# T E N D E R  S P E C I F I C A T I O N

# NO: BHE/PW/PUR/BSI1-CVL/886

**CONSTRUCTION OF RCC FOUNDATIONS FOR STEAM TURBINE WITH TURBO BLOWER AND ITS AUXILIARIES, AIR INLET FILTERS, MISCELLANEOUS EQUIPMENT FOUNDATIONS, PIPE RACK , PLATFORMS, PAVING AND ASSOCIATED STRUCTURAL WORKS,PILING WORK**

**AT**

**3 NOS. TURBO BLOWER STATION, SAIL-BHILAI,**

**DIST: DURG,**

**CHHATISGARH.**

# 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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This document ( i.e. NIT & Vol-I A ) is hosted in BHEL web page (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) separately as a part of Technical Bid.

@: **Price bid is** issued as a separate hard copy booklet 'Tender Specifications – Volume-II (Price Bid-749 )'. Hosted in BHEL web page (www.BHEL.com) separately as titled **"PRICE BID-749 "**

**NOTE : Vol-IE-886 contains Technical Specifications & Drawings. We are unable to host these documents in our web site. As such bidders are requested to collect these documents from our Nagpur office and submit offer with complete tender specifications. In case bidder submit incomplete offer, then offer of the bidder shall not be considered for evaluation and bidders offer shall be disqualified.**

# T E N D E R  S P E C I F I C A T I O N

# NO: BHE/PW/PUR/BSI1-CVL/886

**CONSTRUCTION OF RCC FOUNDATIONS FOR STEAM TURBINE WITH TURBO BLOWER AND ITS AUXILIARIES, AIR INLET FILTERS, MISCELLANEOUS EQUIPMENT FOUNDATIONS, PIPE RACK , PLATFORMS, PAVING AND ASSOCIATED STRUCTURAL WORKS,PILING WORKS**

**AT**

**3 NOs TURBO BLOWER STATION, SAIL-BHILAI,**

**DIST: DURG,**

**CHHATISGARH.**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR TENDER SUBMISSION Refer Notice Inviting Tender .

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

Ref: NO: BHE/PW/PUR/BSI1-CVL/886 Dt: 13/08./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 | **BHE/PW/PUR/BSI1-CVL/886** | |
| ii | Broad Scope of job | **CONSTRUCTION OF RCC FOUNDATIONS FOR STEAM TURBINE WITH TURBO BLOWER AND ITS AUXILIARIES, AIR INLET FILTERS, MISCELLANEOUS EQUIPMENT FOUNDATIONS, PIPE RACK , PLATFORMS, PAVING AND ASSOCIATED STRUCTURAL WORKS<br>AT<br>3 NOs TURBO BLOWER STATION, SAIL-BHILAI,<br>DIST: DURG,<br>CHHATISGARH.** | |
| iii | **DETAILS OF TENDER DOCUMENT** | | |
| a | Volume-IA | *Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc* | *Applicable* |
| b | Volume-IB | *Special Conditions of Contract (SCC)* | *Applicable* |
| c | Volume-IC | *General Conditions of Contract (GCC)* | *Applicable* |
| d | Volume-ID | *Forms and Procedures* | *Applicable* |
| e | Volume-II | *Price Schedule (Absolute value).* | *Applicable* |
| iv | **Issue of Tender Documents** | ***1. Sale from BHEL PS Regional office at :***<br>***Start :13/08/ 2011***<br>***Closes: 26/08/2011 , Time :17.00 Hrs***<br>**2. From BHEL website (www.BHEL.com)** | *Applicable* |

| | | | |
|---|---|---|---|
| | | Tender documents can however be downloaded from website till due date of submission | |
| v | **DUE DATE & TIME OF OFFER SUBMISSION** | ***Date : 29/08/ 2011 , Time :15.00Hrs***<br>***Place : BHEL OFFICE, NAGPUR*** | *Applicable* |
| vi | **OPENING OF TENDER** | ***1 hours after the latest due date and time of Offer submission***<br>*Notes:*<br>*(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.*<br>*(2) Bidder may depute representative to witness the opening of tender* | *Applicable* |
| vii | **EMD AMOUNT** | *Rs 2,00,000/- (Rupees Two Lakhs Only)* | *Applicable* |
| viii | **COST OF TENDER** | *Rs 2000/-.* | *Applicable* |
| ix | **LAST DATE FOR SEEKING CLARIFICATION** | *Date: (Atleast 5 days before the due date of offer submission)*<br>*Along with soft version also, addressing to undersigned & to others as per contact address given below* | *Applicable* |
| x | **SCHEDULE OF Pre Bid Discussion (PBD)** | *Date : Not applicable.* | *Not applicable.* |
| xi | **INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)** | *Not Applicable* | *Not Applicable* |
| xii | **Latest updates** | Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.BHEL.com -->Tender Notifications →View Corrigendums) **and not in the newspapers**. 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.**

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 |
|---|---|---|
| | **Part-I A** | |
| | **ENVELOPE – I superscribed as** :<br>PART-I (TECHNO COMMERCIAL BID)<br>TENDER NO :<br>NAME OF WORK :<br>PROJECT:<br>DUE DATE OF SUBMISSION:<br><br>**CONTAINING THE FOLLOWING**:- | |
| i. | Covering letter/Offer forwarding letter of Tenderer. | |
| ii. | Duly filled-in `No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.<br><br>**Note:**<br>a. In case of any deviation, the same should be submitted separately for technical & 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.<br>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.<br>i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL<br>ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender | |
| iii. | Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.<br><br>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 : Technical 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. | |

