct-2021	₹ 10,00,000
11-Oct-2021	₹ 10,00,000
11-Oct-2021	₹ 10,00,000
03-Nov-2021	₹ 10,00,000
03-Nov-2021	₹ 10,00,000
03-Nov-2021	₹ 10,00,000
03-Nov-2021	₹ 10,00,000
03-Nov-2021	₹ 10,00,000
22-Nov-2021	₹ 10,00,000
22-Nov-2021	₹ 10,00,000
24-Nov-2021	₹ 10,00,000
24-Nov-2021	₹ 10,00,000
24-Nov-2021	₹ 10,00,000
03-Feb-2022	₹ 10,00,000
03-Feb-2022	₹ 10,00,000
03-Feb-2022	₹ 10,00,000
03-Feb-2022	₹ 10,00,000
17-Dec-2022	₹ 16,00,000
24 March 2023	₹ 16,00,000
TOTAL	



UNITED SIKH MISSION

Head Quarter: 10656 Cilantro CT, Fontana, CA 92337

Phone: 909-241-7449, 909-350-8687, Fax: 909-829-4268

Email: info@unitedsikhmission.org , Web site: www.unitedsikhmission.org

RASHPAL SINGH DHINDSA , FOUNDER

Dated-02/06/2023

TO WHOMSOEVER IT MAY CONCERN

We hereby certify that Hartek Solar Private Limited has Designed, Supplied, Installed and Successfully commissioned 1223kWp solar power plant in Sri Harmandir Sahib Complex, Amritsar, Punjab

Project was successfully commissioned by complying all department rules and regulations.

Scope of work included-

- Detailed Design and Engineering
- Coordination with PSPCL for project feasibility and meter installation
- Supply of complete materials like Solar Module Mounting structure, Solar PV Modules, Solar Inverters, Cables, earthing and balance of material.
- Installation of Complete Project
- Charging and commissioning of complete Project
- 10 years Operation and Maintenance

They have also ensured the delivery of entire material and services within the agreed time line. We are satisfied with quality of material.

We wish them all success in their future endeavours.

Best Regards

(Rashpal Singh Dhindsa)

Chairman, United Sikh Mission

UNDERTAKING

We Hartek Solar Private Limited F-321, Phase 8b, Industrial Area, Mohali Punjab installed cumulative capacity of 1223kWp rooftop solar power plant at Sri Harmandir Sahib Complex Amritsar, Gurudwara Bir Baba Budha Sahib Ji, Gurudwara Shaheed Baba Deep Singh ji, Gurudwara Bhai Gurdas Hall

We hereby confirm that Hartek Solar team will be responsible to complete project operation and maintenance for 10 years. This will cover cleaning of modules, preventive and corrective maintenance of project.

For any force majeure condition, Theft and Physical damage to installed system, SGPC may have to arrange suitable system in place to ensure no such incident.

Contact Details for Operation and Maintenance activities

Head Office-[0172 400 4126](tel:01724004126)

Mr. Manpreet Singh- 9574221378

Mr. Divanshu Gupta-9501144743

Mr. Simarpreet Singh-9779911803

Authorized Signatory

Hartek Solar Pvt Ltd

OPERATION & MANUAL

1223 kWp Rooftop Solar Power Project

At

SRI HARMANDIR SAHIB



TABLES OF CONTENT

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ABOUT HARTEK GROUP

The **Hartek Group** is one of India's fastest growing company with offerings that span across Engineering, Construction, Renewables, Technology, Fuel and Manufacturing. Founded in 1991 Hartek has grown to become one of India's most admired brands in the Power and infrastructure space having business interest's right across the value chain. The group operates through five strategic business units - Power Systems | Solar Solutions | Power Distribution| Fuel Services | Value Added services and is a Billion INR plus organisation. Significant collaborations, technical know-how support and licence agreements with select industry giants, have helped Hartek Group to achieve unprecedented growth and become a name to reckon with.



”
Building a
sustainable and
powerful future
through our solar
expertise.
”

Solar

Hartek Solar is India's Top 5 roof top solar EPC installers in the country as per Marcum Capital. It was founded by India's leading entrepreneur, Mr. Simarpreet Singh in the year 2015. In a short span it has executed over 5GW of solar grid connectivity across the country. Hartek team has also been part of the prestigious 2.5 MW roof top solar project set up in Gandhinagar on Shri Narendra Modi secretariat (at that time, Chief Minister of Gujarat). The company also installed roof top solar on Chandigarh 1st commercial building, IT Park, of 435 KW capacity. The company is on a mission to connect every household with clean and sustainable power.



REQUIREMENT OF OPERATION & MAINTENANCE IN SOLAR PV PLANT

Operations and Maintenance (O&M) is an integral part of any Rooftop/Ground Solar PV System. Although a solar PV plant requires little day-to-day maintenance, it is important to ensure that the system is well maintained and is performing at an optimum level.

The main aim of O&M is to increase the plant lifetime, maintain efficiency and increase productivity. Since a PV system is an electrical system with both AC and DC components usually at appreciably high voltages, safety also becomes a prime issue for which proper O&M must be performed. By ensuring O&M at appropriate time intervals, one can minimize the losses and increase the energy production from the plant.

This section highlights the need for O&M in a solar power plant. It describes the importance of maintaining a PV system since this ensures a longer lifetime, efficiency and ultimately a better return on investment for the investor or the owner. Universally there is a widespread notion that solar power plants demand exceptionally less or no maintenance at all. This statement is in fact, true to some extent but at the same time also be misleading. Solar power plant is an asset that is likely to last nearly 25 years. Ultimately when it comes down to an investment strategy, one must account for O&M issues and at the same time deal with these issues in most efficient and cost-effective way.

The expected outcome from the handbook shows the identification and analysis of factors causing degradation and common faults in Solar PV along with operation and maintenance experience and challenges to prevent generation interruptions and estimation of energy generation for future energy security. This Handbook is prepared to keep in mind the maintenance strategies and methods so one can evade loss of energy generation.

- Increases energy generation
- Increases revenue
- Improved Safety
- Breakdown Elimination
- Extends plant life

BILL OF MATERIAL FOR 1223 kWp ROOFTOP SOLAR POWER PLANT

S.NO	ITEM	SPECIFICATION	MAKE	UOM	QUANTITY	WARRANTY
1	Solar PV Modules	500 & 550 WP High Power Mono PERC Module	Trina Solar	Lot	1	12 years product warranty & 25 years linear performance warranty
2	Grid tied string Inverter	10kW to 100kW	Havells	Lot	1	10 years
3	AC & DC Cable	As per SLD	Polycab	Lot	1	1 year
4	Earthing Kits	Earthing Pits	Standard	Lot	1	1 year
5	ACCB Electrical Panels	as per detailed SLD	HARTEK Make	Lot	1	1 year
6	Balance of Materials	As per approved drawings	Standard	Nos	1	1 year

PHOTOVOLTAIC MODULES

This chapter discusses the O&M practices and common faults that occur in PV modules and related equipment that are required to perform O&M. This chapter also describes the correct and incorrect maintenance practices related to maintenance activities.

The performance of a PV System is highly affected due to the following reasons:

- Dust accumulation
- Modules Cleaning
- Module Shading
- Methods & Techniques for eliminating Shadow
- PV Module Performance

Dust Accumulation

Solar panel cleaning is an essential practice in order to ensure that the performance of the PV system does not degrade abruptly. Dirt build-up over the solar arrays can substantially affect the system performance, reduce the energy output, reduce any possible savings or revenue, but more importantly reduce the life of the panels. It is essential to clean the modules regularly to prevent energy loss. Cleaned solar panels help to ensure that the system generates optimum electricity. Areas that are generally dusty and polluted will require more frequent inspection and cleaning.



Figure: Clean Modules



Figure: Cleaning Required

With the passage of time dirt accumulates on the surface of PV modules reducing the power output. Incorrect cleaning practices, bad quality water and use of inappropriate cleaning agent may damage modules and other array components and reduces system performance as well. It is also essential to train the cleaning personnel on proper cleaning methods, safety measures and the use of appropriate cleaning tools.

Modules Cleaning-Method A: Wet Cleaning:

In this method of cleaning, water is used to eliminate dirt from the surface of the solar PV module. The cleaning process can either be manual or automated. Manual cleaning is done by using a soft cloth, brush and clean water.



Figure: Wet Cleaning

Before Cleaning:

- Do not clean damaged panels. This can result in an electrical shock. Thoroughly inspect the panels for crack, damage, and loose connections.
- Cleaning Time: Low light conditions when production is lowest (Before 10:30 A.M. and after 3:00 P.M.) The best time to clean modules is from dusk to dawn when the plant is not in operation and risk of electrical shock hazard is minimum.

Method B: Dry Cleaning:

If excessive soiling is present then a brush, sponge or a cloth may be used. This could however lead to scratches on the module and must therefore be performed cautiously. Dirt must not be rubbed vigorously or scraped, which can result in scratches on the surface of the PV module. The obvious advantage is that dry cleaning can save water requirements.



Figure: Dry Cleaning

Dust Accumulation

PV systems generate electricity based on the amount of sunlight they receive, therefore when a shadow is cast on panels either from clouds, trees, building, vegetation, wires or any object that blocks the pathway of sunlight falling on PV modules, the power output decreases substantially. As a general rule, an array should be free of shade during sun hours.



Figure: Shading on PV Modules

Shading dramatically affects the solar PV array's performance. Even a small amount of shade on a few modules can significantly reduce the performance of an entire array. If the system is not appropriately protected, hotspot problem can arise and the system can be irreversibly damaged.

Hotspots:

Hotspots occur when there is one low current solar cell due to shadow/breakage in a string of several high short-circuit current solar cells within a module. Even if the shaded cell does not get damaged it will result in generation of heat locally, as all the extra power generated in non-shaded cells is dissipated in the shaded cell. The dissipated power results in the heating of the shaded cell and nearby area causing hotspots in the module.

Methods & Techniques for Eliminating shadow

Shading analysis is usually carried out during the time of design of the rooftop solar PV plant. However, due to incorrect design or due to growth of trees, construction of nearby buildings, shadows may be created.

The size of the shadow of an object depends on:

- The size of the object
- Location of the object
- Date & Time

Possible Shadow Cases:

Case - 1: Suppose a tree grows adjacent to your PV system and casts its shadow on the modules



Figure: Tree shadow over modules

Possible Solutions:

- Visually inspect the PV modules
- Trim only those parts of the tree that is causing the shadow. It is NOT recommended to cut down the entire tree.

Case - 2: Suppose a nearby module casts a shadow on another module



Figure: Shadow due to adjacent module

Possible Solutions:

- Visually inspect the PV modules. If you find that the module is shaded when the sun is at overhead, then contact your system installer to correct what is an installation error.

Case - 3: Suppose a building gets constructed near your mounting structure



Figure: Shadow due to building

Possible Solutions:

- Visually inspect the PV modules
- If you find that the module is shaded when the sun is at overhead, then try shifting the modules to slightly farther away (if possible)
- Contact EPC provider to shift mounting structure to some other location

Solar PV Module Performance

- Check the output voltage and current of each string of the array and compare it to the expected output under the existing conditions.
- Verify output from the array (ISC and VOC).
- Use a DC Clamp meter to determine the array output current during a sunny weather.
- Measure the open circuit voltage of the array and compare the measured amount of VOC from the array against the manufacturer's specifications.

Follow the maintenance schedule as listed in the table below. Note that this may vary according to your location and climatic conditions:

Maintenance Work	Frequency
Ensure power generation	Daily
Inspect and clean PV modules from dust and other dirt	7 days
Check all electrical connections are kept clean and tight	Quarterly
Check output voltage and current of each string of the array and compare it with the expected output under the existing conditions	Monthly

INVERTER

A solar inverter or photovoltaic inverter is a type of power inverter which converts the variable direct current output of a photovoltaic solar panel into a utility frequency alternating current that can be fed into a commercial electrical grid or used by a local, off-grid electrical network. It is a critical balance of system –component in a photovoltaic system, allowing the use of ordinary AC-powered equipment. Solar power inverters have special functions adapted for use with photovoltaic arrays, including maximum power point tracking and anti-islanding protection.

Types of Solar Inverters

- String Inverters a string inverter is used with solar arrays to convert direct current into alternating current.
- Power Optimizer Power optimizer offers the same benefit as micro inverter does.
- Central Inverters: Central inverters are the same as string inverters, but they are bigger than them.
- Micro inverters Micro inverters are small inverters.
- Off grid inverter

Objective

To The objective of Maintenance for inverter is to reduce the risk of technical failure to ensure maximum yield and efficient operation of the system during its lifecycle. In view of achieving & maintaining above objective, it is necessary to fix the responsibilities of various persons involved in the O&M dept. with due delegation of authority to enable them to perform their function smoothly and timely.

Responsibility

- Responsible for execution: Site Head/Site Team
- Responsible for revision and implementation: Site Head/Site Team/Head(O&M)

Details of Hazard Involved

- Electrical
- Fire due to short circuit at electrical

Safety Precaution Required

- Ensure proper isolation of Permit from operation in
- Only work on the device when it is switched off and voltage. Do not bypass the safety
- Wherever applicable, use safety gloves while working on.

Spare Parts

- Air filter mat (if required)

Tools

- Screwdriver
- Multimeter & Clamp meter
- Vacuum cleaner

Permit

- Type: Permit to Work under isolation (PTW)

ISOLATION PROCESS

- Switch off the inverter (see inverter user manual for specific inverter type)
- Switch off the ac-main circuit breaker (low voltage)
- Switch off all the JB/SCB connected to the
- Switch off the auxiliary, Open all –ve & +ve fuses/links.
- Open all fuses (DC and AC-grid).
- Disconnect the DC main cables to the inverter. OEM hardware manual

Work instruction-Periodical Maintenance:

- Periodically inspect Inverters for any signs of damage
- Check that all electrical connections are tight and corrosion
- Clean the filter pads, if required replace filter mats (as described below).
- Check all cooling fans for functionally and operating noise
- Visually check the existing fuses and tension springs on the fuse holders
- Check the overvoltage arresters (visual display green – ready for operation, visual display red – over voltage protector defective)
- Visual inspection of GFDI – Remove possible dirt or dust by using vacuum cleaner
- The inverter module heat sink fins pick up dust from the cooling Check the cleanliness of the heat sink.
- Check the tightness of the bus bar connections at the quick Use the tightening torque tables (refer OEM Hardware Manual).
- Clean all contact surfaces of the quick connector.
- Check the inside of the switch cabinet for heavy dust deposits, dirt, and moisture and water penetration from outside.
- If necessary, clean the inverter with vacuum cleaner.

Work Instruction for cleaning the filter pads/grids

- Remove the fasteners at the top of the
- Lift the grating and pull it away from the
- Replace the air filter
- Install the grating in reverse



Figure: Solar Inverter

ACDB

ACDB, DCDB and AIBs are power distribution cum safety circuit boxes that prevent our appliances and solar components from short circuiting and high voltages. They act as circuit breakers when the power fluctuates and electricity surge flows through these distribution boards.

These boxes are installed inside the premises to control and supply the electricity to various electrical appliances. DCDB and AIB is installed between the Solar panel and solar inverter, while ACDB is installed after the Solar panel but before the connected load.

What is MCB

MCB stands for Miniature Circuit Breaker. It automatically switches OFF electrical circuit during any abnormal condition in the electrical network such as overload & short circuit conditions. However, fuse may sense these conditions but it has to be replaced though MCB can be reset. The MCB is an electromechanical device which guards the electric wires & electrical load from overcurrent so as to avoid any kind of fire or electrical hazards. Handling MCB is quite safer and it quickly restores the supply. When it comes to house applications, MCB is the most preferred choice for overload and short circuit protection. MCB can be reset very fast & don't have any maintenance cost. MCB works on bi-metal respective principle which provides protection against overload current & solenoid short circuit current.

What is MCCB

MCCB stands for Molded Case Circuit Breaker. It is another type of electrical protection device which is used when load current exceeds the limit of a miniature circuit breaker. The **MCCB** provides protection against overload, short circuit faults and is also used for switching the circuits. It can be used for higher current rating and fault level even in domestic applications. The wide current ratings and high breaking capacity in MCCB find their use in industrial applications. **MCCB** can be used for protection of capacitor bank, generator protection and main electric feeder distribution. It offers adequate protection whenever an application requires discrimination, adjustable overload setting or earth fault protection.



EARTHING

Definition: The process of transferring the **immediate discharge of the electrical energy directly to the earth by the help of the low resistance wire** is known as the electrical Earthing. The electrical Earthing is done by connecting the non-current carrying part of the equipment or neutral of supply system to the ground.

Mostly, the galvanised iron is used for the Earthing. The **Earthing provides the simple path to the leakage current**. The short-circuit current of the equipment passes to the earth which has zero potential. Thus, protects the system and equipment from damage.

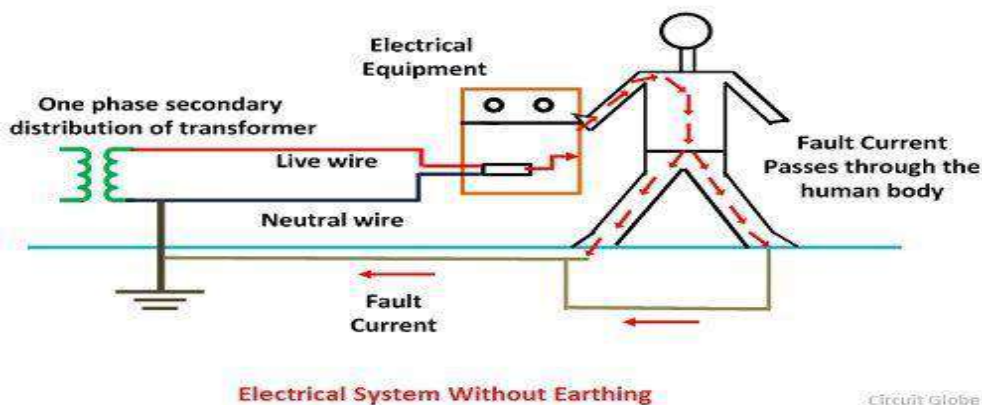
Types of Electrical Earthing

The electrical equipment mainly consists of two non-current carrying parts. These parts are neutral of the system or frame of the electrical equipment. From the Earthing of these two non-currents carrying parts of the electrical system Earthing can be classified into two types.

- Neutral Earthing
- Equipment Earthing.

The Earthing is essential because of the following reasons

- The Earthing protects the personnel from the short-circuit current.
- The Earthing provides the easiest path to the flow of short-circuit current even after the failure of the insulation.
- The Earthing protects the apparatus and personnel from the high voltage surges and lightning discharge.



Checks and Measurements:

- Check earth electrode and earth mat terminations for loose connection, contact, pitting and flash marks.
- Inspect all terminations for salt formation and clean.
- Ensure moisture level is maintained in earth pit.
- Inspect the earth pit brick / concrete lining and pit cover for good condition.



