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2020

# NOTICE INVITING TENDER

(Document No PS:MSX:NIT)

TENDER NO.: BHEL/NR/SCT/KHURJA/CWPH & RWPH/1246

NAME OF WORK: ALL CIVIL, ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PUMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA STPP AT KHURJA, UTTAR PRADESH

Bharat Heavy Electricals Limited



**NOTICE INVITING E-TENDER (NIT)**  
**NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES**

To

Dear Sir/Madam

**Sub : NOTICE INVITING E-TENDER**

Sealed offers in two part bid system (National competitive bidding (NCB) are invited from reputed & experienced bidders (meeting PRE QUALIFICATION CRITERIA as mentioned in Annexure-1) 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	BHEL/NR/SCT/KHURJA/CWPH & RWP/1246
ii	BROAD SCOPE OF JOB	ALL CIVIL, ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PUMP HOUSE (RWP) FOR 2 X 660 MW KHURJA STPP AT KHURJA, UTTAR PRADESH
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> <span style="float: right;">Applicable</span>
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> <span style="float: right;">Applicable</span>
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> <span style="float: right;">Applicable</span>
d	Volume-ID	<i>Forms and Procedures</i>
e	Volume-II	<i>Price Schedule (Absolute value).</i> <span style="float: right;">Applicable</span>
iv	ISSUE OF TENDER DOCUMENTS	Tender documents will be available for downloading from BHEL eProcurement portal ( <a href="https://eprocurebhel.co.in">https://eprocurebhel.co.in</a> ) till due date of submission:  Brief information of the tenders shall also be available at BHEL website ( <a href="http://www.bhel.com">www.bhel.com</a> ) <span style="float: right;">Applicable</span>
v	DUE DATE & TIME OF OFFER SUBMISSION	<b>Date : 20/12/2021 , Time : 10:00 hrs</b> <b>Place : on <a href="https://eprocurebhel.co.in">https://eprocurebhel.co.in</a></b> <span style="float: right;">Applicable</span>
vi	OPENING OF TENDER	<b>Date : 20/12/2021 , Time : 15:30 hrs</b> <b>Notes:</b> (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. <span style="float: right;">Applicable</span>

		(2) Bidder may depute representative to witness the opening of tender. For e-Tender, Bidder may witness the opening of tender through e-Procurement portal only.	
vii	EMD AMOUNT	Rs. 32,57,000/-	Applicable
viii	COST OF TENDER	Free	
ix	LAST DATE FOR SEEKING CLARIFICATION	<p><b>Five days before bid submission due date.</b>  Along with soft version also, addressing to undersigned &amp; to others as per contact address given below;</p> <p>1) Name: <b>G.V. RAJA SEKHAR</b>  Designation: Sr. MANAGER  Deptt: SCT  Address: BHEL-PSNR, PLOT NO. 25, SECTOR – 16A, NOIDA - 201301  Phone: (Landline) 0120-2416232  Email : <a href="mailto:gvr@bhel.in">gvr@bhel.in</a></p> <p>2) Name: <b>CHITTARANJAN SWAIN</b>  Designation: MANAGER  Deptt: SCT  Address: BHEL-PSNR, PLOT NO. 25, SECTOR – 16A, NOIDA - 201301  Phone: (Landline) 0120 - 2416500  Email : <a href="mailto:cs@bhel.in">cs@bhel.in</a></p>	Applicable
x	SCHEDULE OF PRE BID DISCUSSION (PBD)		Not Applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	Please refer clause no. 15.	Applicable
xii	LATEST UPDATES	<p>Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc. to Tender Specifications will be hosted in BHEL webpage (<a href="http://www.bhel.com">www.bhel.com</a> --&gt;Tender Notifications →View Corrigendums), BHEL eProcurement portal (<a href="https://eprocurebhel.co.in">https://eprocurebhel.co.in</a>) <b>and not in the newspapers</b>. Bidders to keep themselves updated with all such information.</p>	

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 digitally using Class III DSC & uploaded in E-Procurement Portal, 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 **Not Used.**

- 4.0 Unless specifically stated otherwise, bidder shall deposit EMD as per clause 1.9 of General Conditions of Contract.

For Electronic Fund Transfer the details are as below:-

**a) Name of the Beneficiary** -: Bharat Heavy Electricals Limited

**b) Bank Particulars**

- |        |  |   |
|--------|--|---|
| i).    | Bank Name :-                               | STATE BANK OF INDIA   |
| ii).   | Bank Telephone No.(with STD code):-        | 011-23475566  |
| iii).  | Branch Address:-                           | CAG II BRANCH, NEW DELHI<br>4 <sup>th</sup> & 5 <sup>th</sup> FLOOR, REDFORT CAPITAL,<br>PARASNATH TOWERS, BHAI VEER SINGH<br>MARG, GOLE MARKET, NEW DELHI-110001 |
| iv).   | Bank Fax No. (with STD code) :-            | 011-23475566  |
| v).    | Branch Code :-                             | 17313   |
| vi).   | 9 Digit MICR Code of the Bank Branch :-    | 110002562   |
| vii).  | Bank Account Number :-                     | 10813608647   |
| viii). | Bank Account Type :-                       | CASH CREDIT   |
| ix).   | 11 Digit IFSC Code of Beneficiary Branch:- | SBIN0017313   |

(Note :- In case of E-Tenders, proof of remittance of EMD should be uploaded in the E-Procurement Portal and originals, as applicable, shall be sent to the officer inviting tender within a reasonable time, failing which the offer is liable to be rejected.)

- 5.0 **Procedure for Submission of Tenders**: This is an E-tender floated online through our E-Procurement Site (<https://eprocurebhel.co.in>). The bidder should respond by submitting their offer online only in our e-Procurement platform at (<https://eprocurebhel.co.in>). Offers are invited in two-parts only.

**Documents Comprising the e-Tender**

The tender shall be submitted online ONLY EXCEPT EMD (in physical form) as mentioned below:

**a. Technical Tender (UN priced Tender)**

All Technical details (e.g. Eligibility Criteria requested (as mentioned below)) should be attached in e-tendering module, failing which the tender stands invalid & may be REJECTED. Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- i. Earnest Money Deposit (EMD) furnished in accordance with NIT Clause 4.0. Alternatively, documentary evidence for claiming exemption as per clause 29 of NIT.
- ii. Technical Bid (without indicating any prices).

**b. Price Bid:**

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.
- iii. Note: It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- iv. A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.
- v. A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.



**DO NOT'S**

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered. **Also, uploading of the price bid in prequalification bid or technical bid may RESULT IN REJECTION of the tender.**

**Digital Signing of e-Tender**

Tenders shall be uploaded with all relevant PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION digital signature certificate (DSC).

**The Requirement:**

1. A PC with Internet connectivity &
2. DSC (Digital Signature Certificate) (**Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION**)

The contact details of the service provider are given below:

**For any technical related queries please call at 24 x 7 Help Desk Number**

**0120-4001 002, 0120-4001 005 & 0120-6277 787**

International bidders are requested to prefix 91 as country code

Email Support - Technical - [support-eproc@nic.in](mailto:support-eproc@nic.in)

**Note:** For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority

The process of utilizing e-procurement necessitates usage of **DSC (Digital Signature Certificate)**

**(Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)** and you are requested to procure the same immediately, if not presently available with you. Please note that only with DSC, you will be able to login the e-procurement secured site and take part in the tendering process.

The contact details of the DSC Certifying Authority as given below:

Sl. No.	Name	Website Link
1	GNFC	<a href="http://www.ncodesolutions.com">www.ncodesolutions.com</a>
2	e-Mudhra	<a href="http://www.e-Mudhra.com">http://www.e-Mudhra.com</a>
3	Safescrypt	<a href="http://www.safescrypt.com">www.safescrypt.com</a>

Vendors are also requested to go through seller manual available on <https://eprocurebhel.co.in>.

6.0 Not used.

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:**

**Bidder's 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 cut off month for reckoning 'Load' shall be the 3<sup>rd</sup> Month preceding the month corresponding to the 'latest date of bid submission', in the following manner -

**(Note:** For example, if latest bid submission is in Jan 2017, then the 'load' shall be calculated up to and inclusive of Oct 2016)

Total number of Packages in hand = Load (P)

Where 'P' is the sum of all unit wise identified packages (refer table-1) under execution with BHEL Regions as on the cut off month defined above, including packages yet to be commenced, excepting packages which are on Long Hold.

- II. **PERFORMANCE**: Here 'Monthly Performance' of the bidder for all the packages (under execution/ executed during the 'Period of Assessment' in all 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 and including the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the 3<sup>rd</sup> Month preceding the month corresponding to 'latest date of bid submission', in the following manner:

**(Note:** For example, if 'latest date of bid submission' is in Jan 2017, then the 'performance' shall be assessed for a 6 months' period up to and inclusive of Oct 2016 (i.e. from May 2016 to Oct 2016), 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 for the 'Period of Assessment':**

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:

- $P_1, P_2, P_3, P_4, P_5, \dots P_N$  etc. be the packages (under execution/ executed during the 'Period of Assessment' in all Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions =  $P_T$  (i.e.  $P_T = P_1 + P_2 + P_3 + P_4 + \dots P_N$ )
- 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 cumulative total months ' $T_T$ ' for total similar Packages ' $P_T$ ' for all Regions (i.e.  $T_T = T_1 + T_2 + T_3 + T_4 + \dots T_N$ )
- Sum ' $S_1$ ' of 'Monthly Performance Evaluation' Scores ( $S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5} \dots S_{1-T_1}$ ) for similar package  $P_1$ , for the 'period of assessment' ' $T_1$ ' (i.e.  $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots S_{1-T_1}$ ). Similarly,  $S_2$  for package  $P_2$  for period  $T_2$ ,  $S_3$  for package  $P_3$  for period  $T_3$  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. ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots S_N$ ')
- Overall Performance Rating ' $R_{BHEL}$ ' for the Similar Package/Packages** (under execution/ executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL

$$= \frac{\text{Aggregate of Performance scores for all similar packages in all the Regions}}{\text{Aggregate of months for each of the similar packages for which performance should have been evaluated in all the Regions}}$$

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

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

Sl. No.	Item Description	Details for all Regions							Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>	...	P <sub>N</sub>	Total No. of similar packages for all Regions = P <sub>T</sub> i.e. 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 Packages ( as in row 1)	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>	...	T <sub>N</sub>	Sum (Σ) of columns (iii) to (ix) = T <sub>T</sub>
3	Monthly performance scores for the corresponding period (as in Row 2)	S <sub>1-1</sub> , S <sub>1-2</sub> , S <sub>1-3</sub> , S <sub>1-4</sub> , ... S <sub>1-T1</sub>	S <sub>2-1</sub> , S <sub>2-2</sub> , S <sub>2-3</sub> , S <sub>2-4</sub> , ... S <sub>2-T2</sub>	S <sub>3-1</sub> , S <sub>3-2</sub> , S <sub>3-3</sub> , S <sub>3-4</sub> , ... S <sub>3-T3</sub>	S <sub>4-1</sub> , S <sub>4-2</sub> , S <sub>4-3</sub> , S <sub>4-4</sub> , ... S <sub>4-T4</sub>	S <sub>5-1</sub> , S <sub>5-2</sub> , S <sub>5-3</sub> , S <sub>5-4</sub> , ... S <sub>5-T5</sub>	.. .. .. .. .. .. ..	S <sub>N-1</sub> , S <sub>N-2</sub> , S <sub>N-3</sub> , S <sub>N-4</sub> , ... S <sub>N-TN</sub>	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	...	S <sub>N</sub>	Sum (Σ) of columns (iii) to (ix) = S <sub>T</sub>

ii). Calculation of Overall 'Performance Rating' (R<sub>BHEL</sub>) in case at least 6 evaluation scores for 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. 'R<sub>BHEL</sub>' shall be calculated subject to availability of 'performance scores' for at least 6 'package months' in the order of precedence below:

- 'Period of Assessment' i.e. 6 months preceding and including the cut-off month
- 12 months preceding and including the cut-off month
- 24 months preceding and including the cut-off month

In case, R<sub>BHEL</sub> cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'.

iii). Factor "L" assigned based on Overall Performance Rating ( $R_{BHEL}$ ) at Power Sector Regions:

Sl. no.	Overall Performance Rating ( $R_{BHEL}$ )	Corresponding value of 'L'
1	=60	NA
2	> 60 and $\leq 65$	0.4
3	> 65 and $\leq 70$	0.35
4	> 70 and $\leq 75$	0.25
5	> 75 and $< 80$	0.2
6	$\geq 80$	NA

III. **'Assessment of Capacity of Bidder':**

'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages  $P_{Max} = (R_{BHEL} - 60)$  divided by corresponding value of 'L', i.e.  $(R_{BHEL} - 60)/L$

Note:

- In case the value of  $P_{Max}$  results in a fraction, the value of  $P_{Max}$  is to be rounded off to next whole number
- For  $R_{BHEL} = 60$ ,  $P_{Max} = '1'$
- For  $R_{BHEL} \geq 80$ , there will be no upper limit on  $P_{Max}$

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if  $P \leq P_{Max}$

(Where P is calculated as per clause 'I' above)

IV. **Explanatory note:**

- Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or C&I 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, C&I, 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 (i.e. Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above.