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

| | | |
|---|---|---|
| | **PART-II** | |
| | **PRICE BID** consisting of the following shall be enclosed | |
| | **ENVELOPE-III**<br>superscribed as:<br>PART-II (PRICE BID)<br>TENDER NO :<br>NAME OF WORK :<br>PROJECT:<br>DUE DATE OF SUBMISSION:<br><br>**CONTAINING THE FOLLOWING** | |
| 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) | |

| | | |
|---|---|---|
| | **OUTER COVER** | |
| | **ENVELOPE-IV** (MAIN ENVELOPE / OUTER ENVELOPE)<br>superscribed as:<br>TECHNO-COMMERCIAL BID, PRICE BID & EMD<br>TENDER NO:<br>NAME OF WORK:<br>PROJECT:<br>DUE DATE OF SUBMISSION: | |

| | | |
|---|---|---|
| | **CONTAINING THE FOLLOWING:** | |
| i | ○ Envelopes I<br>○ Envelopes II<br>○ Envelopes III | |

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 1st 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'
- 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";
- a) If 'P' = 0-1, "A" will be equal to '3'
- b) If 'P' = 2-3, "A" will be equal to '2'
- c) If 'P' = 4-5, "A" will be equal to '1'
- d) 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:
- a) PS ER's Rating 'R**e**r' = $(X_1 + X_2 + .. + X_n)$ divided by n
- b) PS WR's Rating 'R**w**r' = $(X_1 + X_2 + .. + X_n)$ divided by n
- c) PS SR's Rating 'R**s**r' = $(X_1 + X_2 + .. + X_n)$ divided by n
- d) PS NR's Rating 'Rnr' = $(X_1 + X_2 + .. + X_n)$ divided by n

e) **Over all Power Sector Region Rating** '$R_{BHEL}$'= (Rer+ Rwr+ Rsr+ Rnr) divided by 4

(where "$X_1$, $X_2$, $X_3$,…$X_n$" 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 **($R_{BHEL}$):**

a) If $R_{BHEL}$ is 80% and above, "B" will be equal to '6'
b) If $R_{BHEL}$ is > 70% < 80%, "B" will be equal to '5'
c) If $R_{BHEL}$ is > 60% < 70%, "B" will be equal to '4'
d) If $R_{BHEL}$ 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:**

**a) 6 or above : Considered 'Qualified' for the job under tender**
**b) Less than 6: Considered 'NOT Qualified' for the job under tender**

IV. **Explanatory note**:

a) Similar work means GTG,GTG,BOILER or Turbine or Civil or Electrical or CI, etc irrespective of rating of Plant
b) 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 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.

**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
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.

**ANNEXURE - 1**

## PRE QUALIFYING CRITERIA

| | |
|---|---|
| JOB | **CONSTRUCTION OF RCC FOUNDATIONS FOR STEAM TURBINE WITH TURBO BLOWER AND ITS AUXILIARIES, AIR INLET FILTERS, MISCELLANEOUS EQUIPMENT FOUNDATIONS, PIPE RACK , PLATFORMS, PAVING AND ASSOCIATED STRUCTURAL WORKS AT 3 NOs TURBO BLOWER STATION, SAIL-BHILAI, DIST: DURG, CHHATISGARH.** |
| TENDER NO | **BHE/PW/PUR/BSJI1-CVL/886** |

| 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) | **NOT APPLICABLE FOR THIS TENDER** | |
| B | Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable) | **Shall be applicable for bid evaluation from 1st Jan- 2011 onwards )** | |
| C | **Technical**<br><br>**Bidders shall essentially meet all the Qualifying Requirements C (i.e. C.1 and C3 or C2 and C.3. ) and D.1, D.2 , D.3 & E as under.**<br><br>**1)** Bidder must have successfully completed Civil Work of RCC Framed Plant Building **/** Equipment Foundations/ Industrial Building in Power Plant or in any industrial projects in the last seven years as on 30/07/2011 as below.<br>i) Single work order **of Rs 4.00 Crore** or of more value.<br>**OR**<br>ii) Two separate work orders of **Rs 2.50 Crore** .<br>**OR**<br>iii) Three separate work orders of **Rs 2.00 Crore** .<br>**OR**<br>**2)** Bidder must have executed any "Grade" of concrete work in Industrial Buildings / equipments foundations/ Construction of Warehouses/ Storage shed ,plant Road, Culverts , trenches in the last seven years as on 30/07/2011 as below. | | |

| | | | |
|---|---|---|---|
| | i) Concrete work of 1245 M3 in one order<br>ii) Concrete work of 780 M3 against two each separate orders<br>iii) Concrete work each of 620 M3 against three each separate orders<br>i)<br>**AND**<br>**3)** Bidder must have successfully executed "Bored cast in-situ RCC Piles" of minimum 50 nos with a depth of 10 Meter or more in single work order in the last seven years as on 30/07/2011 .<br><br>However the Prime Bidder (who is submitting the offer) do not satisfy above criteria (i.e. C.3 ) for **Piling work,** may have tie up with an experienced agency meeting the above qualifying requirement. In such case, the prime bidder shall also submit along with the technical bid proper documents related to experience of the agency ( i.e. work order, work completion certificate & profile of organization ) to meet the QR. Prime bidder has to submit the copy of tie up agreement executed between two agencies on Rs 50/- non judicial stamp paper duly certified by Notary as per Format No- F-22 of Vol- BCD of tender. | | |
| D.1 | **Financial TURNOVER**<br>Bidders must have achieved an average annual financial turnover (Audited) of **Rs 150.00 Lakhs** or more over last three Financial Years (FY) i.e. 2008-2009, 2009-2010, 2010-2011 or for 2007-2008, 2008-2009 and 2009-2010 if Annual Accounts for FY 2010-11 are not audited . | | |
| D.2 | NETWORTH<br>Net worth of the Bidder based on the latest Audited Accounts as furnished for 'D1' above should be positive | | |
| D.3 | PROFIT<br>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. | | |