GENERATION DATA SOLAR PHOTO VOLATIC POWER PLANTS PROVIDED BY UNITED SIKH MISSION, USA						
PERIOD : (JAN-MAR 2023)						
SN.	Name of the Installed on	Capa- city (KW)	COD	Cumulative Generations on 31 st Dec.	Generation during Year 2023	Cumulative Generation as on 31st Dec 2023
					1 st qtr {Jan-March}	
A	Sri Harmandir Sahib Complex, Sri Amritsar	525	23-12-2021	618518	135608	754126
1	Sri Guru Arjun Dev Ji Niwas	98.5		122391	26352	148743
2	Sri Guru Ram Das Ji Niwas	82		101313	21326	122639
3	Sri Guru Hargobind Ji Niwas	42.5		80143	18454	98597
4	Sri Guru Nanak Dev Ji Niwas	83		99667	22558	122225
	SGPC President Office	25				
5	Mata Ganga Ji Niwas	20		94171	19764	113935
	Joda Ghar	77				
6	Teja Singh Samundri Hall & Dharam Prachar Committee	74.5		96363	21544	117907
7	Gathri Ghar	12		13641	3146	16787
8	NRI Niwas	10.5		10829	2464	13293
B	Gurudwara Bir Baba Budha Sahib Ji	520	24-05-2022			513525
1	Mata Ganga Ji Niwas	51				44865
2	Diwan Hall	240				243670
3	hospital building	20				15268
4	langar Hall	209				209722
C	Gurudwara Shaheed Baba Deep Singh Ji	138	06-04-2022 & 09-01-2023	64649	33573	98222
1	Baba Bota Singh Ji	27	06-04-2022			
2	M Office	15	06-04-2022			
3	Baba Deep Singh Ji Niwas	36	06-04-2022			
4	New Baba Deep Singh Ji	32	09-01-2023			
5	New Baba Bota Ji	28	09-01-2023			
D	Gurudwara Bhai Gurdas Hall	40	25-04-2023			

Declaration Letter for Warranty

Reference:

- Customer: Shimato Enterprises Pvt Ltd
- Project Name: SHRI HARMINDER SAHIB GURUDWARA
- Location: Golden Temple Road, Atta Mandi, Katra Ahluwalia,
- Amritsar, Punjab-143006
- Module Type: TSM-DE18M
- Power bin: 500 W
- Volume: 1990 pcs
- PI no.: TED-A11042-2104-XSI-16143-1-3

To whom it may concern

It is hereby stated that the aforementioned modules TSM-DE18M (II) 500W which are 1990 pieces are covered by the warranty terms specified in "LIMITED MANUFACTURER'S WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULE" (PS-M-0135 Rev. P Nov.10.2020). Trina does not take any responsibility for the loss and risk which result from any physical damages.

All over conditions from the User Manual shall apply and remain in full force. The end user shall comply with all its terms and provisions at all times. In the event of any future claim, Trina Solar LIMITED MANUFACTURER'S WARRANTY FOR TRINA SOLAR CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES will be valid only if the above granted expectations and conditions, as well as the rest of the Installation Manual recommendations, are all adhered to.

Yours Sincerely

Global Customer Service:

天合光能股份有限公司
Bosco Chao
TRINA SOLAR CO., LTD

Signature Date: 2021-12-22

Trina Solar Co. Ltd.
No. 2 Trina Road
Changzhou PV Industrial Park, New District
Chanzhou, Jiangsu, 213031 China

T +86 519 8548 2008
F +86 519 8517 6021
E sales@trinasolar.com

Declaration Letter for Warranty

Reference:

- Customer: Shimato Enterprises Pvt Ltd
- Project Name: SHRI HARMINDER SAHIB GURUDWARA
- Location: Golden Temple Road, Atta Mandi, Katra Ahluwalia, Amritsar, Punjab-143006
- Module Type: TSM-DE19M
- Power bin: 550 W
- Volume: 420 pcs
- PI no.: TED-A11042-2104-XSI-16143-4-7

To whom it may concern

It is hereby stated that the aforementioned modules TSM-DE19M 550W which are 420 pieces are covered by the warranty terms specified in "LIMITED MANUFACTURER'S WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULE" (PS-M-0135 Rev. P Nov.10.2020). Trina does not take any responsibility for the loss and risk which result from any physical damages.

All over conditions from the User Manual shall apply and remain in full force. The end user shall comply with all its terms and provisions at all times. In the event of any future claim, Trina Solar LIMITED MANUFACTURER'S WARRANTY FOR TRINA SOLAR CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES will be valid only if the above granted expectations and conditions, as well as the rest of the Installation Manual recommendations, are all adhered to.

Yours Sincerely

Global Customer Service:

天合光能股份有限公司
Bosco Zhao
TRINA SOLAR CO.,LTD

Signature Date: 2022-11-24

Trina Solar Co. Ltd.
No. 2 Trina Road
Changzhou PV Industrial Park, New District
Chanzhou, Jiangsu, 213031 China

T +86 519 8548 2008
F +86 519 8517 6021
E sales@trinasolar.com

Letter of Warranty Authentication

To,
SGPC,
Teja Singh Samundri Hall,
Sri Harmandir Sahib Complex, Sri Amritsar, Punjab – 143001

This is to certify that the **Havells Enviro GTI Inverters** supplied as per details given below comes with a standard warranty of 10 years. This warranty is applicable from the date of Invoice (as given below) and is provided against manufacturing defects within the terms and conditions of warranty from the date of Invoicing of **M/S HARTEK SOLAR PVT.LTD.** as per the terms of warranty, a copy of which is enclosed with this letter. Inconsistency between this Letter of Warranty Authentication and the applicable warranty terms & conditions to the extent of date of applicability of warranty only, stands superseded by this Letter of Warranty Authentication

Havells Enviro GTI Inverter No.	: Enviro GT i20000 Solar GT Inverter, Enviro GT i50000 Solar GT Inverter, Enviro GT i100000 Solar GT Inverter
Inverter Rating	: 20 Kw, 50 Kw, 100 Kw
Qty.	: 2,1,4
Serial Number	: SL1ES020M8G549, SL1ES020MG556, SJ2ES150M8E384, SQ1ES1AOM3Q227, SQ1ES1AOM3Q260, SQ1ES1AOM3Q261, SQ1ES1AOM4Q482
Havells Invoice No. (To Dealer)	: 5949006500, 5949006501, 5949006609
Date	: 30-09-2021, 30-09-2021, 14-10-2021
Havells Dealer's Invoice No.	: GT/2113100111/HS/PB, GT/2113100146/HS/PB
Date	: 27-10-2021, 18-12-2021

For **Havells India Ltd.**



Authorised Signatory

Date & Seal: 16-06-2022

HAVELLS INDIA LTD.

Corporate Office: QRG Towers, 2D, Sector 126, Expressway, Noida - 201304, U.P (INDIA)

Tel: +91-120-3331000, Fax: +91-120-3332000

E-mail: marketing@havells.com, www.havells.com

Registered Office: 904, 9th Floor, Surya Kiran Building,
K.G. Marg, Connaught Place, New Delhi - 110001 (INDIA)

Consumer Care No.:

1800 103 1313, 1800 11 0303 (All Connections), 011-4166 0303 (Landline)

CIN: L31900DL1983PLC016304

GSTIN: 09AAACH0351E222

CLASSIFICATION | PUBLIC



Letter of Warranty Authentication

To,
SGPC

Teja Singh Samundri Hall, Sri Harmandir Sahib Complex, Sri Amritsar, Punjab - 143001

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Havells Enviro GTI Inverter No.	: GT i15000 Solar GT Inverter, GT i30000 Solar GT Inverter
Inverter Rating	: 15 Kw, 30 Kw
Qty.	: 1,2
Serial Number	: SN1ES015M9S059, SL1ES030M97138, SL1ES030M97122
Havells Invoice No. (To Dealer)	: 5949006678, 5949006690
Date	: 22-10-2021
Havells Dealer's Invoice No.	: GT/2113100145/HS/PB
Date	: 18-12-2021

For **Havells India Ltd.**



Authorised Signatory

Date & Seal: 16-06-2022

HAVELLS INDIA LTD.

Corporate Office: QRG Towers, 2D, Sector 126, Expressway, Noida - 201304, U.P (INDIA)

Tel: +91-120-3331000, Fax: +91-120-3332000

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CLASSIFICATION | PUBLIC



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SGPC
Teja Singh Samundri Hall,
Sri Harmandir Sahib Complex, Sri Amritsar, Punjab – 143001

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Havells Enviro GTI Inverter No.	: Enviro GT i11000 Solar GT Inverter, GT i15000 Solar GT Inverter, GT i20000 Solar GT Inverter, GT i25000 Solar GT Inverter, GT i50000 Solar GT Inverter, GT i80000 Solar GT Inverter, GT i100000 Solar GT Inverter
Inverter Rating	: 11 Kw, 20 Kw, 25 Kw, 50 Kw, 80 Kw, 100 Kw
Qty.	: 2, 2, 1, 1, 3, 2, 1
Serial Number	: SFES010M3G691, SFES010M3G627, SN1ES015LAS012, SN1ES015LAS082, SL1ES020L9H144, SL1ES025M1M180, SJ2ES150M3P504, SJ2ES150M3P505, SJ2ES150M3P496, SQ1ES180M56141, SQ1ES180M5614, 2SQ1ES1A0M4D140
Havells Invoice No. (To Dealer)	: 5949005407, 5949005461, 5957100219,
Date	: 17-07-2021
Havells Dealer's Invoice No.	: GT/2113100041/HS/PB, GT/2113100044/HS/PB
Date	: 23-07-2021, 27/07/2021

For **Havells India Ltd.**



Authorised Signatory

Date & Seal: 16-06-2022

HAVELLS INDIA LTD.

Corporate Office: QRG Towers, 2D, Sector 126, Expressway, Noida - 201304, U.P (INDIA)

Tel: +91-120-3331000, Fax: +91-120-3332000

E-mail: marketing@havells.com, www.havells.com

Registered Office: 904, 9th Floor, Surya Kiran Building,
K.G. Marg, Connaught Place, New Delhi - 110001, (INDIA)

Consumer Care No.:

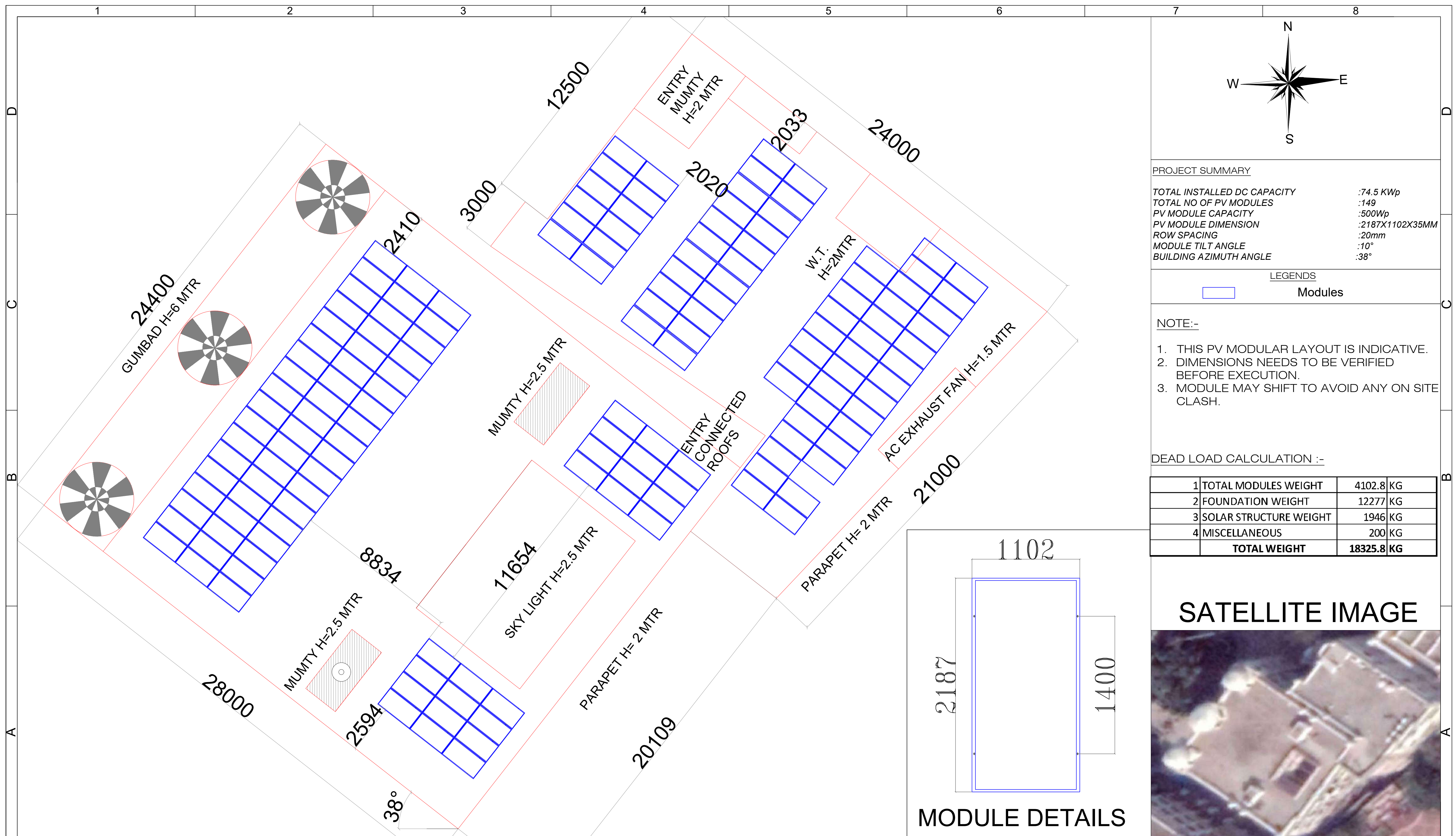
1800 103 1313, 1800 11 0303 (All Connections), 011-4166 0303 (Landline)

CIN: L31900DL1983PLC016304

GSTIN: 09AAACH0351E222

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02	THIRD SUBMISSION	03-06-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
01	SECOND SUBMISSION	25-05-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	17-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
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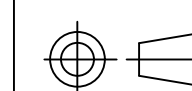
HARTEK SOLAR PVT. LTD.

*PLOT NO. :- F-322,
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MOHALI, PUNJAB*

ALL DIMENSIONS ARE
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OTHERWISE STATED.

31.618289°
74.878228°

SCALE



CLIENT NAME

BUILDING NAME

TITLE :

Date _____

17.04.21

E

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB

M PRACHAR AND GURU TEJA SINGH SAMUNDARI HALL

MODULAR LAYOUT

DRAWING NO.

/2021/PB/GT/C/GEN-1

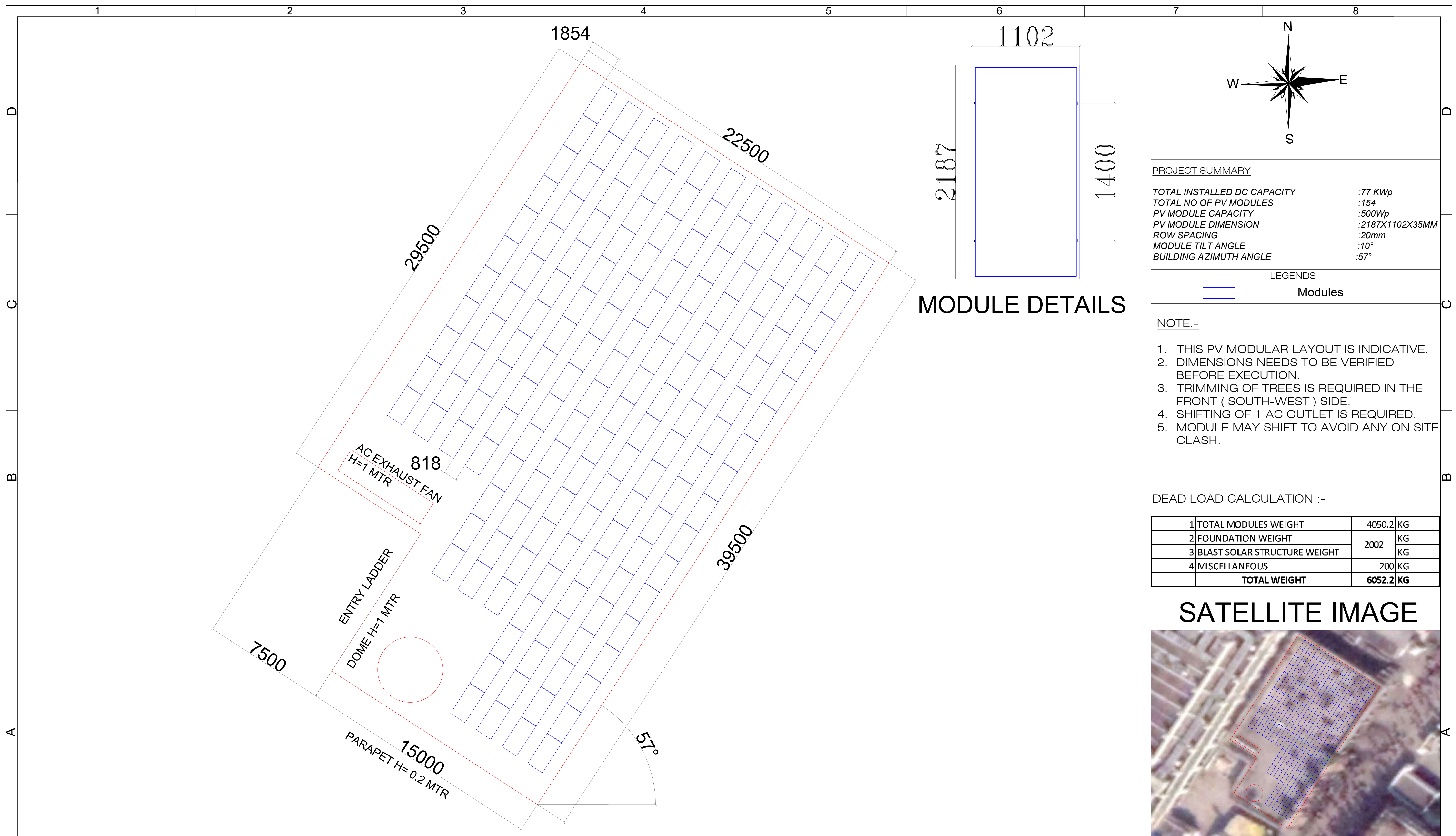
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03 OF 12

REV.