## ii). Identified Packages (Unit wise)

**Table-1**

Civil	Electrical and C&I	Mechanical
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)	i). Electrical ii). C&I iii). Others (Elect. and C&I)	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). ESP iv). LP Piping v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) ix). Material Management x). FGD xi). ACC xii). Others (Mechanical)

- iii). Bidders who have not been evaluated for at least six package months in the last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions, shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions.

A 'NEW VENDOR' if awarded a job (of package/packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI from BHEL.

The "FIRST TIMER" tag shall remain till completion of all the contracts against which vendor has been tagged as First Timer or availability of 6 evaluation scores within last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions.

A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Assessment of Capacity of Bidders'.

- iv). Consequent upon applying the criteria of 'Assessment of Capacity of Bidders' detailed above on all the bidders qualified against Technical and Financial Qualification criteria, if the number of qualified bidders reduces to less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then for further processing of the Tender, BHEL at its discretion reserves the right to also consider the bidders who are "not qualified" as per criteria of 'Assessment of Capacity of Bidders' and for this, procedure described in following three options shall be followed:

- a) All the bidders having Overall Performance Rating ('R<sub>BHEL</sub>')  $\geq 60$  shall be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- b) If even after using option "a", the number of qualified bidders remains less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then in addition to bidders considered as per option "a", "First timer" bidders having average of available performance scores  $\geq 60$  upto and including the Cut Off month shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- c) If even after using option "a" and "b", the number of qualified bidders remains less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then in addition to bidders considered as per option "a" and "b", "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.

**Note:-** In case, the number of bidders qualified against Technical and Financial Qualification criteria itself is less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then all bidders (a)- having Overall Performance Rating ('R<sub>BHEL</sub>')  $\geq 60$ , (b)- First timer" bidders having average of available performance scores  $\geq 60$  upto and including the Cut Off month, (c)- "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall be considered qualified against criteria of 'Assessment of Capacity of Bidders' for further processing of tender.

- v). 'Under execution' shall mean works in progress as per the following:
- a. Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
  - b. Up to Steam Blowing in case of Boiler/ESP/Piping Packages
  - c. Up to Synchronization in all Balance Packages

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

- vi). Contractor shall provide the latest contact details i.e. mail-ID and Correspondence Address to SCT Department, so that same can be entered in the Contractor Performance Evaluation System, and in case of any change/discrepancy same shall be informed immediately. Login Details for viewing scores in Contractor Performance Evaluation System shall be provided to the Contractor by SCT Department.
- vii). Performance Evaluation for Activity Month shall be completed in Evaluation Month (i.e. month next to Activity Month) or in rare cases in Post Evaluation Month (i.e. month next to Evaluation Month) after approval from Competent Authority. In case scores are not acceptable, Contractor can submit Review Request to GM Site/ GM Project latest by 27<sup>th</sup> of Evaluation Month or 5 days after approval of score, whichever is later. However, acceptance/rejection of 'Review Request' solely depends on the discretion of GM Site/GM Project. After acceptance of Review Request, evaluation score shall be reviewed at site and the score after completion of review process shall be acceptable and binding on the contractor.
- viii). Project on Hold due to reasons not attributable to bidder -
  - a. **Short hold:** Evaluation shall not be applicable for this period, however Loading will be considered.
  - b. **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation as well as Loading shall not be considered for this period.
- ix). Performance evaluation as specified above in this clause 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 and/or through e-procurement portal, 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 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 Clause no. 1, Salient Features of NIT, Sl. no. (xi) above.**

**"Integrity Pact (IP)"**



- (a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl. No.	IEM	Email
1.	Shri Arun Chandra Verma, IPS (Retd.)	<a href="mailto:acverma1@gmail.com">acverma1@gmail.com</a>
2.	Shri Virendra Bahadur Singh, IPS (Retd.)	<a href="mailto:vbsinghips@gmail.com">vbsinghips@gmail.com</a>

- (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- (c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note:

*No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as per Clause no. 1, Salient Features of NIT, Sl. No. (ix) 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 authorized 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 shall be resorting to Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com) on "**supplier registration page**") for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price Bids of all the techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.
- 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): Not Applicable
- 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 The consultant / firm (and any of its affiliates) shall not be eligible to participate in tender(s) for the related works or services for the same project, if they were engaged for the consultancy services.
- 27.0 Guidelines/rules in respect of Suspension of Business dealings, Vendor evaluation format, Quality, Safety & HSE guidelines, Experience Certificate, etc. may undergo change from time to time and the latest one shall be followed. The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on [www.bhel.com](http://www.bhel.com) on "supplier registration page".
- 28.0 The offers of the bidders who are on the banned/ hold list and also the offer of the bidders, who engage the services of the banned/ hold firms, shall be rejected. The list of **banned/ hold firms** is available on BHEL web site [www.bhel.com](http://www.bhel.com).
- 28.1 Integrity commitment, performance of the contract and punitive action thereof:
- 28.1.1 **Commitment by BHEL:**  
BHEL commits to take all measures necessary to prevent corruption in connection with the tender Process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.
- 28.1.2 **Commitment by Bidder/ Supplier/ Contractor:**
- (i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
  - (ii) The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
  - (iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.
- If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the prices or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extent guidelines of the company available on [www.bhel.com](http://www.bhel.com) and / or under applicable legal provisions.
- 29.0 Not Applicable
- 30.0 The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

**31.0 PREFERENCE TO MAKE IN INDIA:**

For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

**31.1 Compliance to Restrictions under Rule 144 (xi) of GFR 2017**

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means:-
  - a. An entity incorporated established or registered in such a country; or
  - b. A subsidiary of an entity incorporated established or registered in such a country; or
  - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
  - d. An entity whose *beneficial owner* is situated in such a country; or
  - e. An Indian (or other) agent of such an entity; or
  - f. A natural person who is a citizen of such a country; or
  - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
- IV. The *beneficial owner* for the purpose of (III) above will be as under:
  1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.  
Explanation
    - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.
    - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
  2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.
  3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.
  4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

**Note:**

- (i) The bidder shall provide undertaking for their compliance to this Clause, in the format provided in Annexure-11.
- (ii) Registration of the bidder with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of the bids.

### 32.0 Not used

- 33.0 In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders.

In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/ draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s).

Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

- 34.0 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

### 35.0 Not used

### 36.0 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

It may please be noted that guidelines/ circulars/ amendments/ govt. directives issued from time to time shall also be applicable.

for BHARAT HEAVY ELECTRICALS LTD  
(SCT)

### Enclosure:

- (i) Annexure-1: Pre Qualifying Requirements.
- (ii) Annexure-2: Check List.
- (iii) Annexure-3: Not Used
- (iv) Annexure-4: Reverse Auction Process Compliance Form
- (v) Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process
- (vi) Annexure-6: RA Price Confirmation and Breakup
- (vii) Annexure-7: Integrity Pact
- (viii) Annexure-8: Undertaking as per C4 of Annexure-1 i.e. PQR
- (ix) Annexure-9: Declaration reg. Related Firms & their areas of Activities
- (x) Annexure-10: Declaration reg. minimum local content in line with revised public procurement
- (xi) Annexure-11: Declaration by the Contractor
- (xii) Other Tender documents as per this NIT.

**ANNEXURE - 1****PRE QUALIFYING REQUIREMENTS**

JOB	ALL CIVIL, ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PUMP HOUSE (RWPH) FOR 2X660 MW KHURJA STPP AT KHURJA, UTTAR PRADESH
TENDER NO	BHEL/NR/SCT/KHURJA/CWPH & RWPH/1246

SL. NO.	NAME AND DESCRIPTION OF PRE-QUALIFICATION CRITERIA	BIDDER'S CLAIM IN RESPECT OF FULFILLING THE PQR CRITERIA
<b>A</b>	Submission of Integrity Pact duly signed	Applicable
<b>B</b>	<b><u>Technical</u></b> <b>Bidder who wish to participate should have experience as follows: :</b>	Applicable
<b>B-1</b>	<p>Bidder should have executed similar work for any one of the following in the last seven (7) years from latest date of bid submission:</p> <p>One (01) work of value not less than <b>Rs. 18.06 Crore.</b>  <b>OR</b>  Two (02) works each of value not less than <b>Rs. 11.29 Crore.</b>  <b>OR</b>  Three (03) works each of value not less than <b>Rs. 9.03 Crore.</b></p> <p><b><u>Note:</u></b> 'Similar Works' means "Piling or Civil or Structural or 'Civil and Structural works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or Process industry foundations or any combination of these shall be considered."</p>	
<b>B-2</b>	<p><b><u>Civil Works:</u></b>  Executed:</p> <ol style="list-style-type: none"> <li>At least 5160 CUM of RCC quantities, within a common period of twelve consecutive months in cumulative of two running/ completed contracts.</li> </ol> <p style="text-align: center;"><b>OR</b></p> <ol style="list-style-type: none"> <li>At least 3440 CUM of RCC quantities, within period of twelve consecutive months in one running/ completed contract.</li> </ol> <p><b><u>Note:</u></b> Bidder should have executed above mentioned RCC works at civil works of any pump house/sump house or any power house building civil works or any process industry foundations or any combination of these shall be considered.</p>	

<b>C</b>	<b><u>FINANCIAL:</u></b>	<b>Applicable</b>
<b>C-1</b>	<p><b><u>TURNOVER:</u></b> Bidders must have achieved an average annual financial turnover (Audited) of <b>Rs. 6.77 Crore</b> or more over three consecutive Financial Years (FY) from immediate four previous Financial Years i.e. (2017-18, 2018-19 &amp; 2019-20 OR 2018-19, 2019-20 &amp; 2020-21). Bidder shall submit the Audited Balance Sheet and Profit &amp; Loss Account in support of this.</p> <p>In case audited financial statements have not been submitted for all the three years as indicated above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years.</p> <p>If financial statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by Chartered Accountant.</p>	
<b>C-2</b>	<p><b><u>NET WORTH:</u></b> Net worth (only in case of companies) of the bidder should be positive.</p> <p><b><u>Note:</u></b> Net worth shall be calculated based on the latest Audited Accounts, as furnished for 'C-1' above.</p> <p>Net worth = Paid up share capital + Reserves.</p>	<b>Applicable</b>
<b>C-3</b>	<p><b><u>PROFIT:</u></b> Bidder must have earned profit in any one of the three financial years as applicable in the last three financial years as furnished for 'C-1' above.</p> <p><b><u>Note:</u></b> PROFIT shall be PBT earned during any one year of last three financial years as in 'C-1' above.</p>	<b>Applicable</b>
<b>C-4</b>	Bidder must not be under Insolvency Resolution Process or Liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/authorities, which will render him ineligible for participation in this tender, and shall submit undertaking (Annexure-8) to this effect.	<b>Applicable</b>
<b>D</b>	Assessment of Capacity of bidder to execute the work as per clause 9.0 of NIT	<b>Applicable – by BHEL</b>
<b>E</b>	<p>Approval of Customer</p> <p><b><u>Note:</u></b> Names of bidders who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval.</p>	<b>Applicable – by BHEL</b>
<b>F</b>	<p>Price Bid Opening</p> <p><b><u>Note:</u></b> Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E</p>	<b>By BHEL</b>

**Explanatory Notes for QR 'B':**

1. For Sl. No 'B-1' above the word 'Similar Works' means "Piling or Civil or Structural or 'Civil and Structural works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or Process industry foundations or any combination of these shall be considered."
2. For evaluation of PQR, in case Bidder alone does not meet the pre-qualifying technical criteria B-1 above, bidder may utilize the experience of its Parent/Subsidiary Company along with its own experience, subject to following:
  - a. The parent Company shall have a controlling stake of  $\geq 50\%$  in the subsidiary company (as per Format-1).
  - b. The parent company/subsidiary company of which experience is being utilized for bidding shall submit Security Deposit (SD) equivalent to 1% of the total contract value.
  - c. The parent/Subsidiary Company and bidder shall provide an undertaking that they are jointly or severally responsible for successful performance of the contract (as per Format-2)



3. Completion date for achievement of the technical criteria should be in the last 7 years ending on the 'latest date of Bid Submission' of Tender irrespective of date of the start of work. Completion date shall be reckoned from the "FY quarter of bid submission".
4. 'Executed' means the bidder should have achieved the technical criteria even if the contract has not been completed or closed.
5. For sl.no. 'B-1' above, actual executed value shall be considered. The evaluation currency for this tender shall be **INR**.

