

# Complete Design Solutions

Ground Mounted Solar PV Plant



Civil Design



Electrical Design



Cable Layout & routing



LT/HT System

## Let's Connect!

Our services are divided into two main categories, focusing on Electric Design and Civil Design:

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# Tri-Samya Design Consultants

Focused to Harness Boundless Power of Nature  
(Sun, Water, Wind) for Cleaner, Brighter & Natural Future.

At Tri-Samya Design Consultants, we're dedicated to revolutionizing renewable energy through innovative design solutions for ground-mounted solar power plants.

We prioritize our clients tailoring each project with a unique solution that meets their specific needs ensuring quality and sustainability in every project.

From conception to execution, we're driven by a passion for innovation and excellence.

**Reliable Power  
Sustainable  
Progress**



## Services We Offer

We specialize in providing comprehensive design services for setting up ground-mounted solar power plants, covering every aspect from initial plant layout to detailed design of each component.

Our services are divided into two main categories, focusing on Electric Design and Civil Design:

### Electric Design Services

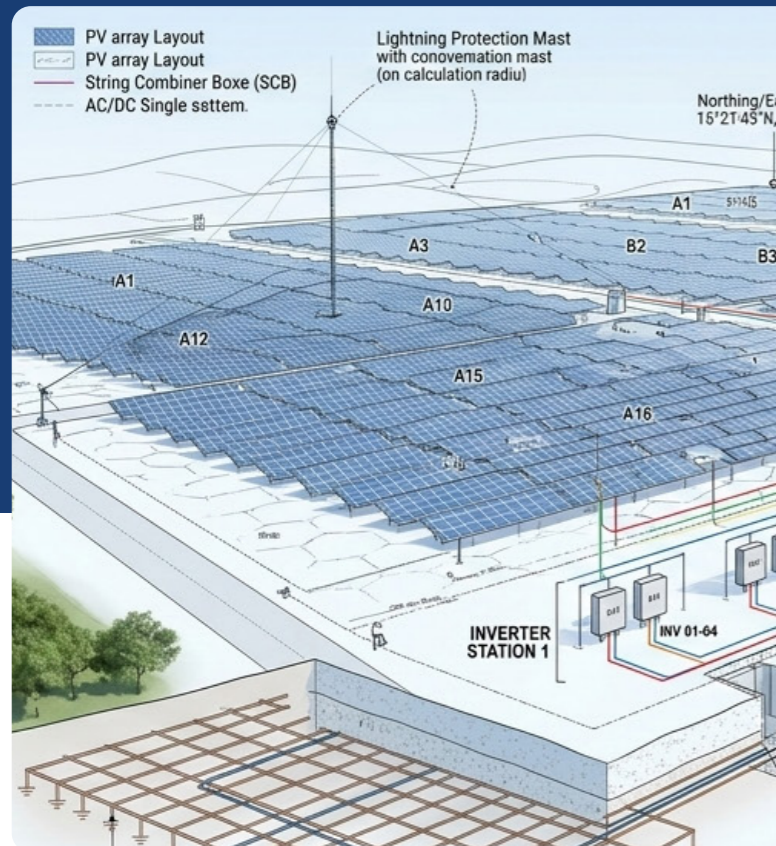
- ✓ 3D Design and Proposals pre-engineering
- ✓ 2D Layouts and Engineering of SLD, Earthing, Transformer,
- ✓ HT & LT Panel Selection & arrangements, DC AC Cable Schedules
- ✓ Energy Estimation of 25 Years with PVSyst
- ✓ Detailed Calculation of Fault Analysis, Earthing and Cable Selections

### Civil Design Services:

- ✓ Site grading and preparation to optimize land utilization
- ✓ Optimized design & Detailed Drawing of Module Mounting Structure (MMS) with STAAD Pro Model Analysis
- ✓ Structural Design and Detailed Drawing of Civil Foundation of IDT, LT Panel,
- ✓ HT Panel, Switchyard, Inverter, Watch-Tower, LA, Light Pole & CCTV Pole, etc.
- ✓ Structural Design and Detailed Drawing of Main Control Room, Security Cabins, Main Gate, Fencing, etc.
- ✓ Design of internal and external road networks, as well as drainage systems, to facilitate efficient operation and maintenance of solar power plants

