

Scope & Specific Technical Requirements

Doc No: TB-DC-378-607-006

Rev 00

1.0.0 INTRODUCTION

- 1.1.0 The purpose of this specification is to specify all details required by a Design Agency for:
- 1.1.1 Generating Civil and Structural designs & drawings of Control room building and GIS building for 765/400kV Substation at **Ariyalur** and 400/220kV Switchyard (GIS) at **Ennore** being executed by BHEL. The **Customers** are M/s Tantransco & M/s Tangedco.

2.0.0 SCOPE

- 2.1.0 Preparation & submission/correction/resubmission of detailed design &/or drawing of any item or items indicated in Annexure I ***including their approval from Consultant /Customer*** based on BHEL's input and BHEL's/Customer's Specification. The detailed design & drawing work shall include, but not limited to :
 - 2.1.1 Verification of all data, criteria and information contained in the contract documents.
 - 2.1.2 Generation of all data, criteria and information required for the completion of work including liaison and interfaces with BHEL/Consultant/Customer.
 - 2.1.3 Analysis and design on standard software like STAAD pro, in house generated EXCEL or any other programs acceptable to customer. All calculations shall be prepared in a neat, sequential, comprehensive form and properly checked to ensure their correctness and completeness.
 - 2.1.4 Preparation of construction drawings with sufficient detailing so that no difficulty is faced by site engineers during execution.
 - 2.1.5 Providing reinforcement quantities (diameter wise) for procurement purpose as and when required at various stages of project.
- 2.2.0 Visit to Site or Customer's/Consultant's office: The Design Agency shall depute their engineer(s) to site or Customer's/Consultant's office for any clarification etc. as required by BHEL/Consultant/Customer.

3.0.0 SPECIFIC TECHNICAL REQUIREMENTS

- 3.1.0 The specific technical requirements shall be as per input provided by BHEL from time to time after award of work.
- 3.2.0 The Design Agency shall interact closely with BHEL engineering group for any input/ clarification and finalize the details. There may be two/three or more revisions till final approval of design and drawings on account of customer comments or minor change of inputs. ***No claim on account of this shall be entertained.***

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4.0.0 SCHEDULE OF ITEMS

4.1.0 The Schedule/BOQ of Items shall be as per **Annexure I**. The Design agency is required to quote their most competitive rates for these items. The quantities shown in annexure I are tentative and may vary to any extent as per project specific BOQs.

5.0.0 DOCUMENTATION

5.1.0 All design documents including computer outputs shall be neatly typed , produced on A4 size paper and shall have a 'Cover Sheet' (To be provided later).

5.2.0 All drawings shall be prepared in AutoCAD as per standard sizes (viz. A0, A1, A2, A3 & A4) and shall have a 'Title Block' (To be provided later).

5.3.0 The vendor should submit the design documents & drawings in soft copies by email /pen drive at each stage of approval. After final approval the vendor is required to submit all documents/drawings in CDs/pen drives in 01 set.

6.0.0 TIME SCHEDULE:

After receipt of work order, a detailed schedule giving list of design documents and drawings and their submission dates shall be prepared jointly by BHEL & Design Agency based on the submission times as per table below. This detailed schedule shall be the time schedule of the project and any delays attributable to agency in any activity shall be counted by this schedule. The inputs shall be provided to agency by e-mails in soft copy. The date of email sent by BHEL shall be considered date of input of any activity.

Inputs by BHEL		Submissions by Agency.		
S.No.	Description of Input	S.No.	Design/drawings Activity	Submission within time(Days)
1	Conceptual plan of building, technical specification, soil report etc.		<u>Lot-1 :Design & Drawings</u>	
		1	<u>Architectural drawings:</u> Architectural plans,elevations,sections and finishing schedule etc.	Within 20 days of receipts of first input.
		1(a)	Resubmissions	Within 7 days of

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			receipts of comments for each revision.
2	<u>Design document:</u>		Within 15 days of Cat-2 approval of Architectural drawings.
2(a)	Resubmissions		Within 10 days of receipts of comments for each revision.
3	<u>Construction Drawings:</u> All RCC drawings upto plinth beams i.e foundation, column details, plinth beams, tie beams if any and staircase dowel bar details etc.		Within 15 days from cat-2 approval of Design document.
3(a)	Resubmissions		Within 7 days of receipts of comments for each revision.
	<u>Lot-2 Design & Drawings.</u>		
4	<u>Miscellaneous drawings:</u> Door& Windows ,septic tank,plumbing,sanitary,water supply,falseceiling,& other miscellaneous drawings such as garland drain, plinth protection,ramp,railings,roof treatment etc.		Within 60 days of receipt of first input.
4(a)	Resubmissions:		Within 7 days of receipts of comments for each revision.

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2	Cut out details, panel placement, GIS loading, under hung cable racks and layout etc.	5	<u>Construction drawings:</u> All RCC drawings above plinth beams i.e. floor lintels, slabs, staircase and roof slabs.	Within 60 days of Cat 2 approval of design document.
		5(a)	Resubmissions:	Within 7 days of receipts of comments for each revision.
3	Internal cable trench.		<u>Lot 3 Drawings:</u>	
		6	<u>Construction drawings:</u> Grade slab, cable trenches, cable pull pit etc.	Within 10 days from receipt of input.

7.0.0 PAYMENT SCHEDULE:

<u>S.No.</u>	<u>Condition</u>	<u>Payment</u>
<u>Item No 1A,1B& 1C of Sch./BOQ of Items (AnnexureI)</u>		
1(a)	On approval (at least Cat 2 i.e approved with comments) of architectural drawings (Lot1).	15% of quoted rate on prorata basis.
1(b)	On approval (at least Cat 2 i.e approved with comments) of miscellaneous drawings (Lot2).	10% of quoted rate on prorata basis.
2	On approval (at least Cat 2 i.e approved with comments) of design documents (Lot1).	10% of quoted rate on prorata basis.
3(a)	On approval (at least Cat 2 i.e approved with comments) of all construction drawings upto plinth beams.(Lot1)	20% of quoted rate on prorata basis.

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3(b)	On approval (at least Cat 2 i.e approved with comments) of all construction drawings above plinth beams.(Lot2)	30% of quoted rate on prorata basis
3©	On approval (at least Cat 2 i.e approved with comments) of all construction drawings above plinth beams.(Lot3).	5% of quoted rate on prorata basis
4	On approval of all design documents & drawings in Cat-I.	10 % of quoted rate.
Item No 2 of Sch./BOQ of Items (Annexure I)		
(i)	On submission of claim after completion of visit.	100 % of quoted rate.