



LAYOUT REPORT OF GROUND MOUNTED PROJECT

For 3.453 MWp

Name of Place
Telangana, India

Date
04 October, 2014

Order No.
#1410040014

Client
abc

Email
abc@abc.com

Address
xyz
Telangana, Telangana, India
503322

INDEX

1.	Layout Review Page	3
2.	Methodology of Layout	4
3.	Summary	5
4.	Site Characteristics	5
5.	Project Features	6
6.	Site Design Plan	7
7.	Table Top View of a Site	8
8.	Overall Plan Layout	9

ABOUT EZYSOLARE


ezysolare is dedicated to making the journey of going solar easy. Starting from decision making to design, ezysolare breaks the process into 2 simple steps. We assist in ascertaining the feasibility of a solar project through SEAR (Solar Energy Assessment Report), while LAYOUT (Solar Module Layout) details the placement of modules and other key equipment of a solar power plant. Both our offerings are designed for all possible variations of projects - rooftop and ground mounted, MW and kW scale, crystalline and thin film modules promising users a tailor made solution to their unique requirements.

DISCLAIMER AND LEGAL INFORMATION:

Considering the nature of climate fluctuations, inter-annual and long-term changes, as well as uncertainty of measurements and calculations, ezysolare cannot take full guarantee of the accuracy of estimates. The maximum possible has been done based on the layout on the best available data, software and knowledge. Ezysolare shall not be liable for any direct, incidental, consequential, indirect or punitive damages arising or alleged to have arisen out of use of the provided report.

1. LAYOUT REVIEW PAGE

This is the review page of your layout form you filled and provided us the information to create your layout report.


Geo Coordinates

Latitude	17.6000003815 North
Longitude	77.9000015259 East


Technical Specifications

Capacity	3.453 MW
Type of Area	Ground
Links	-

Modules & Inverters

Set #	Item	Type	Make	Capacity
Set	Module	Polycrystalline	Jinkosolar	310.000 Wp
	Inverter	Central	ABB	1000.000 kW
	Remarks	-		

2. METHODOLOGY OF LAYOUT

Methodology that can be used for evaluation of the sites to create the Layout report include various attributes described below:

Shadow Analysis

Shading analysis is one of the most essential steps in phase of solar energy system design. In photovoltaic it is important to analyze shading caused by surrounding objects and/or vegetation. Shadow Analysis is the major parameter based on which we get the capacity of plant. However, other parameters like availability of land, energy requirement etc. are also considered for deciding the capacity of a plant.

Capacity, Pitch and Optimum tilt

Based on the Shadow Analysis or capacity given by our users We take the capacity of a site and calculate the pitch and optimum tilt of modules to get maximum sunlight from sun for energy generation through photovoltaic module.

Evacuation Location

General arrangement of equipment & facilities are in a way to ease out the evacuation of power to grid.

Stringing - Series, Parallel

Based on the voltage range of modules & inverters the string sizing (Number of modules in Series & parallel) will be determined.

Table Size finalization

Based on the strings, table size is finalized & same size of the table is kept to insure the repeatability of the racking arrangement for easy sourcing.

Inverter Location

Inverter location is generally governed by optimized cable lengths to keep losses as minimum as possible.

Lightning Arrester Placement

Lightning Arrester is positioned to cover the complete installed area factoring in the shadow of Lightning Arrester.

3. SUMMARY

This layout report is proposed to develop a Solar Photovoltaic power plant with maximum generation capacity of 3000 Wp AC capacity & 3.453 MWp installed capacity located at site Telangana, India.

