

TENDER SPECIFICATION

NO: BHE/PW/PUR/AMRT PH II-ENB/1009

**CONSTRUCTION OF SITE OFFICE BUILDING INCLUDING INTERNAL / EXTERNAL
ELECTRIFICATION**

**AT
5X270 MW
INDIA BULLS AMRAVATI PHASE II
DISTT. – AMRAVATI
MAHARASHTRA.**

TECHNICAL BID - VOLUME- I

TENDER SPECIFICATIONS CONSISTS OF:

- **Notice Inviting Tender,**
- **Technical Conditions of Contract,**
- **Special conditions of Contract,**
- **General conditions of Contract**
- **Forms & Procedures**

VOLUME I



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 PART of Technical Bid

§: “Vol I -B, I-C, I-D” of Part-I (Vol- I) issued as separate book as a part of Technical Bid.

@: Price bid is issued as a separate hard copy booklet ‘Tender Specifications – Volume-II (Price Bid-1009)’.

Tender Specification Issue Details

Tender Specification NO: BHE/PW/PUR/AMRT PH II-ENB/1009

**CONSTRUCTION OF SITE OFFICE BUILDING INCLUDING INTERNAL / EXTERNAL
ELECTRIFICATION
AT
5X270 MW
INDIA BULLS AMRAVATI PHASE II
DISTT. – AMRAVATI
MAHARASHTRA.**

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)

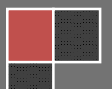
Place: Nagpur

Date:

1001

NOTICE INVITING TENDER

(Document No PS:MSX:NIT:Rev 01 dated 1st
Jun 2012)



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/AMRT PH II-ENB/1009 |
| ii | Broad Scope of job | CONSTRUCTION OF SITE OFFICE BUILDING INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION AT 5X270 MW INDIA BULLS AMRAVATI PHASE II DISTT. – AMRAVATI MAHARASHTRA. |
| iii | DETAILS OF TENDER DOCUMENT | |
| 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> |
| e | Volume-II | <i>Price Schedule (Absolute value).</i> Applicable |
| iv | Issue of Tender Documents | <p>1. <u>Sale from BHEL PS WR office at NAGPUR :</u> Start 04/07/2012 : Closes: 23/07/2012 , Time : 16.00 Hrs</p> <p>2. From BHEL website (www.bhel.com) Tender documents will be available for downloading from website till due date of submission</p> Applicable/ Not applicable |
| v | DUE DATE & TIME OF OFFER SUBMISSION | <p>Date : 24/07/2012 , Time : 15.00 Hrs Place : <u>BHEL PS Regional office at :Nagpur</u> Tenders being submitted through representative shall be handed over to any of the following BHEL officials after making entry/registration at the reception: RK Ranade/ Sr. Manager (Purchase) Pratish Gee Varghese/Engineer(Purchase)</p> Applicable |

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| | | | |
|------|---|---|---------------------------------------|
| vi | OPENING OF TENDER | Date : 24/07/2012, Time : 16:30 Hrs Notes: (1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender | Applicable |
| vii | EMD AMOUNT | Rs 1,50,000/- (Rupees One Lakhs Fifty Thousand Only) | Applicable |
| viii | COST OF TENDER | Rs 2000/-. | Applicable/ Not Applicable |
| ix | LAST DATE FOR SEEKING CLARIFICATION | Atleast 7 days before the due date of offer submission 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 : | Applicable/Not applicable. |
| xi | INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM) | ---- | 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) <u>and not in the newspapers</u> . 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)

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- PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
- One set of tender documents shall be retained by the bidder for their reference

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 | |
| | <p><u>ENVELOPE – I superscribed as :</u> PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:-</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>Note:</p> <p>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.</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="padding-left: 20px;">i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p style="padding-left: 20px;">ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p> | |
| iii. | <p>Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.</p> <p>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.</p> | |
| 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. | |

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

| PART-II | |
|----------------|---|
| | PRICE BID consisting of the following shall be enclosed |
| | <p><u>ENVELOPE-III</u> superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING</p> |
| 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 | |
|--------------------|---|
| | <p><u>ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE)</u> superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:</p> |
| i | <ul style="list-style-type: none"> o Envelopes I o Envelopes II o 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.

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7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT 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:

Bidders capacity for executing the job under tender shall be assessed 'LOAD' wise and 'PERFORMANCE' wise as per the following:

I. **LOAD:** Load takes into consideration **ALL** the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The 'Load' is the sum of the unit wise identified packages (refer Table-1) for contracts with BHEL Regions. The cut off month for reckoning 'Load' shall be the month, two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

(Note: For example if latest bid submission is in Aug 2011, then the 'load' shall be calculated upto and inclusive of June 2011)

i). **Total number of Packages**

Total number of Packages in hand = P

Where

- P is the sum of all unit wise identified packages under execution with BHEL Regions as of the cut off month defined above, including packages yet to be commenced.

ii) **Weightage "A" assigned to bidders based on Total number of Packages 'P':**

- a) If 'P' = 0-9, : "A" will be equal to '4'
- b) If 'P' = 10-18, : "A" will be equal to '3'
- c) If 'P' = 19-36, : "A" will be equal to '2'
- d) If 'P' = 37-60, : "A" will be equal to '1'
- e) If 'P' is above 60 : "A" will be equal to '0'

II. **PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (**under execution/** executed during the 'Period of Assessment' in all the Power Sector Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the month two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

(Note: For example if 'latest date of bid submission' is in Aug 2011, then the 'performance' shall be assessed for a 6 month period upto and inclusive of June 2011, for all the unit wise identified packages (refer Table I)

i). **Calculation of Overall 'Performance Rating' for 'similar Package/Packages' for the tendered scope under execution at Power Sector Regions:**

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:

- a) $P_1, P_2, P_3, P_4, P_5, \dots, P_N$ etc be the packages (**under execution/** executed during the 'Period of Assessment' in all Regions) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions = P_T (ie $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$)
- b) Number of Months ' T_1 ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package P_1 . Similarly T_2 for package P_2 , T_3 for package P_3 , etc for the tendered scope. Now calculate

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cumulative total months 'T_T' for total similar Packages 'P_T' for all Regions (i.e T_T = T₁ + T₂ + T₃+T₄ + .. T_N)

c) Sum 'S₁' of 'Monthly Performance Evaluation' Scores (S₁₋₁, S₁₋₂, S₁₋₃, S₁₋₄, S₁₋₅,.... S_{1-N}) for similar package P₁, for the 'period of assessment' 'T₁' (i.e S₁ = S₁₋₁+ S₁₋₂+ S₁₋₃+ S₁₋₄+ S₁₋₅+...S_{1-N}). Similarly S₂ for package P₂ for period T₂, S₃ for package P₃ for period T₃, etc for the tendered scope for all Regions. Now calculate cumulative sum 'S_T' of 'Monthly Performance Evaluation' Scores for total similar Packages 'P_T' for all Regions (i.e 'S_T'= S₁+ S₂+ S₃+ S₄+ S₅+.... S_N.)

d) **Overall Performance Rating 'R_{BEHL}' for the similar Package/Packages (under execution/ executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL):**

Aggregate of Performance scores for all similar packages in all the Regions

$$= \text{-----}$$

Aggregate of months for each of the similar package for which performance should have been evaluated in all the Regions

$$= \frac{S_T}{T_T}$$

e) **Bidders to note that the risk of non evaluation or non availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder**

f) **Table showing methodology for calculating 'a', 'b' and 'c' above**

| S l o | Item Description | Details for all Regions | | | | | | | Total |
|-------------|---|--|--|--|--|--|---------------------------------|--|--|
| | | (i) | (ii) | (iii) | (iv) | (v) | (vi) | (vii) | |
| 1 | Similar Packages for all Regions → | P ₁ | P ₂ | P ₃ | P ₄ | P ₅ | ... | P _N | Total No of similar packages for all Regions = P _T ie Sum (Σ) of columns (iii) to (ix) |
| 2 | Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment for corresponding similar Package (as in row 1) | T ₁ | T ₂ | T ₃ | T ₄ | T ₅ | ... | T _N | Sum (Σ) of columns (iii) to (ix) = T _T |
| 3 | Monthly performance scores for the corresponding period (as in Row 2) | S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1} | S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2} | S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3} | S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4} | S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5} | | S _{N-1} , S _{N-2} , S _{N-3} , S _{N-4} , ... S _{N-} | ----- |

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| | | | | | | | | | |
|---|---|----------------|----------------|----------------|----------------|----------------|-----|----------------|--|
| | | | | | | | | TN | |
| 4 | Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3) | S ₁ | S ₂ | S ₃ | S ₄ | S ₅ | ... | S _N | Sum (Σ) of columns (iii) to (ix) = S _T |

ii) Weightage “B” assigned to bidders based on Overall Performance Rating (R_{BHEL}) at Power Sector Regions, for the respective Package:

- a) If R_{BHEL} is ≥ 80%, “B” will be equal to ‘6’
- b) If R_{BHEL} is ≥ 75% < 80%, “B” will be equal to ‘5’
- c) If R_{BHEL} is ≥ 70% < 75%, “B” will be equal to ‘4’
- d) If R_{BHEL} is ≥ 65% < 70%, “B” will be equal to ‘3’
- e) If R_{BHEL} is ≥ 60% < 65%, “B” will be equal to ‘2’
- f) If R_{BHEL} is < 60%, “B” will be equal to ‘0’

III. ‘Assessment of Capacity of Bidder’ to be Qualified for the tender:

Shall be based on the sum of the weightages obtained in ‘LOAD’ (A) and ‘PERFORMANCE’ (B) as below:

- a) If the sum (A+B) is 6 or above for each of the applicable Package, then the Bidder is considered ‘Qualified’ for the tender
- b) If the sum (A+B) is less than 6 for any of the applicable Package, then the Bidder is considered ‘NOT Qualified’ for the tender

IV. Explanatory note:

- a) Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or CI, etc at the individual level irrespective of rating of Plant, and irrespective of whether the subject tender is a single package or as part of combined/composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, CI, Civil, Structure, etc is considered individual level of package. For example in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e the ‘identified packages as per Table-1 below), the ‘PERFORMANCE’ part against sl no II above, needs to be evaluated considering all the identified packages (ie Boiler, ESP and Power Cycle Piping) and finally the Bidder’s capacity to execute the tendered scope is assessed in line with III above
- b) Identified Packages (Unit wise)

Table-1

| | Civil | Electrical & CI | Mechanical |
|--|---|---|---|
| | <ul style="list-style-type: none"> i). Enabling works ii). Pile and Pile Caps iii). Civil Works including foundations iv). Structural Steel Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil) | <ul style="list-style-type: none"> i). Electrical ii). CI iii). Others (Elec & CI) | <ul style="list-style-type: none"> i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). LP Piping iv). ESP v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) |

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| | | | |
|--|--|--|--|
| | | | ix). Material Handling x). Material Management xi). Material Handling & Material Management xii). Others (Mechanical) |
|--|--|--|--|

c) Vendors who are first timers to any BHEL Region, may be considered subject to satisfying other tender conditions. Eligibility of the party for the next tender of any package in that Region, shall be subject to the bidder satisfying the 'Assessment of Capacity of Bidder' for a period of first **nine months** after commencement of work or contract duration whatever is lesser.