| | | | |
|---|---|---|---|
| E | Approval of Customer<br>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. | APPLICABLE | |
| F | Consortium criteria | APPLICABLE | |
| | **Explanatory Notes for QR 'A'**<br>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<br>2. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as given above along with all annexure<br>**3. BIDDER SHOULD ESSENTIALLY MEET ALL THE PQR ( i.e. POR- C, D1,D2,D3 & E ) AS ABOVE TO GET QUALIFIED AGAINST THIS TENDER** | | |

**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..**

**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<br>Designation:<br>Telephone No:<br>Mobile No:<br>Fax No: |
| 4 | EMD DETAILS | DD No: Date :<br>Bank : Amount:<br>Please tick ( √ ) whichever applicable:-<br>ONE TIME EMD / ONLY FOR THIS TENDER |

| | | APPLICABILITY | BIDDER REPLY |
|---|---|---|---|
| 6 | Whether the format for compliance with **PRE QUALIFICATION CRITERIA** (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/ | YES/NO |
| 10 | Integrity Pact | **Not Applicable** | ----- |
| 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 |
| 16 | Bank Account Details for E-Payment submitted | Applicable | YES/NO |
| 17 | Capacity Evaluation of Bidder for current Tender | Applicable | ------ |

| | | | |
|---|---|---|---|
| 18 | **Tie Ups / Consortium Agreement against this tender** | **Applicable for this tender** | ------- |
| 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 :**

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

Rev 00
6th
JULY

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED

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**INTROUCTION**

## 01. GENERAL:-

**Steel authority of India Limited (SAIL)** is going to install 3 Nos Turbo Blower Station at Sail-Bhilai Steel Plant at Bhilai, District Durg, and State: Chhattisgarh, India. BHEL has been awarded EPC Main Civil Package comprising of Design, Engineering, Manufacture, Supply, Transportation, Comprehensive Insurance, Erection, Testing and Commissioning, and Conducting Performance Guarantee (PG) Test of all Units and handing over of the project within 27 months from zero date / 11/10/2010.

## 02. SITE CONDITIONS AND INFRASTRUCTURE FACILITIES

### 02.01 Site conditions

### 02.01.01 Location:-

Bhilai steel plant (BSP), SAIL is located at Bhilai in Durg District of the state of Chhattisgarh in the central region of India. The site lies between $21.15^0$ North latitude and $81.22^0$ East longitude. The nearest convenient rail head is drug which is about 12km west of Bhilai. Bhilai/drug stations are on the Howrah – Mumbai rail line of SEC Railway of the Indian Railways

**The location of Bhilai is as follows:-**

- From New Delhi, the national capital - 1359 kms
- From Kolkata - 868 kms
- From Chennai - 1269 kms
- From Mumbai - 1100 kms
-

The distance from state capital Raipur to Bhilai Steel plant is 30km. It is well connected by rail and road network. The nearest national highways are NH 6 & NH 43 Crossing through Raipur.

### 02.01.02 Meteorological data

In the absence of meteorological data at Bhilai / drug, the data of the state capital Raipur, 30kms away, are considered. The meteorological details at Raipur are given below:-

***Ambient Temperature***

- Absolute maximum : $47.7^0$ C
- Absolute minimum : $3.9^0$ C
- Highest of mean monthly : $45.2^o$ C

***Ambient Air***

- Ambient air quality : Industrial

***Relative Humidity***

- Maximum : 100%

- Minimum : 7%
- Climate : Tropical Humid

***Rainfall***

- Heaviest rainfall in 24 hours : 370.3 mm
- Annual Average : 1288.8 mm

***Wind***

- Predominant wind direction : SW to NE (Oct-Feb) and west to East (Mar-Sep)
- Mean wind speed : 6.8 kmph
- Maximum Wind speed : 45 kmph

***Altitude***

- Average altitude of the land is 300 M above MSL

Temperature inside shop premises is generally taken as 5 above Ambient, unless otherwise specified.

**Infrastructure Facilities Outside the Plant**

**Railway**

Bhilai Steel Plant is connected to Indian Railways network via Bhilai/Durg Station of SEC Railway on the Howrah-Mumbai line. The track gauges of SEC Railways as well as of the plant track are standard broad gauge i.e. 1676 mm

**Road**

The Plant is well connected to the country by Road. National Highways NH6 & NH43 both pass through Raipur.

**Sea Port**

The nearest sea port is Vishakhapattanam, approximately 550 km away from site by rail.

**Air Traffic**

The nearest air port connected to the national network is mana at Raipur, 30kms away.

