

**TENDER SPECIFICATION**  
**NO: BHE/PW/PUR/FINSE-CCT/874**

**CONSTRUCTION OF CIVIL, ARCHITECTURAL AND STRUCTURAL  
WORKS FOR COOLING TOWER  
AT  
2x12MW EXPANSION POWER PLANT  
FINCHAA SUGAR FACTORY (FSF)  
STATE- ORAMIA. (ETHIOPIA)**

**TECHNICAL BID - VOLUME- I**

**TENDER SPECIFICATIONS CONSISTS OF:**

- **Notice Inviting Tender**
- **Volume 1 A - Technical Conditions of Contract,**
- **Volume 1 B - Special conditions of Contract,**
- **Volume 1 C - General conditions of Contract**
- **Volume 1 D - Forms & Procedures**



**Bharat Heavy Electricals Limited**  
*(A Government of India Undertaking)*  
Power Sector - Western Region  
345-Kingsway, Nagpur-440001

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**LEGEND:**

This document ( i.e. NIT & Vol-I A ) is hosted in BHEL web page ([www.bhel.com](http://www.bhel.com)) as a ( Vol- I ) of Technical Bid

§: **“Vol I -B, I-C, I-D” of Part-I ( Vol- I )** Hosted in BHEL web page ([www.bhel.com](http://www.bhel.com)) separately as a part of Technical Bid.

@: **Price bid is** issued as a separate hard copy booklet ‘Tender Specifications – Volume-II (Price Bid-873 )’. Hosted in BHEL web page ([www.bhel.com](http://www.bhel.com)) separately as titled **“VOL-II- PRICE BID-873 ”**

Vol-IE-867 contains Technical Specifications Hosted in BHEL web page ([www.bhel.com](http://www.bhel.com)) separately as a part of Technical Bid. ( hosted as corrigendum of NIT). Also drawings hosted in corrigendum of NIT.

**TENDER SPECIFICATION**  
**NO: BHE/PW/PUR/FINSE-CCT/874**

**CONSTRUCTION OF CIVIL, ARCHITECTURAL AND STRUCTURAL  
WORKS FOR COOLING TOWER  
AT  
2x12MW EXPANSION POWER PLANT  
FINCHAA SUGAR FACTORY (FSF)  
STATE- ORAMIA. (ETHIOPIA)**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR                      Refer Notice Inviting Tender  
TENDER SUBMISSION                      .

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s. ....

.....

PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

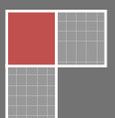
For Bharat Heavy Electricals Limited

DY. GENERAL MANAGER (Purchase)  
Place: Nagpur  
Date :

Rev 00  
6th July  
2010

# NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

Ref: NO: BHE/PW/PUR/FINSE-CCT/874

Dt.: 29/07./2011

## **NOTICE INVITING TENDER (NIT)** **NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES OR PURCHASE TENDERS FROM THIS OFFICE ALSO**

To

Dear Sir/Madam

**Sub : NOTICE INVITING TENDER**

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-I) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

### 1.0 Salient Features of NIT

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	<b>BHE/PW/PUR/FINSE-CCT/874</b>
ii	Broad Scope of job	<b>CONSTRUCTION OF CIVIL, ARCHITECTURAL AND STRUCTURAL WORKS FOR COOLING TOWER AT 2x12MW EXPANSION POWER PLANT FINCHAA SUGAR FACTORY FSF, STATE- ORAMIA. ETHIOPIA</b>
iii	<b>DETAILS OF TENDER DOCUMENT</b>	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> Applicable
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> Applicable
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> Applicable
d	Volume-ID	<i>Forms and Procedures</i> Applicable
e	Volume-II	<i>Price Schedule (Absolute value).</i> Applicable
iv	Issue of Tender Documents	<b>1. <u>Sale from BHEL PS Regional office at :</u> <u>Start : 29/07/2011</u></b> Applicable

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		<b>Closes: 17/08/2011 , Time :17.00 Hrs</b> <b>2. From BHEL website (<a href="http://www.bhel.com">www.bhel.com</a>)</b> Tender documents can however be downloaded from website till due date of submission.	
v	<b>DUE DATE &amp; TIME OF OFFER SUBMISSION</b>	<b>Date : 18/08/2011 , Time :15.00Hrs</b> <b>Place : BHEL OFFICE AT NAGPUR</b>	Applicable
vi	<b>OPENING OF TENDER</b>	<b>1 hours after the latest due date and time of Offer submission</b> Notes: (1) In case the due date of opening of tender becomes a non-working day, tenders shall be opened on next working day at the same time. (2) Bidder may depute representative to witness the opening of tender	Applicable
vii	<b>EMD AMOUNT</b>	<b>Rs 2,00,000/- (Rupees Two Lakhs Only) or 75638/- Ethiopian Birr( ETB )</b>	Applicable
viii	<b>COST OF TENDER</b>	<b>Rs 2000/- Or 757 Ethiopian Birr( ETB )</b>	Applicable
ix	<b>LAST DATE FOR SEEKING CLARIFICATION</b>	<b>Date: (Atleast 5 days before the due date of offer submission)</b> Along with soft version also, addressing to undersigned & to others as per contact address given below	Applicable
x	<b>SCHEDULE OF Pre Bid Discussion (PBD)</b>	Date : Not applicable.	Not applicable.
xi	<b>INTEGRITY PACT &amp; DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)</b>	Not Applicable	Not Applicable
xii	<b>Latest updates</b>	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage ( <a href="http://www.bhel.com">www.bhel.com</a> -->Tender Notifications →View Corrigendums) <b>and not in the newspapers</b> . Bidders to keep themselves updated with all such information	

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Nagpur issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Nagpur, Sundays and second/ last Saturdays
- 4.0 Unless specifically stated otherwise, bidder shall deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Nagpur. For other details and for 'One Time EMD' please refer General Conditions of Contract.
- 5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:
- PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD/COST of TENDER)' in two separate sealed and superscribed envelopes (ENVELOPE-I & ENVELOPE-II)
  - PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
- 6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below.  
**(All pages to be signed and stamped)**

Sl no	Description	Remarks
	<b>Part-I A</b>	
	<p><b><u>ENVELOPE – I superscribed as :</u></b>            PART-I (TECHNO COMMERCIAL BID)            TENDER NO :            NAME OF WORK :            PROJECT:            DUE DATE OF SUBMISSION:</p> <p><b><u>CONTAINING THE FOLLOWING:-</u></b></p>	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	<p>Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p><b><u>Note:</u></b></p> <p>a. In case of any deviation, the same should be submitted separately for technical &amp; commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.</p> <p>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.</p> <p style="margin-left: 20px;">i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p style="margin-left: 20px;">ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p>	

## TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

iii.	Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.  It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT.	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT	
vii.	Notice inviting Tender (NIT)	
viii.	Volume – I A : <u>Technical</u> Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii.	Any other details preferred by bidder with proper indexing.	