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01	SECOND SUBMISSION	25-05-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
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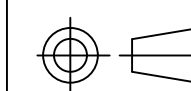
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INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB*

ALL DIMENSIONS ARE
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CLIENT NAME

BUILDING NAME

TITLE :

Date _____

17.04.21

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB

JODHA GHAR

TITLE :	MODULAR LAYOUT
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Date _____

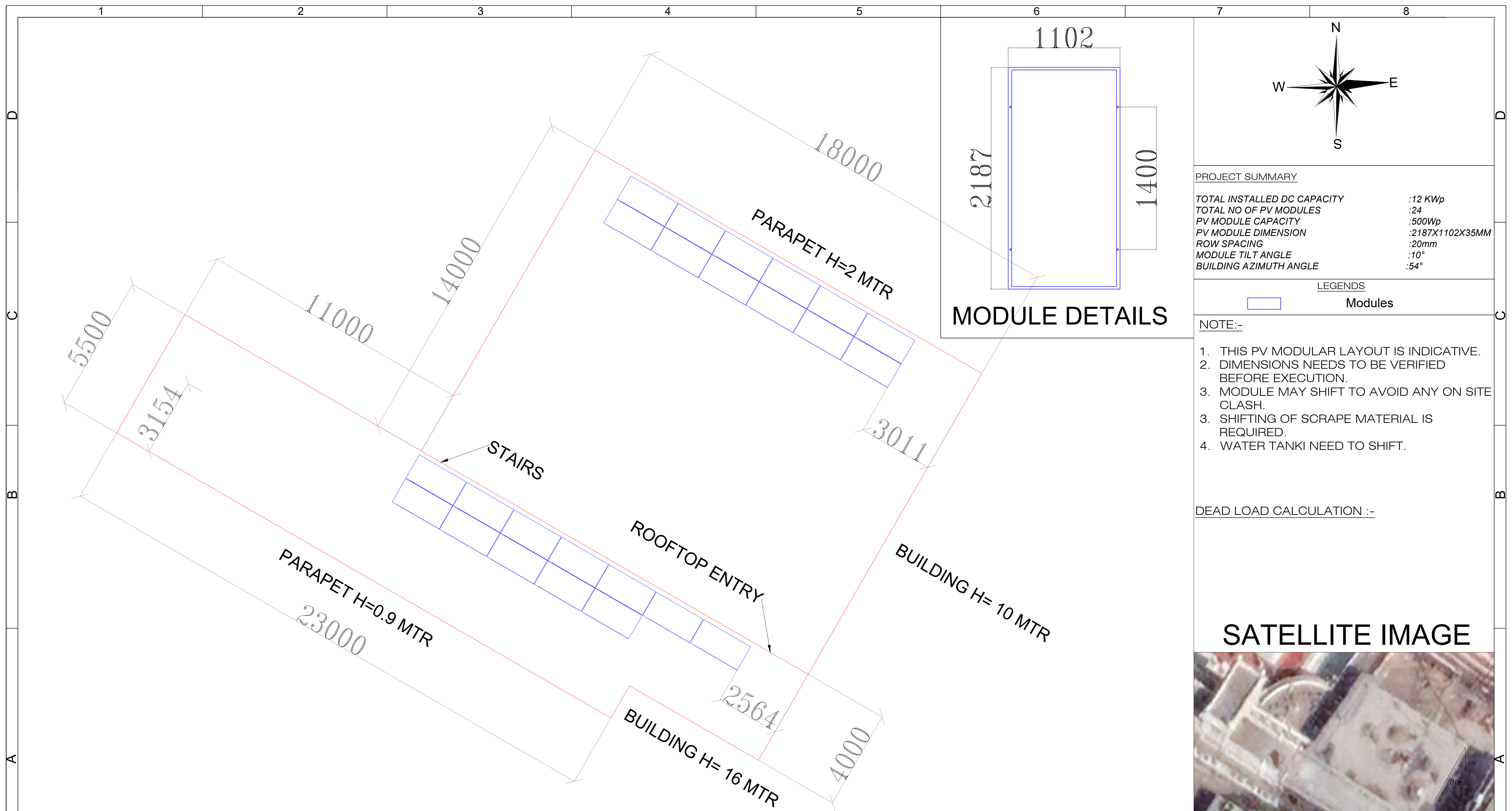
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08 OF 12

R2



02	THIRD SUBMISSION	03-06-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	17-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
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MOHALI, PUNJAB*

ALL DIMENSIONS ARE
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OTHERWISE STATED.

CLIENT NAME

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB

BUILDING NAME

NEW BUILDING (GATHRI GHAR)

TITLE :

MODULAR LAYOUT

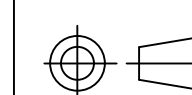
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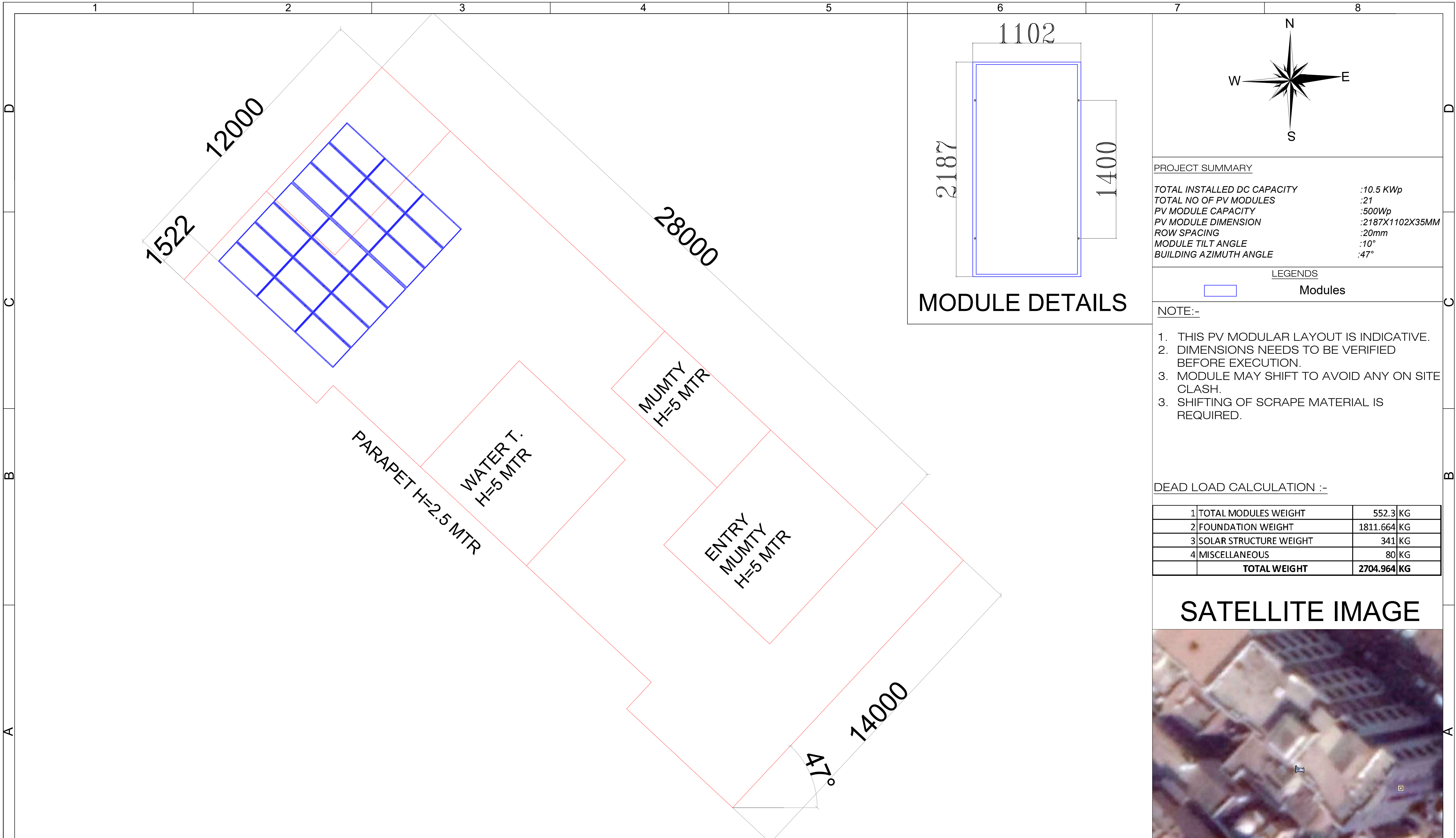
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12 OF 12

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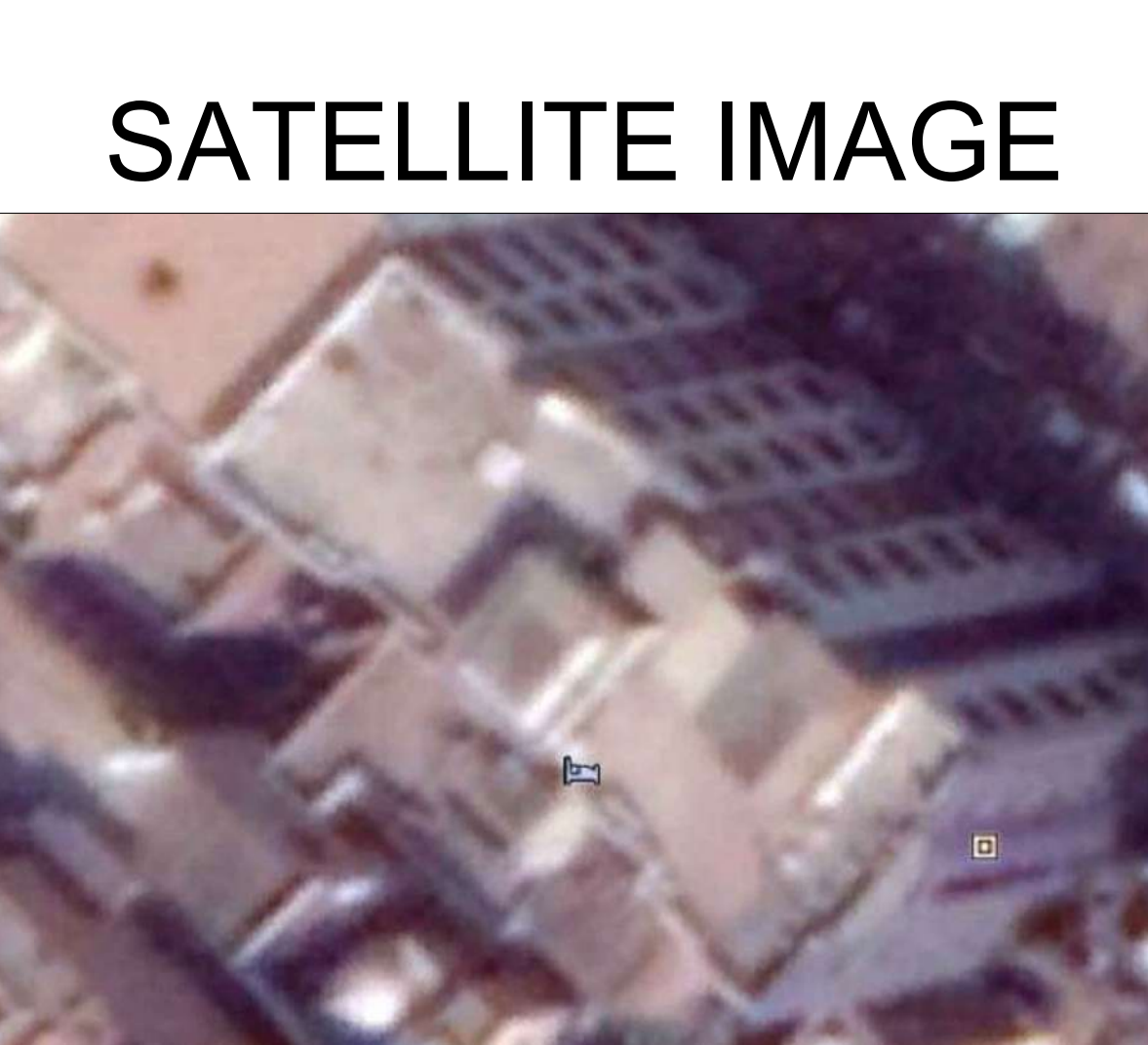


PROJECT SUMMARY	
TOTAL INSTALLED DC CAPACITY	:10.5 KWp
TOTAL NO OF PV MODULES	:21
PV MODULE CAPACITY	:500Wp
PV MODULE DIMENSION	:2187X1102X35MM
ROW SPACING	:20mm
MODULE TILT ANGLE	:10°
BUILDING AZIMUTH ANGLE	:47°

LEGENDS	
	Modules

- NOTE:-
1. THIS PV MODULAR LAYOUT IS INDICATIVE.
 2. DIMENSIONS NEEDS TO BE VERIFIED BEFORE EXECUTION.
 3. MODULE MAY SHIFT TO AVOID ANY ON SITE CLASH.
 3. SHIFTING OF SCRAPE MATERIAL IS REQUIRED.

DEAD LOAD CALCULATION :-		
1	TOTAL MODULES WEIGHT	552.3 KG
2	FOUNDATION WEIGHT	1811.664 KG
3	SOLAR STRUCTURE WEIGHT	341 KG
4	MISCELLANEOUS	80 KG
TOTAL WEIGHT		2704.964 KG



02	THIRD SUBMISSION	03-06-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
01	SECOND SUBMISSION	25-05-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
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HARTEK SOLAR PVT. LTD.

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MOHALI, PUNJAB*

ALL DIMENSIONS ARE
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OTHERWISE STATED.

31.621812°
74.875953°

SCALE

CLIENT NAME

BUILDING NAME

TITLE :

Date

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB

NRI NIWAS

MODULAR LAYOUT

DRAWING NO.

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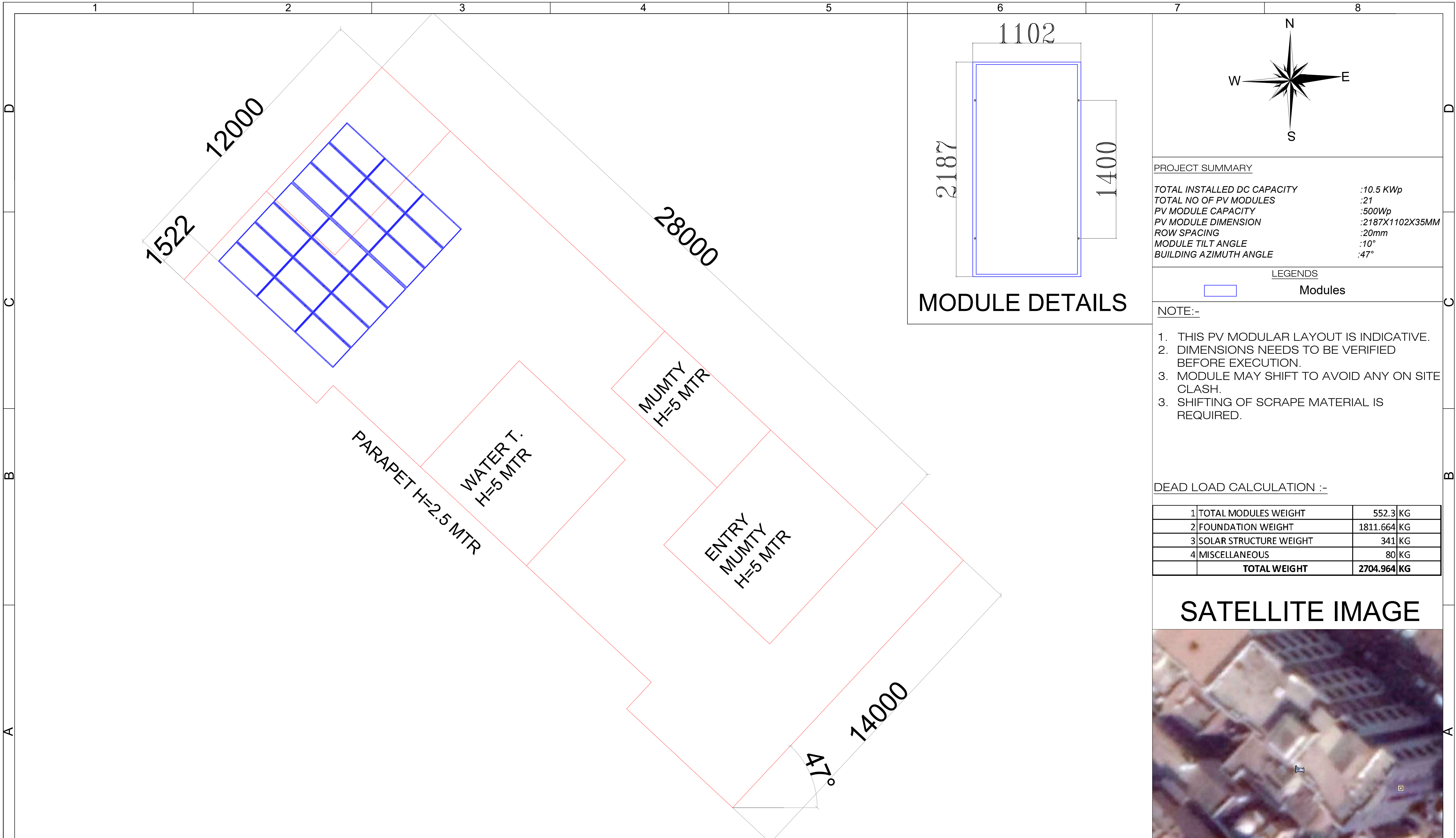
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10 OF 12

R2

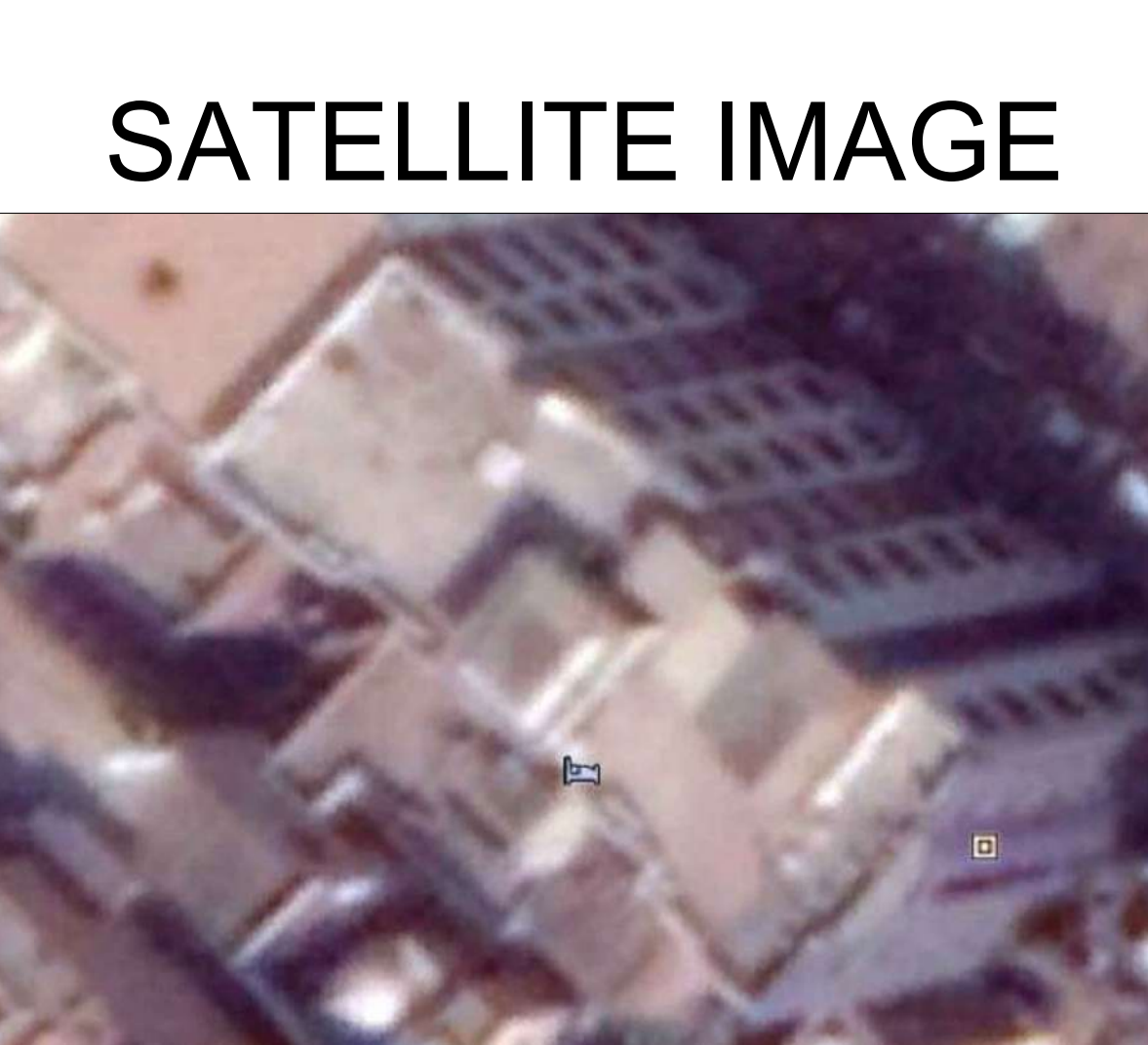


PROJECT SUMMARY	
TOTAL INSTALLED DC CAPACITY	:10.5 KWp
TOTAL NO OF PV MODULES	:21
PV MODULE CAPACITY	:500Wp
PV MODULE DIMENSION	:2187X1102X35MM
ROW SPACING	:20mm
MODULE TILT ANGLE	:10°
BUILDING AZIMUTH ANGLE	:47°

LEGENDS	
	Modules

- NOTE:-
1. THIS PV MODULAR LAYOUT IS INDICATIVE.
 2. DIMENSIONS NEEDS TO BE VERIFIED BEFORE EXECUTION.
 3. MODULE MAY SHIFT TO AVOID ANY ON SITE CLASH.
 3. SHIFTING OF SCRAPE MATERIAL IS REQUIRED.