**Infrastructure Facilities Inside the plant**

**Railway**

The track gauge for the entire plant corresponds to the Indian Railway standard broad gauge i.e. 1676 mm

**Road**

Main road and side Road of the plant shall have roadways of 7.0 M And 4.0 M width respectively and temporary roads provided during the construction stage shall be designed to cater the needs of movement of heavy construction vehicles.

## 2.0 SCOPE OF WORK

### 2.0.01 Micro Grading:

After the completion of civil work the entire area shall be micro graded up to required levels by the contractor to achieve the ground profile as per pavement level requirement at no extra cost. Filling/ cutting required to bring the site up to the required finished levels is in the scope of the contractor. Extra earth required to make up to paved levels shall be arranged by the contractor at his own cost from approved borrow areas.

### 2.0.02

Construction o RCC Bored-cast in-situ socket piles up to required depth in all kind of strata, Chipping/ breaking of Concrete pile up to the cut-off level (Min. 1.00M above cut-of level) and exposing reinforcement for embedding in pile cap (foundation), Construction of Pile Caps/ foundations and all subsequent civil works above the cut-off level of pile including shallow foundation wherever piling is not necessary shall be executed under the scope of this contract.

The work to be performed under the scope of this tender mainly consists of but not limited to complete Civil, structural and Architectural work including all materials, T&Ps, manpower and their maintenance for specified period of the following plant buildings, structural equipment foundations and other miscellaneous structures.

For indicative building sizes and number of equipments refer plot plan, please note that these are tentative and likely to change.

1) **Installation And Testing of RCC bored cast-in-situ socket piles.**

2) **Construction of foundations for the following Equipment.**

   **a)** Steam Turbine with Turbo Blower & its auxiliaries- 3Nos.
   **b)** Air inlet filter for blowers and other miscellaneous skids - 3 Nos.
   **c)** Miscellaneous other equipments as per Mechanical, Electrical & Instrumentation scope.

3) **Construction of foundation & super structure for the following**
   **d)** Platforms for blower silencer
   **e)** Pipe rack

4) **Construction of Misc. Structures & Services:-**
   **a)** Concrete Paving in operational areas.
   **b)** Structural platforms, monorail beams, walkways, crossovers, handrails etc. for miscellaneous equipments, piping etc.
   **c)** Final grading of site upto +/- 500mm.

## 2.0.03 THE WORK WILL INVOLVE.

All civil, structural and architectural works connected with the above mentioned structures such as earth work, concrete work, brick work, steel work, embedment, plastering and painting, wooden and metal doors, windows and partitions, waterproofing, flooring, plumbing, road work, drainage, grouting etc.

## 2.0.04 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 of Bored cast-in-situ piles, Pile caps / Raft / Foundation with pedestals, foundation and footing for lightly loaded 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 brick work, 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 concrete structures and foundations as directed by the Engineer for his checking and approval.
5) Preparation of detailed working drawings and bar bending schedules for all reinforced concrete work and getting them approved by the BHEL Engineer.
6) Taking delivery from BHEL stores, fabrication and fixing structural steelwork for cable trench covers, plates etc.
7) Fabrication supply and fixing of anchor bolts, sleeves, fixing frames, embedment etc. in concrete.
8) Supply of all instruments and personnel for conducting necessary tests at site as specified/as directed by the Engineer.
9) Making appropriate fabrication drawing as per agreed schedule before starting fabrication work for any structural GA drawing.
10) Taking delivery from BHEL stores fabrication and erection of structural steel work including all interfacing works and miscellaneous works, supply of steel will be made by BHEL. The nature of work shall include columns , beams, splicing of steel works as needed, bracings, sheeting runners , sag rods, ties struts, walkways, galleries, stairs, ladders, hand railing , floor gratings, chequered plate work, M.S pipes, equipment supporting platform, and all other structures required for the successful completion of the project.

**2.0.05 GENERAL**

1) The drawings enclosed with this tender 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 considered as the exact construction drawings.
   **Further this is to be noted that 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.

3) The detail scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements.

4) All Construction and building related materials shall be purchased from the Customer / SAIL approved manufactures only. Contractor has to take prior approval from BHEL/SAIL before procurement of Cement, steel and all Construction and building related materials.

**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" 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 WORKS 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 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.**

**SECTION-A: LIST OF TECHNICAL SPECIFICATIONS.**

| Sl. No | Description | Specification number | Rev | Pages |
|---|---|---|---|---|
| 1. | GENERAL SCOPE | PEDC/STD.SPEC/001 | 0 | 4 |
| 2. | PROPERTIES. STORAGE&HANDLING OF COMMON BUILDING MATERIALS | PEDC/STD.SPEC/002 | 0 | 5 |
| 3. | EARTHWORK IN EXCAVATION & BACKFILLING | PEDC/STD.SPEC/003 | 0 | 23 |
| 4. | CEMENT CONCRETE-PLAIN& REINFORCED | PEDC/STD.SPEC/004 | 0 | 67 |
| 5. | FABRICATION & STRUCTURAL STEEL WORK | PEDC/STD.SPEC/005 | 0 | 30 |
| 6. | ERECTION OF STRUCTURAL STEEL WORK | PEDC/STD.SPEC/006 | 0 | 18 |
| 7. | MISCELLANEOUS STEEL WORK | PEDC/STD.SPEC/007 | 0 | 7 |