	<b>PART-I B</b>	
	<b><u>ENVELOPE – II superscribed as:</u></b> PART-I (EMD/COST of TENDER) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING:-</b>	
i.	1. Earnest Money Deposit (EMD) in the form as indicated in this Tender <b>OR</b> Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender  2. Cost of Tender ( Demand Draft or copy of Cash Receipt as the case may be)	

	<b>PART-II</b>	
	<b>PRICE BID</b> consisting of the following shall be enclosed	
	<b><u>ENVELOPE-III</u></b> superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT:	

# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

	DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING</b>	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume II – PRICE BID ( Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures)	

	<b>OUTER COVER</b>	
	<b>ENVELOPE-IV</b> (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING:</b>	
i	<ul style="list-style-type: none"> <li>○ Envelopes I</li> <li>○ Envelopes II</li> <li>○ Envelopes III</li> </ul>	

SPECIAL NOTE : All documents/ annexures submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

7.0 No Deviation with respect to tender clauses and no additional clauses/ suggestions/ in Techno-commercial bid/ Price bid shall normally be considered by BHEL. Bidders are requested to positively comply with the same.

8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

**9.0 Assessment of Capacity of Bidders: ( Shall be applicable for bid evaluation from 1<sup>st</sup> Jan- 2011 onwards )**

**Bidders capacity for executing the job under tender shall be assessed as per the following:**

- I. **Assigning Weightages (A) for Similar Jobs Under-Execution:** Weightages shall be worked out and assigned based on the average number of Similar Works under execution including works yet to be commenced by the agency, in the following manner:
  - i). **Number of Similar Jobs**
    - a) No. of jobs in BHEL, PSER : Say 'J'
    - b) No. of jobs in BHEL, PSSR : Say 'K'
    - c) No. of jobs in BHEL, PSWR : Say 'L'
    - d) No. of jobs in BHEL, PSNR : Say 'M'

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- e) No. of jobs with other customers\* : Say 'N' (\*: Other than BHEL PSER, PSSR, PSWR & PSNR)
- f) Average No. of Jobs is 'P' = (J+K+L+M+N) divided by 5
- ii) Weightage "A" assigned to bidders based on Average Number of jobs "P":
- If 'P' = 0-1, "A" will be equal to '3'
  - If 'P' = 2-3, "A" will be equal to '2'
  - If 'P' = 4-5, "A" will be equal to '1'
  - If 'P' is Above 5, "A" will be equal to '0'
- II. Weightage "B" for Quarterly Performance Reports of Vendors: This shall be based on the averages of the net weighted score obtained by the bidder for the jobs under execution (excluding works not commenced) for the quarter previous to the last quarter reckoned from the date of latest due date of submission, in all four Regions i.e BHEL PSER, PSSR, PSWR & PSNR, in the following manner.
- i). Ratings by Power Sector Region:
- PS ER's Rating 'Rer' =  $(X_1 + X_2 + \dots + X_n)$  divided by n
  - PS WR's Rating 'Rwr' =  $(X_1 + X_2 + \dots + X_n)$  divided by n
  - PS SR's Rating 'Rsr' =  $(X_1 + X_2 + \dots + X_n)$  divided by n
  - PS NR's Rating 'Rnr' =  $(X_1 + X_2 + \dots + X_n)$  divided by n
  - Over all Power Sector Region Rating 'R<sub>BHEL</sub>' = (Rer+ Rwr+ Rsr+ Rnr) divided by 4**
- (where "X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>,...X<sub>n</sub>" is the net weighted score obtained by the bidder as per the "Evaluation of Contractor Performance (Quarterly)" against the various contracts 'n' under execution in the respective Region).
- ii) Weightage "B" assigned to bidders based on Overall Power Sector Rating (R<sub>BHEL</sub>):
- If R<sub>BHEL</sub> is 80% and above, "B" will be equal to '6'
  - If R<sub>BHEL</sub> is > 70% < 80%, "B" will be equal to '5'
  - If R<sub>BHEL</sub> is > 60% < 70%, "B" will be equal to '4'
  - If R<sub>BHEL</sub> is < 60%, "B" will be equal to '0'
- III. Evaluation of Bidders capacity to execute the job under tender: shall be based on the sum of scores obtained in 'A' and 'B', as below:
- 6 or above : Considered 'Qualified' for the job under tender
  - Less than 6: Considered 'NOT Qualified' for the job under tender
- IV. Explanatory note:
- Similar work means GTG,GTG,BOILER or Turbine or Civil or Electrical or CI, etc irrespective of rating of Plant
  - Quarter shall be as per the quarter defined in the "Evaluation of Contractor performance (Quarterly)". For contracts where annexed Quarterly Evaluation performance was not part of the contract, 'Quarterly Performance Reports' previous to the last quarter reckoned from the

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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date of latest due date of submission, given by the respective project site against the contract will be the basis for evaluation.

- c) Vendors who are not executing any jobs presently in the Region and first timers to the Region, may be considered subject to satisfying all other tender conditions
  - d) 'Under execution' shall mean works in progress upto GTG,GTG,BOILER Steam Blowing (for GTG,GTG,BOILER and Auxilliaries) or Synchronisation (for all other jobs including Civil) shall be considered.
- 10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of above.
- 11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 12.0 BHEL may decide holding pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (xi) of 1 above.**
- 16.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of pre-qualification evaluation/ techno-commercial bids, approval/ acceptance of customer (as applicable), etc. and date of opening of price bids shall be intimated to only such bidders.

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- 17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.
- 18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) or specified otherwise in SCC of tender.
- 19.0 BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process. In such case all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .
- However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDs' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.
- 20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 23.0 In case Consortium Bidding is allowed as per Pre Qualifying Requirement, then Prime Bidder and Consortium Partner shall enter into Consortium Agreement. Validity period of Consortium Agreement shall be 6 months after which the same can be re validated.
- 'Stand alone' bidder cannot become a **'prime bidder' or a 'consortium bidder' in a consortium bidding**. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non compliance, consortium bids of such Prime bidders will be rejected. .
- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements" duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 Order of Precedence  
In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:
- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
  - b. Notice Inviting Tender (NIT)
  - c. Price Bid
  - d. Technical Conditions of Contract (TCC)—Volume-1A

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- e. Special Conditions of Contract (SCC) —Volume-1B
- f. General Conditions of Contract (GCC) —Volume-1C
- g. Forms and Procedures —Volume-1D

for BHARAT HEAVY ELECTRICALS LTD

(SCT)

## **Enclosure**

- 01. Annexure-1: Pre Qualifying criteria.
- 02. Annexure-2: Check List .
- 03. Other Tender documents as per this NIT.