For sl.no. 'B-1' above, Value of work is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission as per following formula-

$$P = \left\{ R + 0.425 \times R \times \frac{(X_N - X_0)}{X_0} + 0.425 \times R \times \frac{(Y_N - Y_0)}{Y_0} \right\}$$

Where

P = Updated value of work

R = Value of executed work

$X_N$  = All India Avg. Consumer Price index for industrial workers for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

$X_0$  = All India Avg. Consumer Price index for industrial workers for last month of work execution

$Y_N$  = Monthly Whole Sale Price Index for All Commodities for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

$Y_0$  = Monthly Whole Sale Price Index for All Commodities for last month of work execution.

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.

Credentials submitted by the bidder against "PRE QUALIFYING CRITERIAS" shall be verified for its authenticity. In case, any credential (s) is/are found unauthentic, offer of the bidder is liable to the rejection. BHEL reserves the right to initiate any further action as per extant guidelines for Suspension of Business Dealings.

Format-1**Certificate for relationship between Parent Company / Subsidiary Company and the bidder**

To,

.....

.....

Dear Sir,

**Sub:** Bid for NIT No .....dated..... for “ .....” (name of the tender).

We hereby certify that M/s..... is Parent Company/ Subsidiary Company of M/s .....(the bidder) and details of equity holding of the Parent Company in Subsidiary Company as on .....(not earlier than seven days prior to the Bid Submission Date) are given as below:

Name of Parent Company	Name of Subsidiary Company	Percentage of Equity Holding of Parent Company in Subsidiary Company

**(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder)**

**Undertaking from the Parent Company/ Subsidiary Company of the bidder**  
**(On the Letter Head of Parent Company/ Subsidiary Company, as applicable)**

From,  
Name:  
Full Address:

Telephone No.:  
E-mail address:  
Fax/No.:

To,  
.....  
.....

Dear Sir,

We refer to the NIT No .....dated..... for “ .....” (name of the Tender).

“We have carefully read and examined in detail the NIT/Tender Terms and Conditions, including in particular, Clause .... of the NIT/Tender, regarding submission of an Undertaking, as per the prescribed Format 1 of the NIT/ Tender.

We confirm that M/s..... (the Bidder) has been authorized by us to use our Technical capability for meeting the Technical Criteria as specified in Clause.....of the PQR of the NIT/Tender referred above.

We agree to submit the Security Deposit equivalent to 1% of the total contract value in addition to Security Deposit to be submitted by Bidder as per Clause.....of the NIT/Tender for fulfilment of all obligations in terms of provisions of the contract, in the event of .....(the Bidder) being selected as the Successful Bidder.

We confirm that we along with M/s.....(the bidder), are jointly or severally responsible for successful performance of the contract.

We confirm that our company shall not participate in the above tender as a ‘Standalone Bidder’ or as a ‘Consortium bidder’ and also shall not authorize any other bidder to use our Technical capability for the above tender.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the referred NIT/Tender.

**Signature of Managing Director/Authorized signatory of Parent/ Subsidiary Company**

**ANNEXURE - 2****CHECK LIST****NOTE: - Tenderers are required to fill in the following details and no column should be left blank**

<b>1</b>	<b>Name of the Tenderer</b>		
<b>2</b>	<b>Address of the Tenderer</b>		
<b>3</b>	<b>Type of the Firm/ Company</b>		
<b>(i)</b>	In case of Individual Tenderer	His / her full name, address and place & nature of business shall be furnished along with the offer.	
<b>(ii)</b>	In case of Partnership Firm	The names of all the partners and their addresses, A copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be furnished along with the offer..	
<b>(iii)</b>	In case of Companies	a) Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished). b) Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.	
<b>4.a</b>	<b>Details of Contact person for this Tender</b>	Name : Mr/ Ms Designation: Telephone No: Mobile No: Email ID:	
<b>4.b</b>	<b>Details of alternate Contact person for this Tender</b>	Name : Mr/ Ms Designation: Telephone No: Mobile No: Email ID:	
<b>5</b>	<b>EMD DETAILS</b>		
<b>6</b>	<b>Validity of Offer</b>	TO BE VALID FOR <b>SIX MONTHS</b> FROM DUE DATE	
	<b>DESCRIPTION</b>	<b>APPLICABILITY (BY BHEL)</b>	<b>ENCLOSED BY BIDDER</b>
<b>7</b>	Whether all pages of the Tender documents including annexures, appendices etc are read and understood	Applicable	YES / NO
<b>8</b>	Whether the format for compliance with <b>PRE QUALIFICATION CRITERIA</b> (ANNEXURE – 1 ) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
<b>9</b>	Audited Balance Sheet and profit & Loss Account for the last three years	Applicable	YES / NO
<b>10</b>	Copy of PAN Card	Applicable	YES / NO
<b>11</b>	Copy of GST registration	Applicable	YES / NO

SL. NO.	DESCRIPTION	APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
12	Organization Chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.	Applicable	YES / NO
13	Integrity Pact (Annexure – 7 of NIT)	Applicable	YES / NO
14	Annexures – 5, 8, 9, 10 & 11 of NIT	Applicable	YES / NO
15	Offer forwarding letter / tender submission letter <b>[Form No. F-01 (Rev 00)]</b>	Applicable	YES / NO
16	Declaration by Authorised Signatory <b>[Form No: F-02 (Rev 00)]</b>	Applicable	YES / NO
17	Declaration by Authorised Signatory regarding Authenticity of submitted documents <b>[Form No: F-02A (Rev 00)]</b>	Applicable	YES / NO
18	No Deviation Certificate <b>[Form No: F-03 (Rev 00)]</b>	Applicable	YES / NO
19	Declaration confirming knowledge about Site Conditions <b>[Form No: F-04 (Rev 00)]</b>	Applicable	YES / NO
20	Declaration for relation in BHEL <b>[Form No: F-05 (Rev 00)]</b>	Applicable	YES / NO
21	Non-Disclosure Certificate <b>[Form No: F-06 (Rev 00)]</b>	Applicable	YES / NO
22	Bank Account Details for E-Payment <b>[Form No: F-07 (Rev 00)]</b>	Applicable	YES / NO
23	Format for seeking clarification <b>[Form No: F-08 (Rev 00)]</b>	Applicable	YES / NO
24	Capacity Evaluation of Bidder for current Tender <b>[Form No: F-09 (Rev 00)]</b>	Applicable	YES / NO
25	Power of Attorney for Submission of Tender/Signing Contract Agreement <b>[Form No: F-25 (Rev 00)]</b>	Applicable	YES / NO
26	Analysis of Unit rates <b>[Form No: F-26 (Rev 00)]</b>	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**

NOT USED

**ANNEXURE - 4****Reverse Auction Process Compliance Form**

(The bidders are required to print this on their company's letterhead and sign, stamp before RA)

To

- M/s. {Service provider
- Postal address}

**Sub: Agreement to the Process related Terms and Conditions**

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no.{.....} dt. {.....}

This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per Annexure - 6 within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards

Signature with company seal

Name:

Company / Organization:

Designation within Company / Organization:

Address of Company / Organization:

**Sign this document and FAX/ email it to M/s {Service provider} at {.....} prior to start of the Event.**



**ANNEXURE – 5****Authorization of representative who will participate in the on line Reverse Auction Process:**

1	NAME OF THE BIDDER	
2	NAME & DESIGNATION OF OFFICIAL	
3	POSTAL ADDRESS (COMPLETE)	
4	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

**ANNEXURE – 6**

**RA price confirmation and breakup**  
**(To be submitted by L1 bidder after completion of RA)**

**To**

- M/s. Service provider
- Postal address

CC: M/s BHEL

{Unit-

Address-}

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

**Rs.{\_\_\_\_in value & in words\_\_\_\_} for item(s) covered under tender enquiry No. {...} dt.{...}**

Total price of the items covered under above cited enquiries is inclusive of {*Packing & forwarding, GST, E.D., C.S.T., freight and insurance charges up to {.....} District,{.....} State and Type Test Charges etc., (exclusive of service tax), other as per NIT*}

as our final landed prices as quoted during the Reverse Auction conducted today {*date*} which will be valid for a period of {\_\_\_\_ **in nos. & in words** \_\_\_\_} days.

The price break-up is as given below.

Total

=====

- Rs. in value & in words

=====

Yours sincerely,

For \_\_\_\_\_

**Name:****Company:****Date:****Seal:**

**ANNEXURE – 7**

**INTEGRITY PACT**

Integrity Pact format attached separately

**ANNEXURE – 8**

**UNDERTAKING**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

**Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS**

**Ref:** NIT/Tender Specification No: **BHEL/NR/SCT/KHURJA/CWPH & RWPH/1246**

I/We, \_\_\_\_\_  
declare that, I/We am/are not under insolvency resolution process or liquidation or Bankruptcy Code Proceedings (IBC)  
as on date, by NCLT or any adjudicating authority/authorities, which will render us ineligible for participation in this tender.

**Sign. of the AUTHORISED SIGNATORY  
(With Name, Designation and Company seal)**

Place:

Date:

**ANNEXURE-9****DECLARATION**

Date: \_\_\_\_\_

To: \_\_\_\_\_

Address: BHEL, \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Email: \_\_\_\_\_

\_\_\_\_\_

Sub: **Details of related firms and their area of activities**

Dear Sir/ Madam,

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, \_\_\_\_\_ (NA, if not applicable)

1	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
2	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
...		

**Note:** I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

( \_\_\_\_\_ )

From: M/s \_\_\_\_\_  
 Supplier Code: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Annexure-10**

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH  
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04<sup>TH</sup>  
JUNE, 2020 AND SUBSEQUENT ORDER(S)**

*(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)*

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

**Sub:** Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04<sup>th</sup> June, 2020 and subsequent order(s).

**Ref :** 1) NIT/Tender Specification No: **BHEL/NR/SCT/KHURJA/CWPH & RWPH/1246**

2) All other pertinent issues till date

We hereby certify that the items/works/services offered by..... *(specify the name of the organization here)* has a local content of \_\_\_\_\_ % and this meets the local content requirement for '**Class-I local supplier**' / '**Class II local supplier**' \*\* as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- |          |          |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| ...      |          |
| ...      |          |
| ...      |          |

Thanking you,  
Yours faithfully,

**(Signature, Date & Seal of  
Authorized Signatory of the Bidder)**

**\*\* - Strike out whichever is not applicable.**

**Note:**

1. Bidders to note that above format Duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

**ANNEXURE-11**

**DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017**  
(To be typed and submitted in the Letter Head of the Entity/ Firm providing certificate as applicable)

-----  
To,  
(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

**Sub:** Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

**Ref :** 1) NIT/Tender Specification No: **BHEL/NR/SCT/KHURJA/CWPH & RWPH/1246**  
2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I certify that \_\_\_\_\_ **(SPECIFY THE NAME OF THE ORGANIZATION HERE)**, is not from such a country/ has been registered with the Competent Authority (attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT); and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. (attach relevant valid registration, if applicable)

I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,  
Yours faithfully,

**(Signature, Date & Seal of  
Authorized Signatory of the Bidder)**

**Note:** Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.



BHEL-IP

## INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

\_\_\_\_\_, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

### Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

\_\_\_\_\_. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

### **Section 1- Commitments of the Principal**

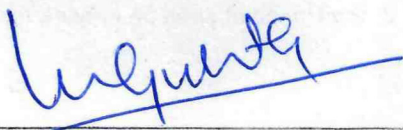
1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.