DEAD LOAD CALCULATION :-		
1	TOTAL MODULES WEIGHT	552.3 KG
2	FOUNDATION WEIGHT	1811.664 KG
3	SOLAR STRUCTURE WEIGHT	341 KG
4	MISCELLANEOUS	80 KG
TOTAL WEIGHT		2704.964 KG



02	THIRD SUBMISSION	03-06-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
01	SECOND SUBMISSION	25-05-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	17-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved
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HARTEK SOLAR PVT. LTD.
*PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB*

ALL DIMENSIONS ARE
IN MM. UNLESS AND
OTHERWISE STATED.

31.621812°
74.875953°

SCALE

CLIENT NAME
BUILDING NAME

TITLE :
Date

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB
NRI NIWAS

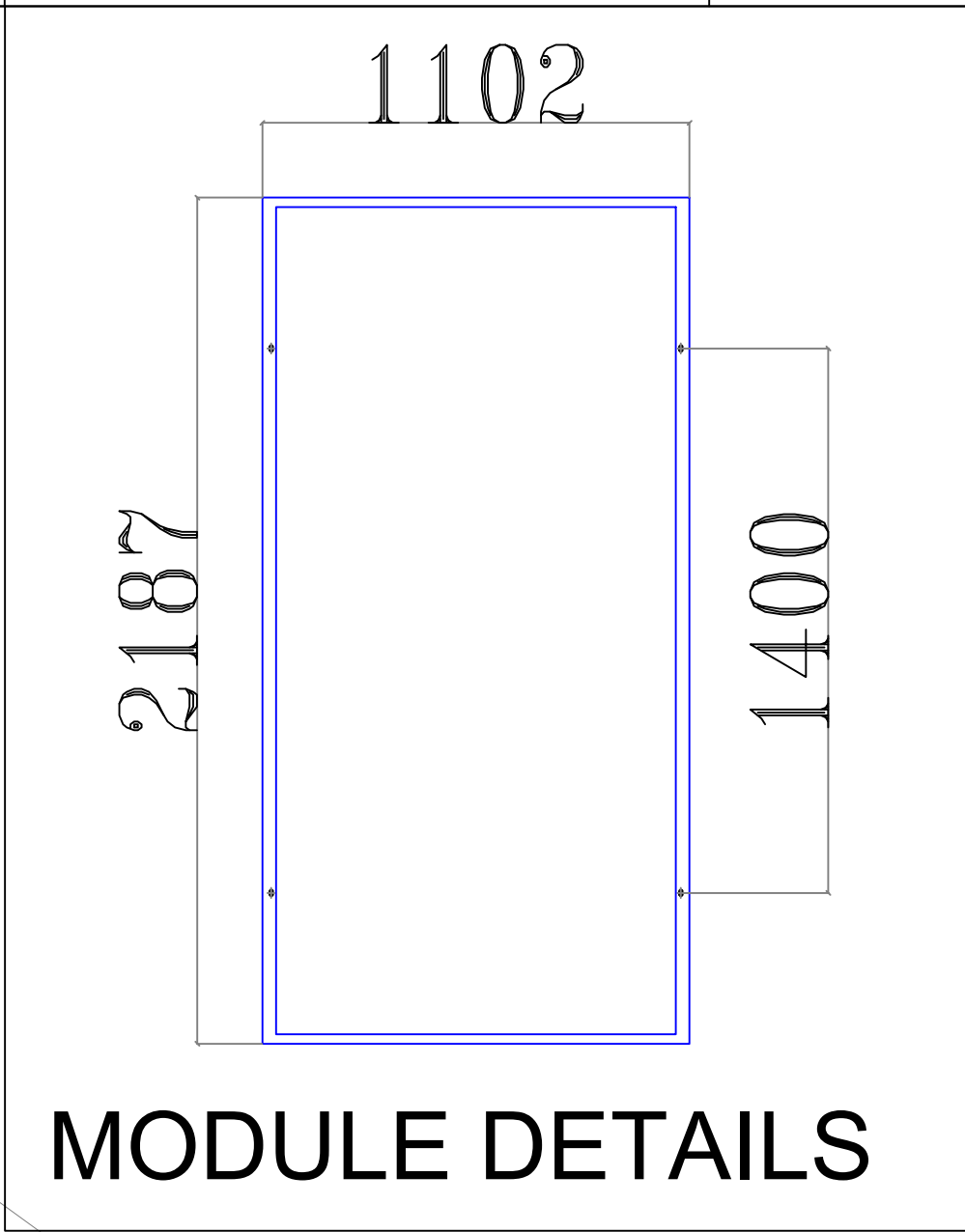
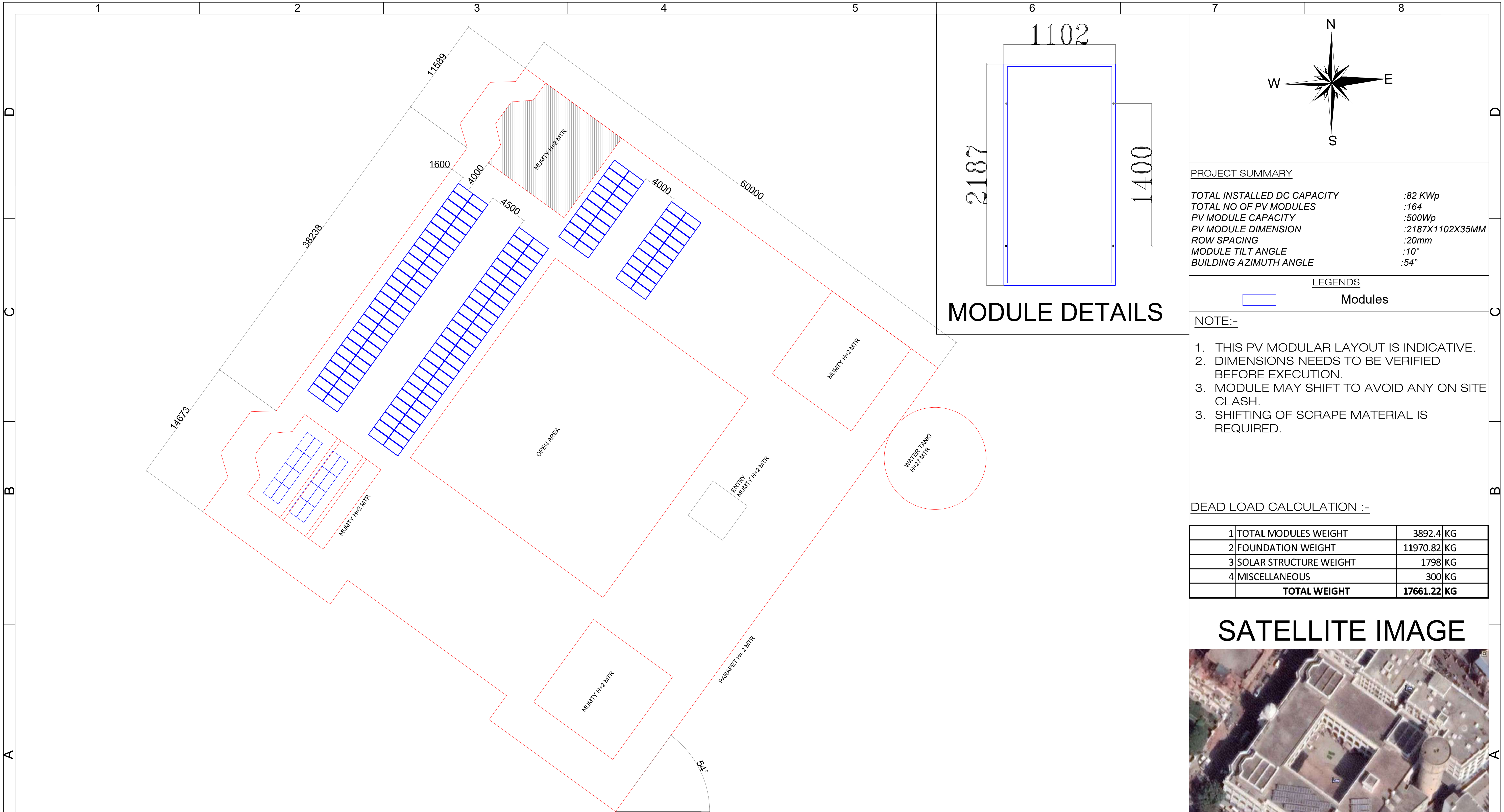
MODULAR LAYOUT
DRAWING NO.
SHEET NO.
REV.

17.04.21

53/2021/PB/GT/J/GEN-1

10 OF 12

R2



PROJECT SUMMARY

TOTAL INSTALLED DC CAPACITY	:82 KWp
TOTAL NO OF PV MODULES	:164
PV MODULE CAPACITY	:500Wp
PV MODULE DIMENSION	:2187X1102X35MM
ROW SPACING	:20mm
MODULE TILT ANGLE	:10°
BUILDING AZIMUTH ANGLE	:54°

LEGENDS

Modules

NOTE:-

- THIS PV MODULAR LAYOUT IS INDICATIVE.
- DIMENSIONS NEEDS TO BE VERIFIED BEFORE EXECUTION.
- MODULE MAY SHIFT TO AVOID ANY ON SITE CLASH.
- SHIFTING OF SCRAPE MATERIAL IS REQUIRED.

DEAD LOAD CALCULATION :-

1	TOTAL MODULES WEIGHT	3892.4	KG
2	FOUNDATION WEIGHT	11970.82	KG
3	SOLAR STRUCTURE WEIGHT	1798	KG
4	MISCELLANEOUS	300	KG
	TOTAL WEIGHT	17661.22	KG



02	THIRD SUBMISSION	03-06-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
01	SECOND SUBMISSION	25-05-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	17-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved
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PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

ALL DIMENSIONS ARE IN MM. UNLESS AND OTHERWISE STATED.

31.618860°
74.878710°

SCALE

CLIENT NAME

BUILDING NAME

TITLE :

Date

SHRI HARMANDIR SAHIB, AMRITSAR, PUNJAB

SHRI GURU RAMDAS JI NIWAS

MODULAR LAYOUT

DRAWING NO.

SHEET NO.

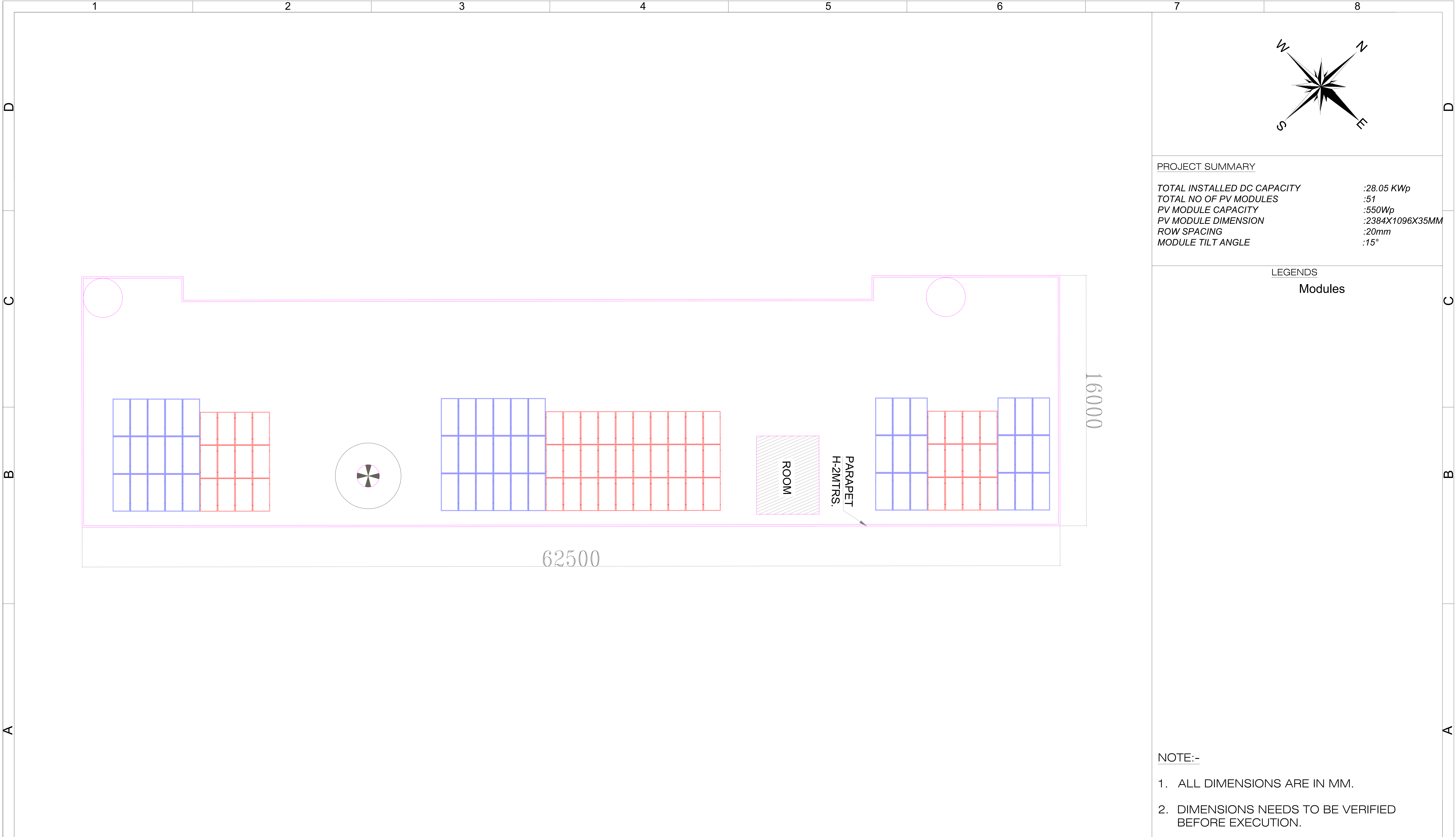
REV.