| | | | | |
|---|---|---|---|---|
| **8.** | MISCELLANEOUS METAL | PEDC/STD.SPEC/008 | 0 | 6 |
| **9.** | PAINTING ON STRUCTURAL STEEL | PEDC/STD.SPEC/009 | 0 | 5 |
| **10.** | INSERTS / EMBEDMENTS IN CONCRETE WORK | PEDC/STD.SPEC/0010 | 0 | 3 |
| **11.** | GROUTING | PEDC/STD.SPEC/0011 | 0 | 4 |
| **12.** | FINISH TO MASONRY &CONCRETE | PEDC/STD.SPEC/0013 | 0 | 8 |
| **13.** | PREMOULDED BITUMINOUS JOINT FILLER & SEALING COMPOUND. | PEDC/STD.SPEC/0025 | 0 | 2 |
| **14.** | DEMOLITION & DISMANTLING | PEDC/STD.SPEC/0026 | 0 | 5 |
| **15.** | TYPE AND MAKE OF MATERIALS TO BE USED | PEDC/STD.SPEC/0027 | 0 | 2 |
| **16.** | CONCRETE PAVEMENTS. | PEDC/STD.SPEC/0035 | 0 | 11 |
| **17.** | PILING WORKS | | 0 | |
| **18.** | a) PART-I PREAMBLE | | | 2 |
| | b) PART-II GENERAL REQUIREMENTS | | | 4 |
| | c) PART-III SPECIFIC REQUIREMENTS | | | 8 |
| | d) PART-IV STANDARD SPECIFICATIONS FOR MATERIALS FOR REINFORCED CONCRETE PILES. | | | 8 |
| | e) PART- V STD SPECIFICATION FOR TESTING OF CONCRETE PILES | | | 11 |
| | f) PART- VI STANDARD SPECIFICATION FOR CONSTRUCTION & INSTALLATION OF RCC BORED CAST IN SITU PILES | | | 8 |

**2.0.08 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.
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 levelling etc., required for commencement of site activities. No separate payment will be made towards the same.
6) The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, form 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 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.

**2.0.09 HIERARCHY**

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

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

**2.0.010** 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:

1. **Draw Construction Power from Customer's Given Point at One Location Inside The Plant Including All Materials.**
2. **Draw Construction Water from Customer's given Point at one location inside the plant including all materials.**

## 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**. 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. All quality checks and protocol shall be jointly signed by BHEL, SAIL and Contractor's representative.

## 2.0.4 Procurement of Materials by Successful Contractors and Testing:

Material required for the entire job like cement, steel, sand, aggregates, , painting & finishing material, 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. 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/SAIL** to ascertain the quality if insisted by **BHEL/BHEL's customer.**

Approved Manufacturers for Procurement of Reinforcement Steel & Structural Steel

1) SAIL,
2) RINL,
3) TISCO,
4) JINDAL

All Steel Shall Conform To Relevant BIS Standard. Preference shall be given to SAIL materials only & in case of non availability of required section/sizes, steel from other manufacturers shall be allowed with prior permission.

Preferably Ordinary Portland Cement (OPC) of grade 43/53 conforming to IS 269 – 1989 shall be used in all the concrete works. Approved manufacturers for procurement of cement.

1) ULTRATECH
2) ACC
3) BIRLA GOLD WITH A PRIOR APPROVAL

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. The variation in price of all the plant materials supplied by the contractor shall be subject to the relevant price variation clause (PVC).

## 2.0.5 Other Responsibilities in General

**2.0.5.1**
Contractor shall be responsible for proper usage of their materials like cement, steel, and aggregates etc. As per standard requirement of is codes and control the wastage within limit. No compensation shall be made for any excess consumption under any circumstances.

**2.0.5.2**
Contractor shall be fully responsible for any delay in progress of work due to delay/short supply of material to be procured by them for this job.

**2.0.5.3**
Rusting of steel should be avoided to the maximum extent possible without hampering the continuity of construction/erection. In case rusting of steel occurs rendering the same unusable, the contractor shall remain responsible to make good the loss at his own cost.

**2.0.5.4**
As-built drawing: contractor shall arrange to incorporate all changes, in AFC drawings, made as per the site requirement on completion of work and submit the same to BHEL for preparing final as-built drawing. This shall form part of work and rates quoted shall be inclusive of this.

**2.0.5.5**
The contractor in the event of engaging 10 or more workmen will obtain independent licence under the contract labor (regulation and abolition) act 1970 from the concerned authorities based on the certificate (form-v) issued by the principal employer/customer.

**2.0.5.6**
It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc. Necessary coordination with SAIL officials is the responsibility of the contractor. Contractor to follow all the procedures lay down by SAIL for making gate passes.

**2.0.5.7**
BHEL/SAIL may insist upon witnessing the regular payment to the labor. They may also like to verify the relevant records for compliance with statutory requirements. Contractor shall enable such facilities to BHEL /SAIL

**2.0.5.8**
Contractor shall also comply with the provisions of ESI act in vogue and submit evidence thereof to BHEL site in charge. Also all other employees benefits to be borne by the contractor as per the labor laws. Contractor shall produce necessary certificates towards their compliance with such statutes and payment of all statutory dues.

**2.0.5.9**
Contractor shall also comply with the requirements of local authorities/ project authorities calling for police verification of antecedents of the workmen, staff etc.

**2.0.5.10**
Where permitted, by BHEL/SAIL, to work beyond normal working hours, the contractor shall arrange necessary gate passes.