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**ANNEXURE - 1**

## **PRE QUALIFYING CRITERIA**

JOB	CONSTRUCTION OF CIVIL, ARCHITECTURAL AND STRUCTURAL WORKS FOR COOLING TOWER AT 2x12MW EXPANSION POWER PLANT ,FINCHAA SUGAR FACTORY (FSF) STATE- ORAMIA. (ETHIOPIA),
TENDER NO	<b>BHE/PW/PUR/FINSE-CCT/874</b>

SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Name and Description of qualifying criteria ( Bidder Should Fill Up the Details in this column for PQR )	Page no of supporting document of bidders offer
A	Submission of Integrity Pact duly signed (if applicable)	<b>NOT APPLICABLE FOR THIS TENDER</b>	
B	Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable)	<b><u>Shall be applicable for bid evaluation from 1<sup>st</sup> Jan- 2011 onwards )</u></b>	
C	<p><b><u>Technical</u></b></p> <p><b>Bidders shall essentially meet all the Qualifying Requirements C (i.e. C.1 and C.4 or C2. and C.4 or C3 and C4) and D.1, D.2 , D.3 &amp; E as under.</b></p> <p>C.1)Bidders should have executed <b>or</b> presently executing Induced Draft RCC Cross flow cooling tower of any configuration but with at least two cells for industrial/power plant in last seven years as on 30/06/2011. In case work is under execution, bidder must have completed at least 50 % of awarded work duly certified by customer .</p> <p style="text-align: center;"><b>OR</b></p> <p>C.2) Bidders should have executed Main Plant Civil works for at least one unit of 2 MW Thermal Power Plant/ GTG/CCPP or of higher ratings which should include foundations for</p>		

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	<p>TG/GTG, Boiler/HRSG, ESP, Fans, Main Power House Building, control room/ switchgear building and its auxiliaries <b>or</b> Industrial foundations &amp; buildings in a single order in last seven years as on 30/06/2011 .</p> <p style="text-align: center;"><b>OR</b></p> <p>C.3) Bidders should have empanelled with us ( i.e. with BHEL PS WR ) in the any one category of C-MP-1/ C-MP-2/C-MP-3/ C-BP-1/C-BP-2/C-BP-3/C-VP-1/C-VP-3/C-VP-3</p> <p style="text-align: center;"><b>AND</b></p> <p>C.4) Bidder must have work experience in Ethiopia for execution of Industrial Civil work for which bidder must submit documentary proof.</p>		
D.1	<p><b><u>Financial TURNOVER</u></b> Bidders must have achieved an average annual financial turnover (Audited) of <b>Rs 171.00 Lakhs</b> or more over last three Financial Years (FY) i.e 2008-09, 2009-2010, 2010-2011 or for 2007-2008, 2009-2009 and 2009-2010 if audited Annual Accounts for FY 2010-11 are not audited</p> <p>For the purpose of evaluation of QR, Turn-over figures in Ethiopian Birr shall be converted into Indian Rupees @ Rs 2.6440 Per Ethiopian Birr</p> <p>** In case the closure of Financial Year of Ethiopian Companies is other than 31<sup>st</sup> March, then the turnover shall be considered as per respective financial year followed in Ethiopia.</p>		
D.2	<p><b>NETWORTH</b> Net worth of the Bidder based on the latest Audited Accounts as furnished for 'D1' above should be positive</p>		

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D.3	<p>PROFIT</p> <p>Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three years defined in 'D1 above above based on latest Audited Accounts.</p>		
E	<p>Approval of Customer (if applicable)</p> <p>Note: Names of bidders who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval. Price bid of only those bidders shall be opened who are approved by customer.</p>	APPLIACABLE	
F	<p>Consortium criteria (if applicable)</p>	NOT APPLICABLE	
<p><b>Explanatory Notes for QR 'A'</b></p> <ol style="list-style-type: none"> <li>1. The word 'executed' means the bidder should have achieved the criteria specified in the QR even if the total contract has not been completed or closed</li> <li>2. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as given above along with all annexure</li> <li>3. <b>BIDDER SHOULD ESSENTIALLY MEET ALL THE PQR ( i.e. POR- C, D1,D2,D3 &amp; E ) AS ABOVE TO GET QUALIFIED AGAINST THIS TENDER</b></li> </ol>			

**BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT IN THE RESPECTIVE ANNEXURES IN THEIR OFFER along with copies of Work Orders, Work Completion certificates, Audited profit and Loss Account for the last three years and other related documents as per PQR & tender specification..**

# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

ANNEXURE - 2

## CHECK LIST

**NOTE:- Tenderers are required to fill in the following details and no column should be left blank**

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Fax No:	
4	EMD DETAILS	DD No:                      Date : Bank :                        Amount: <u>Please tick ( √ ) whichever applicable:-</u> ONE TIME EMD / ONLY FOR THIS TENDER	
		APPLICABILITY	BIDDER REPLY
6	Whether the format for compliance with <b>PRE QUALIFICATION CRITERIA</b> (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years submitted	Applicable	YES/NO
8	Copy of PAN Card submitted	Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable/Not Applicable	YES/NO
10	Integrity Pact	<b>Not Applicable</b>	-----
11	Declaration by Authorised Signatory submitted	Applicable	YES/NO
12	No Deviation Certificate submitted	Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions submitted	Applicable	YES/NO
14	Declaration for relation in BHEL submitted	Applicable	YES/NO
15	Non Disclosure Certificate submitted	Applicable	YES/NO

BHEL-PSWR

**Tender Specification No: BHE/PW/PUR/FINSE- CCT /874**

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# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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16	Bank Account Details for E-Payment submitted	Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	Not Applicable	-----
18	<b>Tie Ups / Consortium Agreement against this tender</b>	<b>Not Applicable for this tender</b>	-----
19	Power of Attorney for Submission of Tender/Signing Contract Agreement submitted	Applicable	YES/NO
20	Analysis of Unit rates submitted	Applicable	YES/NO

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE

**DATE :**  
**SIGNATORY**

**AUTHORISED**

**(With Name, Designation and Company seal)**

# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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ANNEXTURE-III

## **IMPORTANT INFORMATION:**

- 1) Indian bidders and Ethiopian local bidders shall be eligible to participate in this tender.
- 2) The tender document shall be hosted in BHEL web page ( [www.bhel.com](http://www.bhel.com) ) and bidders are requested to download the complete tender specification. In case bidders are unable to download the tender specifications from BHEL web page, on specific request from vendors, BHEL will send the total tender specification by e-mail.
- 3) Bidder should ensure that their complete offer in hard copy should reach to BHEL- Nagpur office on or before due date & time mentioned in NIT. Late tender shall not be accepted in any circumstances.
- 4) The bidder who is submitting the offer should necessarily fulfill the QR (Qualifying Requirement) and other tender conditions. The Indian Bidder will be permitted to have a tie up for execution of limited portions of work with the agencies locally available in Ethiopia or Djibouti, on prior approval of BHEL. However back to back tie up is NOT permitted.
- 5) Offer shall be submitted by bidders in ENGLISH Language only. Also any correspondence shall be in English Language.
- 6) **All the bidders shall quote the price in Ethiopian Birrs (ETB) only in Price Bid**
- 7) Evaluation of prices shall be done in Ethiopian Birr.
- 8) Work order shall also be placed in Ethiopian Birr only.
- 9) Supply of steel is in scope of contractor as specified in this tender. If bidder purchase steel from India for this project for the quantity specified in this tender, then on specific request from bidder, customer may provide assistance to contractor for transportation and documentation clearance form Mumbai Port to Finchaa site
- 10) Slab for the rates of Security Deposit as given in Clause 1.10.1 of 'General Conditions of Contract' may suitably be converted into ETB @ Rs 2.64420 per ETB.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## CONTENTS

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- 11) **Ethiopian bidders can submit their EMD/Cost of documents of requisite amount at BHEL TBG Ethiopia office at the following address:**

*construction manager BHEL site office Fincha Sugar Factory (FSF), Ethiopia. Name, address & contact point of site is as below:*

**Mr. Marimuthu**

**Construction Manager**

BHEL Site Office – Fincha sugar Factory, Ethiopia.