In case the first timer is executing any other packages in any BHEL Region, then the performance evaluation will be based on the data available for the other packages though not similar, for the 'Period of assessment', for the purpose of 'Assessment of Capacity of Bidder'

d) Vendors who are not first timers and who have not been executing any package or packages similar to the packages under the tender in the 'Period of assessment', shall be considered qualified subject to them satisfying all other tender conditions.

e) In the unlikely event of all bidders shortlisted against Technical and Financial Qualification criteria not meeting the criteria on 'Assessment of Capacity of Bidders' detailed above, OR leads to a single tender response on applying the criteria of 'Assessment of Capacity of Bidders', then BHEL at its discretion, reserves the right to consider the further processing of the Tender based on the **Overall Performance Rating 'R_{BHEL}'** only.

f) 'Under execution' shall mean works in progress as per the following:

- i. upto Boiler Steam Blowing in case of Steam Generator and Auxilliaries
- ii. upto Synchronisation in case of all other works excepting sl no (i) and (iii)
- iii. upto execution of at least 75% of anticipated contract value (unit wise), in case of Enabling works or Civil & Structures.

Note : BHEL at its discretion can extend (or reduce in exceptional cases in line with Contract conditions) the period defined against (i), (ii) and (iii) above, depending upon the balance scope of work to be completed.

g) Performance evaluation in CL 9 above is applicable to Prime bidder and consortium partner (or Technical tie up partner) for their respective scope of work

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, applicable wage structure, wage rules, 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.

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 of 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

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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 (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 satisfying the Pre Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
- 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) unless specified otherwise.
- 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 Consortium Bidding (or Technical Tie up) shall be allowed only if specified in Pre Qualifying Requirement (PQR) criteria, and in such a case the following shall be complied with:
- 23.1 Prime Bidder and Consortium Partner or partners are required to enter into a consortium agreement with a validity period of six months initially. In case the consortium is awarded the contract, then the Consortium Agreement between the Prime Bidder and Consortium Partner or partners shall be extended till contractual completion period including extension periods if any applicable.

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- 23.2 'Stand alone' bidder cannot become a **'Prime Bidder' or a 'Consortium bidder' or 'Technical Tie up bidder' in a consortium (or Technical Tie up) 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.
- 23.3 Number of partners for a consortium Bidding (or Technical Tie up) shall be as specified in the PQR
- 23.4 Prime Bidder shall be as specified in the Pre Qualification Requirement, else the bidder who has the major share of work
- 23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0
- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'
- 23.7 Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified
- 23.8 In case customer approval is required, then Prime Bidder and Consortium Partner or partners shall have to be individually approved by Customer for being considered for the tender.
- 23.9 Prime Bidder shall be responsible for the overall execution of the contract
- 23.10 In case of award of job, Performance shall be evaluated for Prime Bidder and Consortium Partner or partners for their respective scope of work(s) as per prescribed formats
- 23.11 In case the Consortium partner or partners back out, their SDs shall be encashed by BHEL. In such a case, other consortium partner or partners meeting the PQR have to be engaged by the Prime Bidder, and if not, the respective work will be withdrawn and executed on risk and cost basis of the Prime Bidder. The new consortium partner or partners shall submit fresh SDs as applicable.
- 23.12 In case the prime Bidder withdraws, the whole contract shall be considered cancelled and short closed.
- 23.13 After execution of work, the work experience shall be assigned to the Prime Bidder and the consortium partner or partners for their respective scope of work. After successful execution of two similar works with the same consortium partner or partners under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'stand alone' bidder for similar works, subject to certification from BHEL about the active involvement of the Prime Bidder for satisfactory execution of the works.
- 23.14 The consortium partner shall submit SD equivalent to 2% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value. In case there are two consortium partners, then each partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value.
- 23.15 In case of a Technical Tie up, all the clauses applicable for the Consortium partner shall be applicable for the Technical Tie up partner also
- 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

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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

AGM/Purchase

Enclosure

01. Annexure-1: Pre Qualifying criteria.
02. Annexure-2: Check List .
03. Annexure-3: Important Infor
04. Other Tender documents as per this NIT.

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| | | | |
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| | one of the three Financial Years as applicable in the last three Financial Years defined in 'C-1' above based on latest Audited Accounts. | | |
| D | Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable) | APPLICABLE | By BHEL |
| E | Approval of Customer (if applicable) Note: Names of bidders (including consortium/Technical Tie up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval. | NOT APPLICABLE | BY BHEL |
| F | Price Bid Opening Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E | APPLICABLE | BY BHEL |
| F | Consortium criteria (if applicable) | NOT APPLICABLE | |
| <p><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></p> <ol style="list-style-type: none"> 1. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above along with all annexures 2. In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three. 3. C-2:-NETWORTH : Shall be calculated based on the latest Audited Accounts as furnished for C-1 above. Net worth = Paid up share capital + Reserves. (Net worth is required to be evaluated in case of companies) 4. C-3:- PROFIT : shall be NET profit (PAT + Non cash expenditure viz depreciation) earned during any one of the three financial years as in C-1 above 5. 'Additional' Criteria in respect of 'Technical' criteria of PQR (as in 'B' above) for Civil, Electrical, CI, unless otherwise specified : <ol style="list-style-type: none"> 1. Bidder should have executed similar work of any one of the following: <ol style="list-style-type: none"> a. One (1) work of value not less than Rs XXX OR b. Two (2) works of not less than Rs YYY OR c. Three (3) works of not less than Rs ZZZ (Value XXX, YYY, ZZZ shall be as indicated by BHEL) 2. 'Similar' work for criteria 5 above means <ol style="list-style-type: none"> a. Civil or Structures or Civil & Structures or Chimney respectively as applicable to the tendered scope in respect of 'CIVIL' Works b. Electrical works in respect of 'ELECTRICAL' c. CI works in respect of 'CI' Works d. Material Handling and/or Management works in respect of 'MM' works 6. Time period for achievement of the 'Technical' criteria of PQR (as in 'B' above) will be the last 7 years ending on the 'latest date' of Bid submission 7. 'EXECUTED' means the Vendor should have achieved the criteria specified in the Technical criteria of PQR (as in 'B' above) even if the Contract has not been completed or closed 8. Unless otherwise specified, for the purpose of 'Technical' criteria of PQR (as in 'B' above), the word 'EXECUTED' means: <ol style="list-style-type: none"> 1. "BOILER LIGHT UP" in respect of Boiler & Aux and ESP 2. "SYNCHRONISATION" in respect of STG/GTG and 'SPINNING' in case of HTG 3. "STEAM BLOWING COMPLETION" in respect of at least Main Steam Line of Power Cycle Piping | | | |