## 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 SAIL BHILAI. Name, address & contact point of site is as below:*

Shri V.K. Kuhikar
Construction Manager
BHEL Site Office – SAIL, BHILAI,
CHHATISGARH.
Mob: 09425239729

| Sl.No | Description<br><br>PART I | Scope / to be taken care by | | *Remarks* |
|---|---|---|---|---|
| | | BHEL | Bidder | |
| 3.1 | ***ESTABLISHMENT*** | | | |
| 3.1.1 | ***FOR CONSTRUCTION PURPOSE:*** | | | |
| 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 | ***FOR LIVING PURPOSES OF THE BIDDER*** | | Yes | Contractor has to make his own arrangements for space, shelter and transportation of labors as per their requirement |
| a | Open space for labour colony (as per availability) | | Yes | |
| b | Labour Colony with internal roads, sanitation, complying with statutory requirements | | Yes | |
| 3.2.0 | ***ELECTRICITY*** | | | |
| 3.2.1 | ***Electricity for construction purposes 3 Phase*** *415/440 V* ***(To be specified whether chargeable or free)*** | | | |

| Sl.No | Description<br><br>PART I | Scope / to be taken care by | | *Remarks* |
|---|---|---|---|---|
| | | BHEL | Bidder | |
| a | Single point source | Yes | | Construction power will be provided free of cost at one point at a distance of approx. 300 M. Further distribution shall be in bidder's scope. |
| | | | | |
| b | Further distribution including all materials, Energy Meter, Protection devices and its service | | Yes | |
| c | Duties and deposits including statutory clearances if applicable | | | |
| 3.2.2 | ***Electricity for the office, stores, canteen etc of the bidder.*** | | | |
| a | Single point source | Yes | | Power will be provided free of cost at one point at an available distance. Further distribution shall be in bidder's scope. |
| 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 | ***Electricity for living accommodation of the bidder's staff, engineers, supervisors etc*** | | Yes | Contractor has to make his own arrangement. |
| a | Single point source | | Yes | |
| b | Further distribution including all materials, Energy Meter, Protection devices and its service | | Yes | |
| c | Duties and deposits including statutory clearances if applicable | | Yes | |

| Sl.No | Description<br><br>PART I | Scope / to be taken care by | | *Remarks* |
|---|---|---|---|---|
| | | BHEL | Bidder | |
| 3.3.0 | ***WATER SUPPLY*** | | | |
| 3.3.1 | ***For construction purposes: (to be specified whether chargeable or free)*** | | | |
| a | Making the water available at single point | Yes | | Construction water will be provided free of cost at one point at a distance of approx. 300M.<br><br>Further distribution shall be in bidder's scope. |
| b | Further distribution as per the requirement of work including supply of materials and execution | | Yes | |
| 3.3.2 | ***Water supply for bidder's office, stores, canteen etc*** | | | |
| a | Making the water available at single point | | Yes | Contractor has to make his own arrangement. |
| b | Further distribution as per the requirement of work including supply of materials and execution | | Yes | |
| 3.3.3 | ***Water supply for Living Purpose*** | | | Contractor has to make his own arrangement. |
| 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 | ***LIGHTING*** | | | |

| Sl.No | Description<br><br>PART I | Scope / to be taken care by | | Remarks |
|---|---|---|---|---|
| | | BHEL | Bidder | |
| a | For construction work (supply of all the necessary materials)<br>1. At office/storage area<br>2. At the preassembly area<br>3. At the construction site /area | | Yes | |
| b | For construction work (execution of the lighting work/ arrangements)<br>1. At office/storage area<br>2. At the preassembly area<br>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 | |
| 3.5.0 | ***COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER*** | | | |
| a | Téléphone, fax, internet, intranet, e-mail etc | | Yes | |
| 3.6.0 | ***COMPRESSED AIR wherever required for the work*** | | Yes | |
| 3.7.0 | ***Demobilization of all the above facilities*** | | **YES** | |
| 3.8.0 | ***TRANSPORTATION*** | | | |
| a | For site personnel of the bidder | | Yes | |
| b | For bidder's equipments and consumables (T&P, Consumables etc) | | Yes | |

| Sl.No | Description<br><br>PART II<br><br>***3.9.0 ERECTION FACILITIES*** | Scope / to be taken care by | | *Remarks* |
|---|---|---|---|---|
| | | **BHEL** | **Bidder** | |
| 3.9.1 | Engineering works for construction: | | | NOT APPLICABLE |
| a | Providing the erection/constructions drawings for all the equipments covered under this scope | Yes | | **For Details Pl refer Chapter-IX-** |
| 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. |
| 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 Sl No. e | | Yes | In consultation with BHEL |
| h | Daily erection / work plan based on Sl No. g | | Yes | In consultation with BHEL |

| Sl.No | Description<br><br>PART II<br><br>***3.9.0 ERECTION FACILITIES*** | Scope / to be taken care by | | *Remarks* |
|---|---|---|---|---|
| | | **BHEL** | **Bidder** | |
| 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 |