# Deliverables

- Shadow Analysis Report
- Generation Pattern Analysis
- STAAD Analysis for MMS
- MMS Layout
- PV Array Layout
- AC DC Single Line Diagram
- Earthing Layouts
- Lightning Protection Layout
- DC Stringer Box Layout
- Equipment Layout
- Inverter Grouping Layout
- DC Trench Layout
- AC Trench Layout
- Cable Routing Layout
- LT HT Panels GA Drawings
- Transformer Selection Calculations
- Civil Foundations of LT HT Panels & Transformers.
- Mounting Structure for inverters.
- Communication of Inverters
- Weather Monitoring System Layouts
- Plumbing Layouts
- Coordinate Marking Layouts
- Other Drawings as per requirement of Project.



# Scope & MDL

## Main Drawing List

Sr. No.	Category	Document Type	Drawing Title	Scope
BASIC ENGINEERING DRAWINGS AND DOCUMENTS				
01	ELECTRICAL	DOC	25-Year Energy Yield Analysis (PVSYST Report)	TDC
02	ELECTRICAL	DOC	Shadow Analysis Report	TDC
03	ELECTRICAL	DWG	DC Single Line Diagram	TDC
04	ELECTRICAL	DWG	800 V AC Single Line Diagram	TDC
05	ELECTRICAL	DWG	33 KV AC Single Line Diagram	TDC
06	ELECTRICAL	DWG	Auxiliary Distribution Single Line Diagram	TDC
07	ELECTRICAL	DWG	Auxiliary Distribution Single Line Diagram	TDC