4. SITE CHARACTERISTIC

Project Location

Telangana, India



5. PROJECT FEATURES

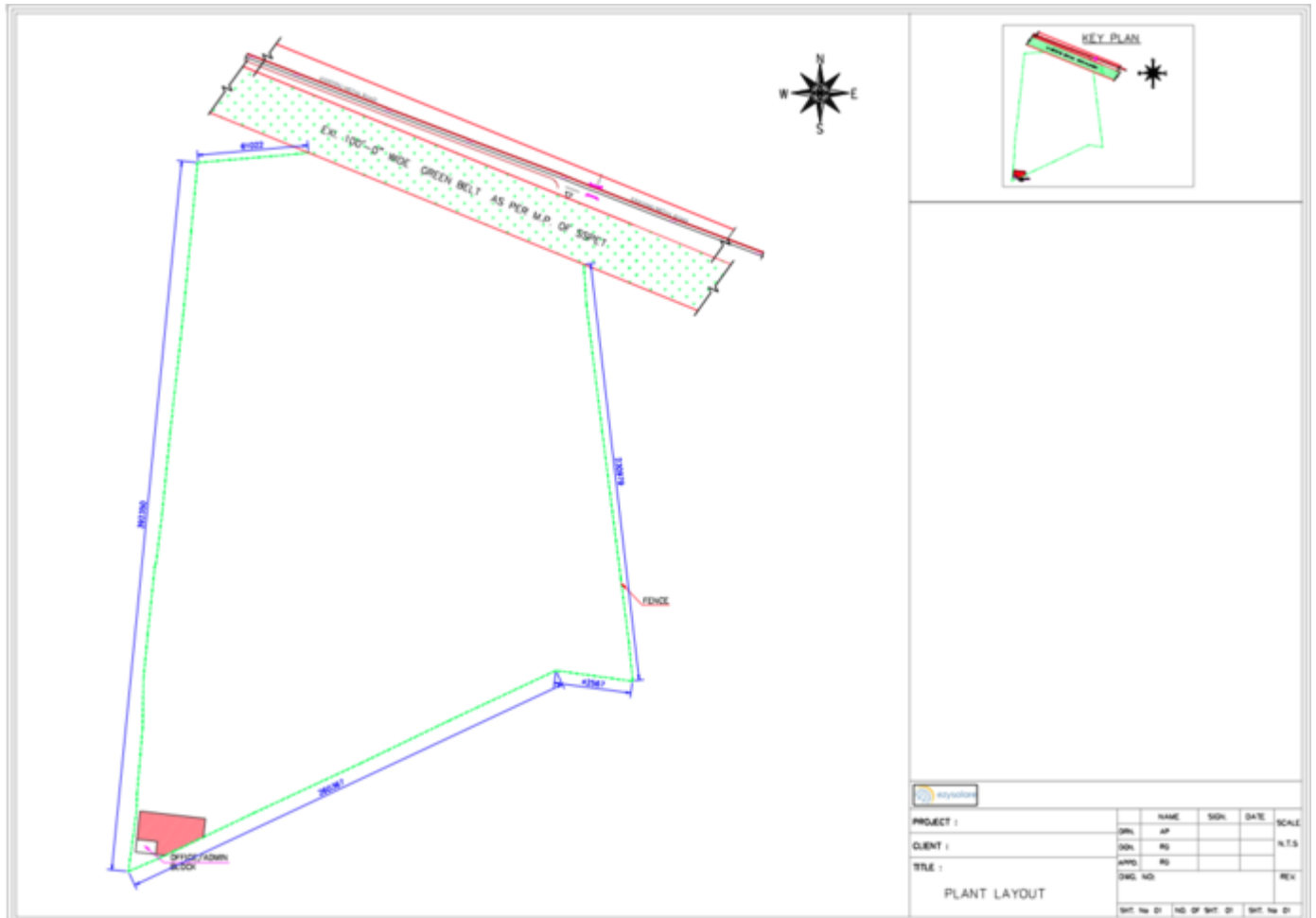
Parameters	Details
Project Location	Telangana, India
Latitude & Longitude	17.600 North, 77.900 East
Tilt Angle	19 °
Pitch Distance	7 m
Estimated Total Area	13.18 Acres
Installed Capacity	3.453 MWp
Module Make & Wattage	Jinko Solar, 310
Total No. of modules	11140
Inverter Make & Capacity	ABB, 1000 kW
Number of Inverter Used	3
AC Capacity	3000 Wp
Number of Control Room	0
Number of Inverter Room	0
Number of Inverter Cum Control Room	1

6. SITE DESIGN PLAN

Site Features	Description	BOM
Existing Features	Existing features are those, which already exist on site.	Office Admin Block, 100' Wide Green Belt
PV Module	PV module converts solar radiation into direct current (DC) electricity through photovoltaic effect. The panels will be mounted and aligned in rows facing due south and will be mounted.	11140 number of PV panels of 310 Wp, Jinko Solar JKM-310PP panels of 310 watts, Dimensions: Length-1956mm , Width-992mm, thickness-40mm.
Inverter	From the combiner box, the DC current will be transmitted to one of given inverter units (enclosed), which will convert the DC electricity into AC electricity suitable for evacuating to the local grid.	3 number of inverter units, ABB, PVS800-57-1000kW-C, 3000 kW of continuous output power and will contain three 1000 kW inverters.
Lightning Arrester	A lightning arrester is a device used to protect the insulation and conductors of the system from the damaging effects of lightning.	Two Lightening Arrestors of 107m radius & One Lightening Arrester of 89m radius have been considered.