**A: TOOL & PLANTS**

| SN | DESCRIPTION |
|---|---|
| 1 | **(a) T &Ps FOR STRUCTURAL WORKS** |

| SL | Major T&P items | Qty |
|---|---|---|
| 1. | 40/45 T Crawler crane | As per requirement |
| 2. | 18 T Crawler crane | As per requirement |
| 3. | Hydra (8 / 10 T Cap.) | 01No. |
| 4. | Radial drill machine | 04Nos. |
| 5. | Pillar drill m/c | 03Nos. |
| 6. | Drill M/C NW 10 | 12Nos. |
| 7. | Submerged Arch Welding machine | 5nos. |
| 8. | MIG welding machine | 5Nos. |
| 9. | Welding Rectifier | 5Nos. |
| 10. | Welding m/c | 6Nos. |
| 11. | Grinding machine | 10Nos. |
| 12. | Portable diesel welding M/C | 01Nos. |
| 13. | Pug cutting m/c | 02Nos. |
| 14. | Power Driven HSFG bolt tightening m/c | As per requirement |
| 15. | Hand cutting set | 10Nos |
| 16. | Plasama cutting m/c | 01No. |
| 17. | Hydraulic jack of different capacity | 10Nos. |
| 18. | Stationery oven | 02Nos. |
| 19. | Portable oven | 04Nos. |
| 20. | Chain pulley of different capacity | 5Nos. |
| 21. | Max puller | 6Nos. |
| 22. | Electric winch of different capacity | 02Nos. |
| 23. | DG set of 160KVA for backup supply during power failure | 01No. |
| 24. | Hand winch 5t CAP. | 05Nos. |
| 25. | Screw jack | 10Nos. |
| 26. | 15t/20t tractor & trailor | 02Nos. |
| 27. | Air compressor | As per requirement |
| 28. | Ultrasonography testing M/c for str. Steel | As per requirement |
| 29. | Radiography sources | As per requirement |
| 30. | Fabrication Bed | As per requirement |

| SN | DESCRIPTION |
|---|---|

**(b) T & Ps FOR CIVIL WORKS**

| | | |
|---|---|---|
| 01 | Mini batching plant immediate required for piling RCC works | 02No. |
| 02 | Concrete Pump (30 Cum/Hr min capacity & lift 70M) | 01No. |
| 03 | Air Compressor | 01No. |
| 04 | Self priming Dewatering pump 5 HP (Diesel/Electric) | 02Nos. |
| 05 | Submersible Dewatering pump 5 HP | 01No.. |
| 06 | Self priming Dewatering pump 10 HP | 01No.. |
| 07 | Self priming Dewatering pump 2 HP | 01No. |
| 08 | Sludge Pump – Submersible | 01No.. |
| 09 | Curing / dewatering pump – 1.5 / 2 HP | 01No. |
| 10 | Hydraulic Excavator /Poclain with rock breaker attachment (mule/rock breaker as per requirements) | 01No. |
| 11 | Ply Shuttering board with adequate supporting structure (Old steel shuttering plates will not be allowed). | As per requirement. |
| 12 | Dumper /Tippers | 03Nos. |
| 13 | Reinforcement bending machine | 01No. |
| 14 | Reinforcement cutting machine | 01No. |
| 15 | MS scaffolding pipe with matching nos. of couplers | 600 RM |
| 16 | Power driven earth rammer | 02Nos. |
| 17 | a) Compression testing machine (200 T cap.) | 01No.. |
| 18 | b) Other civil lab equipment | IMMEDIATELY (along with above) |
| 19 | a) 01 Nos. Electric Winch with hoist | IMMEDIATELY (along with above) |
| 20 | b) Balance winches as per requirement | |
| 21 | Total Station (Survey Instruments) | 01No. |
| 22 | Auto level & staff | 01No. |
| 23 | Concrete Cube Moulds | 24Nos. |

| SN | DESCRIPTION |
|---|---|

| | | |
|---|---|---|
| 24 | JCB | 01No. |
| 25 | 02 Nos. Trailors/tractor | 01No. |
| 26 | Jack hammer | 02Nos. |
| 27 | Conventional mixer machine | 01 No. |
| 28 | Water tanker | 01 Nos. |
| 29 | Poles, cables, halogen, bulbs etc. for area illumination | As per requirement |
| 30 | Computer (Window Xp), with printer & CD writers | 02 sets |
| 31 | Communication facilities, Land line, WLL, Mobile, Fax. Etc | As per requirement |

## (c) CIVIL WORKS - FIELD QUALITY LAB EQUIPMENTS –

(a) Automatic compression testing machine(2000KN) – 2no
(b) Cube moulds(150mm size) – 36 nos
(c) Slump cone with tamping rod – 02no
(d) Sieves of different sizes for fine & coarse aggregate testing – 2 sets
(e) Core cutter test apparatus – 06sets
(f) Oven (capacity 120ltr, range – 250c) – 1no
(g) Moisture container(steel/aluminum) – 10nos
(h) Rapid moisture meter – 4nos
(i) Vicat apparatus with plungers for cement testing – 2set
(j) Cube moulds (70mm size) – 10nos
(k) Physical balance – 02no.
(l) Automatic vibration m/c – 01 no.
(m) Jars – 4 nos.

**B: MEASURING AND MONITORING DEVISES (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**

## 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 **09 (Nine months)** from the date of start.

**Tentative Time Schedule of completion - Civil Works**

Start of civil works 1st SEPT. 2011
Handover of civil foundations for erection works –TURBO 1 : JUNE 2012
Handover of civil foundations for erection works –TURBO 2 : AUGUST 2012
Handover of civil foundations for erection works –TURBO 3 : SEPTEMBER 2012
Completion of civil works in all respect - MAY 2012

**Note:**

**Agency should note that the construction works for TURBO BLOWER FOUNDATIONS along with its auxiliaries shall have to go parallely to match with the commissioning schedule of the plant. For this it will necessary to deploy "Dedicated Resources" like Manpower, Machineries and Materials Area wise to execute the woks simultaneously.**

**Bidders are requested to submit Resource deployment plan Area wise with detail program in line with above schedule in the form of Bar Chart / MS project planer along with their offer.**

**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 complete all the work in the scope of this contract within the contract period.