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| | |
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| | <p>4. “HYDRAULIC TEST” of the system in respect of Structures, Pressure parts/IBR Piping</p> <p>5. “CHARGING” in respect of power Transformers, Bus ducts, HT/LT switchgears</p> <p>6. “Completion of RCC Shell and liner (steel or brick as per tendered scope) up to the HEIGHT specified using slip form” in case of RCC Chimney.</p> <p>7. Achievement of physical Quantities as per respective PQRs in respect of Civil & Structures and Piling Works</p> <p>8. ‘Readiness for coal Filling’ in respect of Bunker Structure Work.</p> <p>9. Boiler means HRSG or WHRB or any other types of Steam Generator</p> <p>10. Critical/Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass, LP Bypass lines</p> <p>11. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating in terms of MW shall be considered for evaluation.</p> <p>12. In case the experience/POAWO certificate enclosed by bidders do not have separate break up prices for the E&C portion of Electrical and CI Works, (i.e. the certificates enclosed are for composite order for supply and erection of Electrical & CI and other works if any), then value of Erection and Commissioning for the Electrical & CI portion shall be considered as 15% of the supply & erection of Electrical & CI, unless otherwise specifically indicated in the PQR.</p> <p>13. Scope for capital overhaul of STG shall cover Bearing Inspection work and overhauling of all cylinders of the Turbine unless otherwise specifically indicated in the PQR.</p> <p>14. In case the tendered scope is not a Pulverised Fuel Boiler, experience of Oil/Gas Fired Boilers also can be considered unless otherwise specifically indicated in the PQR.</p> |
|--|--|

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND WORK COMPLETION CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

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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.a | Details of Contact person for this Tender | Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No: | |
| 3.b | Details of alternate Contact person for this Tender | Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No: | |
| 4 | EMD DETAILS | DD No: Date : Bank : Amount: <u>Please tick (√) whichever applicable:-</u> ONE TIME EMD / ONLY FOR THIS TENDER | |
| 5 | Validity of Offer | TO BE VALID FOR SIX MONTHS FROM DUE DATE | |
| | | APPLICABILIT Y(BY BHEL) | ENCLOSED BY BIDDER |
| 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 | Applicable | YES/NO |
| 8 | Copy of PAN Card | 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 | YES/NO |
| 11 | Declaration by Authorised Signatory | Applicable | YES/NO |
| 12 | No Deviation Certificate | Applicable | YES/NO |
| 13 | Declaration confirming knowledge about Site Conditions | Applicable | YES/NO |
| 14 | Declaration for relation in BHEL | Applicable | YES/NO |
| 15 | Non Disclosure Certificate | Applicable | YES/NO |
| 16 | Bank Account Details for E-Payment | Applicable | YES/NO |
| 17 | Capacity Evaluation of Bidder for current Tender | Applicable/ | YES/NO |

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| | | | |
|----|---|----------------|--------|
| 18 | Tie Ups/Consortium Agreement are submitted as per format | Not Applicable | YES/NO |
| 19 | Power of Attorney for Submission of Tender/Signing Contract Agreement | Applicable | YES/NO |
| 20 | Analysis of Unit rates | Applicable | YES/NO |

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED ABOVE APPLICABLE DOCUMENTS ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

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

ANNEXURE 3: **IMPORTANT INFORMATION**

The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site (www.bhel.com ---> Tender Notification -> List of Banned Firms)

Rev 00
6th
JULY

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter - I : Project Information

| 1.0 | <u>PROJECT INFORMATION</u> |
|------------|---|
| | <p>1: Owner : INDIABULLS (ELENA POWER & INFRASTRUCTURE LIMITED).</p> <p>2: Project Title : 5 x 270 MW AMRAWATI TPP PHASE II (UNIT 6 TO 10)</p> <p>3: Location :</p> <p>(a) Nearest Village : Nandgaonpeth</p> <p>(b) Nearest Town : AMRAWATI</p> <p>4: Nearest Railway Station : Vadnera – 20 km from project Site</p> <p>5: Road approach : 22 KM distance from Amravati District on NH-6 near Nandgaonpeth</p> <p>6: Nearest airport : Nagpur – 132 kms</p> |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

2.0 SCOPE OF WORK

The scope of work comprises of but not limited to the following: -

- 2.0.1 Construction of Site Office Building of size 60m x 10m (Plan) comprising of Brick masonry, plaster, painting, tubular trusses and PPGI sheeted roof with associated internal/external electrification & other finishing, architectural, furnishing, plumbing and sanitary works etc. as per requirement and drawing of BHEL.

All the above works shall be measured and paid under relevant item of BOQ.

All the above jobs shall be as per BHEL Engineer's instructions, drawings, detailed specification and respective bill of quantities furnished in the Rate Schedule.