- 12) **Wherever the BG ( Bank Guarantee ) is required to be submitted as per tender specifications , the following procedure is to be adopted by bidder**

- a) **For Indian Bidders- The BG should be issued through the Member Bank listed in Section-15 of this tender.**
- b) **For Ethiopian and Djiboutian Bidders- The BG may be accepted from Foreign Bank at the sole discretion of BHEL, provided the BG is duly endorsed by any Bank listed in Section-15**
- c) **The BG through any other Indian Nationalized Bank ( Not covered in the list of Section-15 ), the discretion of its acceptance shall lie solely with BHEL**

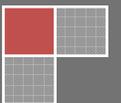
- 13) **Work order shall be released in ETB only and for the purpose of payment in INR or US \$, applicable ETB shall be converted into INR or US \$ as per prevailing exchange rate.**

- 14) **Price Variation Compensation Clause ( PVC ) as per GCC cl no 2.17 shall not be applicable to this contract. As such rates quoted by bidder shall remain firm for execution of work against this contract.**

Rev 00  
6<sup>th</sup>  
JULY

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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<b>SI No</b>	<b>DESCRIPTION</b>	<b>Chapter</b>	<b>No. OF PAGES</b>
<b>Volume-IA</b>	<b>Part-I: Contract specific details</b>		
1	Project Information	Chapter-I	2
2	Scope of Works and Technical Specifications	Chapter-II	10
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III	8
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	3
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	1
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8	Taxes and other Duties	Chapter-VIII	2
9	Tender Drawings	Chapter-IX	2
9	Appendix	Chapter-X	1

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

1.0	Project Information
1.1	<p><b><u>Introduction</u></b></p> <p>2x12MW Finchaa is being set up by Finchaa Sugar Factory (FSF) near Finchaa Valley in the state of Oromia (Ethiopia).</p> <p><b><u>General Site Data</u></b></p> <ol style="list-style-type: none"><li>1) Road Approach : Project Site Is Located In The Wolega Zone Of Aromia Region, About 350km West of Addis Ababa.</li><li>2) Sea port : Port Of Entry For Imported Goods By Marine Transport is Port Of Djibouti, Which Is Around 1300 Km From Site</li><li>3) Air port : port of entry for air transportation is Addis Ababa.</li><li>4) Height Above MSL : 1500 M</li><li>5) Rainy Season : June To October</li><li>6) Average Rainfall : 1300mm</li><li>7) Crushing season : 27 weeks (188 days), extending from second Week of November through to mid may.</li><li>8) Seismic Zone : None Defined</li><li>9) Maximum Ambient Temperature (Shade) : +34 ° C</li><li>10) Minimum Ambient Temperature (Shade) : +11 ° C</li><li>11) Design Temperature Range : +5 ° C TO +40 ° C</li><li>12) Relative Humidity Range : 62% TO 96 %( Average 84%).</li><li>13) Cooling Water Temperature Range : +20 ° C TO +24 ° C</li><li>14) Dust condition : very dusty, contains sugar and splashes of molasses</li><li>15) Area classification electrical : hazardous class 1; division 1a refinery sugar handling.</li><li>16) Provision Of Water Supply</li></ol>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

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a) Water is pumped from Finchaa River by four river pumps.

### 17) Prevailing Wind

a) Predominant wind direction : calm

b) Occasional wind direction : southeast to north west and east to west

c) Average wind speed : 3.4 km/h

d) Maximum wind speed : 6.5 km/h.

### 18) Cane Quality And Throughput

a) Cane harvesting: burnt cane, whole stick manually harvested and mechanically loaded is received at factory.

b) Pol % cane : 14.06

c) Fiber %cane (average) : 14.60

d) Ash % cane (average) : 0.75

e) Sand %cane (approximate) : 4.0

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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### **2.0.01 SCOPE OF WORK**

The work to be performed under the scope of this tender mainly consists of but not limited to complete Civil, structural and Architectural work of the Cooling towers.

The cooling towers (Turbine Condenser Cooling Tower and Bearing water Cooling Tower) with configuration as mentioned below are required to cool continuously, throughout the year, the hot water returning from the main condenser and auxiliary cooling equipment of the Power Plant.

- 1) **Induced Draft RCC Cross flow cooling tower with 3 (2W+1S) cells for Turbine Condenser.**
- 2) **Induced Draft RCC Cross flow cooling tower with one cell for Bearing Cooling water.**

### **2.0.02 THE WORK WILL INVOLVE.**

- a) All civil , structural and architectural works connected with the above mentioned structures such as earth work, concrete work, steel work, embedment, plastering and painting, waterproofing, flooring, plumbing, paving, grouting etc.

### **2.0.03 CIVIL AND ARCHITECTURAL WORKS**

The scope covers all Civil and Architectural within the battery limits. The important works covered are as below.

- 1) Excavation of earth and backfilling including dewatering of excavations for foundations, trenches, tunnels pits, etc. till the construction of the same is completed and disposal of surplus.
- 2) Construction foundations with pedestals, foundation footing for structures, trenches, tunnels, sumps, grade beams, tie beams at foundation level, grade slabs, floor slabs and roof slabs, equipment foundations etc.
- 3) Complete civil and architectural works such as plastering, painting, all types of floor/roof finishes, all types joinery etc.
- 4) Preparation and submission of detailed calculations, arrangement drawings and detail drawings of formwork, staging and scaffolding for all reinforced
- 5) concrete structures and foundations as directed by the Engineer for his checking and approval.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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- 6) Preparation of detailed working drawings and bar bending schedules for all reinforced concrete work and getting them approved by the BHEL Engineer.
- 7) Taking delivery from BHEL stores, fabrication and fixing structural steelwork for cable trench covers, plates etc.
- 8) Fabrication supply and fixing of anchor bolts, sleeves, fixing frames, embedment etc. in concrete.
- 9) Supply of all instruments and personnel for conducting necessary tests at site as specified/as directed by the Engineer.
- 10) Making appropriate fabrication drawing as per agreed schedule before starting fabrication work for any structural GA drawing.
- 11) Design and making detailed drawing of barricading structures and taking approval of the same from customer.