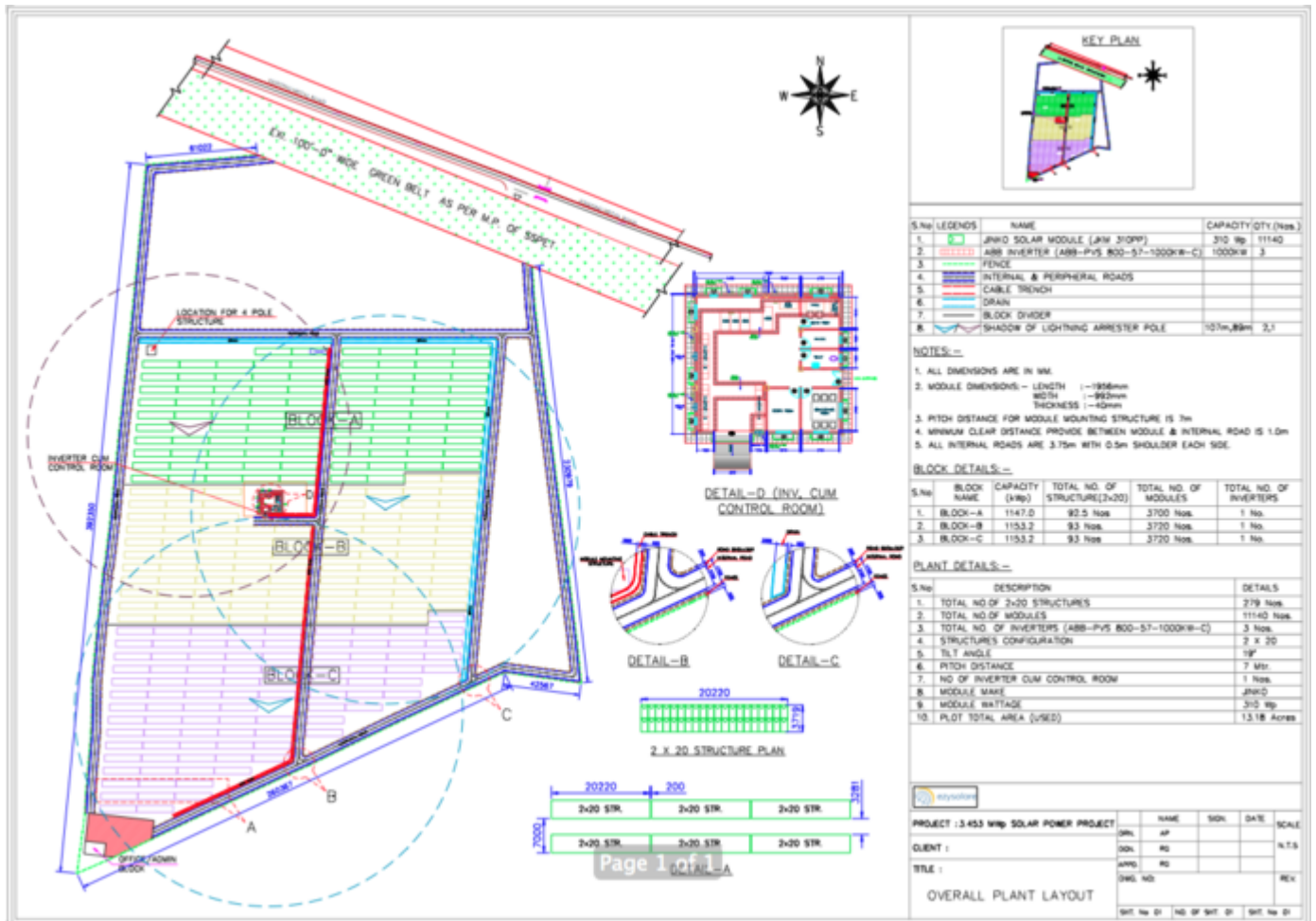
7. TOP VIEW OF A SITE

This is the top view of the site for which Solar Module Layout has been designed.



8. OVERALL PLANT LAYOUT

This is the overall plant layout with Modules, inverters & Lightning arresters placed at your site.






108, Pinnacle Business Park , Corporate Road, Prahladnagar , Ahmedabad, Gujarat - 380015