2.1 VARIATION IN QUANTITY

The quantities against each item of the Rate Schedule are approximate and may vary up to any extent or may be deleted altogether. The agreed rate of each item shall remain firm for any variation in individual quantities. Compensations on account of such variation shall be dealt **as per clause no. 2.14 of GCC**. The Payment shall be made as per agreed item rates for the quantities actually executed and measurements by BHEL. The contractor has to take note of this and quote his rates accordingly.

2.2 Responsibility of the Contractor

2.2.1

The contractor shall engage all the unskilled, skilled and especially skilled labor including fabricators, welders and fitters etc. and supervisory staff. Only trained and competent personnel with previous experience in the job shall be employed. However, BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they found him unsuitable. The contractor shall be bound to follow the instruction of BHEL.

2.2.2

All the materials like steel, windows, doors, ventilators, trusses, structural members, foundation bolts, MS bars, painting materials, G.I. Sheets, MS square bar and necessary electric goods etc. shall be supplied by the contractor as per the specification mentioned in the tender/Indian standard specification. The contractor is required to quote their rates inclusive of cost of all materials, labor, etc. BHEL reserves the right to inspect and reject any material not found satisfactory.

2.3 General

2.3.1

During execution of the job, it is very essential that proper and adequate inspection should be made constantly by the contractor to maintain quality of workmanship and to ensure that deviations from BHEL drawings not exceed the permissible limits, which shall be approved by BHEL. Necessary laboratory test shall be conducted on random sampling basis for the materials like Bricks, steel, cement etc if so desired by BHEL Engineer. Apart from that, Contractor shall also ensure **Field Quality Test (FQA)** like Compressive Strength Test of concrete (cube test), Sieve Analysis of aggregates, and Compaction Test for backfilling as per Standard Practice and Relevant IS codes either at site or nearby Field Quality Lab. approved by BHEL. **All the testing charges shall be borne by the contractor.** Decision of BHEL engineer shall be binding on the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

Contractor shall procure reinforced / structural steel & cement from reputed manufacturer/ Authorized dealer & approval for the same shall be obtained from BHEL well in advance before ordering of the materials.

2.3.2

The contractor shall visit the site and ascertain the local conditions, entry and traffic restrictions, all obstructions in the area and also ascertain all site conditions and particularly the sub-soil conditions etc. **The contractor shall carry out the survey to study the properties of soil/sub soil like strength to withstand the weight of structure during all weather conditions without sinking of foundation.** If any of such defects like cracks, sinking of foundation etc. occur after completion of work till the performance guarantee period, it shall be rectified by contractor free of cost including the supply of materials required. No claim shall be entertained on this account under any circumstances from the contractor.

2.3.3

The contractor shall provide and maintain at his own cost pumps and other equipment to keep the work free from water and continue to do so until the handing over of the work. The contractor shall clear all trees, rubbish, vegetation, brickbats etc. And dispense them suitably in allotted areas at his own cost.

2.3.4

The contractor shall take adequate precautions to ensure complete safety and prevention of accidents at site. The safety precautions shall conform to IS codes wherever applicable.

2.3.5

The contractor shall level the site in accordance with the sequence of earth leveling to maintain the proper gradient as per the instruction of BHEL; as soon as construction activity is over. Payment towards this shall be released as per the relevant items available in B.O.Q.

2.3.6

The work though not specifically mentioned either in the drawings or in the tender specification but are needed to complete the work as per site requirement & instruction of Engineer are also in the scope of this contract & to be erected to the entire satisfaction, for which the payment shall be released as per the respective item rate of **Rate Schedule. If the item is not available in the rate schedule the rate shall be derived as per CPWD- DSR-2012 rate schedule latest version with applicable escalation / cost index published by CPWD.**

2.3.7

The contractor shall provide and maintain at his own cost all T & P for carry out the work. The T & P shall be for fabrication of the structures and for the purpose of erection of trusses, purlins bracings etc complete.

2.4

The detailed tentative drawings and specifications will form part of the tender documents. BHEL reserves the right to modify/alter the tender drawings, if necessary during the actual execution at site.

2.4.1

Specification for Civil Works for Construction of site office building alongwith its associated internal/external electrification works.

Standard specifications for various items of work for building construction as per the relevant IS-codes (latest edition) shall be applicable for this work. The work has to be executed as per standard

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

specification and drawings to the satisfaction of BHEL. However, the following Drawings/Sketches are to be read along with specifications and shall be treated as in the scope of work. Please refer **Appendix – IX for drawings.**

2.4.2

These drawings are indicative and strictly for tendering purpose, only meant to give an idea to tenderers about nature of job. If any changes in the layout, plan, section, partition, truss, columns etc. are felt necessary by BHEL Engineer to suit site requirement, the same shall be done by contractor as per revised sketches/drawings given by BHEL engineer. Contractor shall ensure/ascertain the stability, safety of the said work. Any modification/variation from the said drawings, if necessary as suggested by the contractor will have to be approved by BHEL in writing.

2.5

2.5.1

Excavation of Foundation, etc shall be made as per IS specification.

2.5.2

Any filling/loose soil met below the foundation shall be made up with lean cement concrete 1:4:8 mix (min).

2.5.3

Basement and sides of the foundation wall shall be filled in with selected excavated earth including watering, consolidation etc. Complete as per IS specification.

2.5.4

The excess/unutilized suitable earth and debris shall be disposed & leveled to the proposed mentioned area for development. All unusable earth debris, trees, vegetations etc. shall be disposed off at a location embarked by BHEL / Client. Rate quoted for excavation shall be inclusive of such disposal.

2.5.5

Filling under floors / foundations with 100mm/150mm thick layer of compacted selected earth/river sand including watering, consolidation etc. shall be executed as per IS specification and drawings if any. However this can be eliminated in case a hard strata/good stratum is met with in foundation level & PCC shall be done directly in such cases. However this can be decided as per site requirement with discussion with site engineer.