## **Section 2 - Commitments of the Bidder(s)/ Contractor(s)**

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

## **Section 3 - Disqualification from tender process and exclusion from future contracts**

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

## **Section 4 - Compensation for Damages**

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to





demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

#### **Section 5 - Previous Transgression**

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

#### **Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors**

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.
- 6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

#### **Section 7 - Criminal Charges against violating Bidders/ Contractors / Subcontractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

#### **Section 8 - Independent External Monitor(s)**

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non-disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.



- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

#### Section 9 - Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

#### Section 10 - Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.





BHEL-IP

- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

-----  
For & On behalf of the Principal

(Office Seal)

Place-----

Date-----

Witness:-----

(Name & Address) -----  
-----

-----  
For & On behalf of the Bidder/

Contractor

(Office Seal)

Witness:-----

(Name & Address) -----  
-----

*V.K. Gupta*

 **वी. के. गुप्ता / V. K. GUPTA**  
अध्यक्ष महाप्रबंधक (उप संचिदा एवं क्रय)  
**Addl. General Manager (SCP)**  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, पावर सेक्टर-उत्तरी क्षेत्र  
Bharat Heavy Electricals Ltd., Power Sector-Northern Region  
प्लॉट सं.25, सेक्टर-16ए, नोएडा/Plot No.25, Sec.16A, Noida

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

NAME OF WORK: ALL CIVIL ARCHITECTURAL  
AND STRUCTURAL WORKS OF CW PUMP  
HOUSE (CWPH), CW CHANNEL, FOREBAY,  
TRANSITION ZONE & RW PUMP HOUSE (RWPH)  
FOR 2X660MW KHURJA STPP AT KHURJA,  
UTTAR PRADESH

BHARAT HEAVY ELECTRICALS LIMITED



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## CONTENTS

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3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III	10-19
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	20-25
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	26-27
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<b>Volume-IA</b>	<b>Part-II : Technical Specifications</b>	<b>Section</b>	
1	TECHNICAL SPECIFICATION		

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

### **2X660MW KHURJA STPP- STG PACKAGE**

#### **INTRODUCTION**

THDC, a joint venture of Government of India & Government of UP, has awarded the work to BHEL for supply, construction/erection for CW system civil works package for 2x660MW Khurja STPP at Khurja, U.P.

The Bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on BHEL/Owner. All relevant site data /information as may be necessary shall have to be obtained /collected by the Bidder.

S.No.	Title	Description
1	Owner	THDC India Limited
2	Consultant	NTPC Limited
3	Project Title	2X660MW KHURJA STPP – CW SYSTEM CIVIL WORKS PACKAGE
4	Project Site Location	Khurja STPP is located in Bulandshahar district of Uttar Pradesh. The site is situated near villages Dushhara-kherli, Jahanpur, Naiphal (Unchagaon) and Rukunpur. The district Headquarters Bulandshahar is about 32Kms. Distance of the project site from Delhi is about 90Kms.
5	Nearest Railway Station	The nearest railway station Danwar on Delhi-Kolkata section (via Aligarh) is approx. 5Km away from the project site. The nearest major railway station is Khurja at a distance of about 11kms.
6	Nearest Airport	The nearest commercial airport is Delhi at about 120 km by road
7	Nearest Highway	NH34
8	Nearest Water Body	The upper Ganga canal passes near by the Khurja STPP at a distance of about 13 Kms
9	Land	Land is in possession of THDC
10	Location Co ordinate	Project is located between 28°08'35" to 28°10'25" Northern latitude and 77°53'47" to 77°55'22" Eastern longitude.
11	Seismic Data	The area falls in Zone III (Moderate), according to the Indian Standard Seismic Zoning Map



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

---

Note: - The bidder is advised to visit and examine the site of WORKS and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the Contract. All costs for and associated with site visits shall be borne by the bidder.

### INSTRUCTIONS TO TENDERERS

The Tenderer are advised to physically visit the site and fully acquaint themselves with site conditions, transportation routes, various distances and the fact that other contractors would be working in this area and their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors. **Necessary precaution and arrangements including sprinkling of water during work as acceptable to BHEL for safety & security for the above have to be made by the contractor. No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.**

The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'Engineer' or his duly authorized representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

<b>2.0</b>	<b>GENERAL SCOPE OF WORK</b>
<b>2.1</b>	<b>Scope of this tender covers</b> “ALL CIVIL ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PIMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA” AT KHURJA, UTTAR PRADESH
<b>2.2</b>	<p><b>The brief scope of work is as follows:</b></p> <ol style="list-style-type: none"> <li>1. Complete civil, structural and architectural works associated with CW pump house (CWPH) along with steel superstructure and metal sheeting at roof including substructure pump foundations, maintenance bay, forebay, Transition zone, flow smoothening devices/ structures required as per the sump model tests (Model test in Owner's scope) for CW Pump house sump, Switchgear room and Control room Building etc.</li> <li>2. Complete civil, structural and architectural works associated with Raw Water pump house (RWPH) along with steel superstructure and metal sheeting at roof including maintenance bay, Sump, connection with reservoir outlet pipes, pump foundations, Switchgear room and control room building etc.</li> <li>3. Complete civil work for CW channel from the terminal point at IDCTs upto CW pump, Forebay, Transition zone and any other flow smoothening devices/structures required.</li> <li>4. CW pump house &amp; Raw water pump house including concreting of first stage &amp; second stage embedment for stop log gates &amp; trash racks in each pump bay.</li> <li>5. Civil works for storm water drains around CW pump house area including switchgear room and control room.</li> <li>6. Civil works for earthing mat around pump houses.</li> <li>7. Supply and installation of Bio Digester type Sewage Treatment Unit STP for 20 persons capacity for CW pump house.</li> <li>8. Stoplogs, Trashracks and Lifting Beams for Cooling Water (CW)</li> </ol> <p>The above provided list is indicative only for the bidder's guideline. Any other building/structure not mentioned above, but required for completion of the project in total, deemed to have been included in the bidder scope under this contract. Such work will be executed under this contract by bidder as per the direction of Engineer in charge.</p>
<b>2.2.1</b>	<p>➤ The contractor's scope shall include excavation in soil, dewatering, dressing to required profile, sheet piling or shoring/strutting, backfilling around completed structures and plinth filling, plinth protection, disposal of surplus earth and rock, concreting including reinforcement and formwork, masonry work, plastering, painting, dismantling of existing structures (below ground and above ground, structural steel, other facilities), RCC and brick/ block</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

	<p>masonry and steel structures, fabrication and erection of all structural steel and miscellaneous steel, M. S embedment, earthing, supply of stop log gates and trash gates, complete work of handling, unloading, loading and transporting of materials from project stores sheds / storage yards to site of erection or preassembly yard and unloading at pre-assembly area/erection site, checking, cleaning chipping and levelling of foundations and site clearance before handing over to Owner and other auxiliary items of work, etc. all complete including supply of all materials (except those specified in BHEL scope), consumables, labor, Tools and plants, transportation and storage, sample testing etc. all complete as per BOQ, technical specifications and drawings for proper and successful execution of the job for <b>CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY &amp; TRANSITION ZONE AND RAW WATER PIMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA.</b></p> <ul style="list-style-type: none"><li>➤ The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials including dismantling, removing and disposing off the existing underground structures / facilities etc. (if found), shall be burnt or otherwise disposed of as directed by the Engineer-in-Charge. No separate payment for these operations shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.</li><li>➤ All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts.</li><li>➤ The unit rates shall include all material equipment, fixtures, labor construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.</li><li>➤ The unit rates quoted for various items of B.O.Q shall include all the stipulations mentioned in technical specifications under Section C and nothing extra over B.O.Q rates shall be payable.</li><li>➤ Drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.</li><li>➤ The bidder should fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, local conditions, soil strata and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may have not been specifically brought out in the specifications</li></ul>
2.2.2	<p><b><u>Cement and Steel Supply:</u></b> Cement, Reinforcement Steel and Structural Steel (as per BOQ cum Rates Schedule) required for this tender's scope shall be procured by BHEL and issued to contractor as Free of Cost (FOC) Item.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

	However unloading, handling / storage of Cement and Reinforcement/Structural steel procured by BHEL for this tender scope at site, inside BHEL Stores / Contractor's Stores/one point as informed by BHEL and further transportation from Stores to work area will be in the scope of contractor. No Extra payment shall be made for this work. All sort of material handling for the purpose of this contract is in the scope of bidder without any additional cost to BHEL.
<b>2.2.3</b>	The working area shall be separated from the existing plant area (if required) by cordoning off the area by providing MS / GI sheets of suitable heights with appropriate frame work as approved by BHEL/ Customer. No extra payment shall be paid to contractor for this work.
<b>2.2.4</b>	The Customer THDC India Ltd. may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.
<b>2.2.5</b>	The work under this contract shall be carried out as per BOQ Cum Rate Schedule. In case the description / specifications as per BOQ are found to be incomplete, Indian standard specifications shall be followed. Quantities mentioned in the BOQ cum Rate schedules are approximate only and liable for variation due to change in scope of work / variation in schedule of quantities, changes in design etc. The contractor shall undertake to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of Individual quantity.
<b>2.2.6</b>	The complete works shall be carried out as per BOQ cum Rate schedule. If any work covered in the scope of contract cannot be executed using items available in BOQ, additional / extra items shall be made and rates for such items shall be worked out as per GCC clause 2.15.7. However, contractor shall be bound to execute all the works under the scope of the contract and decision whether an extra item is applicable or not, shall be taken by BHEL Engineer which will be binding on the contractor.
<b>2.2.7</b>	Any activity which is necessarily required for satisfactory execution of any item of BOQ in line with technical specifications shall be deemed to be included in BOQ item even

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

	if it is not described in the item description and no extra payment shall be made against such activity.
<b>2.3</b>	<b>The technical requirements for work to be executed under this specification shall be as per Technical Specifications, enclosed with this tender document. (Part - II)</b>
<b>2.4</b>	<b>Contractor's scope also includes following:</b>
<b>2.4.1</b>	Furnishing all labor, materials (except those specified in BHEL scope), supervision, construction plans, equipment, material, scaffolding, tools and plants, transport to and from the site, materials handling, storage, fuel, electricity, compressed air, water and all other incidental items and temporary works not shown or specified but reasonably implied or necessary for the proper completion, maintenance and handing over the works, in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by BHEL Engineer during the course of works.
<b>2.4.2</b>	Supervisors / Engineers, labours and other staff, consumables etc., required for the scope of work shall be provided by the contractor. It shall be specially noted that the contractor's labour and staff may have to work round the clock to meet the completion schedules / plans, which may involve payment of considerable overtime. The contractor's quoted rates should be inclusive of all such contingencies.
<b>2.4.3</b>	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. Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
<b>2.4.4</b>	Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that are required for all works including temporary works. All the necessary certificates and licenses required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.
<b>2.4.5</b>	Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
<b>2.4.6</b>	The work shall conform to dimensions and tolerances given in various drawings and quality manuals provided by BHEL. If any portion of work is found to be defective in workmanship not conforming to drawings or other stipulations, the contractor shall dismantle and redo the work duly replacing the defective materials at his cost, failing which the job will be carried out by BHEL by engaging other agencies / departmentally and recoveries will be effected from contractor's bill towards expenditure incurred including BHEL's overhead charges.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