### **2.0.04 STRUCTURAL WORKS**

The work involves:

- 1) Supplying, fabrication and erection of structural steel work including all interfacing work and miscellaneous work. Supply of steel will not be made by BHEL. The nature of work shall include columns, beams, splicing of steel works as needed, bracings, purling, sheeting runners, sag rods, ties, struts walkways, galleries, stairs, ladders, handrails, floor gratings, chequered plate work , M.S, pipes, equipment supporting platforms and all other structures required for successful completion of project.
- 2) Supplying, fabrication and erection of handrail as per drawing and specifications.
- 3) Supply and fixing of floor gratings as per Specifications.
- 4) Supply of high tensile bolts, mild steel bolts, nuts, plain/taper and spring washers, all electrodes required for shop and field work.
- 5) Shop and final painting as per Technical Specification after properly cleaning the steel surfaces.
- 6) Grouting under stanchion bases.
- 7) **WELDING**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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- Welding shall be done by the qualified welders. Welder's test to be conducted at site in presence of BHEL/BHEL'S customer. Process qualification if required shall be arranged by contractor. All samples for the welder's qualification test shall arranged by contractor. Quoted rate shall be inclusive of all the expenditure towards testing of welders for destructive and non-destructive test, testing and approval of welders etc., complete. All welded joints shall be subject to the acceptance of BHEL engineer. All the welded joints shall be cleaned of slag etc. And painted with primer to prevent corrosion at no extra cost towards this. ***Primer and paint of approved color & shades shall be supplied by contractor as per the technical specification/approved drawing & prior approvals of BHEL/FSF.***
- Contractor shall make his own arrangement inside/outside the plant premises for storage of the cement and other materials including the building materials. Space for development of such infrastructure facilities shall be provided by **BHEL/FSF (FINCHA SUGAR FACTORY)** free of cost as per the availability. Also for fabrication of steel structural and reinforcements the necessary area inside/outside the plant premises shall be provided by BHEL & all necessary infrastructures has to be arranged by the contractor at their cost. All costs, duties, levies, taxes and incidental, charges etc., have to be borne by the contractor. Requisite fencing and other suitable security arrangements etc. Shall be the contractor's responsibility. Transport of the worked and fabricated items, arranging gate passes and other permits etc., is also part of contractor's responsibility. The rates quoted shall be inclusive of all the above and related factors. No claim whatsoever will be entertained by BHEL in this regard.

### **2.0.05 GENERAL**

- 1) The drawings enclosed with this tender (if any) are intended to give the tenderer a general idea of the type and extent of work involved. The drawings are as such only indicative and not to be construed as the exact construction drawings. The work shall be executed as per The "AFC" drawing (Approved For Construction) supplied by BHEL from time to time (2 sets) in phased manner.

**Further the drawings and the documents furnished along with this specification are the sole property of B.H.E.L. It must not be used directly or indirectly in any way detrimental to the interest of the company.**

- 2) The scope of work will also include such other related works although they may not be specifically mentioned in the above paragraph and all such incidental items not specified but reasonably imply and necessary for completion of the job as a whole all as desired and as directed by the engineer.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter - II : Scope of Works and Technical Specifications

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- 3) The detailed scope of work covered in these specifications is not a comprehensive list of the items of work involved. The detailed scope of work may vary considerably depending on the actual construction requirements and as per drawings released.
- 4) Materials shall be stacked neatly, preserved and stored in the contractor's shed and work in an orderly manner.
- 5) Should the contractor or his workmen or servants break, deface, injure or destroy any part of a building, road, kerbs, fence, enclosures, water pipes, cables, drains, electric or telephone posts or wires, trees or any other property, or to any part of erected equipments and stored components etc., the contractor shall make the same good at his own expense or in default, the BHEL site engineer may cause the same to be made good by other agency or by other means and deduct the expense with BHEL overhead (of which the site engineer's decision is final) from any sums that may be then or at any time thereafter become due to the contractor or from his security deposit or any other money due.
- 6) The work has to be executed with the constraints like rain, insufficient space, improper approach roads etc., and in conjunction with numerous other operations at site as it always happens in this nature of project. The contractor and his personnel shall cooperate with other personnel/contractor, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 7) **The contractor should satisfy BHEL that an accident risk insurance policy in respect of his employees as per workmen compensation act, is taken before starting of the work and also satisfy BHEL that the policy is kept in force till the contract is completed.**
- 8) Recoveries will be made from contractor's bills for any liability accrued to BHEL for the accidents and refund of the same shall be considered later, after the claim is fully settled by insurance authorities.
- 9) The contractor shall submit survey report/ performance report of the tools and plants deployed by him and being utilized on the work under the scope. These survey reports/ performance reports are to be obtained by contractor from the customer of BHEL/insurance authorities and submitted to BHEL at no extra cost.
- 10) In case, any additional expenditure is to be incurred in work during execution arising out of the faulty execution of such work by the contractor, the same shall be borne by the contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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### **2.0.06 ALSO INCLUDED IN THE SCOPE**

Unless otherwise specified, the work to be provided by the contractor for the items mentioned in the “Schedule of items (SOQ) / Bill of Quantities (BOQ)” shall include but not be limited to the following.

- 1) Furnishing all labour, materials, supervision, construction plans, equipment, supplies, transport, to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provide by the engineer during the course of works.
- 2) Furnishing samples of all materials required by the engineers for testing/inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works.
- 3) Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
- 4) Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
- 5) Arranging manufacturer’s supervision for items of work done as per manufacturer’s specifications when so specified.
- 6) Carrying out topographic survey of the entire and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identification works etc., The contractor shall provide the owner/BHEL such a assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.
- 7) Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.

### **2.0.07 WORK BY OTHERS**

No work under the specification will be provided by any agency other than the contractor unless specifically mentioned elsewhere in the contract.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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### **2.0.08 TECHNICAL SPECIFICATIONS & DRAWINGS FOR INFORMATION.**

#### ***SECTION DESCRIPTION***

- 1) SECTION – A LIST OF TECHNICAL SPECIFICATIONS
- 2) SECTION – B LIST OF TENDER DRAWINGS (Refer Chapter IX)

#### **NOTE:**

Contractor has to make him-self well conversant with the Customer specification. In case of ambiguity between BHEL and customer specification, customer specification shall prevail.

#### 1) SECTION-A: LIST OF TECHNICAL SPECIFICATIONS.

S.No	Description of the Specification	No. of Pages	Copies To PSWR/IO
1	General Scope.	4	pdf copy
2	Properties, Storage & Handling of common building material.	5	-do-
3	Earth work Excavation and Back filling.	23	-do-
4	Cement Concrete Plain & Reinforced.	67	-do-
5	Fabrication and structural work.	30	-do-
6	Erection of structural steel work.	18	-do-
7	Miscellaneous steel work.	7	-do-
8	Miscellaneous metal	6	-do-
9	Painting on structural steel.	5	-do-
10	Inserts / Embedments in concrete work.	3	-do-
11	Grouting.	4	-do-
12	Masonry and allied works	8	-do-
13	Finish to masonry & concrete.	8	-do-
14	Demolition and dismantling	5	-do-
15	Type and make of materials to be used.	2	-do-