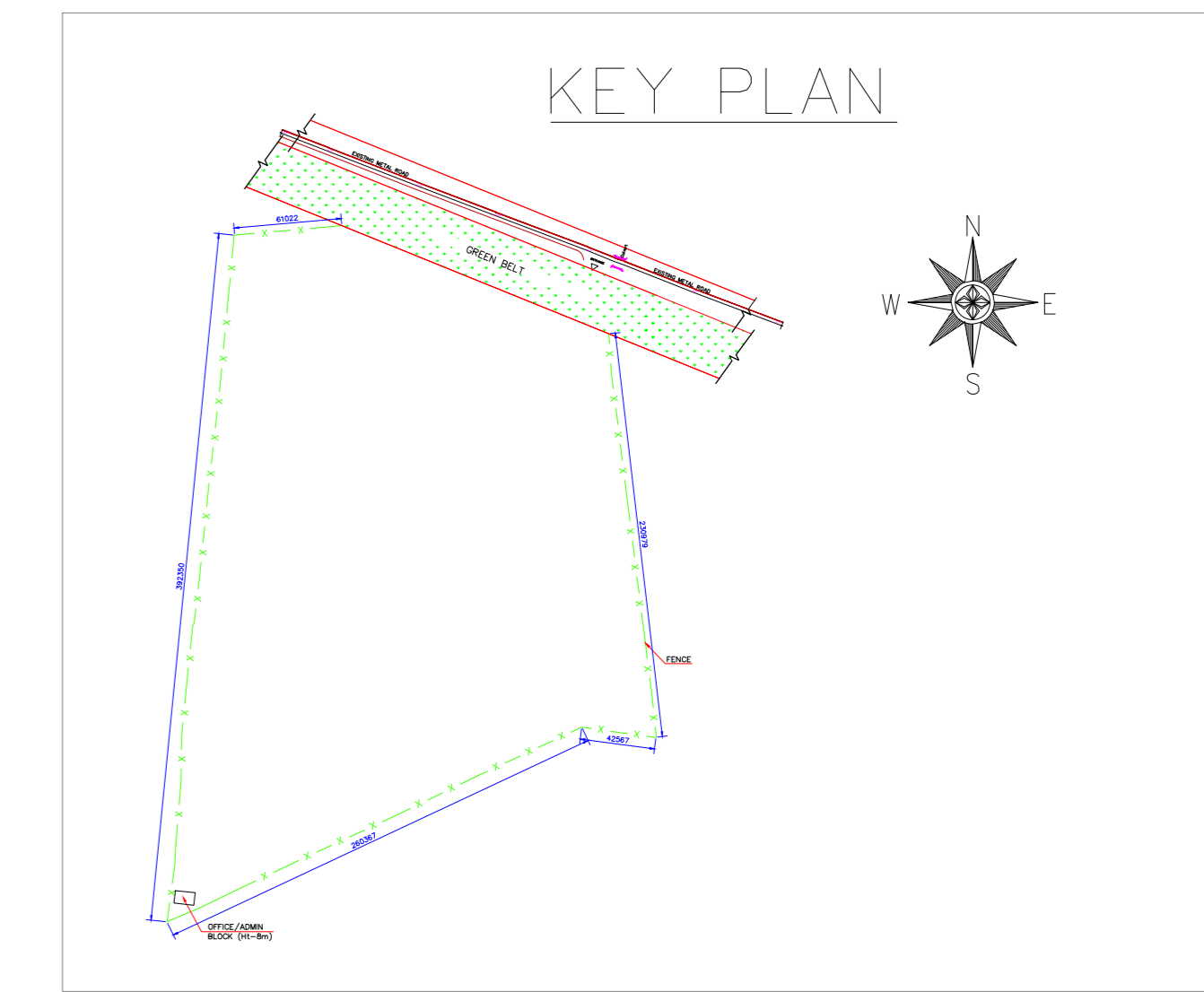
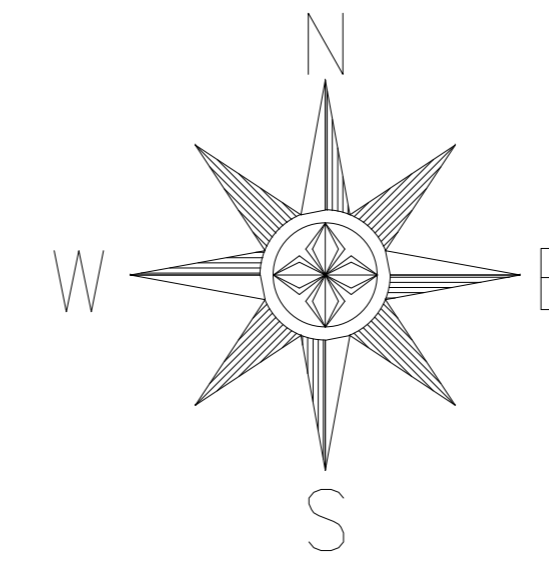
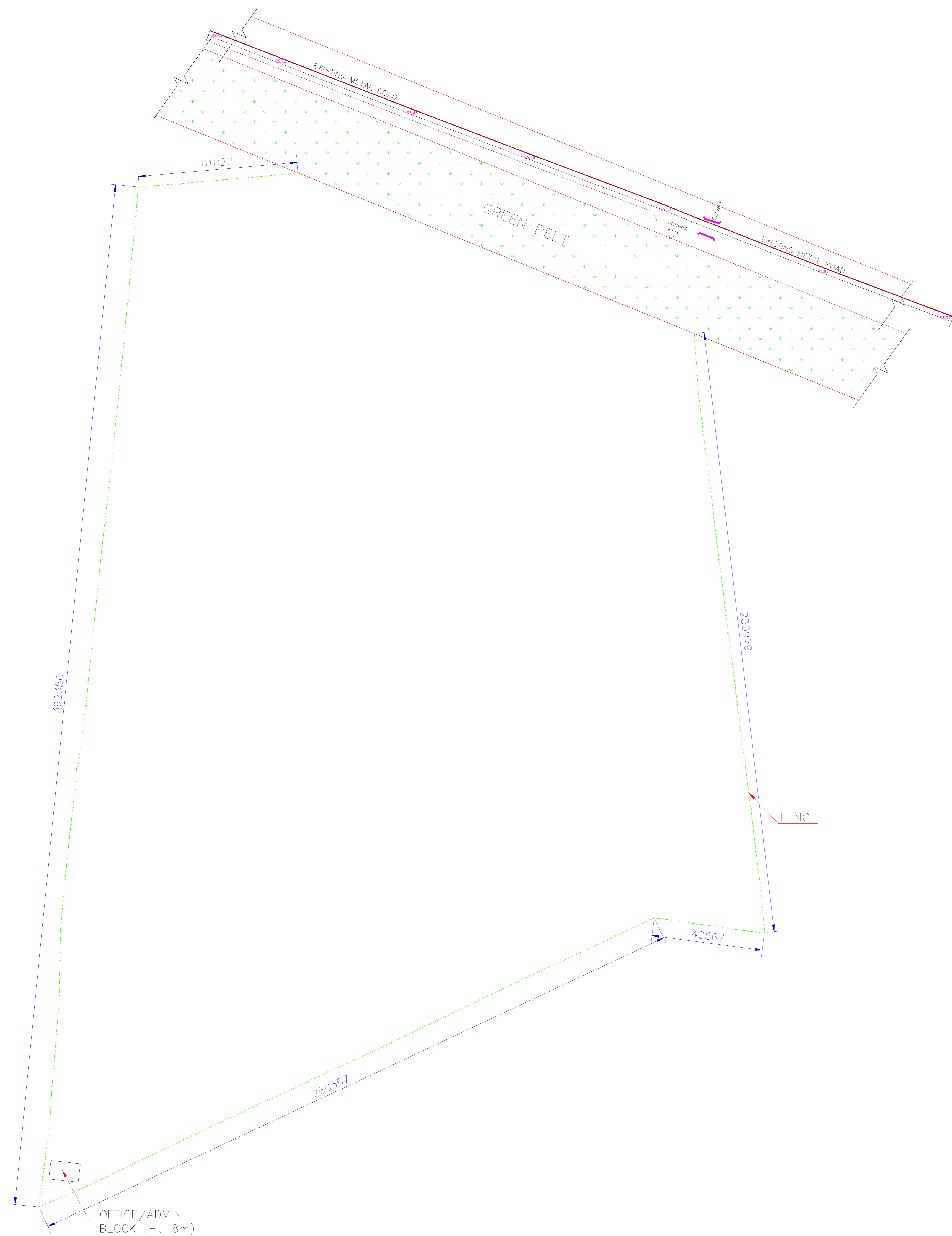
 [company/ezysolare](https://www.linkedin.com/company/ezysolare)

 [pages/Ezysolare/506233432835389](https://www.facebook.com/pages/Ezysolare/506233432835389)

 [ezysolare](https://twitter.com/ezysolare)

 [u/0/106466619653569381444/posts](https://plus.google.com/u/0/106466619653569381444/posts)

 info@ezysolare.com



S.No	LEGENDS	DESCRIPTION	CAPACITY	QTY.(Nos.)
1.	FENCE			

NOTES:

1. ALL DIMENSIONS ARE IN MM.



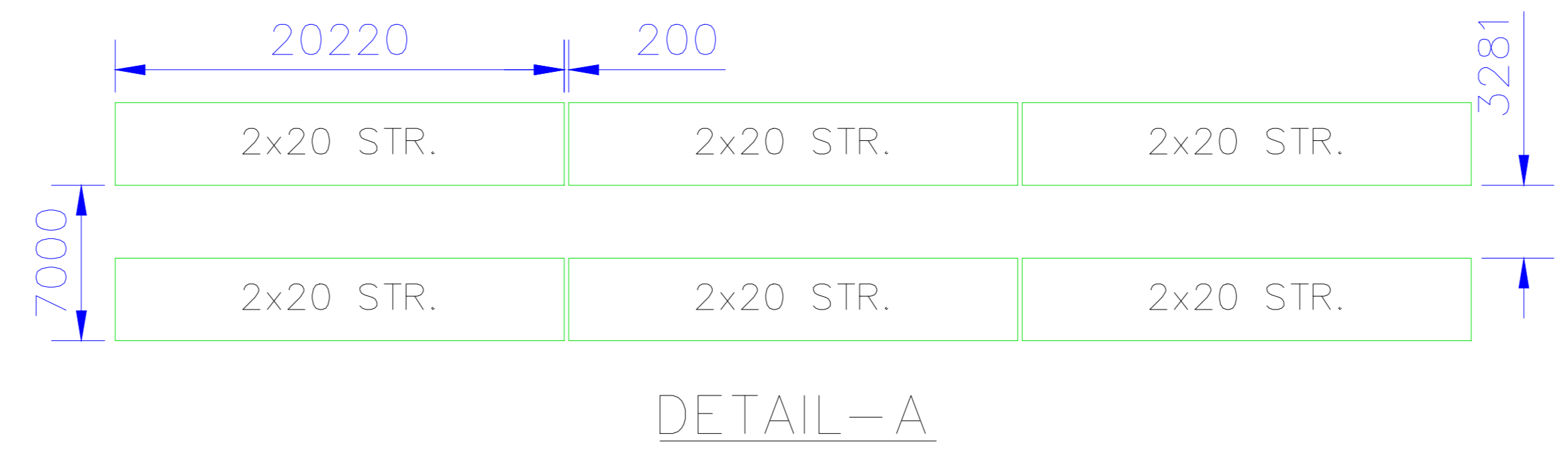
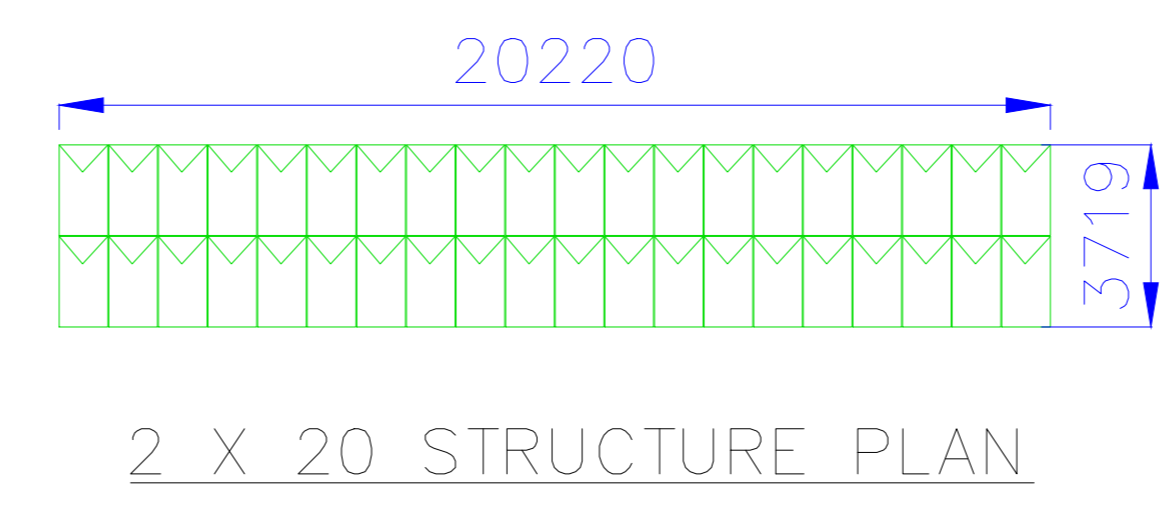