## 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 PRORATA BASIS AGAINST MONTHLY RA BILLS AS FOLLOWS.

As per schedule of rate for item no. 2301 (a) for fabrication can be further break up as follows

**(A) COMPLETION OF FABRICATION: 80% OF QUOTED RATE UNDER ITEM 2301 (a).**
**(B) COMPLETION OF SURFACE PREPARATION AND ONE COAT OF PRIMER : 20% OF QUOTED RATE UNDER ITEM 2301(a)**

As per schedule of rate for item no. 2301 (b) for erection, alignment & welding can be further break up as follows

**(C) ERECTION: 80% OF QUOTED RATE UNDER ITEM 2301 (b).**
**(D) WELDING & ALIGNMENT : 20% OF QUOTED RATE UNDER ITEM 2301(b)**

**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**

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

**As Per GCC**.

## . 8.0 TAXES, DUTIES, LEVIES (Rev 01 dated 15/03/2011)

**8.1.1**
The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit. **(i.e. rate quoted by bidder shall be inclusive of all Taxes and Duties except VAT/WCT and Service Tax).**

However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.

### 8.1.2 Service Tax & Cess on Service Tax

Service Tax and Cess on Service Tax as applicable on Services are excluded from contractor's scope; therefore **contractor's price/rates shall be exclusive of Service Tax and Cess on Services**. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and pay the same to the concerned tax authorities, such applicable amount will be paid by BHEL at the prevailing Service Tax Rate (presently 10.3 %) on the admitted bill value.

Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract. Contractor shall submit serially numbered Service Tax and Cess Invoice, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely,

I. The name, address and the registration number of the contractor,
II. The name and address of the party receiving taxable service,
III. Description, classification and value of taxable service provided and,
IV. The service tax payable thereon.

All the Four conditions shall be fulfilled in the invoice before release of service tax payment.

**Wherever, more than one route/option are available for discharge of service tax liability under a particular service, (e.g. "works contract Service"), contractor shall obtain prior written consent from BHEL site before billing the amount towards Service Tax.**

### 8.1.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT) on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, **the price quoted by the contractor shall be exclusive of the same**. Where such taxes are required to be paid by the contractor, this will be reimbursed on production of proof of payment made to the authorities by the Contractor. In any case the Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA

bill. The contractor has to take all necessary steps to minimize tax on input goods by purchasing the materials from any registered dealer of the concerned state only. In case contractor opts for composition, it will be with the prior express consent of BHEL. Deduction of tax at source shall be made as per the provisions of law unless otherwise found exempted. In case tax is deducted at source as per the provisions of law, this is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made unless specifically agreed to.

**Further contractor will have to provide Form-3 under Chattisgarh VAT act to BHEL copy of which is enclosed.**

### 8.1.4 Modalities of Tax Incidence on BHEL

Wherever the relevant tax laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.

### 8.1.5 New Taxes/Levies

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of Price Bid. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his price bid.

### 8.1.6 Submission of Periodical Reports

Contractor shall submit periodical reports in respect of following aspects of operation:

1) Consumption of welding electrodes and gases
2) Consumption of construction power
3) Manpower reports
4) Daily and Monthly Progress reports
5) Field calibration reports

BHEL at site will inform formats for these reports.

8.1.7 It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc. Necessary coordination with customer officials is the responsibility of the contractor. Contractor to follow all the procedures laid down by the customer for making gate passes. Where permitted, by customer/ BHEL, to work beyond normal working hours, the contractor shall arrange necessary work permit for working beyond normal working hours

**8.2 BUILDING & OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING & OTHER CONSTRUCTION WORKERS CESS Act, 1996 & CESS RULES, 1998.**

In case any portion of work involves execution through building or construction workers, then compliance to the above titled Acts shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances it may be ensured as under:-

i. It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a licence to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of licence / permission to BHEL within a period of one month from the date of award of contract.

ii. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these act and rules including that of payment / deposit of 1% cess on the extant of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.

iii. It shall be the responsibility of the sub-contractor to furnish the receipts / challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the sub-contractor during the preceding month.

iv. It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including

FOLLOWING DRAWINGS ARE ENCLOSED WITH THE TENDER.

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

| SL. NO | TITLE | DRAWING NO. | REV |
|---|---|---|---|
| 1. | PLOT PLAN / PLANT LAYOUT (TENTATIVE) | 0-381-01-01188 | R0 |
| 2. | STANDARD DETAILS | 4-38144-00003 | R0 |
| 3. | MS HAND RAIL DETAILS | 4-38144-00005 | R0 |
| 4. | PIPE ELECTRODE | GT 57191 | R0 |
| 5. | EARTH ELECRODE IN TEST PIT | GT 57191 | R0 |

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.

## 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 – 1 heads
3. Experienced Foreman / Supervisors - 4 heads
4. Planning & Billing Engineer – 01 head
5. Stores, Gate Pass – 01 heads
6. Accounts & Administration- 01no
7. Quality Control Engineer – 1 head
8. Safety Engineer – 1no
9. Surveyor – 01 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