### **2.0.09 PREAMBLE FOR THE SCHEDULE OF QUANTITIES/BOQ.**

- 1) Details of the items in this Schedule shall be read in conjunction with the corresponding specifications, drawings and other Bid documents and shall have precedence over any contrary statement mentioned anywhere in this document.
- 2) The work shall be carried out as per construction drawings, specifications, the description of the items in this schedule and/or Engineer's instructions., Drawings enclosed with these documents are only indicative giving some idea of the type of work involved. The layout, sizes and details of the building, structures and foundations shown in tender drawings may vary at a large extent during actual construction. Final drawings will be issued progressively during the execution of the work.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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- 3) Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
- 4) Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant, temporary works, labour materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
- 5) The rate quoted shall be inclusive of cleaning the site of any vegetations, dressing and leveling etc., required for commencement of site activities. No separate payment will be made towards the same. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.
- 6) The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, from existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
- 7) The quantities of the various items mentioned in the schedule are approximate and may vary up to any extent or be deleted altogether. The overall variation in contract value on execution shall be dealt as per GCC. Contractor has to obtain prior approval of BHEL/FSF before procurement of bought out items/ building materials including Cement.
- 8) Rates shall be quoted both in figures and in words in clear legible writing. No over writing is allowed. All scoring and cancellation should be counter signed by the bidder. In case of illegibility, the interpretation of the engineer shall be final. All entries shall be in English language.
- 9) Engineers decision shall be final and binding on the contractors regarding clarification of items in this schedule with respect to the other section of the contract.
- 10) In case of any discrepancy between item description, relevant drawing and/or specification clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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### **2.0.010 HIERARCHY**

In case of any conflict/deviations amongst various documents, the order of precedence shall be as follows

- Statutory Regulations
- Customer's specification
- Items in Schedule of quantities
- BS/BATCODA/IS standards
- BHEL's standard specification (with prior approval of Engineer-in-charge).

**2.0.011** Laying / Cutting & Re-welding of associated electrical earthing works below the road & drains and surrounding areas shall also be done by civil contractor as per drawings (excluding test pit/earth pit) for which 40mm dia. MS rod/GI flats shall be supplied by BHEL free of cost.

### **2.0.2 Other Related Activities:**

**2.0.2.2 Construction Water** shall be provided by BHEL/Customer at one point free of cost at available location. Further arrangement and distribution works etc shall be done by Contractor within the quoted rate. No additional payment shall be made on account of this.

**2.0.2.3 Construction Power** shall be provided by BHEL/Customer at one point free of cost at available location. Further arrangement and distribution works etc shall be done by Contractor within the quoted rate. No additional payment shall be made on account of this.

#### **2.0.2.4 Statutory Requirement**

Contractor shall comply with all statutory requirements, local laws, labor law prevailing in that country (Ethiopia) for execution of project works within their quoted rate. No extra payment shall be made to the contractor on this account.

### **2.0.3 Field Quality Assurance:**

The contractor shall be responsible for day-to-day quality checks of concrete and other building materials during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/BHEL'S customer and as per field quality plan approved by BHEL/FSF. For this, contractor shall either establish their own field quality lab or have tie-up with approved lab by BHEL in/outside of the plant.

### **2.0.4.0 General Technical Condition of contract.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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- 1 Contractor shall mobilize sufficient number of excavation machine/POCLAIN/JCB, dumpers, concrete batching plant, vibrators, concrete pumps, shuttering & scaffolding materials for RCC framework of Cooling Tower, winches, cranes, tractor, dumper and quality control lab. Equipments at site for successful completion of job in time.
- 2 The works to be performed under this contract consist of providing all labor, supervision, all types of materials (*including both Reinforcement steel and structural steel & cement*), scaffolding, construction equipments, tools and plants, temporary works, supplies, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials, concrete, earthwork other allied works, preparation of bar bending schedules on the basis of construction drawings.
- 3 The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials remove shall be burnt or otherwise disposed of as directed by the engineer-in-charge.no separate payment for this operation shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.
- 4 All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-In-Charge when the work is in progress during the night shifts.
- 5 The unit rates shall include all material equipment, fixtures, labor construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.
- 6 The unit rates quoted for various items of B.O.Q shall include all the stipulations mentioned in technical specifications and nothing extra over B.O.Q rates shall be payable.
- 7 Design drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.
- 8 Customer/BHEL shall provide land outside plant premises for regular disposal and associated activities in respect of excavated surplus earth, dismantled materials generated from this work.
- 9 All Architectural Items Shall Be Purchased From Only The Vendors Approved By BHEL/FSF/CONSULANT.
- 10 contractor shall take delivery of certain steel materials **like foundation bolts/ embedment** (if any) supplied by our manufacturing units of BHEL/ suppliers of

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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equipment from BHEL site stores/storage yard in the prescribed proforma. Fixing of foundation bolts in important equipment foundations done by using steel templates exclusively made for this purpose within the quoted rate. Wooden templates shall not be permitted. Bolt and inserts after fixing in position shall be properly welded with adjacent **Steel/Reinforcement** member to retain in correct position and to ensure alignment/verticality during concreting.

### **2.0.4.2 Field Quality Lab.**

The contractor has to establish a separate field quality lab at site with all requisite instruments and dedicated qualified engineers/supervisor for day-to-day quality checks of concrete and other building materials during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/BHEL'S customer and as per field quality plan approved by BHEL/FSF.

#### **a. Final Painting**

Surface preparation including final painting on the structural steel and other part of the work shall be done strictly as per **BHEL/FSF** specification.

#### **b. Ground Water Table:**

Ground water table encountered during works has to dewater during execution of work.

### **2.0.4.2 Procurement Of Materials By Successful Contractors And Testing:**

Material required for the entire job (other than issued by BHEL as explained above) like cement, sand, aggregates, windows, doors, ventilators, rolling shutter, sanitary fixtures, painting & finishing material, stop-log gates, travelling screen, electrical fittings and wiring material and all other material required for the completion of entire scope, bolts & nuts, HSFG/HT bolts have to be arranged by the contractor, except those specifically indicated as BHEL scope of supply. BHEL reserves the right to reject any material not found satisfactory.

Contractor shall produce manufacturer's test certificate (**MTC**) for cement for every batch of manufacturing along with each consignment brought to the site. Cement shall be procured from fresh stock only. Apart from the above, it shall be the responsibility of contractor to get the testing of cement, or any other materials procured from outside laboratory approved by **BHEL/FSF** to ascertain the quality if insisted by **BHEL/BHEL's customer**.

Rate quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of **BHEL/BHEL customer's** representative.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of Works and Technical Specifications

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### **Bidders are requested to specifically note the following:**

*Bidders are requested to have **pre-bid visit/ inspection of site** to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site condition. Bidders may fix up their site visit in consultation with construction manager BHEL site office Fincha Sugar Factory (FSF), Ethiopia. Name, address & contact point of site is as below:*

**Mr. Marimuthu**

**Construction Manager**

BHEL Site Office – Fincha sugar Factory, Ethiopia.