2.4.7	The work covered under this specification is of highly sophisticated nature requiring the best quality of workmanship, engineering and construction management. The contractor should ensure timely completion of the work. The contractor must have the adequate quantity of tools, construction aids, equipments, etc., in this possession. He must also on his rolls adequate trained, qualified and experienced supervisory staff and skilled personnel.
2.4.8	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 implied and necessary for completion of the job as a whole all as desired and as directed by the engineer.
2.4.9	The 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. It is not the intent to specify herein all details of all material. Any item related this work not covered by this but necessary to complete the system will be deemed to have been included in the scope of the work.
2.4.10	Mix design for all concreting shall be carried out from a reputed approved institute, contractor has to ensure adding of admixture and minimizing of cement content in line with IS 456 as advised by BHEL time to time without any additional cost. Bidder may use approved available Design Mix at site with approval of Engineer In charge. Engineer In charge decision shall be final and binding in this regard.
2.4.11	The bidder scope shall also include setting up a testing laboratory in the field to carry out all relevant tests. Laboratory equipment is to be arranged by the contractor within quoted rate for conducting required material testing at site. Necessary chemist is also to be deployed at laboratory. The bidder may tie up with approved/registered inspection agencies for setting up test lab at site as described above.
2.4.12	<p>Where ever the Supply &amp; Erection like stoplog, trahsracks and lifting beams arrangement etc., together is covered in the scope of bidder necessary approvals from BHEL / THDC shall be taken by bidder for the design, inspection procedure &amp; its vendor. List of items for which such approvals required will be frozen during execution of the contract. No material is to be designed, procured or erected before the confirmation &amp; prior approval by Engineer in charge.</p> <p><b>NOTE: 1. Contractor shall procure and supply the items to project site as per the BOQ from BHEL / THDC approved vendors, meeting the specification, Drawings and instructions of the Engineer.</b></p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: Facilities in the scope of Contractor/BHEL

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Sl.No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.0	<b><u>ESTABLISHMENT</u></b>			
3.1	<b><u>FOR CONSTRUCTION PURPOSE:</u></b>			
3.1.1	Open space for office	Yes		BHEL may provide free of charge limited open space for office and store as and where made available by the customer i.e. THDC.
3.1.2	Open space for storage	Yes		
3.1.3	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
3.1.4	Bidder's all office equipment, office / store / canteen consumables		Yes	
3.1.5	Canteen facilities for the bidder's staff, supervisors and engineers etc.		Yes	
3.1.6	Firefighting equipment like buckets, extinguishers etc.		Yes	
3.1.7	Fencing of storage area, office, canteen etc. of the bidder		Yes	
3.2	<b><u>FOR LIVING PURPOSES OF THE BIDDER</u></b>			
3.2.1	Open space		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	
3.2.2	Living accommodation		Yes	Bidder has to make his own arrangement at his own cost
3.3	<b><u>ELECTRICITY</u></b>			
3.3.1	<b><u>Electricity For construction purposes (Chargeable)</u></b>	Yes		Construction Power will be provided at single point source on <b>chargeable basis</b> as and where made available by Owner, however contractor has to deploy DG Sets at no extra cost to BHEL to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project.
3.3.1.1	Single Point source	Yes		
3.3.1.2	Further distribution for the work to be done which include supply of all materials, energy meter, protection devices and its execution& service		Yes	
3.3.1.3	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	
3.3.2	<b><u>Electricity for the office, stores, canteen etc. of the bidder, which include:</u></b>		Yes	
3.3.2.1	Distribution from single point including supply of materials and service		Yes	
3.3.2.2	Supply, installation and connection of material of energy meter including operation and maintenance		Yes	
3.3.2.3	Duties and deposits including statutory clearances for the above		Yes	
3.3.2.4	Living facilities for office use including charges		Yes	
3.3.2.5	Demobilization of the facilities after completion of works		Yes	
3.3.3	<b><u>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc. on the above lines.</u></b>		Yes	
3.4.0	<b><u>WATER SUPPLY</u></b>			
3.4.1	<b><u>For construction purposes:</u></b>			

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

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Sl.No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.4.1.1	Making the water available at single point		Yes	The contractor shall arrange for construction water from underground/local sources. All borings, pipe lines, pumps, water tankers, underground storage tank, over-ground storage tank, etc, whatsoever required for taking the water from the underground source to the site of work shall be provided / erected / constructed/maintained by the contractor at his Own cost.
3.4.1.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.2	<u>Water supply for bidder's office, stores, canteen etc.</u>		Yes	
3.4.2.1	Making the water available at single point		Yes	
3.4.2.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.5.0	<u>LIGHTING</u>			

# 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	
3.5.1	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	
3.5.2	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	
3.5.3	Providing the necessary consumables like bulbs, switches, etc. during the course of construction		Yes	
3.5.4	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.6.0	<b><u>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</u></b>			
3.6.1	Telephone, internet, intranet, e-mail etc.		Yes	
3.7.0	<b><u>COMPRESSED AIR SUPPLY</u></b>			
3.7.1	Supply of Compressor and all other equipment required for compressor and compressed air system including pipes, valves, storage systems etc.		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	
3.7.2	Installation of the above system and operation and maintenance of the same.		Yes	
3.7.3	Supply of the all the consumables for the above system during the contract period		Yes	
<b>3.8</b>	<b><u>CONSTRUCTION FACILITIES</u></b>			
3.8.0	Engineering works for construction:			
3.8.1	Providing the construction drawings for all the works covered under this scope	Yes		
3.8.2	Drawings for construction methods and detailed shop drawings	Yes	Yes	In consultation with BHEL. Drawings for construction methods and detailed shop drawings shall be prepared by the Contractor as specified in the BOQ.
3.8.3	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site– routing of small bore pipes		Yes	In consultation with BHEL
3.8.4	Shipping lists etc. for reference and planning the activities	Yes		"
3.8.5	Preparation of site construction schedules and other input 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	
3.8.6	Review of performance and revision of site construction schedules in order to achieve the end dates and other commitments	Yes	Yes	"
3.8.7	Weekly construction schedules based on Sl. No 3.8.5		Yes	"
3.8.8	Daily construction / work plan based on Sl. No 3.8.7		Yes	"
3.8.9	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	
3.8.10	Preparation of preassembly bay		Yes	
3.9	<b>Other important Conditions regarding facilities to be provided by BHEL / Contractor i.e. Space, Construction Power and Construction Water etc.:</b>			
3.9.1	BHEL may provide free of charge limited open space, for office & storage shed, as and where made available by Customer (THDC). It is the responsibility of the contractor to construct sheds, fabrication yard, establish batching plant, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work.			
3.9.2	Contractor shall be responsible for providing all necessary facilities like residential accommodation, transport, electricity, water, medical facilities etc. as required under various labour laws and statutory rules and regulations framed there under to the personnel employed by him.			
3.9.3	<b>Construction power, for construction purposes will be provided on chargeable basis at one point near erection site, from supply point AS AND WHEN IT IS MADE AVAILABLE</b>			

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: Facilities in the scope of Contractor/BHEL

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	<p><b>BY THE CUSTOMER</b> . In the initial stages, the Contractor may have to deploy the DG sets for carrying out the tender works. Further distribution of power (when received) shall be done by contractor at his cost. All wiring must comply with local regulations and will be subject to Engineer's inspection and approval before connecting supply.</p> <p>The THDC tariff and tax may vary from time to time. The required Energy meter for measuring the consumption shall be provided and installed by the contractor. Any dispute regarding consumption, the BHEL engineer's decision shall be final &amp; binding to the contractor. The contractor shall make his own arrangement for further distribution with necessary isolator/LCB etc.</p>
3.9.4	<p>Provision of distribution lines of power and water from the central points to the required place with proper distribution boards observing the safety rules laid down by the authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS / Copper / Brass clamps, copper conductor, change over switches, pipes, fittings etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shift / hours accordingly and deploy additional manpower if necessary so as to achieve the targets. Any duty, deposit involved in getting the Electricity shall be borne by the bidder.</p>
3.9.5	<p>In case of power cuts / load shedding no compensation for idle labour or extension of time for completion of work will be given to contractor. During interruptions in regular power supply, power cut/load shedding in any construction sites, contractor should make his own arrangement for alternative source of power supply through deployment of adequate number of DG sets at their cost during the power breakdown /failure to get urgent and important work to go on without interruptions. No separate payment shall be made for this contingency</p>
3.9.6	<p>Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. within finally accepted rates.</p>
3.9.7	<p><b>CONTRACTOR HAS TO ARRANGE FOR CONSTRUCTION WATER BY PROVIDING SUITABLE BORE WELL WITHIN THE QUOTED RATES.</b> Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.</p>
3.9.8	<p>No claim for damages will be entertained by the Company on account of interruptions of water supply or limitation of quantity of water as aforesaid or on account of the water so taken being not fit for construction purposes or on any other account in connection with such water supply.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: Facilities in the scope of Contractor/BHEL

3.9.9	The Contractor should make arrangements for storage of sufficient quantity of water required for work.
3.9.10	The Contractor shall during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, consumables, offices, etc. required for the proper and efficient execution of the work. The planning, setting and erection of these buildings shall have the approval of the Engineer and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer.
3.9.11	On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the contractor along with prevailing overhead. The decision of BHEL Engineer in this regard shall be final.
3.9.12	<b>DRINKING WATER</b> – Bidder shall provide drinking water at the work spot at their cost.
3.9.13	<p><b>CONSUMABLES</b></p> <p>All consumables, like gas, electrodes, chemicals, lubricants etc. required for the scope of work, shall be arranged by the contractor at his cost unless otherwise specifically mentioned in the contract.</p> <p>In the event of failure of contractor to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost towards this along with overhead shall be paid by the contractor or deducted from the contractor's bills.</p>
3.9.14	<p><b>DEWATERING</b></p> <p>The bidder shall, prior to submitting his tender for the work, visit and examine the site of works and its surroundings at his own expense, and obtain &amp; satisfy themselves about the limit and extent of surface and subsurface water to be encountered during the performance of the work, and the requirement of drainage and pumping.</p> <p>Contractor shall ensure at all times that the work area &amp; approach/ access roads are free from accumulation of water, so that the materials are safe and the erection/ progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL.</p>
3.9.15	<p><b>SITE ORGANISATION</b></p> <p>The contractor shall provide adequate staffing in the following areas in addition to the staffing requirements for execution as instructed/informed by BHEL:</p> <ol style="list-style-type: none"> <li>i. Overall planning, monitoring &amp; control.</li> <li>ii. Quality control and quality assurance.</li> <li>iii. Materials management.</li> <li>iv. Safety, fire &amp; security.</li> </ol>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: Facilities in the scope of Contractor/BHEL

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	v. Industrial relations and fulfillment of labour laws and other statutory obligations.
3.9.16	The contractor shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all times for smooth execution of the contract. This organization shall be reinforced from time to time, as required to make up for slippage from the schedule without any commercial implication to BHEL. The site organization shall be headed by a competent construction manager having sufficient authority to take decisions at site.



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps and MMEs to be deployed by Contractor

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### **(A) - LIST OF T & Ps TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST:**

The following indicative major Tools & Plants (T&P) shall be arranged by the Contractor for execution work, within the quoted rate.