## Layouts

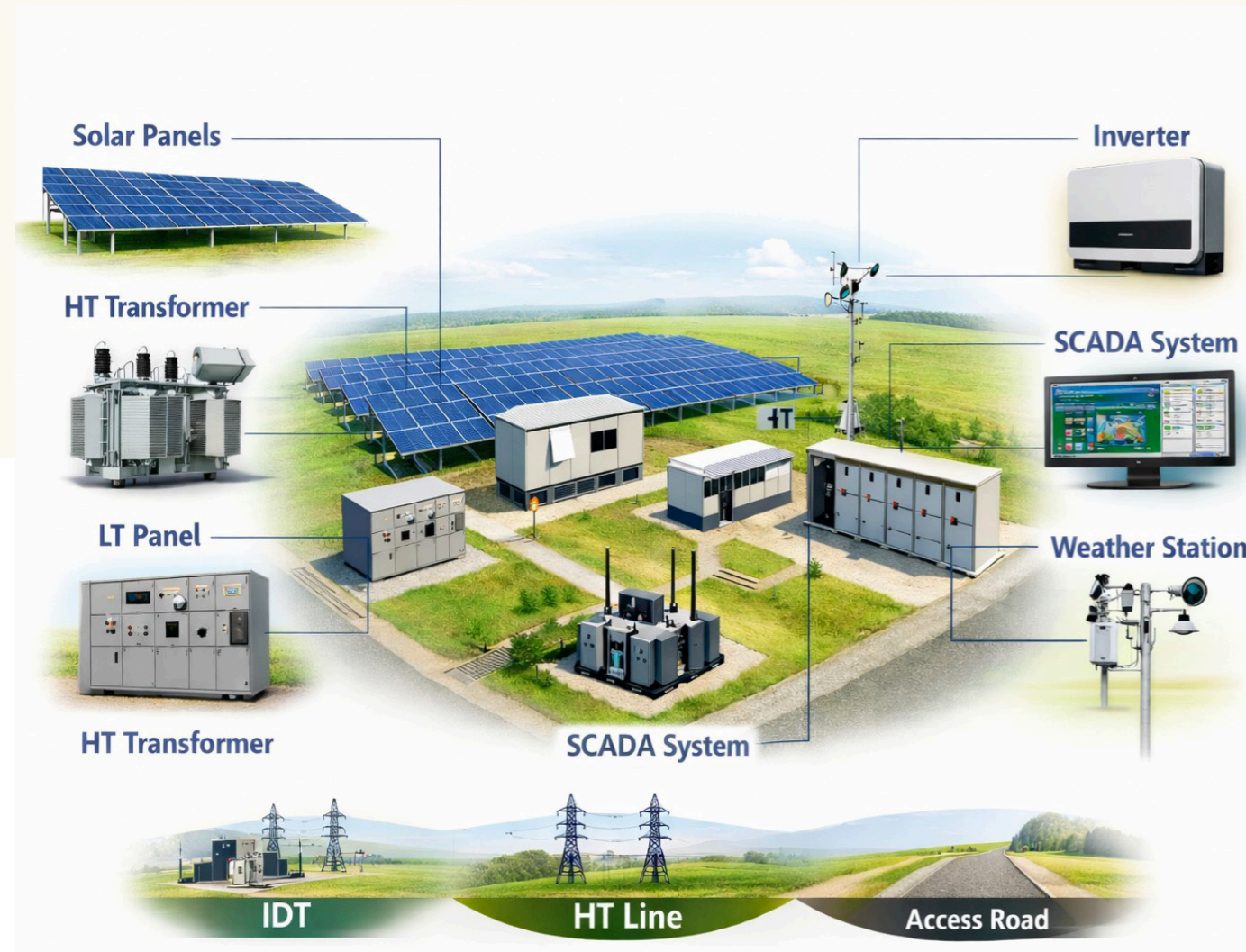
08	ELECTRICAL	DWG	Overall Plant Layout	TDC
09	ELECTRICAL	DWG	String Layout	TDC
10	ELECTRICAL	DWG	Lightning Protection layout	TDC
11	ELECTRICAL	DWG	DC Cable Routing Layout/Trench Layout	TDC
12	ELECTRICAL	DWG	AC (LT & HT) cable routing/Trench layout	TDC
13	ELECTRICAL	DWG	PV Array earthing layout	TDC
14	ELECTRICAL	DWG	CCTV system layouts	TDC
15	ELECTRICAL	DWG	Fencing Boundary Layout	TDC
16	ELECTRICAL	DWG	Power Block Lighting Layout	TDC
17	ELECTRICAL	DWG	Drainage Layout	TDC