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

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Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	<b>ESTABLISHMENT</b>			
3.1.1	<b>FOR CONSTRUCTION PURPOSE:</b>			
A	Open space for office (as per availability)	Yes		Location will be finalized after joint survey with owner
B	Open space for storage (as per availability)	Yes		Location will be finalized after joint survey with owner
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	<b>FOR LIVING PURPOSES OF THE BIDDER</b>			
a	Open space for labour colony (as per availability)	Yes		BHEL/FSF shall provide land for labor colony Free cost. Contractor has to make his own arrangements for shelter and transportation of labours as per their requirement.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	<b>ELECTRICITY</b>			
3.2.1	<b>Electricity for construction purposes 3 Phase 415/440 V (To be specified whether chargeable or free)</b>			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Single point source	Yes		Construction Power shall be provided by BHEL / FSF free of cost at One Point at a distance of 300M. In case non supply of power due to maintenance or any other reasons , Contractor has to make his own arrangements for Power / Electricity of adequate capacity as per the requirement to complete the job within the scheduled time as given in the contract. Refer Chapter II, Cl no: 2.0.2
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	<b><i>Electricity for the office, stores, canteen etc of the bidder.</i></b>			
a	Single point source	Yes		BHEL/FSF shall provide Power free of cost at one point at an available distance.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	<b><i>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc</i></b>			
a	Single point source	Yes		BHEL/FSF shall provide Power free of cost at one point at an available distance.

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3.0	<b><i>WATER SUPPLY</i></b>			
3.3.1	<b><i>For construction purposes: (to be specified whether chargeable or free)</i></b>			
a	Making the water available at single point	<b>yes</b>		Construction Water shall be provided by BHEL / FSF free of cost at One Point at a distance of 300M. In case non supply of Construction water due to maintenance or any other reasons Contractor has to make his own arrangements for Construction Water and Potable Water of adequate capacity as per the requirement to complete the job within the scheduled time as given in the contract. Refer Chapter II, CI no: 2.0.2.
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<b><i>Water supply for bidder's office, stores, canteen etc</i></b>			
a	Making the water available at single point	Yes		Water shall be provided by BHEL / FSF free of cost at One Point at an available Distance.

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.3	<b>Water supply for Living Purpose</b>			Water shall be provided by BHEL / FSF free of cost at One Point at an available Distance.
a	Making the water available at single point	Yes		
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	<b>LIGHTING</b>			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.5.0	<b>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</b>			
a	Téléphone, fax, internet, intranet, e-mail etc		Yes	
3.6.0	<b>COMPRESSED AIR wherever required for the work</b>		Yes	
3.7.0	<b>Demobilization of all the above facilities</b>		<b>YES</b>	
3.8.0	<b>TRANSPORTATION</b>			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl.No	Description <b>PART II</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
	<b>3.9.0 ERECTION FACILITIES</b>			
3.9.1	Engineering works for construction:			NOT APPLICABLE
a	Providing the erection/constructions drawings for all the equipments covered under this scope	Yes		<b>For Details PI refer Chapter-IX-</b>
b	Drawings for construction methods	Yes	Yes	In consultation with BHEL
c	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III : Facilities in the scope of Contractor/BHEL**

SI.No	Description <b>PART II</b> <b>3.9.0 ERECTION FACILITIES</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
d	Shipping lists etc for reference and planning the activities			NOT APPLICABLE
e	Preparation of site erection schedules and other input requirements		Yes	In consultation with BHEL
F	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on SI No. e		Yes	In consultation with BHEL
h	Daily erection / work plan based on SI No. g		Yes	In consultation with BHEL
I	Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
J	Preparation of preassembly bay			NOT APPLICABLE
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor/bidder himself			NOT APPLICABLE
L	Arranging the materials required for preassembly			NOT APPLICABLE

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – IV : T&Ps AND MME TO BE DEPLOYED BY CONTRACTOR**

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**A: TOOL & PLANTS**

SN	DESCRIPTION	
1	<b>A) T &amp;Ps For Structural Works</b>	
	<b>S.NO</b>	<b>Major T&amp;P items</b>
	<b>Qty</b>	
	1.	18 T Crawler crane
		As per requirement
	2.	Hydra (8 / 10 T Cap.)
		02Nos.
	3.	Radial drill machine
		02Nos.
	4.	Pillar drill m/c
		02Nos.
	5.	Drill M/C NW 10
		02Nos.
	6.	Submerged Arch Welding machine
		01nos.
	7.	Welding Rectifier
		01Nos.
	8.	Welding m/c
		02Nos.
	9.	Grinding machine
		02Nos.
	10.	Hand cutting set
		03Nos
	11.	Plasma cutting m/c
		01Nos.
	12.	Hydraulic jack of different capacity
		5Nos.
	13.	Stationery oven
		02Nos.
	14.	Portable oven
		02Nos.
	15.	Chain pulley of different capacity
		02Nos.
	16.	Max puller
		02Nos.
	17.	Electric winch of different capacity
		02Nos.
	18.	DG set of adequate capacity (for power back-up only) in case of power supply failure
		01Nos.
	19.	15t/20t tractor & trailer
		02Nos.
	20.	Air compressor
		As per requirement
	<b>B) T &amp; Ps For Civil Works</b>	
	<b>S.NO</b>	<b>Major T&amp;P items</b>
	<b>Qty</b>	
	1.	Automatic Batching Plant (15 Cum/Hr) – OPTIONAL Successful bidder shall be permitted to go for RMC concrete of desired grade upon approval of BHEL/FSF
		01Nos. (Optional)
	2.	Mini batching plant (5 Cub.m./Hr.)
		01Nos.
	3.	Transit mixer
		01Nos.
	4.	Concrete Pump (15 Cum/Hr min capacity & lift 40M)
		02Nos.
	5.	Vibrators
		6 nos.
	6.	Jack Hammer
		02Nos
	7.	Self priming Dewatering pump of various capacity (Diesel/Electric) From 3 HP to 12 HP
		03Nos.
	8.	Curing / dewatering pump – 1.5 / 2 HP
		03Nos.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – IV : T&Ps AND MME TO BE DEPLOYED BY CONTRACTOR

SN	DESCRIPTION	
9.	Hydraulic Excavator/Poclaim with rock breaker attachment (mule/rock breaker as per requirements)	01Nos
10.	JCB	01No.
11.	Ply Shuttering board with adequate supporting structure –(Old steel shuttering plates will not be allowed).	2000 Sqm.
12.	MS Pipe Scaffolding, Clamps / Swivel Couplers (One/Two Way), Props, Jacks, Screw Heads, Wooden Battens, Planks, Bullies, H Frames, Tie Rods with Nuts, Adjustable Achro Span	As per requirement to work simultaneously in all fronts.
13.	Dumper	05Nos.
14.	Reinforcement bending machine	02Nos.
15.	Reinforcement cutting machine	02Nos.
16.	Power driven earth rammer	03Nos.
17.	Electric Winch with hoist	As per requirement
18.	Total Station	01Nos.
19.	Auto level & staff	02Nos.
20.	Concrete Cube Moulds	24Nos.
21.	Tractor with trolley	02Nos.
22.	Road Roller/Vibro roller	01No. as & when required
23.	Water Tanker	01 No.
24.	Poles, Cables, Halogens,Bulbs Etc For Area Illumination	As per requirement
25.	COMPUTER(with Latest OS) with printing & CD writing facility	2 sets
26.	Communication Facilities	As per requirement
<p><b>C) Civil Work: FIELD QUALITY LAB EQUIPMENTS - OPTIONAL</b>  <i>Testing may be tied up by bidders outside in approved Lab.</i></p> <p>(a) Automatic Compression Testing Machine (2000KN) – 1NO</p> <p>(b) Cube Moulds(150MM SIZE) – 24 NOS</p> <p>(c) Slump Cone With Tamping Rod – 01NO</p> <p>(d) Sieves Of Different Sizes For Fine &amp; Coarse Aggregate Testing</p>		

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – IV : T&Ps AND MME TO BE DEPLOYED BY CONTRACTOR**

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SN	DESCRIPTION
	(e) Core Cutter Test Apparatus – 03SETS (f) Oven (CAPACITY 120LTR, RANGE – 250C) – 1NO (g) Moisture Container(STEEL/ALUMINIUM) – 05NOS (h) Rapid Moisture Meter – 2NOS (i) Vicat Apparatus With Plungers For Cement Testing – 1SET (j) Cube Moulds (70MM SIZE) – 05NOS (k) Physical Balance – 01NO. (l) Automatic Vibration M/C – 01 NO. (m) Jars – 2 NOS.

