

# **STANDARD GUIDELINES FOR EXECUTION OF ENABLING WORKS AT PROJECT SITES**

**OBJECTIVE** - The objective of these standard guidelines is to define uniform procedures, technical requirements, approval mechanisms, and documentation protocols for execution of **Enabling Works** at BHEL Power Plant Project Sites, ensuring quality, compliance with specifications, and effective control during execution.

**SCOPE** - Scope is as given below but not limited to:

## **1.0 OFFICE BUILDING WORKS**

### **1.1 Drawings & Approvals**

1.1.1 The Contractor shall furnish complete architectural and allied drawings for office buildings **prior to commencement of work**, including:

- Architectural plans, elevations, and sections
- Structural drawings with detail member specifications.
- Electrical layout drawings comprising of all connection, switch board etc.
- Water supply and sanitary layout drawings including details of fitting items.
- 3D views for architectural visualization of the office from both internal & external.

**Note:** Design/Drawings to be prepared by Qualified Professional Design engineers.

1.1.2 All drawings shall be submitted to BHEL (Execution-Region & region may take support of CPC for structural engineering review of drawing & STAAD-File) for review & once BHEL-review & approval has accorded the same shall be vetted from third party like IIT/NIT/Government Engineering College.

1.1.3 No construction activity shall commence without approved drawings from BHEL & third party like IIT/NIT/Government Engineering College.

### **1.2 Furniture: Specifications & Procurement**

1.2.1 Furniture items shall be as per the specification provided in tender documents (TCC)

1.2.2 Furniture shall be procured only from reputed/renowned manufacturers, subject to prior approval of BHEL.

1.2.3 Equivalent specification shall be only approved once it is established that approved brands (as per TCC) are not available in the market for any item.

1.2.4 Equivalent or superior specifications may be considered only with written approval of the BHEL Engineer-in-Charge.

1.2.5 No furniture shall be procured or installed without prior approval of BHEL.

1.2.6 All the furniture once it has installed it should be properly cleaned by the agency by removing temporary covering transparent plastic sheet before handing over to BHEL for use.

### 1.3 Materials & Finishing Works

1.3.1 All materials shall be inspected prior to erection/installation for compliance with approved specifications.

1.3.2 Structural materials shall conform to approved design grades and standards.

1.3.3 Brands and types of all finishing materials shall be submitted to BHEL (Project Site-Engineer-I/C) for approval prior to procurement of the materials by the agency.

1.3.4 No material shall be ordered or procured without prior approval of BHEL.

### 1.4 Utilities – Electrical & Water Supply

1.4.1 Installation of water supply and sanitary systems shall be as per approved drawings.

1.4.2 Electrical installations shall strictly follow approved electrical layout drawings.

1.4.3 Electrical switches, fittings, plumbing fixtures and appliances shall be of approved make as per TCC and shall be procured only after prior approval of BHEL. No material shall be ordered or procured without prior approval of BHEL.

## 2.0 STORE SHEDS – OPEN & CLOSED

### 2.1 Drawings & Layout Approval

2.1.1 The Contractor shall submit layout drawings for open and closed store sheds, including:

- Plan and Elevation sections
- Structural framing details with detail section properties and connection details.
- Drainage and access details with detail of doors and windows.
- 3D-View of Store shed both internal & external.
- Floor details with detail sectional details of Sub-base, base course and RCC/PCC pavement details.
- External connecting approach road to store shed detail design and section of roads.
- External plinth protection with garland drain details.

**Note:** Design/Drawings to be prepared by Qualified professional Design engineers.

All drawings shall be submitted to BHEL (Execution-Region & region may take support of CPC for structural engineering review of drawing & design document like STAAD-File) for review & once BHEL-review & approval has accorded the same shall be vetted from third party like IIT/NIT/Government Engineering College.