2.5.6

PCC: below foundation and PCC capping: This shall include supplying and placing PCC at all depths below plinth level including form work, curing, all materials, tools and plants and labour complete. **Concrete of 1:4:8/1:3:6/1:2:4 grade** as defined in IS- 456 with 40mm/20mm and downgraded stone aggregates as per drawing. Nominal mix (volumetric) shall be allowed to use as per the guidelines of IS-456 (latest edition) with min. W/C ratio & cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine & hand mix is generally not acceptable.

However in certain unavoidable circumstances, hand mix shall be permitted with 10% extra cement content as per the discretion of BHEL engineer.

2.5.7

Brick masonry: Brick masonry shall be done by using best quality locally available burnt clay bricks / Fly Ash Lime (FAL) bricks of standard size. Minimum strength of the bricks should not be less than 35 KG/sq. cm. Other quality requirement shall be in line with the relevant IS Code. One-brick thick brickwork shall be constructed as specified, in Cement mortar 1:4 including linking, plumbing, leveling, pacing, joints curing etc. including all materials, tools, plants and labor complete at all level/elevation.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

Rubble masonry: Rubble masonry shall be done by using best quality locally available hard stone (black basalt) in foundation/wall. BHEL should have approved the quality of stone before placing in use. Irregular hard stones should be rounded of before use. Maximum size of stone should be between 200 – 230mm.

2.5.8

RCC: RCC 1:2:4 (M15)/ 1:1^{1/2}:3 (M20) shall be provided for plinth beam, lintel, sun sheds, toilet roof slab wherever required as per Drawing and IS specification.

2.5.9

Formwork: The formwork should be capable of carrying the dead load of concrete, the reinforcements and the forces of vibration. The form works shall be designed by the contractor and approved by engineer in charge. After sufficient curing period & after attaining adequate strength of concrete the formwork shall be removed with the approval of BHEL engineer. The item of PCC/RCC shall be deemed as completed after removal of forms and required finishing is completed.

2.5.10

Structural works:

All structural works like roof truss, etc. shall be carried out as per drawing given along with the tender. All Associated Fitting materials shall be paid by weight along with the truss.

2.5.11

Contractor is permitted to get steel truss fabricated at workshop outside of the plant premises with prior permission of BHEL. In this case contractor has to arrange for shop inspections periodically as required by BHEL Engineer to ensure the quality of fabrication work. Fabricated structures without inspection/certified by BHEL shall not be allowed for erection.

2.5.12

Necessary sanitary and plumbing works shall be provided with necessary water taps and all connections with supply lines/septic tank shall be provided by the contractor for site office building. The materials used and the location etc. shall be as per the directions of BHEL engineer.

2.5.13

Septic tanks with soak pit/leaching cesspool shall be provided by the contractor at the location specified by BHEL complete in all respects as per IS specification. (Suitable for capacity of 25 users as per item rate available in the rate schedule). **The drawing attached with tender is indicative only & any changes required at site shall be done as per the instruction of BHEL Engineer.**

2.6 Electrical Installations

2.6.1

The electrical installation shall generally be carried out in conformity with the requirements of the Indian electricity act, 1910 as amended up to date and the Indian electricity rules, 1956 framed there under and also the relevant regulations of the electric supply authority concerned as well as IS: 732-1963 (revised). **Before commencement of work Contractor has to submit for approval of BHEL detail electrical layout drawings prepared by experienced & licensed electrical agency/engineer indicating the cable route, internal/external panels, DBs, cable sizing, fittings & fixtures, Earthing etc. in line with the BOQ for office building.**

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

2.6.2

Good workmanship is an essential requirement for compliance with the rules in the code. The work shall be carried out under the direct supervision of a person holding a valid certificate of competency issued by the state government concerned for the type of work involved.

2.6.3

All out door/external lamps shall have weatherproof fittings of design approved by BHEL Engineer so as to effectively prevent the admission of moisture.

2.6.4

The distribution fuse boards shall be located as near as possible to the center of the load they are intended to control.

2.6.5

All main switches shall be of metal clad enclosed pattern, which shall be fixed at close proximity to the point of entry of supply.

2.6.6

Main and branch distribution boards shall be in accordance with Indian standard 732-1963 "code of practice for electrical wiring installation".

2.6.7

PVC conduit (concealed type) wiring system should be adopted throughout and all conduit pipes/channel shall be conforming to latest IS.

2.6.8

Approved and good quality copper wire with adequate current carrying capacity/voltage rating with proper insulation as per IS should be used for the entire electrical wiring/installation.

2.6.9

The service connection from outside mains to the switchboard inside the building shall also be carried out by the contractor.

2.6.10

Water Pump: Suitable water Pump shall be provided at sump as per the specification given in BOQ for filling OH tank installed near office building for further distribution of water supply line to toilet blocks, etc. 40 mm dia GI pipe shall be laid from the customer source to sump constructed near office complex and different place of open storage yard. Etc. Underground brick masonry sump shall be constructed at suitable location near office complex.

2.7 Earthing

2.7.1

All earthing system shall be in accordance with IS: 3043-1966 "code of practice for earthing".

2.7.2

The installation and earthing shall generally be carried out in accordance with the Indian electricity rules 1956 as amended from time to time and the relevant regulations of the electricity supply authority concerned.

2.7.3

All plugs and sockets shall be of three-pin type, one of the pins being connected to earth.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

2.7.4

Bodies of all electrical appliances shall be earthed by the use of three pin plugs. The covers of the regulators if or metallic construction, shall be earthed by means of a separate earth wire. A separate earth wire shall be used for earthing these appliances.