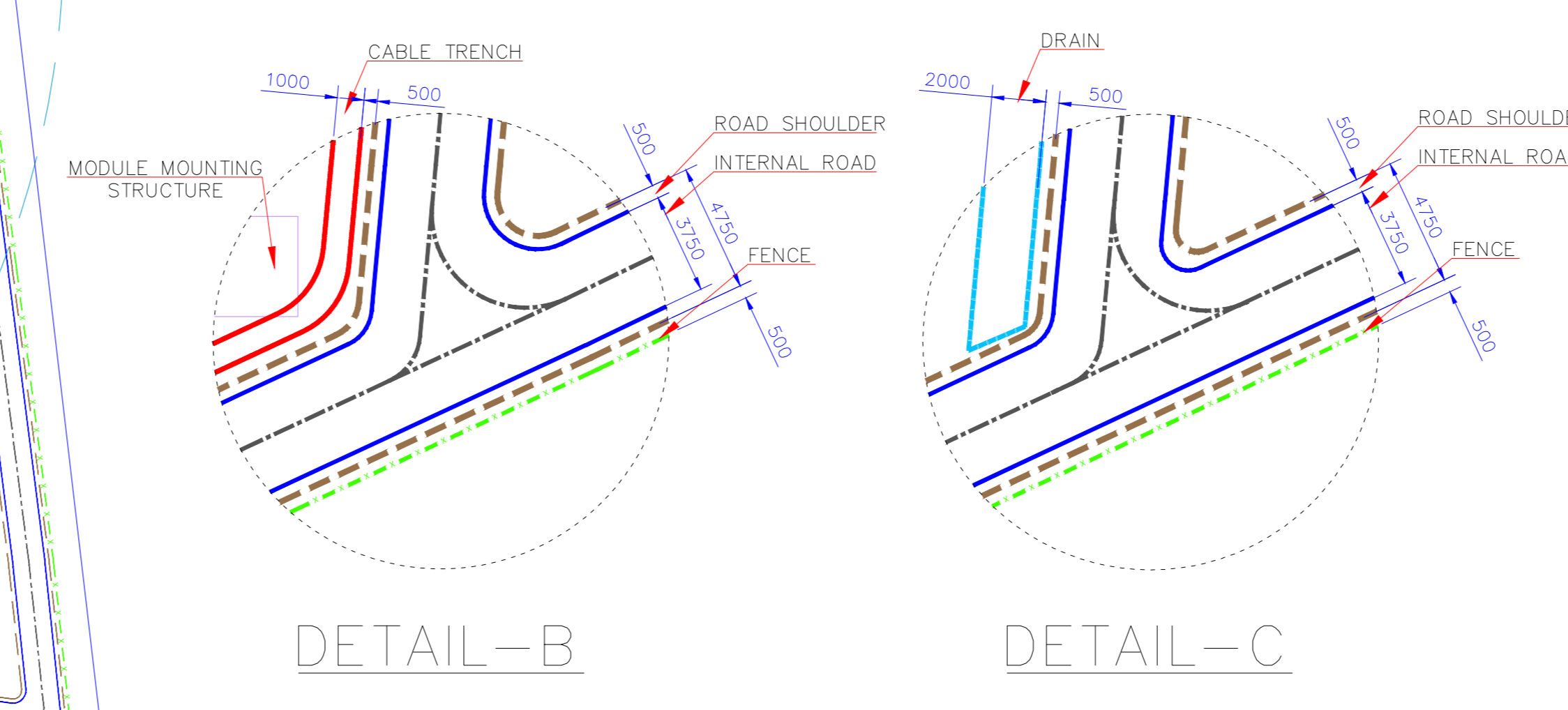
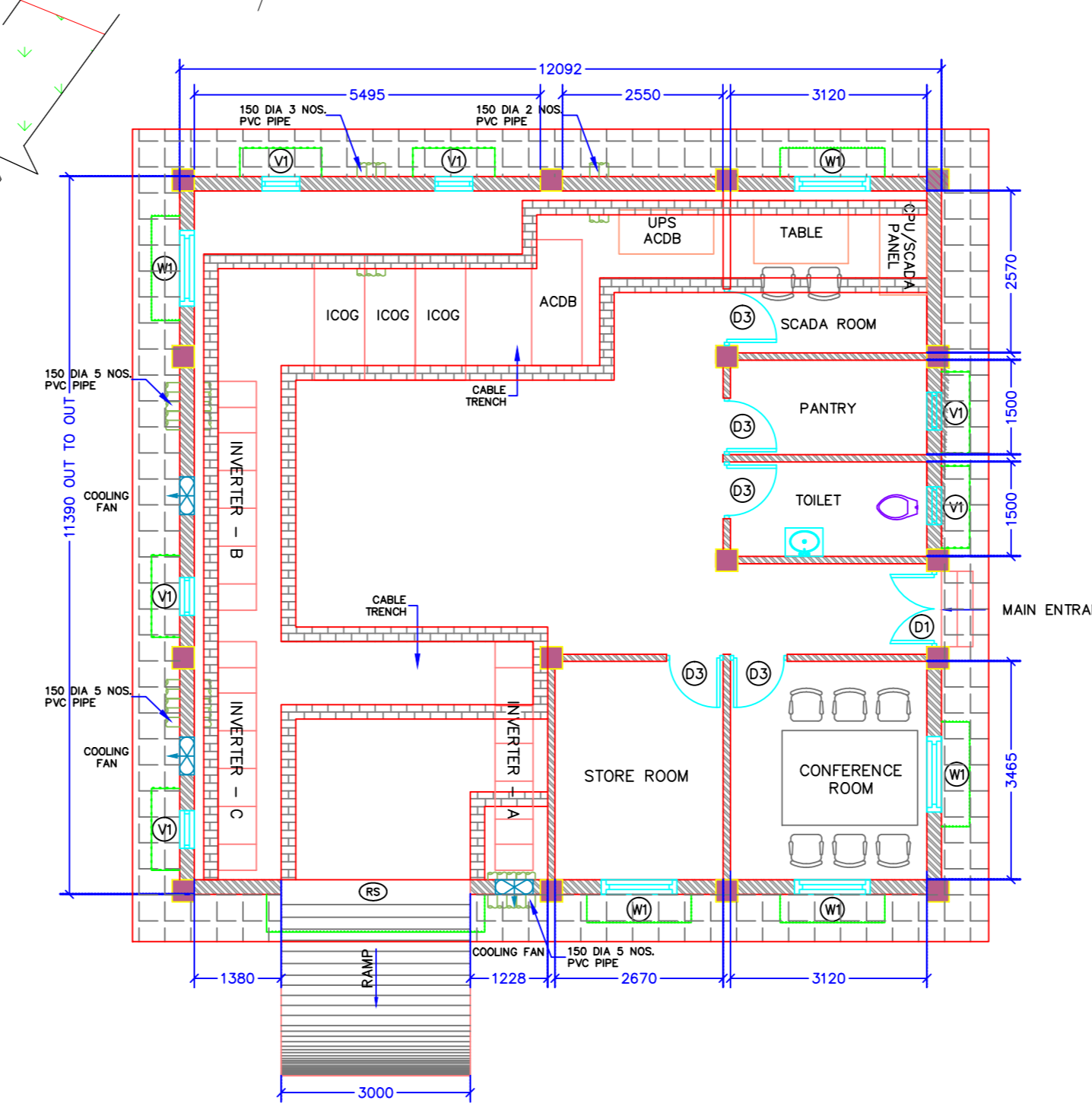