17.04.21

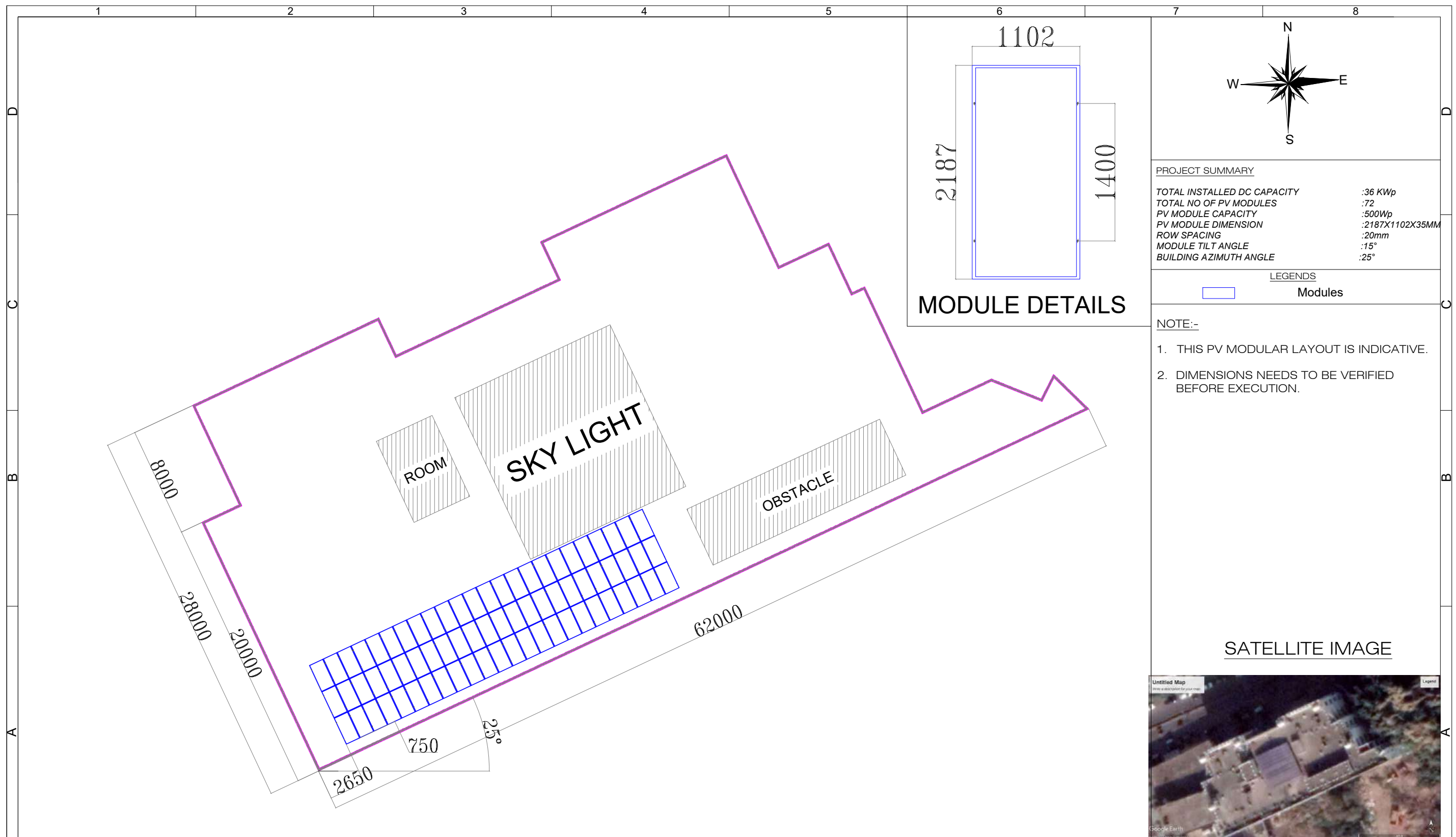
53/2021/PB/GT/B/GEN-1


11 OF 12

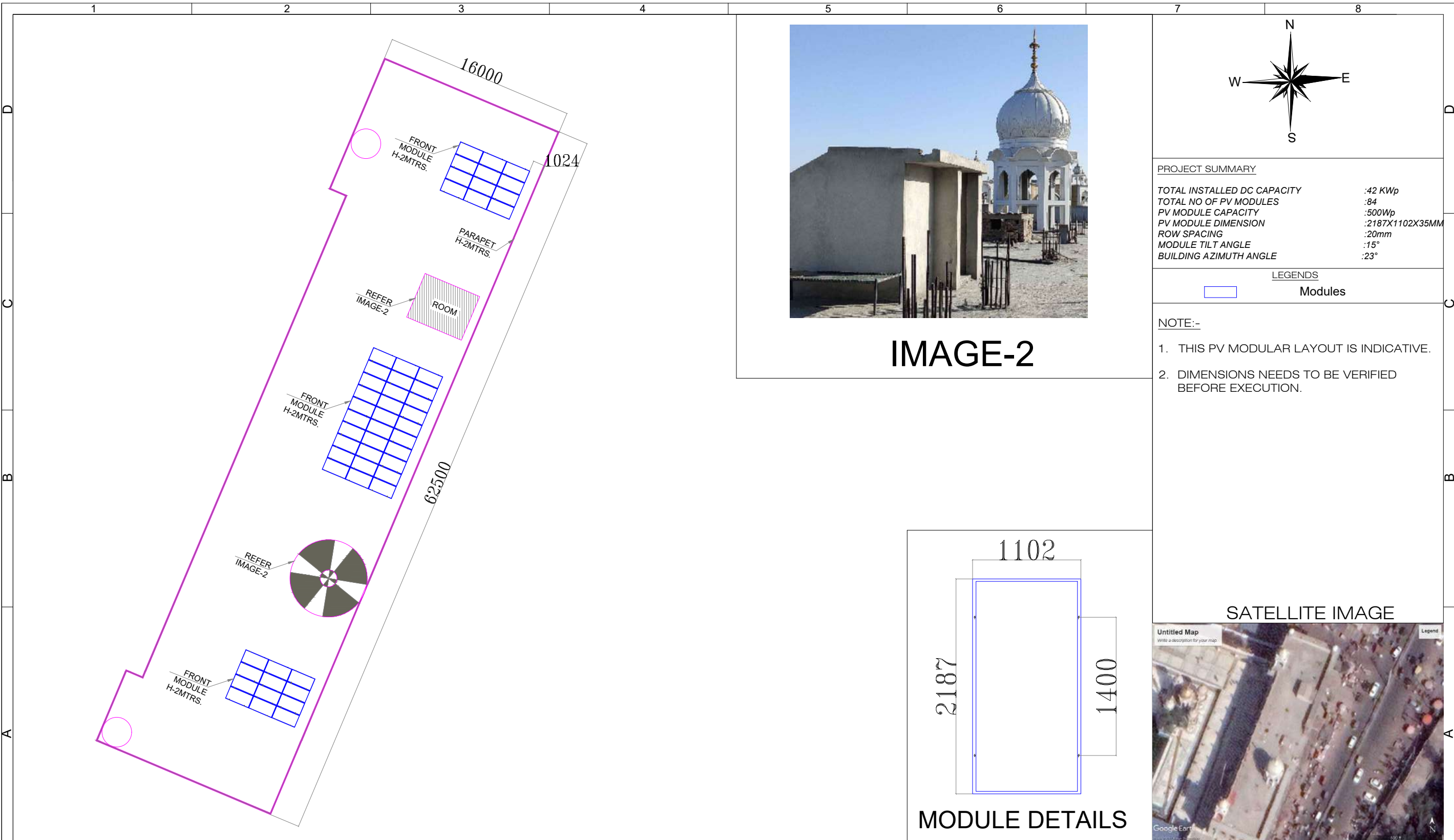
R2



						<div><div>HARTEK[®]</div><div>HARTEK SOLAR PVT. LTD.</div><div><i>PLOT NO. :- F-322, INDUSTRIAL AREA, PHASE :- 8B MOHALI, PUNJAB</i></div></div>	ALL DIMENSIONS ARE IN MM. UNLESS AND OTHERWISE STATED.	CUSTOMER	GURUDWARA SHRI BABA DEEP SINGH JI, AMRITSAR			
							USER	BABA BOTA SAHIB (BUILDING)				
								TITLE : MODULAR LAYOUT				
00	FIRST SUBMISSION	16-09-2022	SUMIT SHARMA	SUMIT SHARMA	NAVNEET			Date	DRAWING NO.		SHEET NO.	REV.
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved			SCALE		16.09.2022	02 OF 03	R0
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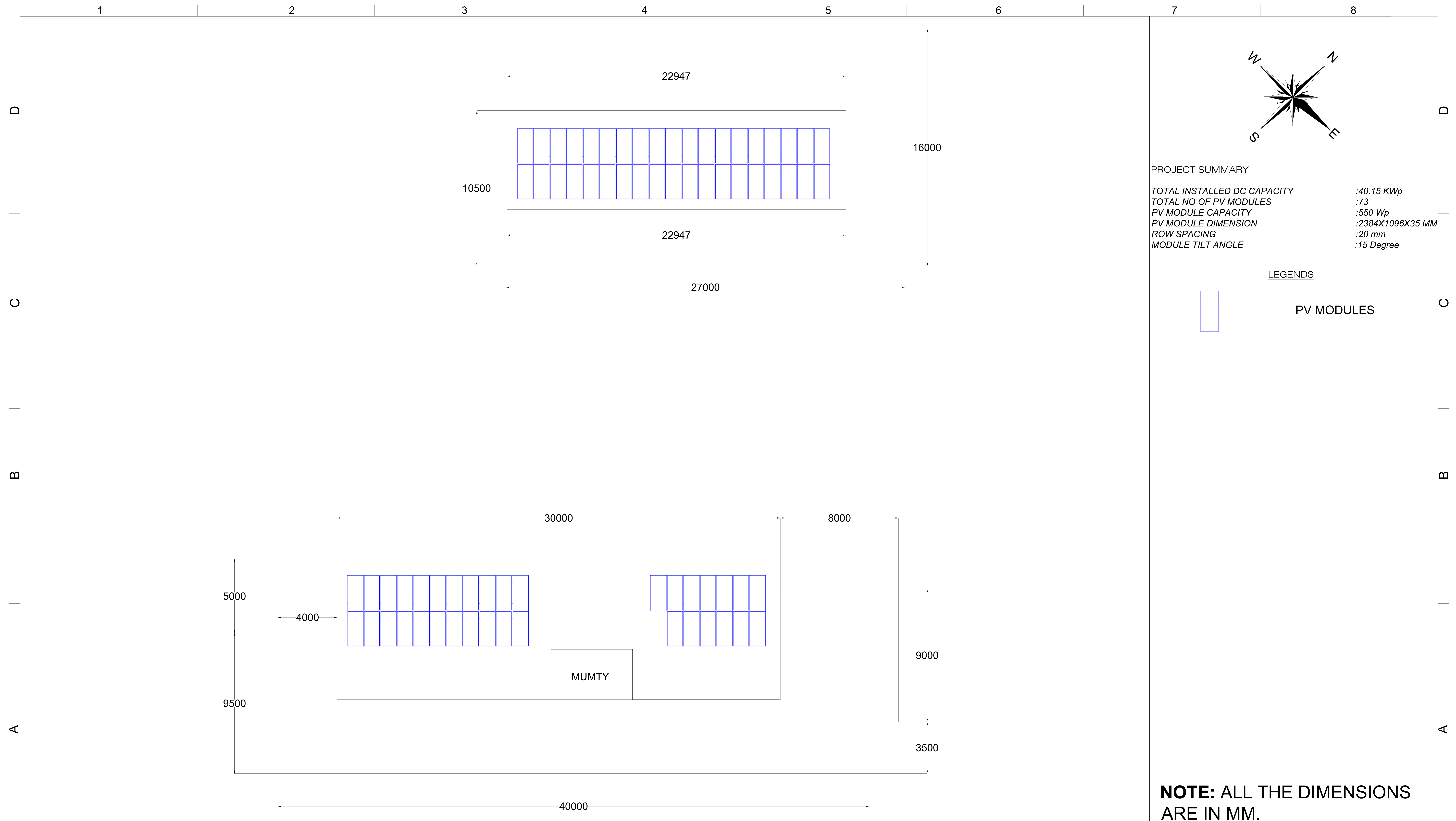
						<div><div>HARTEK[®]</div><div>HARTEK SOLAR PVT. LTD.</div><div><i>PLOT NO. :- F-322, INDUSTRIAL AREA, PHASE :- 8B MOHALI, PUNJAB</i></div></div>	ALL DIMENSIONS ARE IN MM. UNLESS AND OTHERWISE STATED.		CUSTOMER	BABA DEEP SINGH JI YATRI SARAI				
31.612667° 74.881221°		USER	BABA DEEP SINGH JI YATRI SARAI											
		TITLE : Modular Layout		Date			DRAWING NO.		SHEET NO.		REV.			
00	FIRST SUBMISSION	12-03-2021	ASHOK	ASHOK	DIVANSHU		SCALE		12.03.21	HSPL-2021-XX		01 OF 01		R0
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved									
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00	FIRST SUBMISSION	12-03-2021	ASHOK	ASHOK	DIVANSHU
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved
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INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

ALL DIMENSIONS ARE IN MM. UNLESS AND OTHERWISE STATED.		CUSTOMER	BABA BOTA SAHIB (BUILDING)			
		USER	BABA BOTA SAHIB (BUILDING)			
31.613729° 74.881199°		TITLE :		Modular Layout		
		Date	DRAWING NO.	SHEET NO.	REV.	
SCALE		12.03.21	HSPL-2021-XX	02 OF 03	R0	

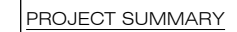


00	FIRST SUBMISSION	16-09-2022	SUMIT SHARMA	SUMIT SHARMA	NAVNEET
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved
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INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

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OTHERWISE STATED.

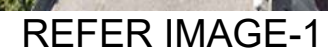
CLIENT NAME	SHRI GURDAS HALL, AMRITSAR		
BUILDING NAME	SHRI GURDAS HALL, AMRITSAR		
TITLE : MODULAR LAYOUT			
Date	DRAWING NO.	SHEET NO.	REV.
16.09.2022		01 OF 01	00



LEGENDS

NOTE:-

-



*PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB*

31.511810°
74.774400°

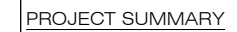
11.04.22

HSPL-2021-PB-1017

01 OF 01

R1

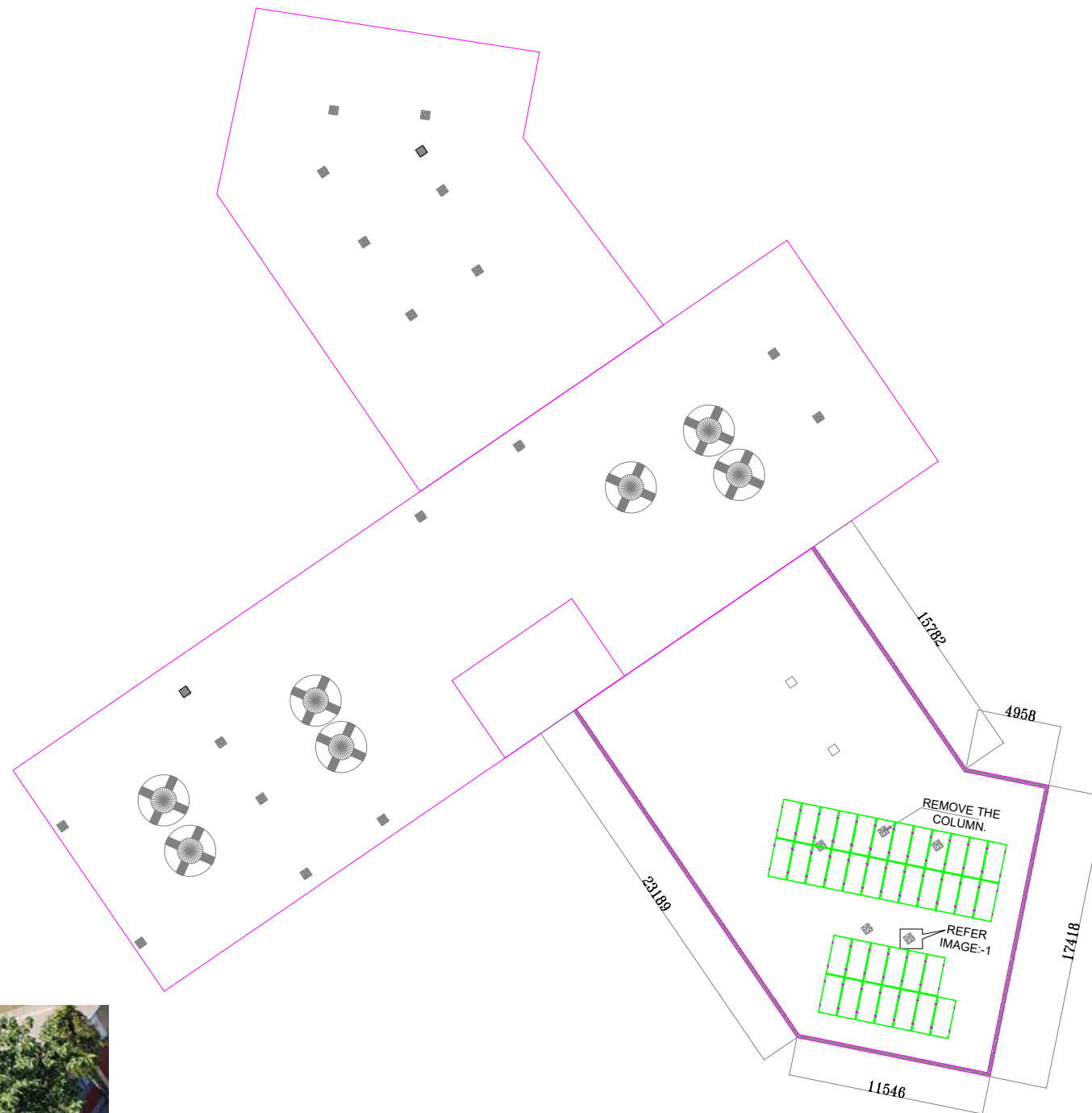
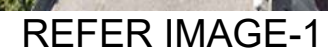
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LEGENDS

NOTE:-

-



HARTEK®

*PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB*

31.511810°
74.774400°

BUILDING NAME

HOSPITAL

Modular Layout

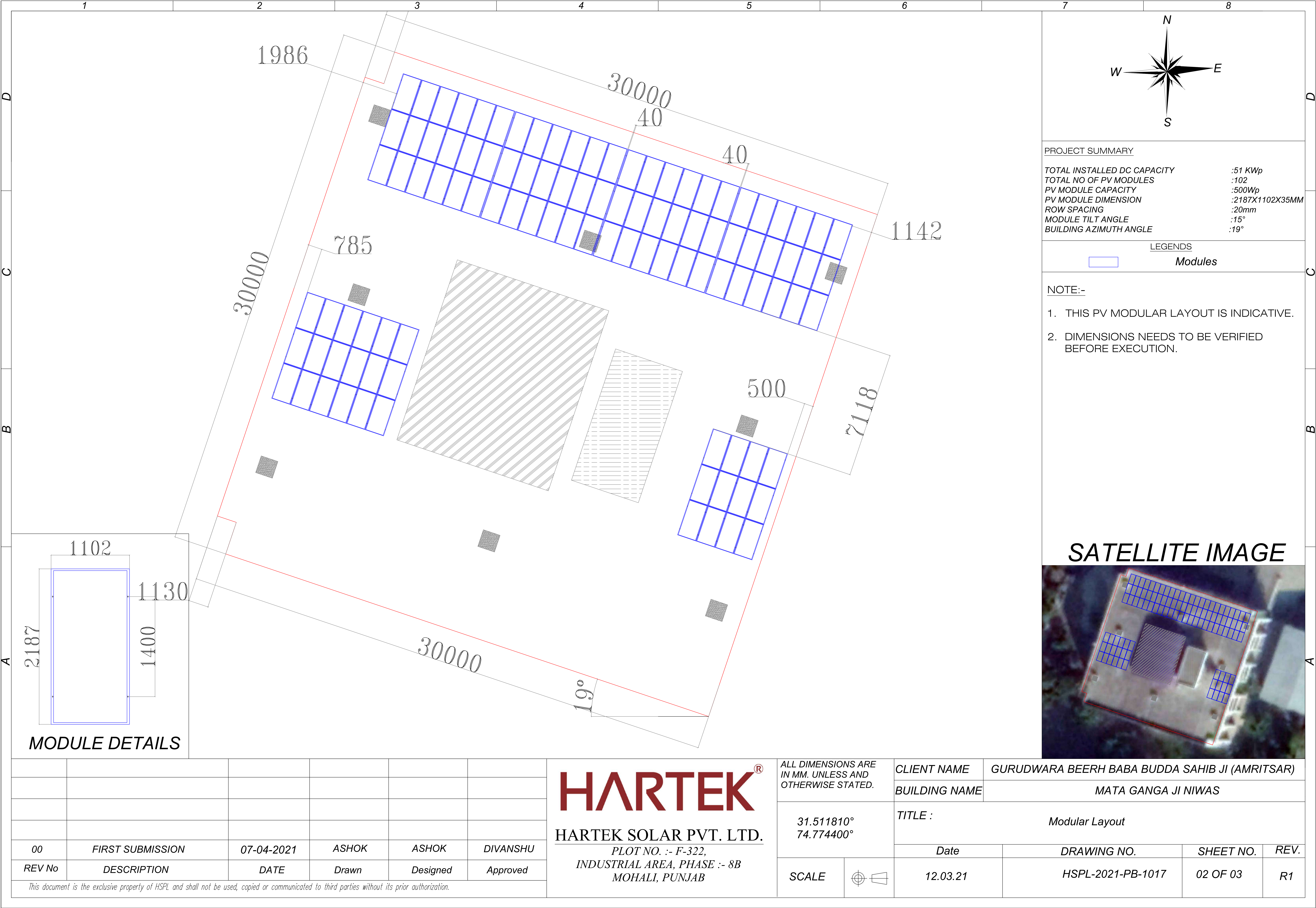
DRAWING NO.

HSPL-2021-PB-1017

01 OF 01

R1

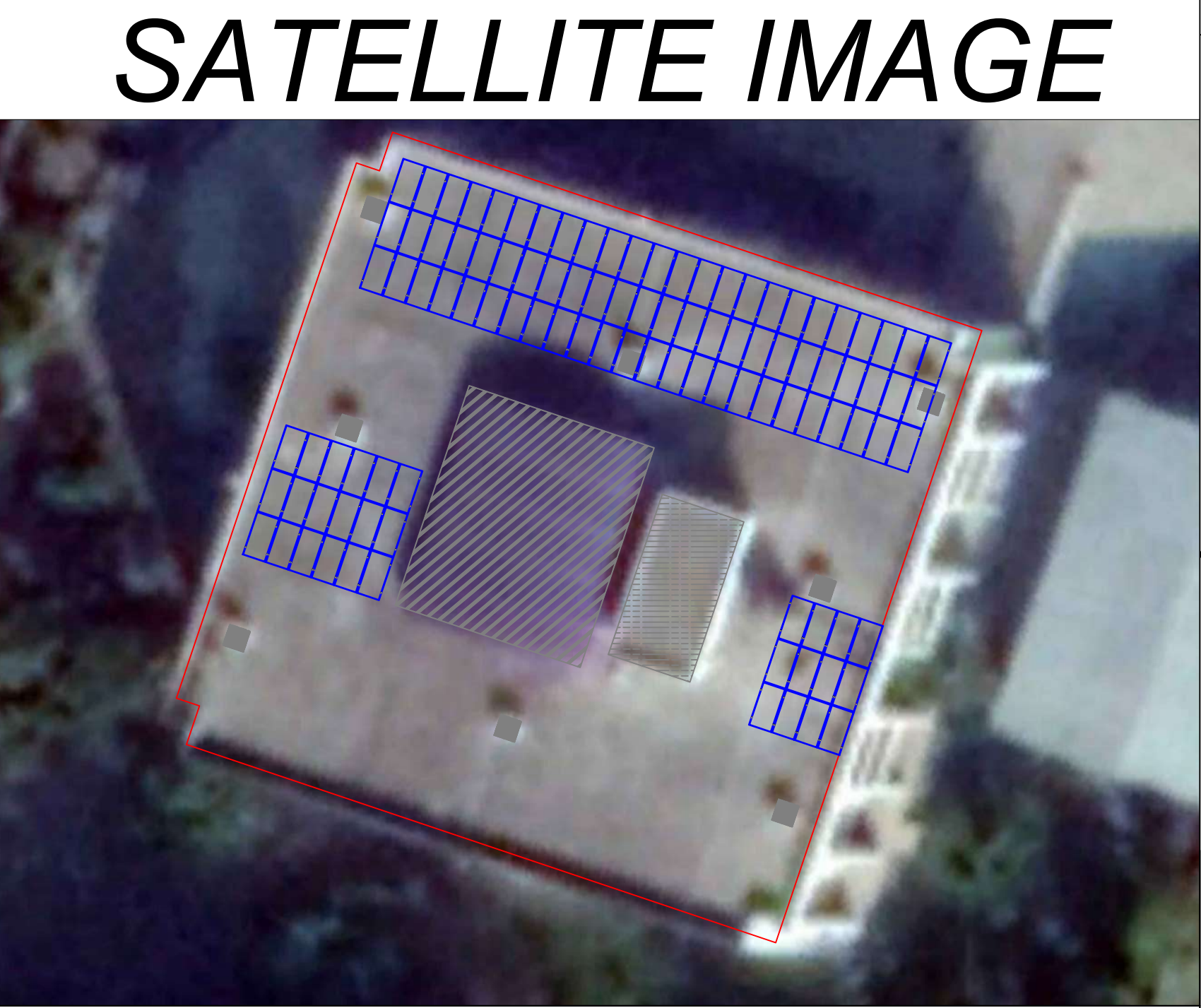
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PROJECT SUMMARY			
TOTAL INSTALLED DC CAPACITY	:	51 KWp	
TOTAL NO OF PV MODULES	:	102	
PV MODULE CAPACITY	:	500Wp	
PV MODULE DIMENSION	:	2187X1102X35MM	
ROW SPACING	:	20mm	
MODULE TILT ANGLE	:	15°	
BUILDING AZIMUTH ANGLE	:	19°	

LEGENDS	
	Modules

- NOTE:-
- THIS PV MODULAR LAYOUT IS INDICATIVE.
 - DIMENSIONS NEEDS TO BE VERIFIED BEFORE EXECUTION.