2.7.5

All earth wires and earth continuity conductors shall be of copper/-galvanized iron. They shall be either stranded or solid bars of flat rectangular strips and may be bard, provided, due care is taken to avoid corrosion and mechanical damage to it. Inter connections of earth continuity conductors and main and branch earth wires shall be made in such a way that reliable and good electrical connections are permanently ensured.

2.7.6

The neutral conductor shall not be used as earth wire.

2.7.7

Welded, bolted and clamped joints only are permissible. For stranded conductor, sleeve connectors are permissible. Bolted connectors and their screws shall be protected against any possible corrosion.

2.7.8

The path of the earth wire shall, as far as possible, be out of reach of any person and shall be visible for inspection.

2.7.9

The galvanized iron pipe electrodes shall not be smaller than 38mm internal diameter and shall not be less than 3.5M. In length and shall, as far as possible, be embedded below permanent moisture level and shall be one piece only without any joints.

2.8

Dewatering: It is the responsibility of the contractor to engage sufficient dewatering pump (Diesel, electrically operated) of adequate capacity for dewatering of sub-soil, rain water from excavated pit and other localized area and keep the area dry and workable till completion of entire work within their quoted rate.

2.9 GENERAL NOTES FOR STEEL DOOR, WINDOWS, AND VENTILATORS

2.9.1 STEEL/ IRON WORK

Steel Door: - Pressed steel doors as per standard specification, relevant IS code and sizes shall be supplied along with frames and fixed with suitable hold fasts, furniture and fittings etc. Complete.

Steel Window: - All steel Windows shall be supplied and fixed as per standard specifications, relevant IS code and instructions of Engineer-in-charge with all furniture, fittings, holdfasts etc. Complete.

Steel ventilators: - All steel ventilators shall be supplied and fixed as per standard specifications, relevant IS code and instructions of Engineer-in-charge with all furniture, fittings, holdfasts etc. Complete.

Contractor shall arrange for shop inspection for all steel doors, windows & trusses etc. if fabricated outside the plant before delivery at site for Engineer's clearance.

2.10

PAINTING

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

All the steel items such as doors, windows, ventilators, roof trusses, columns, purlins etc. shall be supplied with one coat of red oxide primer; two coats of synthetic enamel paint of approved color and quality shall be applied after fixing in position to achieve uniform finishing. Rates shall be quoted taking into account cost of painting for woodwork, steel work etc.

2.10.1

Three coats of white/color washing shall be provided uniformly on all wall surfaces as per IS specification.

2.10.2

Three coats of white/color oil bound distemper shall be provided uniformly on all wall surfaces including surface preparation with putty as per IS specification.

2.11

PVC water tank of Sintex make or any approved make shall be provided over the RCC roof slab of toilet blocks.

2.12 Specification of roofing structure for office building

2.12.1

Office building: Pre-fabricated tubular/structural steel trusses (curved type) shall directly rest on office building column structures and posts with suitable arrangements of bolting.

2.12.2

The trusses shall be tubular (**CLASS B-MEDIUM QUALITY**), fabricated in pieces of convenient length for transportation by truck and speedy erection at site. The base plates shall be welded to the trusses for fixing/resting the same on supports. Suitable cleats or fixing plates shall be provided on the trusses for holding the purlins and the bottom tie runners. Bolts shall be fixed in columns and posts by using templates for fixing truss. These foundation bolts, base plates, clits etc. fixed with truss shall be paid under tonnage of truss only. No separate payment shall be made for templates. Work shall be done as per BHEL Approved Drawings. **Successful bidder has to submit detailed design and drawing for the roof truss (tubular) along with the foundation bolt prepared by reputed structural designer duly stamped and signed for approval of BHEL. Since the site location (Amravati) is cyclonic prone area and heavy wind storm has been experienced in recent past, necessary precaution and factors to be considered while designing the tubular truss and foundation bolt.**

2.12.3

The purlins and bottom tie runners shall be of structural steel sections or steel tubes of adequate size to give proper strength and rigidity

2.12.4

All the bolts, nuts and washers supplied for the assembly of the structure shall be hot dipped galvanized and of metric sizes. All the members shall be given two coats of anti-rust red oxide primer paint after proper cleaning of the surface.

2.12.5

All the members of the structure shall be of standard dimensions and shall provide complete flexibility for assembling in the required number of days. The expansion of the structure in lengthwise direction shall be possible with minimum dismantling of the existing members.

2.13

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II : Scope of Works

Providing & laying of pipelines for Water supply to Office Building as well as for construction purpose:

Customer will provide construction water and drinking water supply at single point inside the plant free of cost. Main supply pipe line of 40mm dia. GI pipe shall be laid up to the Overhead water tank near office location for water supply to office premises. Internal plumbing if any shall be done in BHEL Store office toilet blocks as per requirement through 25mm/20mm/ 15mm dia GI pipes as per requirement. However contractor has to arrange tankers or further distribution pipeline up to the work site for Construction purpose from this point within their quoted rates.

2.14

Prior Approval from BHEL Engineer

Contractor shall take prior approval from BHEL Engineer for use of Sanitary items, Overhead water tanks, Doors, Windows, ventilators **Type of Cement (OPC/PPC)**, Brick, Steel, structural steel and for other items as specified in respective items description and necessary **manufacturer's test certificate (MTC)** and laboratory test as required by BHEL shall be arranged by contractor within their quoted rate.