Sl. No.	EQUIPMENT	INDICATIVE QUANTITY
1.	TRANSIT MIXER WITH MATCHING DUMPERS	4 Nos.
2.	CONCRETE PUMPS (STATIC)	3 Nos.
3.	BOOM PLACER	APR
4.	SUBMERSIBLE PUMP (DIESEL / ELEC)	2 Nos.
5.	PLC OPERATED BATCHING PLANT WITH PRINTING FACILITY (MIN 40 CUM PER HOUR) AND TIE UP WITH ANY READY MIX CONCRETE SUPPLIER FOR MEETING THE PEAK REQUIREMENTS. HOWEVER PRIOR APPROVAL OF SUPPLY THROUGH READY MIX CONCRETE SUPPLIERS FOR ITS QUALITY AND DESIGN MIX IS TO BE TAKEN FROM CUSTOMER (THDC)	1 No.
6.	MINI BATCHING PLANT CP-15	APR
7.	CRAWLER / TYRE CRANE- 75 T CAPACITY	APR
8.	CRAWLER / TYRE CRANE- 40 T CAPACITY	1 No.
9.	LIGHT CRANE 18/20 MT	1 No.
10.	Hydra 12/14 T Capacity	1 No.
11.	15/20 MT TRAILORS WITH PULLING UNIT / TRACTOR – TRAILORS	2 Nos.
12.	DE WATERING PUMP – 5/10/25/50 HP	1 Nos. EACH
13.	SLUDGE / SLURRY PUMP ( DIESEL / ELEC )	1 No.
14.	POWER DRIVEN EARTH RAMMER	1 No.
15.	REINFORCEMET CUTTING / BENDING MACHINE	3 Nos.
16.	PORTABLE LIGHTING MAST / LIGHTING SYSTEM	3 Nos.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps and MMEs to be deployed by Contractor

17.	CEMENT STORAGE SHED OF MIN 300 MT CAPACITY	1 Nos.
18.	DG SET 60 kVA	1 Nos.
19.	CONCRETE MIXTURE M/C	APR*
20.	CONCRETE VIBRATORS	APR*
21.	POWER / HAND WINCHES	APR*
22.	WELDING MACHINES	APR*
23.	HEATING OVEN	APR*
24.	PORTABLE OVENS	APR*
25.	PORTABLE GRINDING MACHINE OF VARIOUS SIZES	APR*
26.	SPRAY PAINTING EQUIPMENT	APR*
27.	PAINT THICKNESS MEASURING EQUIPMENT	APR*
28.	EXCAVATORS	APR*
29.	EARTH COMPACTOR	APR*
30.	PLATE COMPACTOR	APR*
31.	PNEUMATIC JACK HAMMER	APR*
32.	SLUDGE / SLURRY PUMP (DIESEL / ELECT)	APR*
33.	PLATE BENDING MACHINE	APR*
34.	VIBROMAX	APR*
35.	ROAD ROLLER	APR*
36.	ALL SCAFFOLDING MATERIALS	APR*
37.	PLY SHUTTERING BOARD/ STEEL SHUTTERING WITH ADEQUATE SUPPORTING STRUCTURE	APR*
38.	PIPE CUTTING MACHINE	APR*
39.	VIBRO - HAMMER / DROP HAMMER ARRANGEMENT	APR*

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – IV: T&Ps and MMEs to be deployed by Contractor

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40.	HYD EXCAVATORS / POCLAINS / JCB	APR*
41.	DUMPERS	APR*
42.	DOZERS	APR*
43.	AIR COMPRESSOR	APR*
44.	WINCH WITH BUILDING HOIST	APR*
45.	WATER TANKER WITH SPRINKLER	APR*
46.	CONCRETE BREAKER	APR*
47.	DRINKING WATER TANK	APR*

**APR\*: As per Requirement**

#### **NOTES:**

1. The above list – ( A ) is only indicative and these T&Ps may not be required for entire contract period but contractor will ensure that these T & Ps are provided as per the work requirement. **T&P Deployment schedule will be finalized at site based on the work fronts and in consultation with BHEL Engineer. Contractor have to mobilize / maintain the T& P as per the schedule notified time to time by BHEL Engineer.**
2. If any one of T&P mentioned above is not needed for proper execution of scope of work, provided contractor has not utilized BHEL free issued T&P for completing such work, no recovery from contractor shall be applicable.
3. Any additional item required in addition to above mentioned T&P for proper execution of scope of work, contractor has to arrange such T&P within quoted rate on the instruction of BHEL in writing in a reasonable period within two weeks from the written instruction from BHEL.
4. In case deployment of T&P w.r.t requirement, is delayed or deployed for a shorter period or abnormal down time of T&P or in case T&P w.r.t requirement was not deployed by the contractor as per instruction of BHEL and BHEL had to deploy either its own T&P or from outside, the recovery shall be done from the contractor as under:
  - a. In case BHEL had to deploy its own T&P, hire charges of T&P applicable for outside agencies as per extant guidelines for “Hire Charges on issue of Capital Tools & Plants” shall be recovered.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps and MMEs to be deployed by Contractor

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- b. In case BHEL had to deploy the T&P from outside, actual hiring cost plus applicable overheads shall be recovered.
- c. In case the contractor does not deploy or delays deployment or major T&P with reference to schedule specified or T&P deployed is out of service for continuous more than 5 days, BHEL will recover non-refundable penalty per day in the following manner-( This recovery shall also be applicable in case BHEL does not deploy its own T&Ps or not deployed hired T&Ps)

In respect of each 75 MT crane- @ Rs 8000/- per day

In respect of each 40MT/50MT crane- @ Rs 5000/- per day

In respect of each hydra/crane 12T/14T/18MT/20 MT- @ Rs 3000/- per day

In respect of each trailer 20MT- @ Rs 2000/- per day per trailer

For the daily recovery rate for other T&P/IMTEs BHEL Engineer decision shall be final and binding on the contractor

- 5. All the tools and tackles/measuring instruments shall be duly tested/calibrated and valid certificate to that effect should be submitted to BHEL site in-charge before the start of work.
- 6. Depending upon the nature of work and availability of facilities locally, contractor may have to arrange for a temporary workshop for facilitating uninterrupted progress of work.
- 7. Necessary electrical / water / air connection required for operation of any of the tools & tackles shall be to Contractor's account.
- 8. The contractor shall arrange crane operator, diesel, petrol and other consumables required for the tools and plants, equipments etc. Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay. Required number of experienced mechanics and helpers for routine maintenance of the above cranes shall be provided by the contractor within his quoted rate.
- 9. Other terms and conditions regarding above items please also refer clause for T&P/IMTEs in SCC.
- 10. All the tools and plants required for this scope of work, except the Tools & Plants provided by BHEL are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. **Any additional T & P required to meet BHEL commitments/schedule shall be arranged without any extra cost by the contractor.**
- 11. **If the work related to T & Ps mentioned above list - (A) is completed then, Engineer I / C can release the T & P during contract period / extended period if any. However, written permission shall be taken by contractor from BHEL construction Manager before releasing T&P.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps and MMEs to be deployed by Contractor

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### **B- LIST OFIMTEs/MMEs REQUIRED:**

SL NO	EQUIPMENT
1	TOTAL STATION
2	AUTO LEVEL AND STAFF
3	COMPRESSION STRENGTH TESTING EQUIPMENT
4	CONSTRUCTION MATERIAL TEST EQUIPMENT
5	CONCRETE CUBE MOULDS (150 X 150 X 150) mm
6	CONCRETE SLUMP CONE
7	COARSE AGGREGATE SIEVES & SAND SIEVER
8	SIEVES AND SIEVE SHAKER
9	AGGREGATE IMPACT TEST MACHINE
10	LE CHATELEIR'S APPROATUS AUTO CLAVE EQUIPMENT
11	LOS ANGES ABRASION TESTING MACHINE
12	AGGREGATE CRUSHING VALUE APPRATUS
13	THICKNESS GAUGE FOR MEASURING FLAKINESS INDEX
14	ELONGATION GAUGE
15	PYCNOMETER (FOR SPECIFIC GRAVITY OF AGGREGATES)
16	MOTORISED VIBRATION MACHINE FOR CEMENT TESTING
17	PHYSICAL BALANCE FOR LAB WORK
18	RAPID MOISTURE METER
19	VICAT APPARATUS WITH PLUNGERS FOR CEMENT TESTING
20	TOTAL STATION
21	DUMPY LEVEL UP TO 350 MM
22	CORE CUTTER TEST APPARATUS
23	CUBE MOULDS (70MM SIZE)
<b>PROCESS CONTROL ACCESSORIES</b>	
1	HOT AIR OVEN (TEMPERATURE RANGE 50°C TO 300°C)
2	ELECTRONIC BALANCE OF REQUIRED CAPACITY & SIZE
3	PHYSICAL BALANCE OF REQUIRED CAPACITY & SIZE
4	THERMOMETRE (RANGE 0°C TO 150°C)
5	POKER THERMOMETER (CONCRETE ROAD) OF REQUIRED RANGE
6	MEASURING JARS (100ml, 200ml, 500ml & 1000ml)
7	DIGITAL pH METER
8	DIGITAL MICROMETER

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – IV: T&Ps and MMEs to be deployed by Contractor

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9	DIGITAL PAINT THICKNESS METER FOR STEEL
10	SCREW GAUGE (0.1mm – 10mm, Least Count .05)
11	DIGITAL PAINT THICKNESS METER FOR MASONRY / CONCRETE PAINTING

#### NOTES:

1. The above list is only indicative and these IMTEs/MMEs may not be required for entire contract period and will be provided as per need. Contractor will assess actual quantity and period of requirement based on his experience.
2. Other terms and conditions regarding above items please also refer clause for T&P/MMEs.
3. The contractor has to establish / arrange at site the field-testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality checklist of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.
4. All the IMTEs /MMEs required for this scope of work, except the IMTEs / MMEs provided by BHEL, are to be arranged by the contractor within the quoted rates. **The list is suggestive in nature. Any additional IMTEs / MMEs required to be arranged by the contractor.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – V: T&Ps to be deployed by BHEL on Sharing Basis

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### 5.1 THE LIST OF T&Ps BEING PROVIDED BY BHEL FOR USE OF CONTRACTOR FREE OF HIRE CHARGES ON SHARING BASIS:

Sl No.	EQUIPMENT	QUANTITY	PURPOSE	REMARKS
2	CRAWLER CRANE 135 MT	01	AS PER REQUIREMENT AT SITE AS CONFIRMED BY SITE INCHARGE	<b>ON SHARING BASIS</b>

#### NOTES:

1. **Cl.4.2.2.16 c) of SCC shall be read**

- a. **For BHEL's cranes 75 MT & above:-**Day-to-day upkeep and running maintenance like filling topping up of lubricants, changing filters, etc. including repair of self-starter, batteries and dynamo of these cranes shall be excluded from the scope of the contractor.
- b. **For BHEL's cranes below 75 MT capacity:-**Day-to-day upkeep and running maintenance like filling topping up of lubricants, changing filters, etc. including repair of self-starter, batteries and dynamo of these cranes shall be responsibility of the contractor. If on checking it is found that the same is not followed, BHEL shall exercise its right to get the job/works done at the risk and cost of the contractor.

**Common for above Sl. No. (a) & (b):-** In case of breakdown of crane, contractor shall provide the necessary manpower for maintenance of the BHEL owned crane to maintenance agency (deployed by BHEL), failing to do so BHEL will get the job done at the risk and cost of contractor. BHEL may also provide cranes through crane hiring agencies in which case the day-to-day upkeep and running maintenance shall be excluded from scope of contractor. The contractor shall arrange fuel for the operation of hired & BHEL owned cranes also.

2. **Cl.4.2.2.16 e) of SCC Shall be read as**

- a. **For BHEL's cranes 75 MT & above:-** The operator, helper & maintenance personal (Engineer/Technician/OEM) for BHEL's cranes 75 MT & above capacity being provided by BHEL free of cost. Further fuel for operation of all BHEL cranes shall be provided by contractor without any extra cost.
- b. **For BHEL's cranes below 75 MT capacity:-**The operators for BHEL's cranes 75 MT below capacity shall be provided by the contractor free of cost. These operators should possess valid license for heavy vehicle. Further fuel for operation of all BHEL cranes shall be provided by contractor without any extra cost.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – V: T&Ps to be deployed by BHEL on Sharing Basis

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3. The Cranes at SI No 1 &2 will be provided as per requirement & availability for special package handling only at the sole discretion of the BHEL Engineer.
4. The contractor shall make necessary arrangement like lying of special sleeper beds, assembly & dismantling of heavy lift attachment, boom, jib etc. for movement and operation of crane.
5. Other T&P mentioned above, contractor shall transport from BHEL stores, install, operate, carry out maintenance, dismantle after use and return to BHEL stores.
6. Cranes provided by BHEL will be on sharing basis with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time as decided by BHEL for suitable duration and intended purpose. Augmentation of BHEL T & P under special circumstances shall be discretion of BHEL.