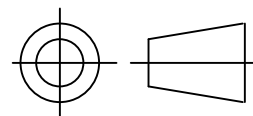
00	FIRST SUBMISSION	07-04-2021	ASHOK	ASHOK	DIVANSHU
REV No	DESCRIPTION	DATE	Drawn	Designed	Approved
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OTHERWISE STATED.

31.511810°
74.774400°

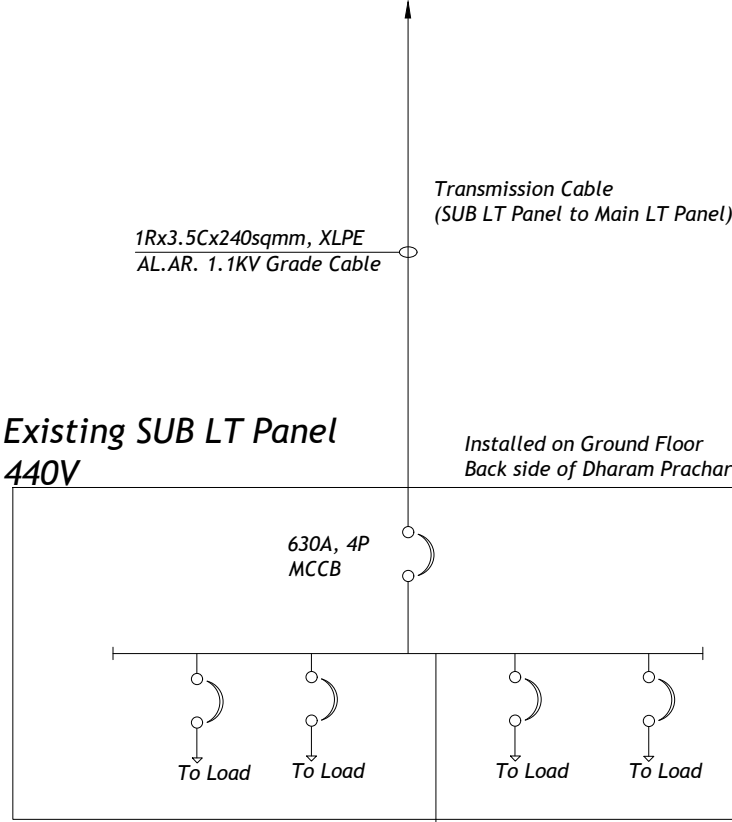
SCALE



CLIENT NAME	GURUDWARA BEERH BABA BUDDA SAHIB JI (AMRITSAR)				
BUILDING NAME	MATA GANGA JI NIWAS				
TITLE :	Modular Layout				
Date	DRAWING NO.	SHEET NO.	REV.		
12.03.21	HSPL-2021-PB-1017	02 OF 03	R1		



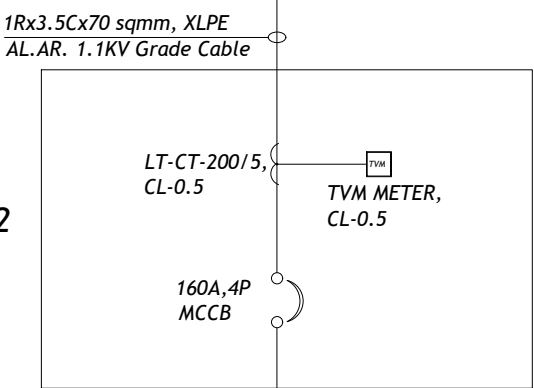
Incoming from Existing Main LT Panel 11KV/440V



Existing SUB LT Panel 440V

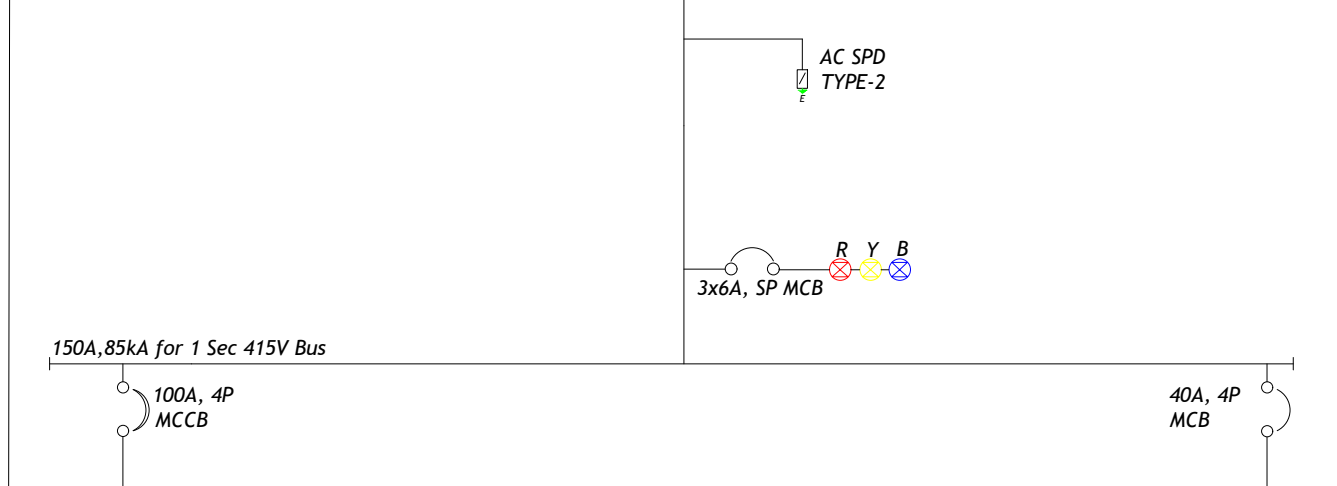
Transmission Cable (SUB LT Panel to Main LT Panel)
1Rx3.5Cx240sqmm, XLPE
AL.AR. 1.1KV Grade Cable

Solar Meter Panel-2 (With AC Breaker)



Installed Near Termination point

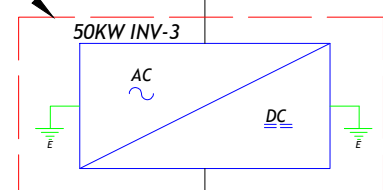
ACCB-2 (2 In 1 Out)



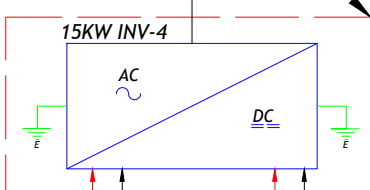
Installed on Rooftop of Dharam Prachar Building

Combined ACCB for Shri Guru Teja Singh Ji Samundari Hall & Dharam Prachar Building Rooftop Solar

Refer Detail A & C



Refer Detail B



MPPT- 1		MPPT- 2		MPPT- 3	
NO OF STRING	4	NO OF STRING	2	NO OF STRING	2
MODULE/STRING	16	MODULE/STRING	15	MODULE/STRING	14
NO OF MODULES	64	NO OF MODULES	30	NO OF MODULES	28
MODULE Wp	500 Wp	MODULE Wp	500 Wp	MODULE Wp	500 Wp
STRING POWER	8 kWp	STRING POWER	7.5 kWp	STRING POWER	7 kWp
Vmp OF STRING	684.8 V	Vmp OF STRING	642 V	Vmp OF STRING	716.8 V
Voc OF STRING	827.2 V	Voc OF STRING	775.5 V	Voc OF STRING	878.9 V

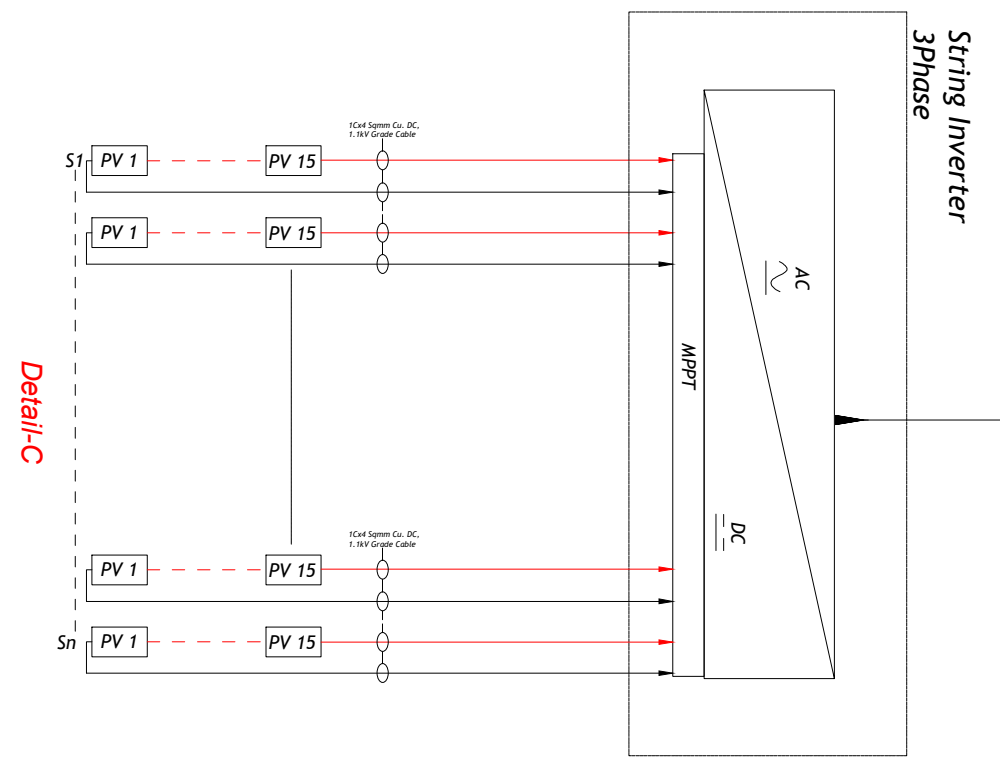
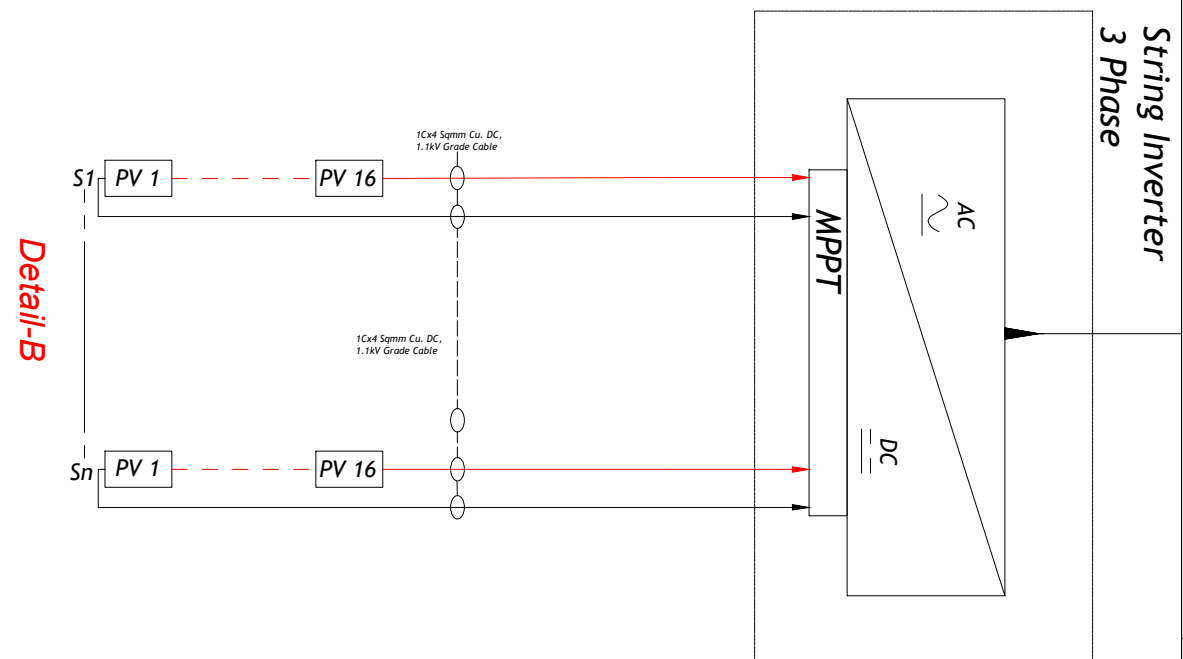
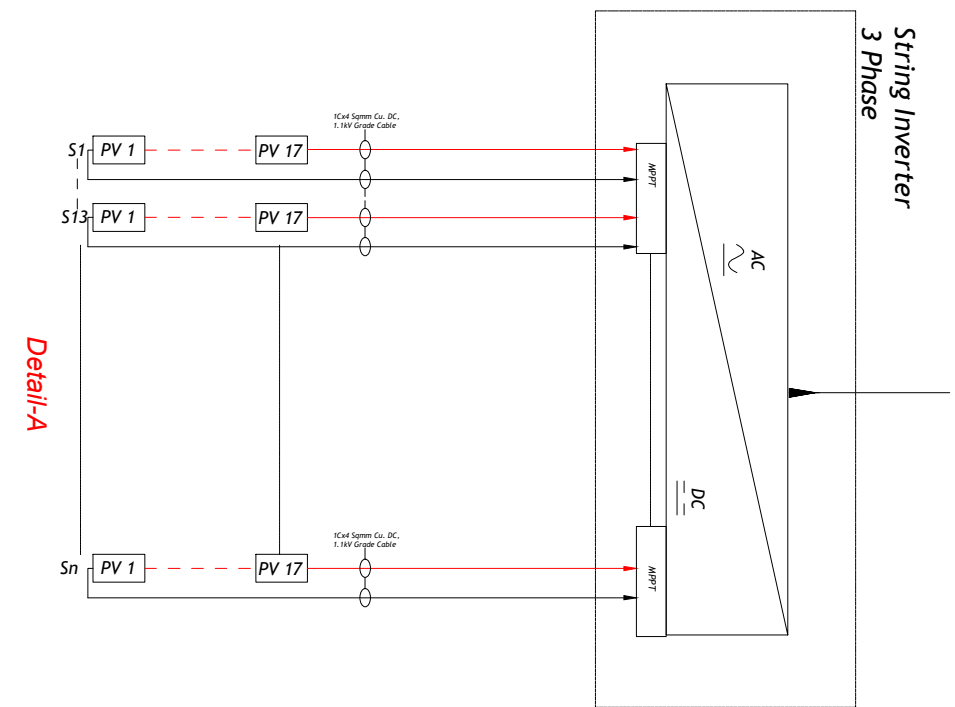
MPPT- 1		MPPT- 2	
NO OF STRING	1	NO OF STRING	1
MODULE/STRING	16	MODULE/STRING	11
NO OF MODULES	16	NO OF MODULES	11
MODULE Wp	500 Wp	MODULE Wp	500 Wp
STRING POWER	8 kWp	STRING POWER	5.5 kWp
Vmp OF STRING	684.8 V	Vmp OF STRING	470.8 V
Voc OF STRING	827.2 V	Voc OF STRING	568.7 V

PROJECT SUMMARY

TOTAL INSTALLED DC CAPACITY	:525 KWp
TOTAL INSTALLED AC CAPACITY	:505 KWp
TOTAL NO OF PV MODULES	:1050 No's
PV MODULE CAPACITY	:500 Wp

LEGENDS

	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB



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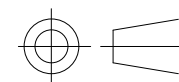
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PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

ALL DIMENSIONS ARE
IN Mtr. UNLESS AND
OTHERWISE STATED.

31.61°N, 74.87°E

SCALE



CLIENT NAME

SHRI HARMANDIR SAHIB

BUILDING NAME

SHRI GURU TEJA S. SAMUNDARI HALL, DHARAM PRACHAR

TITLE :

SINGLE LINE DIAGRAM-TERMINATION-2

Date

29-04-2021

DRAWING NO.

53/2021/PB/GT/C/EE-1

SHEET NO.

2 OF 7

REV.