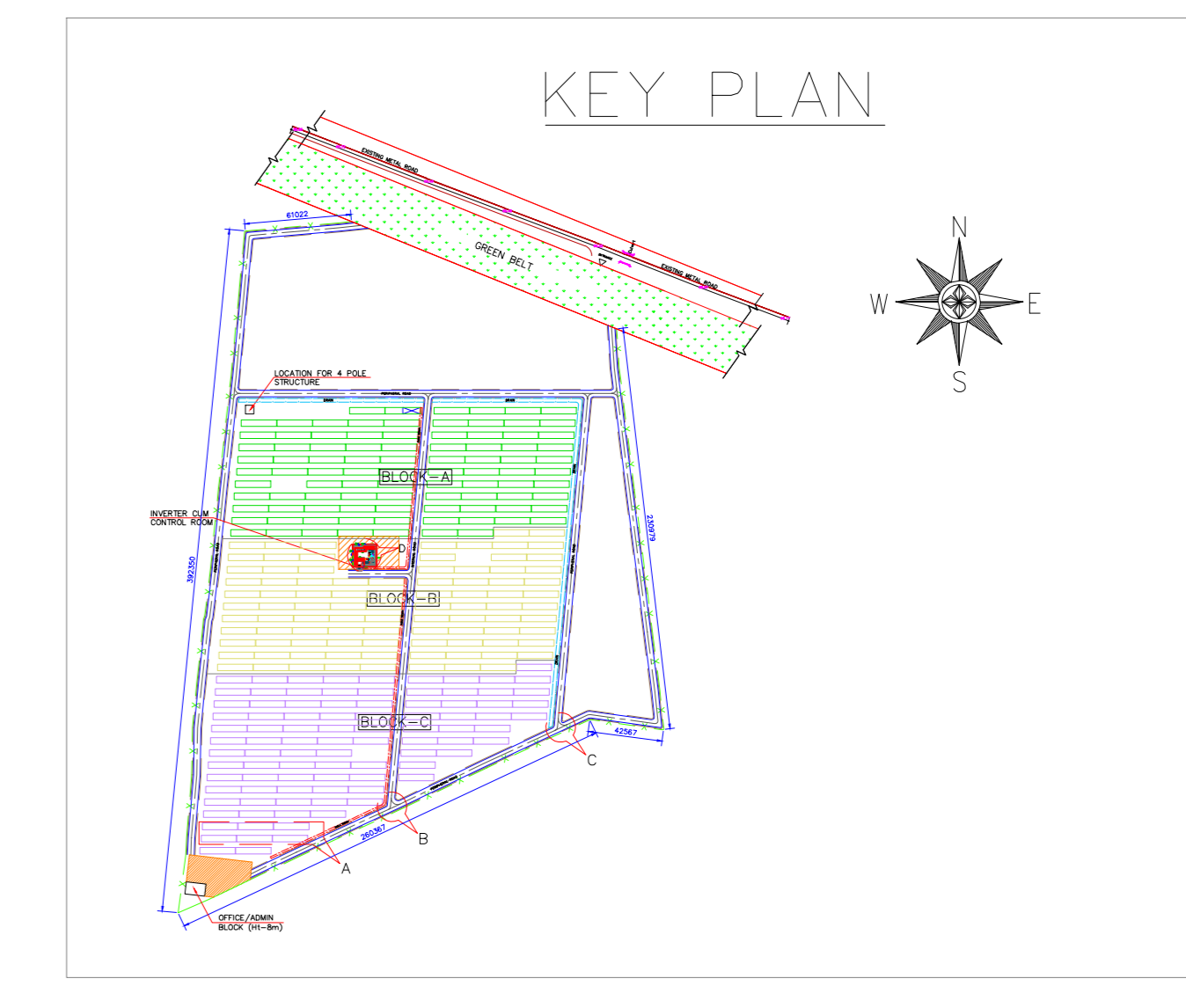
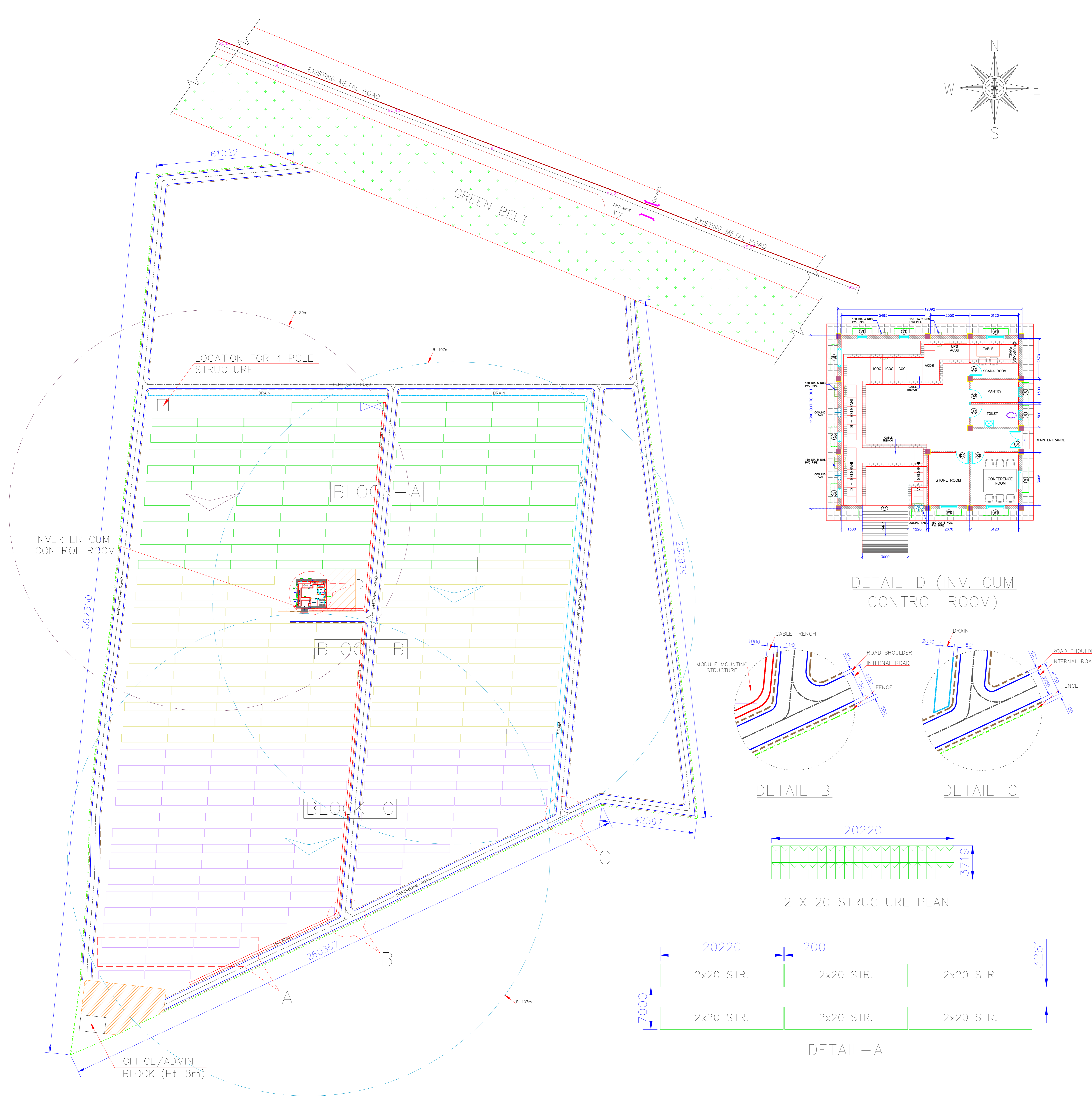
PROJECT : SOLAR POWER PROJECT