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

<b>6.0</b>	<b>TIME SCHEDULE (MOBILIZATION, TIME SCHEDULE, CONTRACT PERIOD)</b>
<b>6.1</b>	<b>INITIAL MOBILIZATION</b> After receipt of Letter of Award (LOA), Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilization. Contractor shall mobilize necessary resources within 4 weeks of issue of letter of intent or as per the directive of Project Manager / Construction Manager. Such resources shall be progressively augmented to match the schedule of milestones as directed by BHEL Engineer.
<b>6.1.1</b>	The activities for construction, erection etc. shall be started as per directions of Construction Manager of BHEL. Contractor shall mobilize further resources (in addition to those required for activities under clause no. 6.1.1) as per requirement to commence the work and progressively augment the resources to match schedule of the project.  During the total period of contract, the contractor has to carry out the activities in a phased manner as required by BHEL and the program of milestone events.
<b>6.2</b>	<b>START DATE / ZERO DATE</b> The schedule date of start of work shall be the date after 4 weeks of issue of LOA; The Actual Date of Start of Contract Period (Zero Date) shall be date of handing over of site to contractor for work and shall be certified by the BHEL Engineer.
<b>6.3</b>	<b>COMPLETION PERIOD:</b> Entire work as detailed in tender specification <b>shall be completed within 18 (Eighteen) months from the actual date of start of work</b> as per the programs / milestones indicated by BHEL. Contractor has to mobilize adequate resources to meet BHEL's commitments to their customer as indicated from time to time. <b>In the event the contractor fails to respond to these requirements, BHEL shall take appropriate actions to meet customer's commitments in line with the provisions of General Conditions of Contract.</b>
<b>6.3</b>	In case due to reasons not attributable to the contractor, the work gets delayed and scheduled completion gets extended, time extension will be granted by BHEL as per clause no. 2.11 of GCC.
<b>6.4</b>	The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.
<b>6.5</b>	In order to meet above schedule in general, and any other intermediate targets set, to meet customer/ project schedule requirements, contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL without any extra cost to BHEL. Bidder has to start the parallel working at CWPH and RWPH fronts. Required resources like manpower, T&Ps, etc are to be mobilized by bidder to take up parallel working at CWPH &

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

	RWPH fronts. Subject package is a critical package and same is urgently required for the synchronization of power plant. Bidder has to take care of this during the execution of work.																													
6.6	<b>CONTRACT PERIOD:</b> The contract period for completion of entire work under scope of this contract shall be <b>18 (Eighteen) Months</b> from the actual / zero date of start of work.																													
6.7	<b>The Milestones are as under:</b> <table><tr><th>Mile Stone</th><th>Schedule from Zero date</th><th>Intermediate Milestone (M1 &amp; M2)</th></tr><tr><td>Supply of Stop log gates &amp; Trash gates for CWPB &amp; RWPH</td><td>Within 10 months</td><td>M1</td></tr><tr><td>Readiness of front for EOT crane of RWPH</td><td>Within 11 months</td><td></td></tr><tr><td>Readiness of front for RW pumps erection</td><td>Within 12 months</td><td>M2</td></tr><tr><td>Readiness of front for EOT crane of CWPB</td><td>Within 13 months</td><td></td></tr><tr><td>Completion of civil &amp; structural RWPH civil works including Switchgear Building</td><td>Within 13 months</td><td></td></tr><tr><td>Readiness of front for CW pumps erection</td><td>Within 14 months</td><td></td></tr><tr><td>Completion of civil &amp; structural CWPB civil works including Switchgear Building</td><td>Within 15 months</td><td></td></tr><tr><td>CW Forebay &amp; its channel civil works</td><td>Within 18 months</td><td></td></tr></table>			Mile Stone	Schedule from Zero date	Intermediate Milestone (M1 & M2)	Supply of Stop log gates & Trash gates for CWPB & RWPH	Within 10 months	M1	Readiness of front for EOT crane of RWPH	Within 11 months		Readiness of front for RW pumps erection	Within 12 months	M2	Readiness of front for EOT crane of CWPB	Within 13 months		Completion of civil & structural RWPH civil works including Switchgear Building	Within 13 months		Readiness of front for CW pumps erection	Within 14 months		Completion of civil & structural CWPB civil works including Switchgear Building	Within 15 months		CW Forebay & its channel civil works	Within 18 months	
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6.8	<b>Provision of Penalty in case of slippage of Intermediate Milestones:</b> A. Two Major Intermediate Milestones are identified as M1 and M2 above. B. In case of slippage of these identified Intermediate Milestones, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones. C. In case delay in achieving M1 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 2% of executable contract value, will be withheld.																													

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

	<p>D. In case delay in achieving M2 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 3% of executable contract value, will be withheld.</p> <p>E. Amount already withheld, if any against slippage of M1 milestone, shall be released only if there is no delay attributable to contractor in achievement of M2 Milestone.</p> <p>F. Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment (corresponding RA Bill) and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.</p> <p>G. Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion/ closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.</p> <p>H. In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.</p> <p><i>* Executable Contract Value - Value of work for which inputs/ fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.</i></p>
<b>6.9</b>	<p><b>SUBMISSION OF L3 SCHEDULE</b></p> <p>The contractor shall submit a detailed area/structure wise L3 schedule within 15 days in consultation with BHEL based on the tentative schedule provided as per the clause 6.7. The detailed L3 schedule shall be approved by BHEL and same shall be implemented. Bidder shall submit L3 schedule in MS Projects to meet the agreed project schedule covering various milestone activities and their split up details such as construction, procurement of materials, fabrication &amp; erection activities. This schedule shall also clearly indicate the interface facilities/inputs to be commenced from the date of completion of the whole of the work in the package, certified by the Engineer.</p>
<b>6.10</b>	<p><b>CONSEQUENCE OF DELAY</b></p> <p>It may be noted that in the event, delay in completion is attributable to the contractor; BHEL will impose LD on the contractor as per clause no. 2.7.9 of GCC.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VII: Terms of Payment

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<b>7.0</b>	<b>TERMS OF PAYMENT</b>
<b>7.1</b>	The 'Engineer' will certify regarding the actual work executed in the measurement books and bills, which shall be accepted by the contractor in measurement book.
<b>7.2</b>	<b>The Contractor shall be paid monthly running bill as per chapter – X of SCC and Clause Nos. 2.22 &amp; 2.23 of GCC.</b> The format for billing shall be approved by BHEL before raising invoices.
<b>7.3</b>	The contractor on certification of the engineer at site is entitled for payments of his running bills which shall be subject to any deduction/retention specifically under clauses 2.22 of GCC and 10.0 of SCC.
<b>7.4</b>	BHEL will release the payment through Electronic Fund Transfer (EFT)/RTGS
<b>7.5</b>	Final bill shall be submitted after completion of works and upon material reconciliation along with all prescribed formats.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: Taxes & Duties

### 8.0 TAXES AND DUTIES:

8.0	<b>TAXES &amp; DUTIES</b>
8.1	<p>The contractor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods &amp; services consumed and output goods &amp; services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding <b>GST</b> on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses.</p>
8.2	<b>GST (Goods and Services Tax)</b>
8.2.1	<p>GST as applicable on output supply (goods/services) are excluded from contractor's scope; therefore, contractor's price/rates shall be <b>exclusive</b> of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition.</p>
8.2.2	<p>The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL &amp; its Contractor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL &amp; its Contractor.</p>
8.2.3	<p>Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall 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.</p>
8.2.4	<p>Contractor has to submit GST registration certificate of the concerned state. Contractor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period.</p>
8.2.5	<p>Contractor/Vendor has to issue invoice indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder.</p>
8.2.6	<p>Vendor has to submit GST compliant invoice within seven days from the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of invoice &amp; GR/LR/RR to BHEL before movement of goods starts. Special care should be taken in case of month end transactions.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: Taxes & Duties

8.2.7	Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed.
8.2.8	<p>Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor: -</p> <ul style="list-style-type: none"><li>a. Supply of goods and/or services have been received by BHEL.</li><li>b. Original Tax Invoice has been submitted to BHEL.</li><li>c. Contractor/ Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.</li><li>d. In cases where e-invoicing provision is applicable, vendor/contractor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.</li><li>e. Contractor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.</li><li>f. Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.</li><li>g. Contractor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.</li></ul>
8.2.9	Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from contractor's bill or otherwise as deemed fit.
8.2.10	TDS as applicable under GST law shall be deducted from contractor's bill.
8.2.11	Contractor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills, road permits etc. required for transportation of goods needs to be arranged by the contractor.
8.2.12	Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.
8.2.13	In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/altered/deleted on GSTN portal which results in

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: Taxes & Duties

	any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor's due payment.
8.2.14	Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.
8.2.15	In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL's decision shall be final and binding on the contractor.
8.2.16	<p><b><u>Variation in Taxes &amp; Duties:</u></b></p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its contactor only and within the contractual delivery period only.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, 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.</p>
8.3	<p><b><u>Income Tax:</u></b></p> <p><b>TDS/TCS</b> as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from contractor's bill.</p>

8.4	<p><b>BUILDING &amp; OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING &amp; OTHER CONSTRUCTION WORKERS CESS Act, 1996 &amp; CESS RULES, 1998.</b></p>
	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

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: Taxes & Duties

	circumstances it may be ensured as under:-
8.4.1	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.
8.4.2	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 gross payment made for value of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.
8.4.3	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.
8.4.4	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.
8.4.5	The contractor shall, however ensure before deposit of any BOCW Cess, that customer is not depositing the same in order to avoid excess deposit of cess.
8.4.6	The contractor shall bear cost of BOCW cess either by way of deposit or through recovery by BHEL in case the same is deposited by the customer.
8.4.7	In case of failure in above mentioned compliances, BOCW Cess @ 1% as well as applicable penalty as specified in BOCW Act/Rules shall be deducted from the contractor.

Note:

1	The Gross amount is to be construed as cost of construction in line with the provisions of the BOCW of the BOCW Cess act and in case of compliance by customer by way of deduction at source in line with clause No 3(2) of the act an equitable adjustment to the relatable cost of construction attributable to the bidder shall be made in terms of clause no 8.2 of TCC
2	In case compliance by customer by way of deduction at source in line with clause no 3(2) is not resorted to, the compliance of BOCW Cess act shall be ensured by the bidder in line with the provisions of BOCW Cess act in terms of clause no 8.2.2b of TCC



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: Taxes & Duties

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3	The bidder may consider the cost of construction for levy of BOCW Cess inclusive of GST, however, due to whatsoever reason if the GST does not form the cost of construction for levy of aforesaid Cess an equitable adjustment thereof shall be made to the contract price.
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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX: Materials and Other Requirements

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<b>9.0</b>	<b>MATERIALS</b>
<b>9.1</b>	The contractor shall at his own expenses provide all materials including consumables, paints, welding electrodes etc. required for the work. However for permanent works <b>cement, reinforcement steel and structure steel will be issued free of cost</b> as per BOQ cum Rate Schedule, terms & conditions specified in clause No. 9.14 from BHEL / Customer stores or at a point instructed by BHEL.
<b>9.2</b>	All materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant Indian standard and the Contractor shall, if requested by the BHEL Engineer, furnish proof to the satisfaction of BHEL Engineer that the materials so comply.
<b>9.3</b>	The Contractor shall, at his own expense and without delay, supply to the BHEL Engineer, samples of materials proposed to be used in the works. The BHEL Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the BHEL Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
<b>9.4</b>	The BHEL Engineer shall have full powers for removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the BHEL Engineer shall be at liberty to have them removed by other means. The BHEL Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply; he may cause the same to be supplied by other means. All costs, which may attend upon such removal and / or substitution, shall be borne by the Contractor.
<b>9.5</b>	The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings / specifications issued after submission of the tender.