R01

01

SECOND SUBMISSION

06-07-2021

DEEPENDRA

DEEPENDRA

DIVANSHU

00

FIRST SUBMISSION

29-04-2021

DEEPENDRA

DEEPENDRA

DIVANSHU

REV NO

DESCRIPTION

DATE

CHECKED

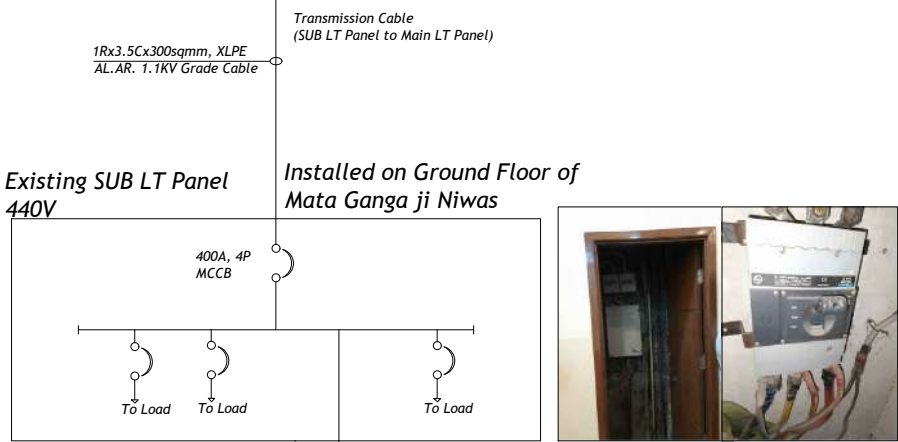
DESIGNED

APPROVED

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Incoming from Existing Main LT Panel 11KV/440V



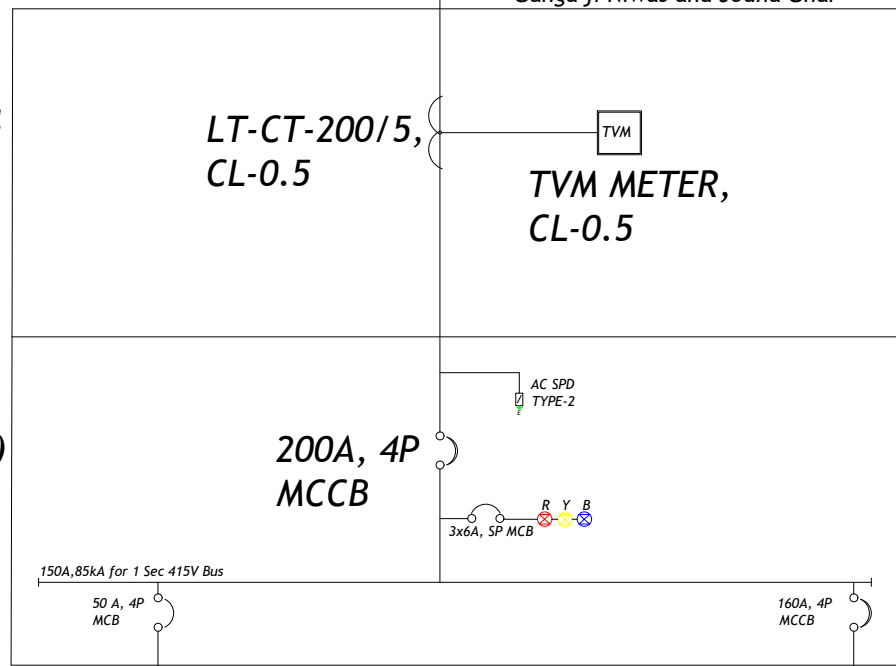
Existing SUB LT Panel 440V



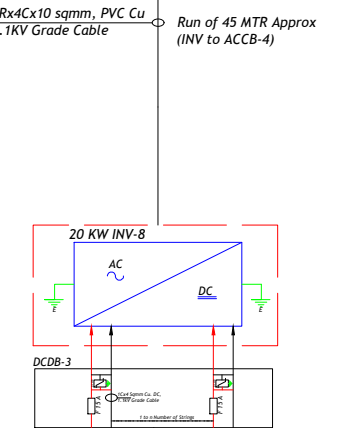
Installed on Ground Floor of Mata Ganga ji Niwas

Solar Meter Panel-4 (Section-2)

ACCB-4 (2 In 1 Out) (Section-1)

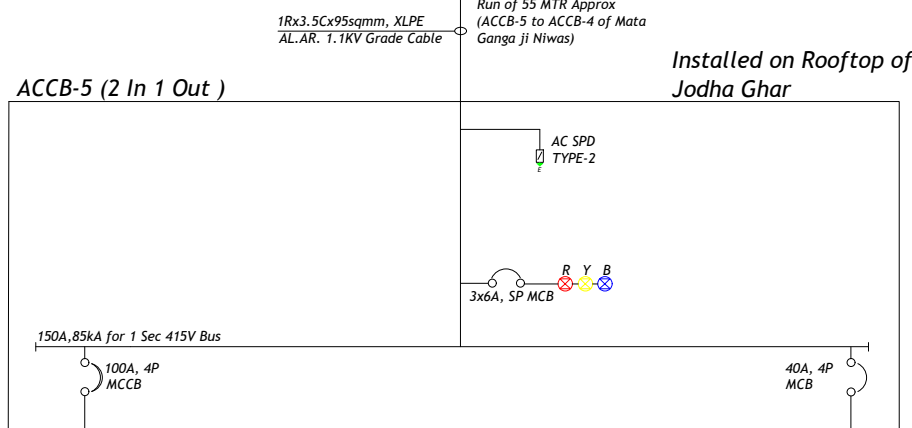


ACCB With Metering Panel for Mata Ganga ji Niwas and Jodha Ghar



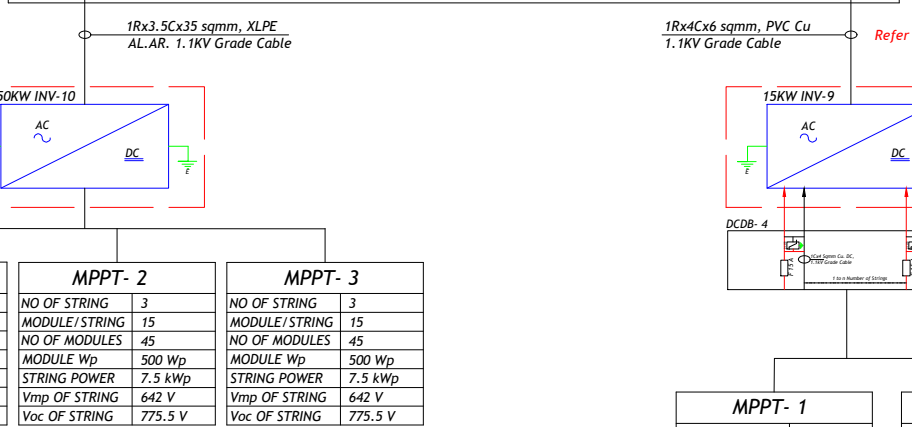
MPPT- 1	MPPT- 2
NO OF STRING 1 1	NO OF STRING 1 2
MODULE/STRING 16	MODULE/STRING 12
NO OF MODULES 16	NO OF MODULES 24
MODULE Wp 500 Wp	MODULE Wp 500 Wp
STRING POWER 8 kWp	STRING POWER 8 kWp
Vmp OF STRING 484.8 V	Vmp OF STRING 513.6 V
Voc OF STRING 627.2 V	Voc OF STRING 630.4 V

ACCB-5 for Jodha Ghar

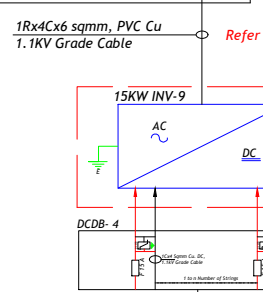


Run of 55 MTR Approx (ACCB-5 to ACCB-4 of Mata Ganga ji Niwas)

Run of 55 MTR Approx (ACCB-5 to ACCB-4 of Mata Ganga ji Niwas)



MPPT- 1	MPPT- 2	MPPT- 3
NO OF STRING 2	NO OF STRING 3	NO OF STRING 3
MODULE/STRING 16	MODULE/STRING 15	MODULE/STRING 15
NO OF MODULES 48	NO OF MODULES 45	NO OF MODULES 45
MODULE Wp 500 Wp	MODULE Wp 500 Wp	MODULE Wp 500 Wp
STRING POWER 7.5 kWp	STRING POWER 7.5 kWp	STRING POWER 7.5 kWp
Vmp OF STRING 544.8 V	Vmp OF STRING 544.8 V	Vmp OF STRING 544.8 V
Voc OF STRING 627.2 V	Voc OF STRING 627.2 V	Voc OF STRING 627.2 V



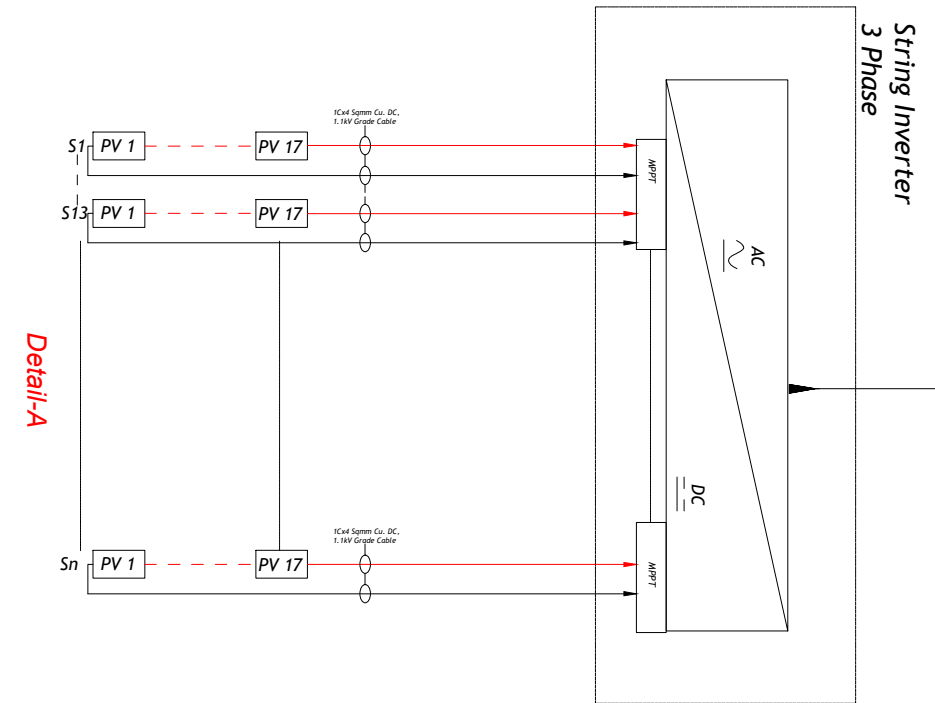
MPPT- 1	MPPT- 2
NO OF STRING 1 1	NO OF STRING 1 2
MODULE/STRING 16	MODULE/STRING 16
NO OF MODULES 16	NO OF MODULES 16
MODULE Wp 500 Wp	MODULE Wp 500 Wp
STRING POWER 8 kWp	STRING POWER 8 kWp
Vmp OF STRING 484.8 V	Vmp OF STRING 484.8 V
Voc OF STRING 627.2 V	Voc OF STRING 627.2 V

PROJECT SUMMARY

TOTAL INSTALLED DC CAPACITY	:525 KWp
TOTAL INSTALLED AC CAPACITY	:505 KWp
TOTAL NO OF PV MODULES	:1050 No's
PV MODULE CAPACITY	:500 Wp

LEGENDS

	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB

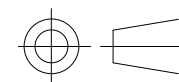


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MOHALI, PUNJAB

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31.61°N, 74.87°E

SCALE



CLIENT NAME

SHRI HARMANDIR SAHIB

BUILDING NAME

MATA GANGA JI NIWAS AND JODHA GHAR

TITLE :

SINGLE LINE DIAGRAM-TERMINATION-4

Date

29-04-2021

DRAWING NO.

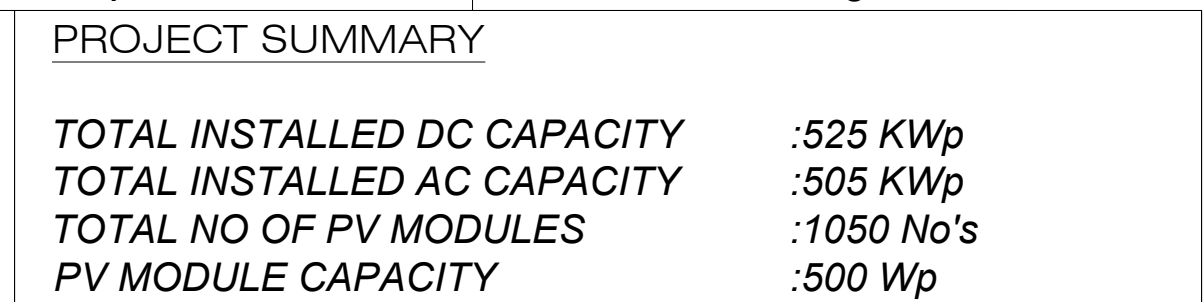
53/2021/PB/GT/FH/EE-1











SHEET NO.

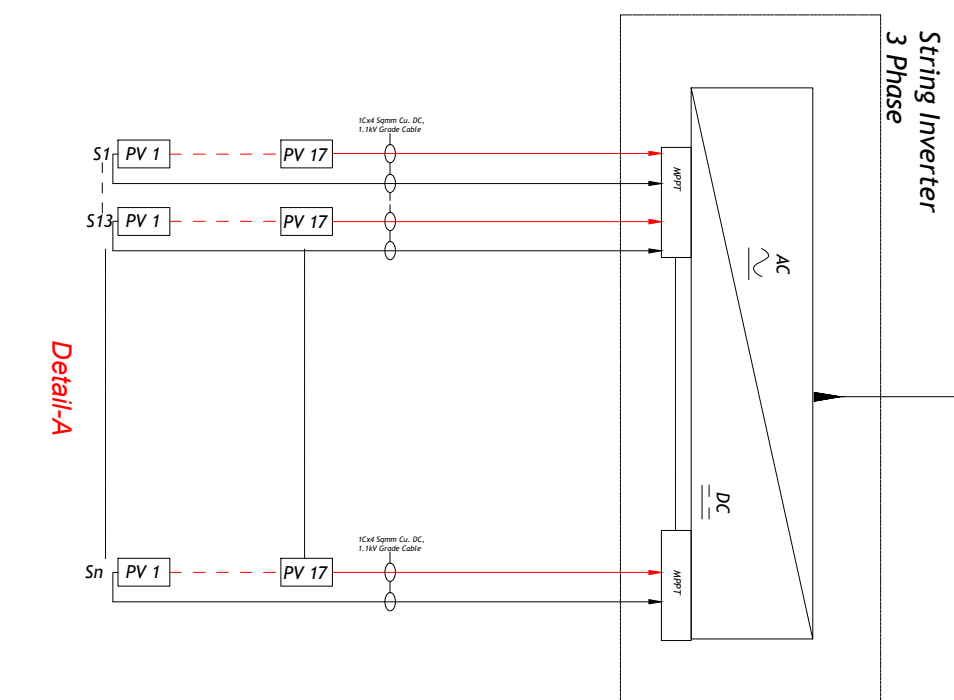
4 OF 7

REV.

R01



LEGENDS			
	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB



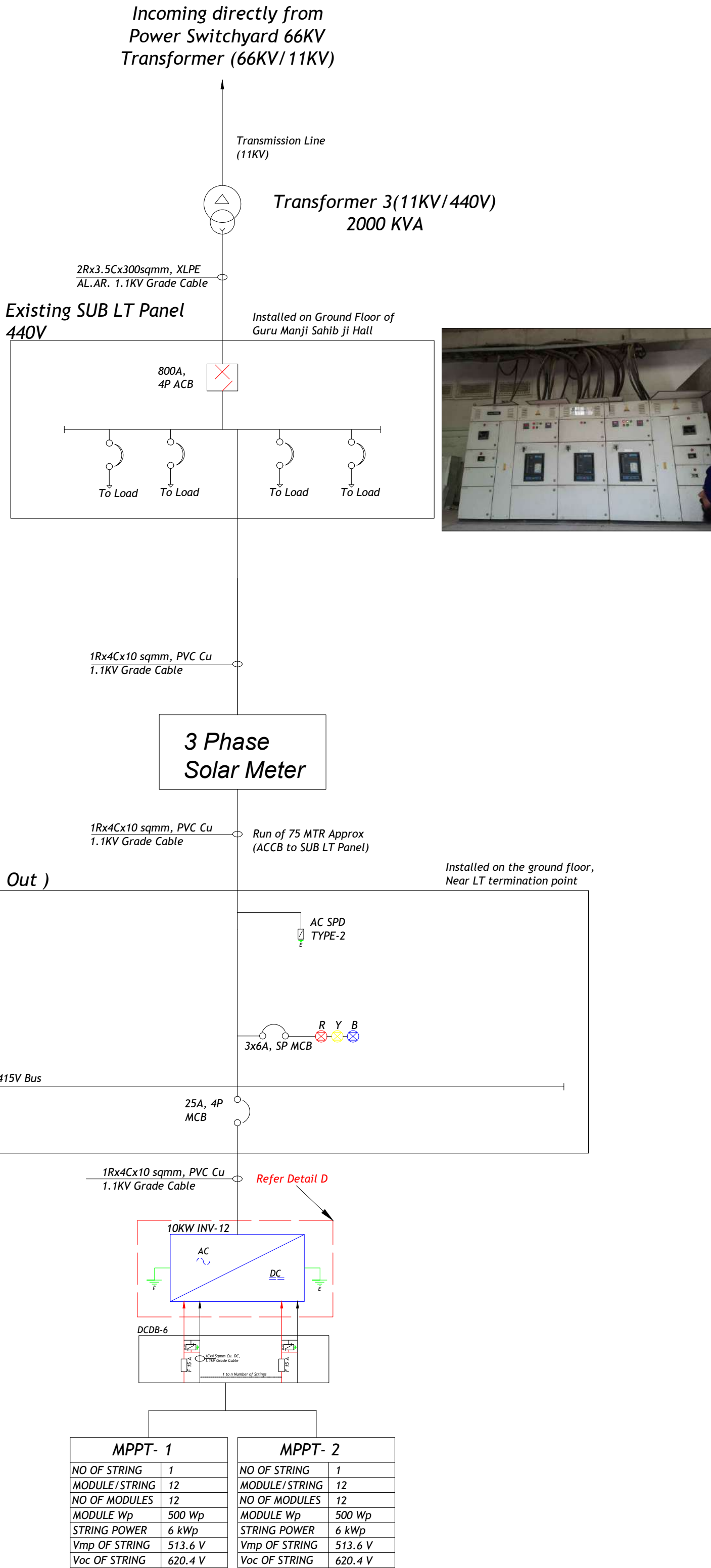
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INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB*

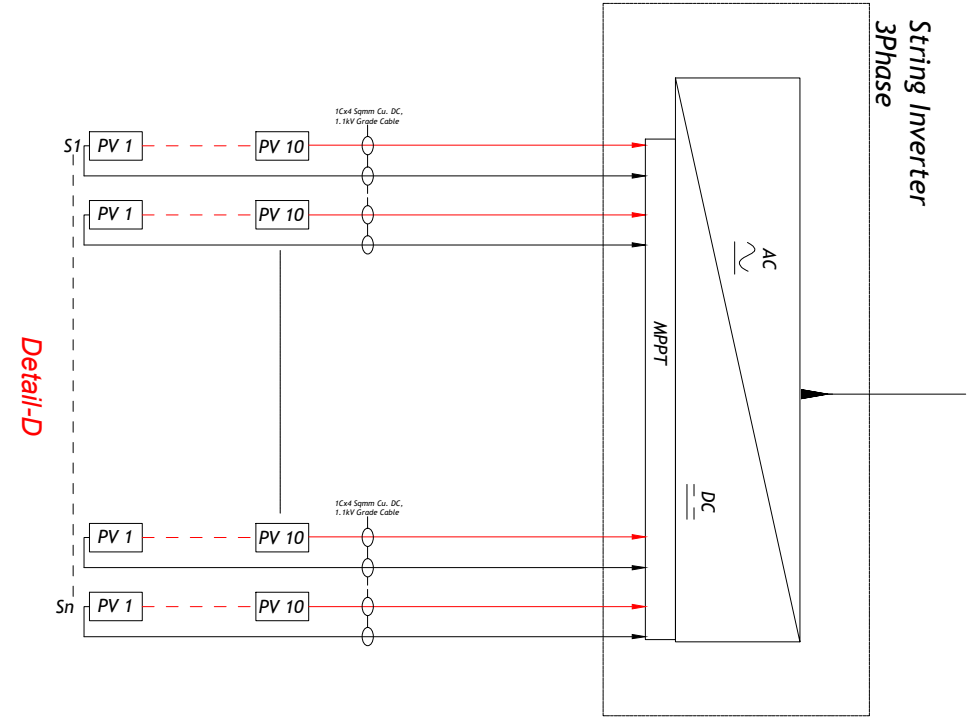
CLIENT NAME	SHRI HARMANDIR SAHIB		
BUILDING NAME	MATA GANGA JI NIWAS AND JODHA GHAR		
TITLE :	SINGLE LINE DIAGRAM-TERMINATION-4		
Date	DRAWING NO.	SHEET NO.	REV.
29-04-2021	53/2021/PB/GT/FH/EE-1	4 OF 7	R01

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PROJECT SUMMARY	
TOTAL INSTALLED DC CAPACITY	:525 KWp
TOTAL INSTALLED AC CAPACITY	:505 KWp
TOTAL NO OF PV MODULES	:1050 No's
PV MODULE CAPACITY	:500 Wp

LEGENDS			
	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB



HARTEK[®]

HARTEK SOLAR PVT. LTD.

PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

ALL DIMENSIONS ARE
IN Mtr. UNLESS AND
OTHERWISE STATED.

CLIENT NAME

SHRI HARMANDIR SAHIB

BUILDING NAME

GATARI GHAR

TITLE :

SINGLE LINE DIAGRAM-TERMINATION-6

Date

DRAWING NO.

SHEET NO.

REV.

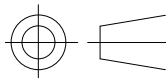
29-04-2021

53/2021/PB/GT/K/EE-1

6 OF 7

R01





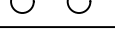





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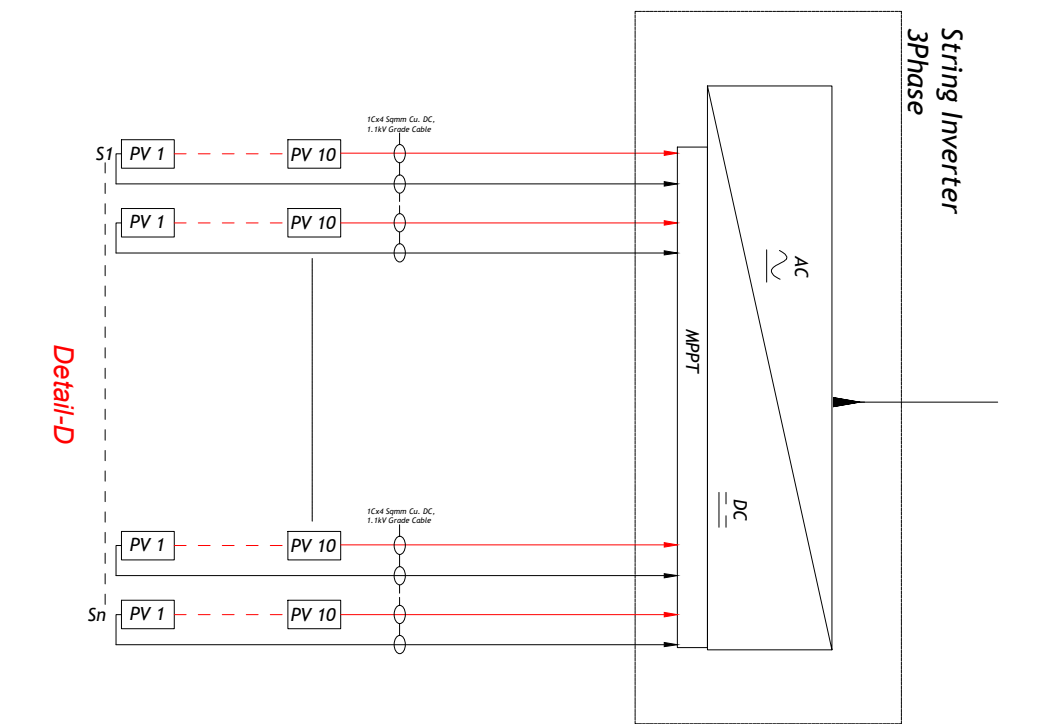


01	SECOND SUBMISSION	06-07-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	29-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
REV NO	DESCRIPTION	DATE	CHECKED	DESIGNED	APPROVED

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LEGENDS			
	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB



MPPT- 1		MPPT- 2	
NO OF STRING	1	NO OF STRING	1
MODULE / STRING	10	MODULE / STRING	11
NO OF MODULES	10	NO OF MODULES	11
MODULE Wp	500 Wp	MODULE Wp	500 Wp
STRING POWER	5 kWp	STRING POWER	5.5 kWp
Vmp OF STRING	428 V	Vmp OF STRING	470.8 V
Voc OF STRING	517 V	Voc OF STRING	568.7 V

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31.61°N, 74.87°E

BUILDING NAME

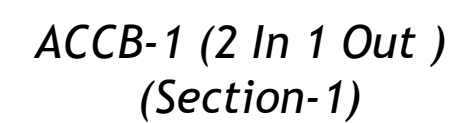
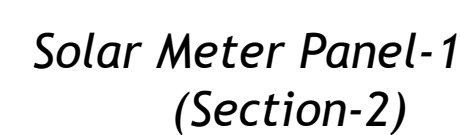
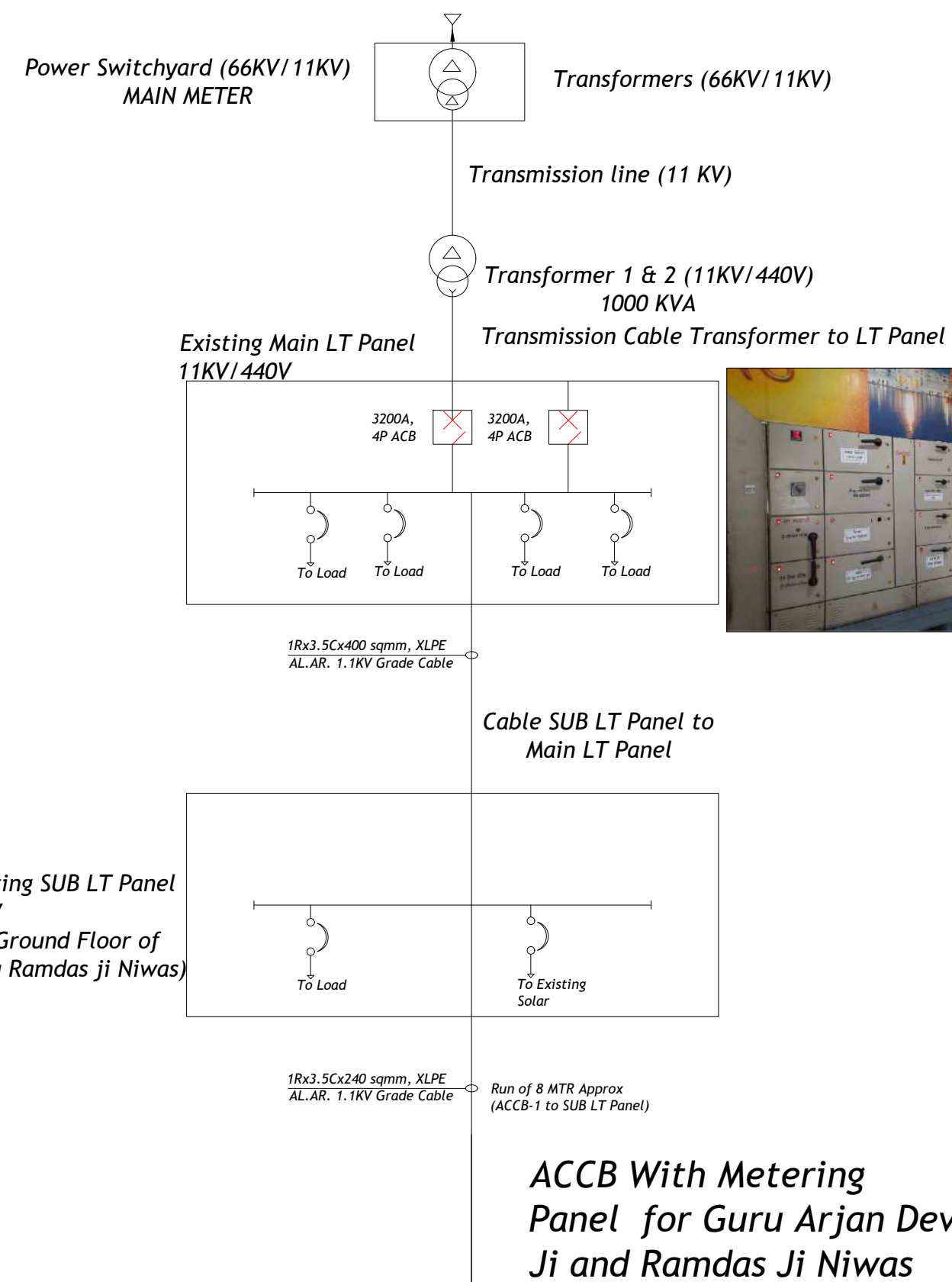
Date _____

NRI NIWAS

SINGLE LINE DIAGRAM-TERMINATION-5

SHEET NO.	
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R01	
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MPPT- 1			MPPT- 2 TO 4			MPPT- 5			MPPT- 6			MPPT- 7			MPPT- 1 TO 2			MPPT- 3			MPPT- 4			MPPT- 5			MPPT- 6		
NO OF STRING	2		NO OF STRING	6		NO OF STRING	2		NO OF STRING	2		NO OF STRING	1		NO OF STRING	4		NO OF STRING	2		NO OF STRING	16		NO OF STRING	2		NO OF STRING	2	
MODULE / STRING	17		MODULE / STRING	6		MODULE / STRING	14		MODULE / STRING	15		MODULE / STRING	18		MODULE / STRING	16		MODULE / STRING	17		MODULE / STRING	16		MODULE / STRING	17		MODULE / STRING	16	
NO OF MODULES	34		NO OF MODULES	90		NO OF MODULES	28		NO OF MODULES	30		NO OF MODULES	30		NO OF MODULES	64		NO OF MODULES	34		NO OF MODULES	16		NO OF MODULES	34		NO OF MODULES	34	
MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp		MODULE WATT	500 Wp	
STRING POWER	8.5 kWp		STRING POWER	7.5 kWp		STRING POWER	7 kWp		STRING POWER	7.5 kWp		STRING POWER	7.5 kWp		STRING POWER	8 kWp		STRING POWER	8.5 kWp		STRING POWER	8 kWp		STRING POWER	8.5 kWp		STRING POWER	8.5 kWp	
Vmp OF STRING	727.6 V		Vmp OF STRING	642 V		Vmp OF STRING	716.8 V		Vmp OF STRING	642 V		Vmp OF STRING	642 V		Vmp OF STRING	684.8 V		Vmp OF STRING	727.6 V		Vmp OF STRING	684.8 V		Vmp OF STRING	727.6 V		Vmp OF STRING	727.6 V	
Voc OF STRING	878.9 V		Voc OF STRING	775.5 V		Voc OF STRING	878.9 V		Voc OF STRING	775.5 V		Voc OF STRING	775.5 V		Voc OF STRING	827.2 V		Voc OF STRING	827.2 V		Voc OF STRING	827.2 V		Voc OF STRING	878.9 V		Voc OF STRING	878.9 V	

SOLAR PV INVERTER ON
GURU ARJAN DEV JI NIWAS

*SOLAR PV INVERTER ON
GURU RAMDAS JI NIWAS*

HARTEK SOLAR PVT. LTD.

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OTHERWISE STATED.

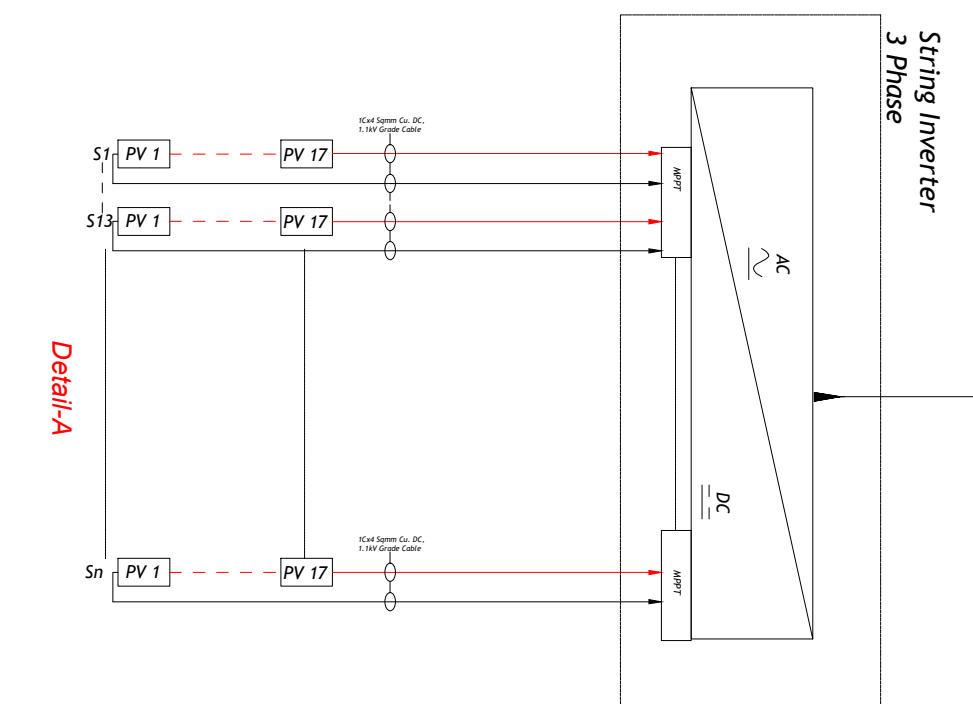
CLIENT NAME

TITLE :

Date _____

PROJECT SUMMARY

LEGENDS



01	SECOND SUBMISSION	06-07-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
00	FIRST SUBMISSION	29-04-2021	DEEPENDRA	DEEPENDRA	DIVANSHU
REV NO	DESCRIPTION	DATE	CHECKED	DESIGNED	APPROVED

ALL DIMENSIONS ARE
IN Mtr. UNLESS AND
OTHERWISE STATED.

CLIENT NAME

TITLE :

Date _____

SHRI HARMANDIR SAHIB

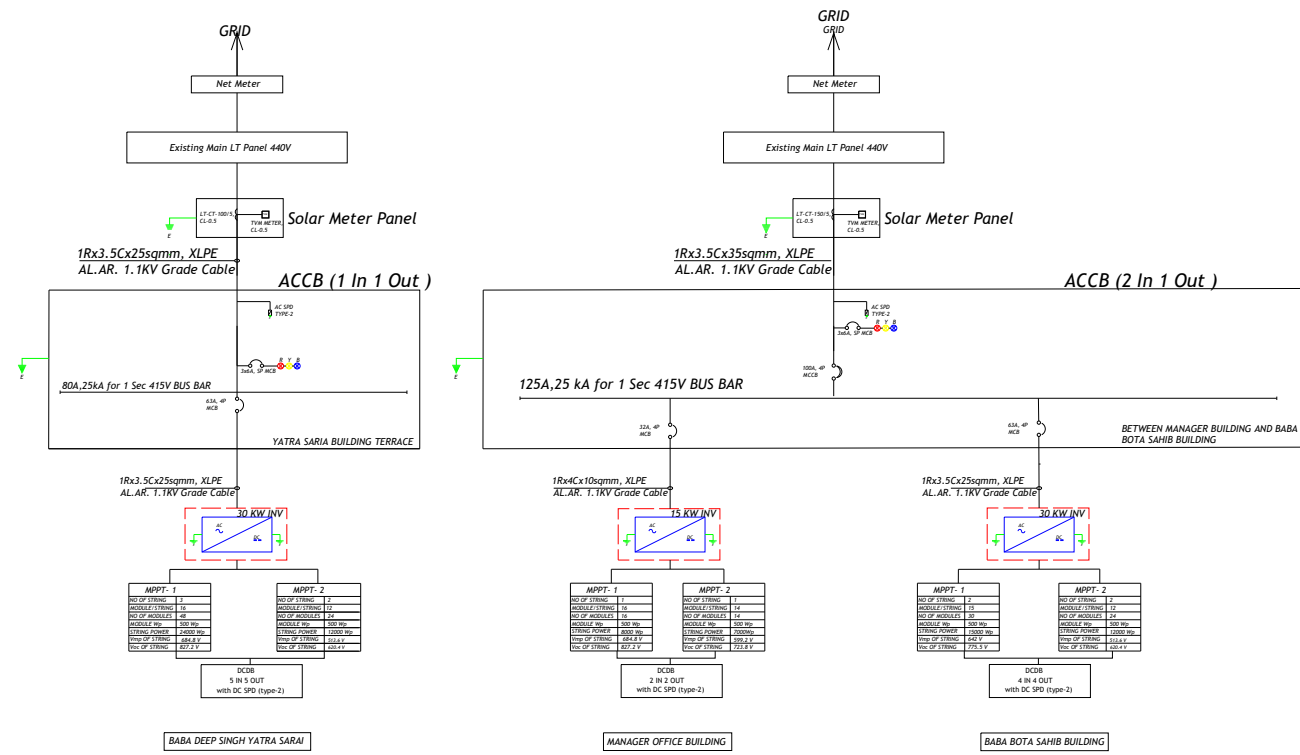
SINGLE LINE DIAGRAM-TERMINATION-1

DRAWING NO.

SHEET NO.

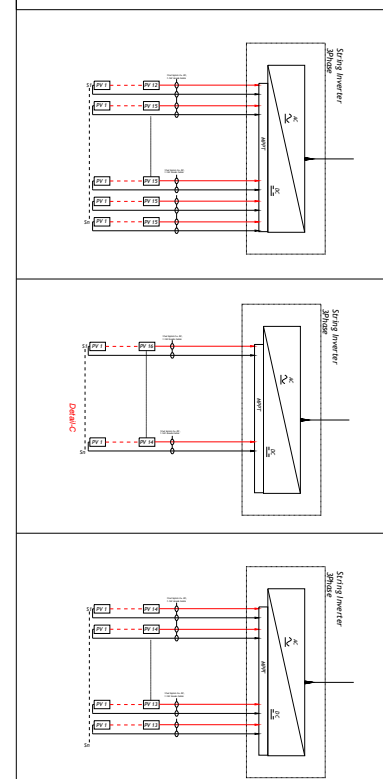
REV.

1 2 3 4 5 6 7 8



PROJECT SUMMARY	
TOTAL INSTALLED DC CAPACITY	:78 KWp
TOTAL NO OF PV MODULES	:158
PV MODULE CAPACITY	:500 Wp
PV MODULE DIMENSION	:2176X1098X35MM

LEGENDS			
	MCB		Solar PV Panel
	MCCB		ACB
	Solar Meter		Indication Lamp
	Earthing		AC/DC SPD
	Transformer		ACDB



REV NO	DESCRIPTION	DATE	CHECKED	DESIGNED	APPROVED
03	THIRD SUBMISSION	18-10-2021	AS	RK	AS
01	SECOND SUBMISSION	16-10-2021	AS	RK	AS
00	FIRST SUBMISSION	15-10-2021	AS	RK	AS

HARTEK
HARTEK SOLAR PVT. LTD.
PLOT NO. :- F-322,
INDUSTRIAL AREA, PHASE :- 8B
MOHALI, PUNJAB

ALL DIMENSIONS ARE IN Mtr. UNLESS AND OTHERWISE STATED.		CLIENT NAME	GURDWARA AMAR SHAHEED BABA DEEP SINGH		
		BUILDING NAME	GURDWARA AMAR SHAHEED BABA DEEP SINGH		
		TITLE :	SINGLE LINE DIAGRAM		
		Date	DRAWING NO.	SHEET NO.	REV.
SCALE		18-10-2021	HSPL/2122/DE0060	1	R03

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