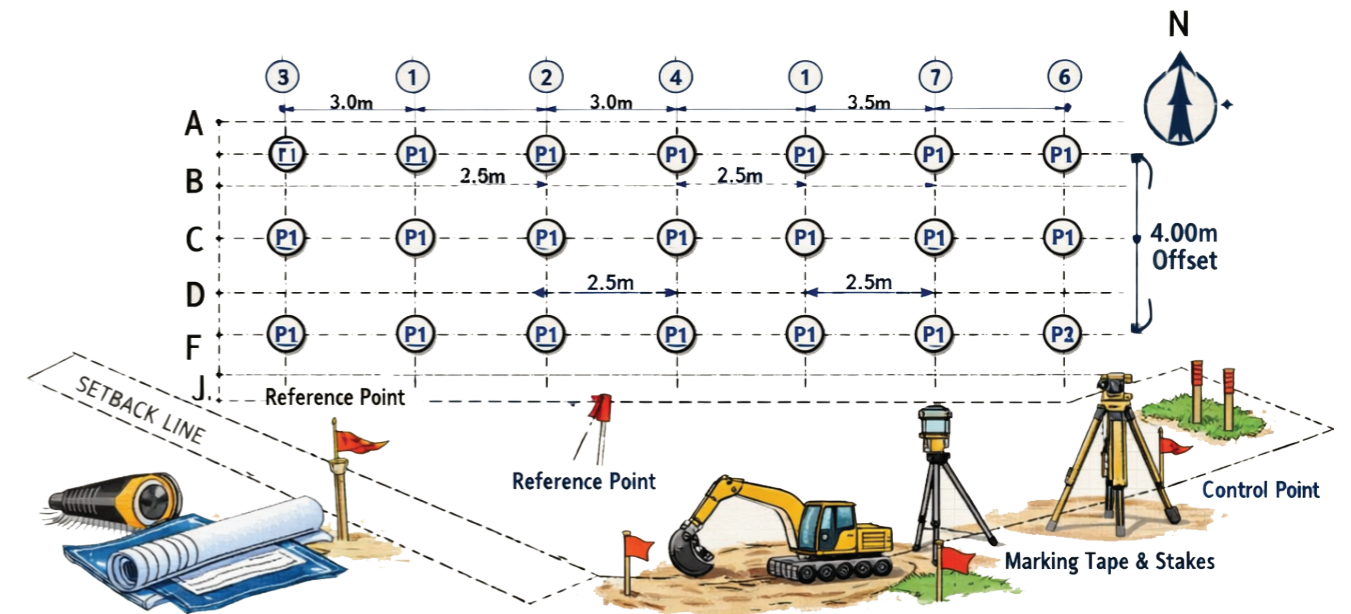
# Scope & MDL

## Detailed Engineering Calculations

Sr. No.	Category	Document Type	Drawing Title	Scope
18	ELECTRICAL	CAL	DC Cable Schedule (String to Inverter)	TDC
19	ELECTRICAL	CAL	AC Cable Schedule	TDC
20	ELECTRICAL	CAL	Auxiliary AC Cable Schedule	TDC
21	ELECTRICAL	CAL	DC Earthing Design Calculation	TDC
22	ELECTRICAL	CAL	Auxiliary transformer Sizing calculations	TDC
23	ELECTRICAL	CAL	UPS and battery sizing calculation	TDC
24	ELECTRICAL	CAL	Auxiliary Distribution Single Line Diagram	TDC
25	ELECTRICAL	DWG	SCADA Architecture	TDC
26	ELECTRICAL	CAL	SCADA IO List	TDC