2.1.2 Execution agency shall commence works at site only after receipt of approved RFC drawings from BHEL & third party.

### 2.2 Materials & Structural Works

2.2.1 All structural materials shall be checked for compliance with approved design grades prior to erection.

2.2.2 Execution shall be strictly in line with approved structural and architectural drawings.

2.2.3 Any deviation shall be carried out only after written approval of BHEL (Project site Engineer I/C).

### **2.3 Flooring, Drainage & Protection**

2.3.1 Flooring shall be designed and executed considering load requirements and material storage conditions.

2.3.2 Adequate drainage arrangements shall be provided to prevent water stagnation.

2.3.3 Closed sheds shall be provided with proper ventilation, lighting, and security arrangements as approved by BHEL.

## **3.0 OPEN YARD DEVELOPMENT**

### **3.1 Yard Layout & Planning**

3.1.1 The Contractor shall submit detailed open yard layout drawings mentioning details of internal road, storage area, drainage details, fencing details, entry and exit gate, fencing details, High mast details, street light etc. Agency has to submit the following drawings for construction of open storage yard of BHEL.

- Yard location and boundaries w.r.t land availability at site.
- Grid marking as per plot plan.
- Internal roads and drains with cross-sections in line with the tender drawings.
- Fencing detail plan.
- Gate details.
- Security kiosk or watch tower details.
- High mast location in plot plan.
- Open yard pavement section details with proper drainage slope indication in plan.

**Note:** Agency has to submit all drawings to BHEL (Execution-Region & region may take support of CPC for engineering review of drawing) for review & approval. No work shall be commenced at site without prior approval of BHEL.

3.1.2 Yard drawing to be discussed with CPC team w.r.t land availability, ground/soil conditions etc. for any quantity variation from Contract BOQ.

3.1.3 Yard development works shall commence only after approval of layout by BHEL.

### **3.2 Yard Stripping, Levelling & Grading**

3.2.1 Yard stripping areas shall be clearly identified and executed as per approved layout.

3.2.2 Pre- and post-execution photographs along with videos shall be submitted to BHEL Site for following activities:

- Yard stripping
- Levelling and grading works

3.2.3 Levels shall be checked and certified prior to subsequent works & keep record for future reference.

### 3.3 Sleeper Works

3.3.1 Sleeper drawings with grade of concrete shall be submitted to BHEL for approval prior to execution.

3.3.2 Sleeper Concrete test reports to be recorded in register.

3.3.3 There should be proper handing over of Sleepers to MM department.

3.3.4 Records of number of sleepers laid shall be maintained.

3.3.5 Sleeper issue and consumption registers shall be maintained and produced for verification by BHEL.

### 4.0 DOCUMENTATION & BILLING CONTROL

4.1 All records, drawings, photographs, and registers stipulated in 'Standard Guidelines' shall form part of RA Bills as per approved protocol.

4.2 Payments shall be subject to compliance with 'Standard Guidelines' and certification by BHEL.

### 5.0 COMPLIANCE & PENALTIES

5.1 All works shall be executed under supervision of BHEL or its authorized representative.

5.2 Non-compliance with these 'Standard Guidelines' may result in:

- Rejection of work or materials
- Rectification at Contractor's cost
- Withholding of RA bills or payments till the non-conformity of work has been removed.
- Other actions as per contract provisions

### 6.0 RESPONSIBILITY

- **Contractor / Vendor:** Compliance with the 'Standard Guidelines' and submission of required drawings & third party approval, following tender specifications, execution of works as per drawing and specifications, records keeping, and obtained approvals of drawing and works from BHEL-Engineer I/C.
- **BHEL Engineer-in-Charge (EIC):** Review, approval, supervision, and enforcement of these Standard Guidelines.
- **BHEL Site Management (HOD-Civil/ CM-Site / PD-Site):** Monitoring and verification of execution like whether it is as tender specifications or approved drawing issued for construction of the job.
- **Responsibility matrix Flow:**

Agency ➡ BHEL-Engineer I/C ➡ HOD(Civil) ➡ CM-Site ➡ PD-Site

### 7.0 CONTRACTUAL STATUS

**'STANDARD GUIDELINES FOR EXECUTION OF ENABLING WORKS AT PROJECT SITES'** shall form an **integral part of the Tender and Contract Documents** and shall be binding on the Contractor.