CLIENT :

TITLE :

LAYOUT

DRN.	NAME	SIGN.	DATE	SCALE
	AP			N.T.S
	RG			
	RG			
DWG. NO:				REV.
SHT. No 01	NO. OF SHT. 01	SHT. No 01		



S.No	LEGENDS	DESCRIPTION	CAPACITY	QTY.(Nos.)
1.		JINKO SOLAR MODULE (JKM 310PP)	310Wp	11140
2.		ABB INVERTER (ABB-PVS 800-57-1000KW-C)	1000kW	3
3.		FENCE		
4.		INTERNAL & PERIPHERAL ROADS		
5.		CABLE TRENCH		
6.		DRAIN		
7.		BLOCK DIVIDER		
8.		SHADOW OF LIGHTNING ARRESTER POLE		
9.		SHADOW AREA		
10.		UNUSED MOUNTING SPACE		

NOTES:

- ALL DIMENSIONS ARE IN MM.
- MODULE DIMENSIONS: LENGTH : 1956mm
WIDTH : 992mm
THICKNESS : 40mm
- PITCH DISTANCE FOR MODULE MOUNTING STRUCTURE IS 7m.
- MINIMUM CLEAR DISTANCE PROVIDED BETWEEN MODULE & INTERNAL ROAD IS 1.0M.
- ALL INTERNAL ROADS ARE 3.75m WITH 0.5m SHOULDER EACH SIDE.
- SHADOW MARKED CONSIDERING TIMING 8.30AM TO 4.30PM.
- DIMENSION OF INVERTER CUM CONTROL ROOM IS INDICATIVE.

BLOCK DETAILS:

S.No	BLOCK NAME	CAPACITY (kWp)	TOTAL NO. OF STRUCTURES(2x20)	TOTAL NO. OF MODULES	TOTAL NO. OF INVERTERS
1.	BLOCK-A	1147.0	92.5	3700	1
2.	BLOCK-B	1153.2	93	3720	1
3.	BLOCK-C	1153.2	93	3720	1

PLANT DETAILS:

S.No	DESCRIPTION	DETAILS
1.	TOTAL NO. OF 2x20 STRUCTURES	279 Nos.
2.	TOTAL NO. OF MODULES	11140 Nos.
3.	TOTAL NO. OF INVERTERS (ABB-PVS 800-57-1000KW-C)	3 Nos.
4.	TOTAL NO. OF LIGHTNING ARRESTERS (107m/89m-2/1Nos.)	3 Nos.
5.	STRUCTURES CONFIGURATION	2 X 20
6.	TILT ANGLE	19°
7.	PITCH DISTANCE	7 Mtr.
8.	NO. OF INVERTER CUM CONTROL ROOM	1 No.
9.	MODULE MAKE	JINKO
10.	MODULE WATTAGE	310 Wp
11.	PLOT TOTAL AREA (USED)	13.18 Acres



PROJECT : 3.453 MWp SOLAR POWER PROJECT	NAME	SIGN.	DATE	SCALE
CLIENT :	DRN.	AP		N.T.S
	DGN.	RG		
	APPD.	RG		
TITLE :	DWG. NO:			REV.
OVERALL PLANT LAYOUT				
SHT. No. 01	No. OF SHT. 01			SHT. No. 01