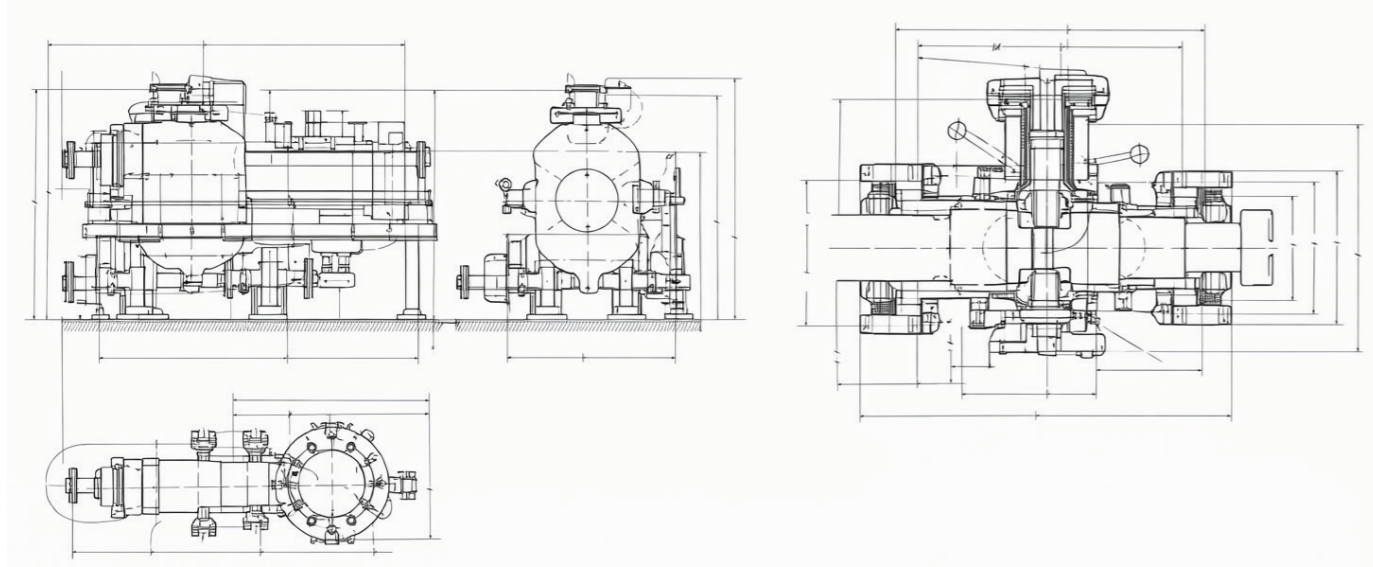
# Civil Module Mounting Structure



## Other Civil Foundations Design And Drawings

Sr. No.	Category	Document Type	Drawing Title	Scope
27	CIVIL	DWG	GA of Module Mounting Structure	TDC
28	CIVIL	CAL	Design Calculations for Module Mounting Structure	TDC
29	CIVIL	STAAD	Stadd file for MMS Design	TDC
30	CIVIL	DWG	Inverter Transformer foundation	TDC
31	CIVIL	DWG	Main HT Panel Foundation	TDC
32	CIVIL	DWG	HT panel foundation Drawing (ICOG)	TDC
33	CIVIL	DWG	LT Panel foundation drawing	TDC
34	CIVIL	DWG	Internal and Peripheral Road Layout	TDC
35	CIVIL	DWG	Pile foundation marking layout	TDC
35	CIVIL	DWG	Pile foundation marking layout	TDC
36	CIVIL	DWG	Inverter Canopy Drawing	TDC
37	CIVIL	DWG	CCTV Foundation Layout	TDC
38	CIVIL	DWG	Fencing GA Drawing	TDC
39	CIVIL	DWG	Light Pole GA Drawing	TDC

# Vendor Drawings & Document For Review Only



Vendor drawings include detailed technical documents provided for review and approval. These drawings represent equipment layouts, dimensions, specifications, and integration details to ensure accurate installation and project coordination.

Sr. No.	Category	Document Type	Drawing Title	Scope
40	ELECTRICAL	DOC	Inverter Transformer GTP	TDC
41	ELECTRICAL	DOC	DC Cable GTP	TDC
42	ELECTRICAL	DOC	AC LT Cable GTP	TDC
43	ELECTRICAL	DOC	AC Aux Cable GTP	TDC
44	ELECTRICAL	DOC	AC HT Cable GTP	TDC
45	ELECTRICAL	DWG	ICOG ,2IC+1OG ,3IC+1OG & MAIN HT 33KV Panel GA GTP BOM	TDC
46	ELECTRICAL	DWG	Inverter Duty Transformer Drawing (GA/BOM)	TDC
47	ELECTRICAL	DWG	LT & ACDB Switchgear Drawings (GTP/GA/BOM ) & Type test reports	TDC
48	ELECTRICAL	DWG	Aux DB,UPS DB and UPS DB MCR GA drawings	TDC
49	ELECTRICAL	DWG	SCADA Architecture Drawings & Datasheets & Type Test Reports	TDC

Note : This Is Primary Mdl Which May Change As Per Final Deal And Purchase Order With Confirmation Of All Respective Stack-Holders

# Experiences

Project	Capacity
Ground Mounted Project at Chattisgarh	18 MW
Ground Mounted Project at Bayad, Gujarat	4.6 MW
Ground Mounted Project at Goa	3.2 MW
Ground Mounted Project at Maharashtra	3.5 MW
Ground Mounted Project at Kusum Yojna	1 MW
Ground Mounted Project at Gujarat	2.7 MW
Ground Mounted Project at Bhuj, Gujarat	4 MW
Ground Mounted Project at Gir-Somanath, Gujarat	1 MW
Ground Mounted Project Bidding Documents in Bangladesh	100 MW
Rooftop Projects at Various Locations	125+ MW

