TRANSMISSION ENGINEERING · STEP 02 · ROUTE & SITE ENGINEERING · DRAWING

Route Alignment & Tower Schedule Drawing

Georeferenced plan-profile drawing showing final alignment, tower locations, span lengths, angle points and crossing details.

Worked example (anonymised): 132 kV D/C Transmission Line & Switching Station · 50 MWac solar park evacuation, single circuit initially, D/C ready · Maharashtra, Western India. 18 km greenfield 132 kV line connecting a solar park pooling substation to the nearest DISCOM switching station, routed through mixed agricultural land and a short forest patch requiring diversion approval.

Illustrative sample image

Sample excerpt · Tower Schedule Extract (Sample Section, Ch. 4.0-6.5 km)

Tower No.	Chainage (km)	Type	Height (m)	Span (m)	Deviation Angle	Soil Class
T-14	4.10	Suspension DE	24	310	0°	Class II (medium)
T-15	4.42	Suspension DE	24	320	2°	Class II (medium)
T-16	4.75	Angle A0	27	290	18°	Class I (soft)
T-17	5.05	Suspension DE	24	305	0°	Class III (hard)
T-18	5.38	Section Tower	30	280	0°	Class III (hard)
T-19	5.68	Suspension DE	24	300	0°	Class II (medium)

Notes

- Angle towers positioned to avoid two private orchards flagged during ground survey
- Final tower type selection to be validated in detailed design against loading standard

What happens in this step

1. Desktop corridor screening using satellite imagery, forest/eco-sensitive zone maps and existing RoW data to shortlist 2-3 viable alignments

2. LiDAR/DGPS or drone-based topographic survey along the shortlisted corridor to build a 3D terrain and vegetation model
3. Tower spotting and profile plotting on the surveyed terrain to optimise span lengths, angle points and tower type selection
4. Geotechnical investigation (trial pits/boreholes) at representative tower locations and the substation site to classify soil bearing capacity
5. Substation site selection and comparison across candidate plots on land availability, flood/seismic risk, access road distance and grid-tie feasibility
6. Stakeholder and statutory mapping - private land parcels, forest patches, water bodies, protected structures - with a preliminary crossing schedule
7. Consolidated route alignment drawing, tower schedule and site selection memo issued for client sign-off before detailed design

Outcomes

• Land acquisition and forest clearance risks identified and quantified before detailed design commitment
• Optimised tower count and span design reducing overall line cost by minimising unnecessary angle points
• Geotechnically validated foundation strategy avoiding costly design changes during construction
• Substation site selection backed by a defensible, criteria-based comparison for internal and lender approval

Want this for your project? Write to info@growthifye.com or use the Contact page — we will scope the real deliverable set for your capacity, state and lender requirements.