**B: MEASURING AND MONITORING DEVICES (MMD):**

AS PER REQUIREMENT TO BE FINALIZED AT SITE.

**NOTE:**

This above list is only indicative and neither exhaustive nor limiting. Quantities indicated above are only the minimum required. Contractor shall deploy all necessary T&P to meet the schedules & as prescribed by **BHEL engineer** and required for completion of work.

**BHEL WILL NOT PROVIDE ANY T & P's FOR THIS WORK**

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – V: T&Ps and MMEs to be deployed by BHEL on sharing  
basis**

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**BHEL WILL NOT PROVIDE ANY T & P's FOR THIS WORK**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

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### 6.1 TIME SCHEDULE & MOBILIZATION

#### 6.1.1 INITIAL MOBILIZATION AND TENTATIVE SCHEDULE

Contractor shall reach site, make his site establishment and be ready to commence the work **within two weeks from the date of fax Letter of Intent** or as per directions of Construction Manager/ Project Manager of BHEL.

**The total contract period for completion of entire work shall be 6 (Six) months from the date of start.**

#### 6.1.2

In order to meet above schedule and other intermediate targets/activities as set **by BHEL engineer in charge** at site, to meet customer requirements/project schedule, contractor shall arrange all necessary resources and work force in consultation with bhel engineer at site to undertake works concurrently in all possible fronts as made available to contractor.

Contractor shall note that individual milestones as above shall be achieved as per schedule furnished above. The date of start of first excavation shall be reckoned as the start of contract period for this purpose.

The contractor shall reach site and establish his site office and mobilize necessary resources well in advance of actual commencement of the contract time schedule as per directions of bhel engineer. The date of commencement for the purpose of clause

**Date of start of work shall be the date on which first excavation work is started.**

The contractor shall complete all the work in the scope of this contract within the contract period.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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### 7.00 Terms of Payment

#### 7.0.1 Progressive Payment for Civil, Structural and Architectural Work.

The percentage of payment for progressive completion of work in various categories of work shall be as under:

#### 7.0.2 Civil And Architectural Work

100% of Item Rate on Pro-Rata Basis against Monthly RA Bills.

#### 7.0.3 STRUCTURAL WORK

100% of Item Rate on Pro-Rata Basis against Monthly RA Bills.

7.0.4 The RA bill payment shall be made as made as per Cl no 10.0 of Chapter –X of SCC ( page-44 ) and as per cl no : 2.6 of GCC .

### **For Ethiopian Bidders:**

Entire payment shall be made in Ethiopian Birr (ETB) as per terms of payment given in Section 12.

### **For Indian Bidders:**

Indian bidders can avail a maximum of 50% of every running bill in Indian Rupees (INR) or US \$ and Remaining amount shall be paid in Ethiopian Birr (ETB).

Work order shall be released in ETB only and for the purpose of payment in INR or US \$, applicable ETB shall be converted into INR or US \$ as per prevailing exchange rate.

#### 7.0.5 EXTRA/ADDITIONAL ITEMS OF WORK:-

As Per GCC.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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### **TAXES, DUTIES, LEVIES**

The rate quoted by bidders should be inclusive of all Taxes & Duties and BHEL will not reimburse any amount on account of Taxes & Duties. Wherever tax exemptions/concessions are allowed to the bidder, the same may be availed by the bidder without attracting any financial implication on BHEL. However, if as per the Ethiopian/ Indian laws, BHEL can avail set off against any tax or duty paid by the bidder, the bidder shall provide necessary documents to BHEL to avail such set off.

All payments to the bidders shall be subject to recovery of all applicable Withholding Tax and / or Tax Deduction at source as per the Ethiopian Laws and /or Indian Law

## SPECIAL CONDITIONS OF CONTRACT (SCC) CHAPTER IX –DRAWINGS

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FOLLOWING DRAWINGS ARE ENCLOSED WITH THE TENDER.

### **Drawings Given by Customer / PED.**

<b>S.No.</b>	<b>Description</b>	<b>Drg.no.</b>	<b>Rev No</b>
1.	General Arrangement of Cooling Tower with Battery Limits	C204525-G-001	03
2.	Layout & RC Details of Footing & Columns	C204525-H-003	03
3.	Civil G.A of cooling tower(2 shts)	C204525-H-004	02
4.	RC Details & Details of Basin Raft ( 3 Sheets )	C204525-H-005	02
5.	Layout & G.A details of beams at curb lvl(2 shts)	C204525-H-007	00
6.	Layout & G.A details of beams at Intermediate Level 1(2 shts)	C204525-C-01	00
7.	Layout & G.A details of beams at Intermediate Level 2(2 shts)	C204525-C-02	00
8.	Layout & G.A details of beams at Drift support lvl(4 shts)	C204525-C-03	00
9.	Rc Details of Precast Drift Eliminator Column	C204525-C-04	00
10.	RC Details of Staircase	C204525-C-017	00
11.	Layout & RCC details of beams at Roof Deck Level	C204525-C-018	00
12.	Rcc Details of Monorail Column & Fanstack Level	C204525-C-019	00
13.	Layout & RC Details of Columns & Walls for Condenser/Bearing Cooling towers(2 shts)	C204525-C-021	00

NOTE: These tender drawings are not hosted in our web site. These drawings shall be available in our office at Nagpur in Hard Copy. Bidders can collect these drawings while purchasing tender specification.

# SPECIAL CONDITIONS OF CONTRACT (SCC)

## CHAPTER X –APPENDIX

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### **Appendix A:** **Tentative Manpower Requirement**

1. Project manager – with adequate experience in Industrial Foundation, Building & Structural Works, Power Plant Civil & Structural Works.
2. Experienced Civil Engineers – 2 heads
3. Experienced Supervisors - 3 heads
4. Planning & Billing Engineer – 01 heads
5. Stores, Gate Pass – 02 heads
6. Accounts & Administration- 01no
7. Quality Control Engineer – 1 head
8. Safety Engineer – 1no
9. Surveyor – 02 head capable to handle total station
10. Operator, Licensed Electrician, Mechanic - As per requirement
11. Experienced Carpenters & Helpers – lot for similar nature of work
12. Experienced Bar Benders & Helpers – lot for similar nature of work
- 13.** Security Guards (Round The Clock) – As per requirement