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

| SI.No | Description | 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 | | | |
| a | Open space for labor colony (as per availability) | Yes | | Location will be finalized after joint survey with owner |
| b | Labor Colony with internal roads, sanitation, complying with statutory requirements | | Yes | |

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

| Sl.No | Description | Scope / to be taken care by | | Remarks |
|-------|--|-----------------------------|--------|---|
| | | BHEL | Bidder | |
| 3.2.0 | ELECTRICITY | | | |
| 3.2.1 | Electricity for construction purposes 3 Phase of Voltage 415/440 V (To be specified whether chargeable or free) | | | FREE |
| a | Single point source | Yes | | At a distance of 400M from site (Distance is only estimated, it may vary up to an extent depending on site condition). Cabling shall be paid as per relevant item of BOQ. |
| 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 | Electricity for the office, stores, canteen etc of the bidder (to be specified whether chargeable or free) | | | Chargeable(Applicable Tariff) |
| a | Single point source | Yes | | At an available distance from site (Distance may vary up to an extent depending on site condition). Cabling shall be done by bidder at their own cost. |
| b | Further distribution including all materials, Energy Meter, Protection devices and its service | | Yes | |
| c | Duties and deposits including statutory clearances if applicable | | Yes | |

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

| Sl.No | Description | Scope / to be taken care by | | Remarks |
|-------|---|-----------------------------|--------|---|
| | | BHEL | Bidder | |
| | PART I | | | |
| 3.2.3 | Electricity for living accommodation of the bidder's staff, engineers, supervisors etc | | | |
| a | Single point source | | Yes | Contractor has to make suitable arrangement at their own cost. |
| 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 | WATER SUPPLY | | | |
| 3.3.1 | For construction purposes: (to be specified whether chargeable or free) | | | FREE |
| a | Making the water available at single point | Yes | | In case of inadequate supply / non-availability of construction water from customer, contractor shall have to arrange construction water at his own expenses. |
| b | Further distribution as per the requirement of work including supply of materials and execution | | Yes | |
| 3.3.2 | <u>Water supply for bidder's office, stores, canteen etc</u> | | | Chargeable(Applicable Tariff) |
| 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 | |
| 3.3.3 | <u>Water supply for Living Purpose</u> | | Yes | Contractor has to make suitable arrangement at their own cost. |

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

| Sl.No | Description | Scope / to be taken care by | | Remarks |
|-------|--|-----------------------------|------------|---------------------|
| | | BHEL | Bidder | |
| | PART I | | | |
| 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 | | | |
| 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 | |
| 3.5.0 | COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER | | | |
| a | Telephone, fax, internet, intranet, e-mail etc | | Yes | |
| 3.6.0 | Compressed Air wherever required for the work | | | Not Required |
| 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 | |

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

| SI.No | Description PART II 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 PI refer Chapter-II- |
| 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 | | | NOT APPLICABLE |
| 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 |

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

| SI.No | Description PART II 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 |

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

A: TOOL & PLANTS

| SN | DESCRIPTION |
|----|---|
| 1 | 1) Concrete Mixture -1nos 2) Vibrators- 2nos 3) Leveling instrument with calibration certificate as per required 4) Theodolite with calibration certificate as per required 5) Shuttering materials as per requirement 6) Cube moulds required 6 nos and testing arrangement 7) Slump testing cone as required 8) curing pump 1HP/2 HP – 2 nos. 9) Diesel/Petrol/Electric Pump set (3 HP)-as per requirement 10) Welding Transformer - 2nos 11) Gas cutting Set- 3 Nos 12)Drilling Machine- 2Nos 13)JCB- 1No 14) Water Tanker- 1No 15) Tractor- Trailer- 2No 16)Tripper-2Nos 17)Chain Pulley Block (3T)- 2No 18) Grinding Machine-2 Nos 19) Fire extinguishers & Fire Buckets - 2Nos NOTE The above list is only indicative and not exhaustive. Arrangement for any other T and P required for completion of the job shall be the responsibility of the contractor and shall be arranged by him. Fabrication roof trusses shall be allowed to fabricate outside workshop with prior permission of BHEL. |

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.

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

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

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 contractor has to subsequently augment his resources in such a manner that the entire related works are completed within the contract period.

THE OVERALL CONTRACT PERIOD SHALL BE 04 (Four) MONTHS.

6.1.2

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VII: Terms of Payment

Stages of Progressive Payments

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

- A) 95% of agreed item rate will be released for the completed work against monthly R.A. bills.
- B) Balance 5% retention amount shall be released after completion of maintenance guarantee period of 12 months from the date of completion of work.

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

TAXES, DUTIES, LEVIES

8.0

TAXES, DUTIES, LEVIES (Consolidated Rev 00 dated 07/06/2012)

8.1 'Enabling Works'

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. rates quoted by bidder shall be inclusive of Service Tax, VAT/WCT and all other taxes and duties**)

8.2 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.

8.3

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:-

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

- 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 that is provided under the Workmen's Compensation Act, 1923.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX DRAWINGS

FOLLOWING DRAWINGS ARE ENCLOSED WITH THE TENDER.

| SL.NO. | DRAWING/SKETCH No | TITLE |
|--------|-----------------------|--|
| 1. | BHE/PW/ ST.SP-01 | SEPTIC TANK |
| 2. | BHE/PW/ ST.SP-02 | SECTION OF BAFFLE BEAM |
| 3. | BHE/PW/ ST.SP-03 | DETAILS OF SOAK PIT |
| 4. | BHE/PW/OFFICE-01/03: | PLAN OF OFFICE BUILDING. |
| 5. | BHE/PW/OFFICE-02/03: | MISC. DETAILS |
| 6. | BHE/PW/OFFICE-03/03 : | CROSS SECTIONAL VIEW OF SITE OFFICE |
| 7. | BHE/PW/OFFICE-R1 : | CROSS SECTIONAL VIEW OF CHAJJA OVER PORCH AREA |
| 8. | BHE/PW/OFFICE-R2: | CROSS SECTIONAL VIEW OF RCC ROOF OVER TOILET BLOCKS. |

These drawings are for tendering purpose. The work shall be executed with the approval of drawings by BHEL during execution.