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<b>9.6</b>	The BHEL Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and such tests are required by BHEL Engineer, the Contractor shall provide all facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.
<b>9.7</b>	In addition, the Contractor shall perform / submit at his own cost such tests / samples as may be required by the BHEL Engineer out of the materials used by the company except for the costs of materials used in such tests/ samples.
<b>9.8</b>	After acceptance of the Contract, if Contractor desires BHEL to supply any other materials, such material may be supplied by BHEL, if available, at rates to be fixed by the BHEL Engineer along with prevailing departmental charges. BHEL reserve the right not to issue any material. The non-issue of such material will not entitle the Contractor for any compensation whatsoever either in time or in cost.
<b>9.9</b>	Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by BHEL Engineer. Storage and safe custody of material shall be the responsibility of the contractor.
<b>9.10</b>	BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.
<b>9.11</b>	All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the BHEL Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him and upon such removal, the same shall re-vest in and become the property of the Contractor.
<b>9.12</b>	It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes / TIG wires. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch No. date of expiry etc. and produce test certificate for each lot / batch with correlation of batch / lot no. with respective test certificate. No electrode will be allowed to be used without valid test certificate.

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<b>9.13</b>	All charges on account of Octroi, terminal or sales tax and other duties on material obtained for the works from any source shall be borne by the contractor.
<b>9.14</b>	<b>ISSUE AND ACCOUNTING OF CEMENT, REINFORCEMENT STEEL.</b>
<b>9.14.1</b>	<b>Cement, steel (reinforcement &amp; structure) will be issued as free issue materials from BHEL / THDC site stores or other issuing points as specified by the Engineer.</b> Such issues would be only for permanent works. Necessary indents shall be raised by the contractor as per procedure laid down by the Engineer-in-Charge about 7 days in advance of the actual requirement for incorporation in the works.
<b>9.14.2</b>	Materials will be issued only for permanent works and not for making templates, other temporary works, enabling works etc. and the same shall not be taken into account for purpose of material reconciliation.
<b>9.14.3</b>	The contractor shall bear all other costs including the lifting, carting from issue points to works site / contractor's stores, custody and handling etc. and return of surplus / serviceable materials to BHEL's stores to be designated by the Engineer-in-charge and all expenditure will be made by the contractor.
<b>9.14.4</b>	All steel shall be issued in available lengths / shapes and no claims for extra payment on account of issue of non-standard lengths / shapes will be entertained. For the purpose of billing and accounting only linear measurement will be taken and weight will be calculated as per the IS Co-efficient. The different in unit weight as per IS and actual as issued, if any shall be to the contractor's account and contractor shall quote the rates for corresponding item to take care of such difference.
<b>9.14.5</b>	Cement, as received from the Manufacturer / Stockiest will be issued to the contractor. The theoretical weight of each bag of cement for issue purpose will be considered as 50Kgs. Per Bag. Any type of cement and in any container as received from Manufacturer / Stockiest shall be issued to the contractor. No claim whatsoever shall be entertained on this. Cement bags weighing up to 4% less will be accepted by the contractor and accounted for as 50Kg per bag.
<b>9.14.6</b>	The Contractor shall maintain good stores for storing the cement issued to him. The flooring of the storage house, the clearance of cement bags from the sidewalls etc., shall be as per the instructions of the Engineer-in-charge.
<b>9.14.7</b>	The cement stores shall be open for supervision and verification by the Engineer-in-charge or his authorized representative by any time when the Engineer-in-charge feels the need to do so.
<b>9.14.8</b>	In the case of steel materials, the same shall be issued generally on the basis of linear measurement and the corresponding weight will be calculated as per Indian Standard. For the purpose of billing & accounting, only linear measurement will be taken and any difference in weight based on linear measurement & actual weight shall be to contractor's account. Quoted price shall be deemed to include the above & the permissible wastage mentioned. No claim

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	whatsoever shall be entertained on account of wastage & difference in weight as referred to above.		
<b>9.14.9</b>	Issue of stores material is subject to availability and the contractor shall not be entitled to any claim or compensation for non-supply or delay in the supply under any circumstances. The material will be issued generally during the working hours.		
<b>9.14.10</b>	The Contractor will have to submit their design mix for different grades of Concrete keeping in view the requirements stipulated in IS:456, specifically regarding slump and Water Cement ratio and Specific Gravity of Materials brought to site as analyzed in the laboratories. The design shall be used upon absolute volume method and theoretical consumption of Cement shall be worked out on this basis. For other than above designated mix Concrete items, the coefficients for consumption of cement shall be adopted as per CPWD practice. The theoretical consumption of cement thus worked out shall be binding upon the Contractor for reconciliation of Cement issued by the Owner. For any excess /under consumption based on these coefficients, the Contractor shall be penalized as per contract provisions. Though, permissible wastage specified shall be considered, while effecting penal recovery, no other allowance whatsoever shall be taken for reconciliation purposes.		
<b>9.14.11</b>	The theoretical consumption of cement, reinforcement steel and structural steel required for the work will be calculated on the basis of approved drawings / joint measurements. In the case of cement, the theoretical consumption shall be decided by the Engineer as mentioned above and his decision in this regard shall be final and binding on the Contractor. Reinforcement and structural steel shall be measured by weight in tones. The weight will be arrived at by multiplying the used length by the sectional weight. The sectional weight will be same as were applied at the time of issue. Standard hooks, cranks, bends and authorized laps, chairs, separator pieces etc. specified in drawing or instructed by engineer as required shall be measured and paid for. No payment shall be made for binding wires, spacer block etc. required for keeping the steel in position unless otherwise specified in the contract. No extra payment will be made for modification of already embedded reinforcement, if required due to faulty fabrication or placement.		
<b>9.14.12</b>	The contractor shall submit proper account of material / material reconciliation statement for the material drawn by him <del>from stores</del> once in every three months. Failing compliance of this requirement further issue of steel to the contractor may be suspended and no claim of compensation for delay in execution on this account shall be entertained.		
<b>9.14.13</b>	All the cement & reinforcement steel thus issued shall be properly accounted for as per the following permissible wastage over the theoretical quantity / consumption incorporated in the works.		
	Item	Area	Permissible Variation / Wastage
	<b>Cement</b>	For All works	1.5%

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	<b>Reinforcement Bars &amp; MS Earthing Rods</b>	For All works	3%
	<b>Structural Steel</b>	For All Works	4%
<b>9.14.14</b>	Any unused / serviceable quantity of cement, reinforcement steel & structural steel not returned in good condition & wastages / loss / consumption beyond specified / agreed limits shall be charged at penal rate of <b>Rs 7000 per MT for cement, Rs 60,000 per MT for reinforcement steel &amp; Rs 70,000 per MT for structural steel</b> at the time of preparing final bill, during finalization of the contract. The decision of Engineer-in-charge with regard to applicability of penal rates shall be final & binding upon the contractor.		
<b>9.14.15</b>	For the materials i.e. Reinforcement (TMT), Structure Steel being issued free of cost, the scrap generated shall belong to BHEL.		
<b>9.14.16</b>	Empty cement bags shall be the property of contractor and recovery @ 01/- (Rs. One only) per empty cement bag shall be made from their RA bills.		
<b>9.14.17</b>	<b>SCRAP &amp; SERVICEABLE MATERIALS:</b> All reinforcement steel / Structural steel (rolled sections) of length above 2 M shall be considered as serviceable materials provided the materials be in good and acceptable condition. Structural Steel / Reinforcement steel in length less than 2 M shall be treated as scrap. All plates/ sheets of size above 2 SQM shall be considered as serviceable materials provided the materials be in good and acceptable condition. All plates and sheets below the size of 2 SQM shall be treated as scrap.		

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<b>10.1</b>	<b>EXECUTION OF WORK</b>
10.1.1	The work shall be executed in a workman like manner and to the entire satisfaction of the Engineer and as per technical specification issued with tender, IS codes, technical specifications as applicable. In case of conflict, the decision of the Engineer I/c shall be final & binding.
10.1.2	The Engineer I/c will communicate or confirm his instructions to the Contractor in respect of the execution of the work in a "Work Site Order Book" maintained at his office and the Contractor shall visit this office daily and shall confirm receipt of such instructions by signing the relevant entries in this book or through e-mail. Such entries / e-mails will rank as order or notices in writing within the intent and meaning of these conditions.
10.1.3	Only BHEL approved make of electrodes will be used. All electrodes shall be heated and dried in the electric electrode drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to site will have valid manufacturing test certificate. The test certificate will have co-relation with the lot no. / batch no. given on electrode packets. No electrodes will be allowed to be used in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved / accredited test house traceable to National / International standards) will be submitted to BHEL before putting the oven in use. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.
10.1.4	Contractor shall execute the work as per sequence and procedure prescribed by BHEL at site. The applicable erection manuals which are available with BHEL site office are to be referred for compliance and guidance before taking up the work. Any rework on this failure to comply with will be to account of contractor only. BHEL engineer, depending upon the availability of materials, fronts etc., will decide the sequence of erection and methodology. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the method of erection adopted in erection of similar jobs in other projects or for any reason whatsoever.
10.1.5	The work shall conform to dimensions and tolerances specified in the various drawings / documents that will be provided during various stages of erection. If any portion of work is found to be defective in workmanship, not conforming to drawings or other stipulations due to Contractor's fault, the Contractor shall dismantle and re-do the work duly replacing the defective materials at his cost, failing which the work will be got done by BHEL and recoveries will be effected from the Contractor's bills towards expenditure incurred including cost of materials and departmental overheads of BHEL as per GCC.
10.1.6	On completion of work, all the temporary buildings, structures, scaffolding, cables etc. shall be dismantled and levelled and debris shall be removed as per instructions of BHEL by the contractor at his cost. In the event of his failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.



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<b>10.2</b>	<b>SETTING OUT</b>
10.2.1	All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark all be made available for setting out the works under the contract. This reference lines shall be used as datum for the works under the contract and the contractor has to establish for his work area at available points horizontal and vertical control points. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractor's expense.
10.2.2	The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessary placed by BHEL / Customer at contractor's expenses.
<b>10.3</b>	<b>SITE DRAINAGE</b>
10.3.1	<p>All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and excavations, including monsoon period shall be removed by the contractor from the Site to the satisfaction of the Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.</p> <p>Vendor has to arrange and maintain adequate no. of Diesel &amp; electrical pumps of suitable capacities, operators, necessary manpower with sufficient quantity of suction&amp; discharges hoses, pipes, Clamps, cables, Electrical panels/starters, diesel, consumables without any extra commercial implication on BHEL treating as normal scope of work. Dewatering pumps will be required to run to ensure job progress is not hampered &amp; if required pumps are to be run on round the clock basis on working days &amp; holidays, Sundays.</p>
<b>10.4</b>	<b>INSPECTION AND STAGE APPROVAL OF THE WORK</b>
10.4.1	The owner or his duly authorized representative shall have at all reasonable times access to the contractor's premises or works and shall have the power to inspect drawings or any portion of the work, examine the materials and workmanship and shall have the authority to reject any work. This would be implemented through joint



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	inspection by the representative of the owner and BHEL and in the form of joint protocols without any extra claims and loss of time and amount.
10.4.2	All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer when each stage is ready. In default of such notice being received, the Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer thereon shall be final and conclusive.
<b>10.5</b>	<b>UNCOVERING AND MAKING GOOD</b>
10.5.1	The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer. If any such part has been covered up or put out of view after being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor.
<b>10.6</b>	<b>DISCREPANCIES AND ADJUSTMENT OF ERRORS</b>
10.6.1	The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small-scale drawings and figures dimensions in preference to scale and special conditions in preference to general conditions.
10.6.2	<p>In case of discrepancies between schedules of quantities, the specification and / or the drawings, the following order of preference shall be observed.</p> <ul style="list-style-type: none"><li>(a) Description in schedule of quantities.</li><li>(b) Technical Conditions of Contract.</li><li>(c) Drawings.</li><li>(d) Technical Specifications</li><li>(e) Special Conditions of Contract</li><li>(f) General conditions of contract</li></ul>
10.6.3	If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer shall be the deciding authority with regard to the document.

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10.6.4	Any error in description, quantity in schedule of quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to the drawings and specifications or from any of his obligations under the contract.
<b>10.7</b>	<b>MATERIAL OBTAINED FROM EXCAVATION</b>
10.7.1	Valuable Materials / Archeologically important materials of any kind obtained from excavation on the Site shall remain the property of BHEL / its client and shall be disposed of as the Engineer may direct, at no extra cost.
<b>10.8</b>	<b>SAFETY CODE</b>
<b>10.8.0</b>	<b>The contractor shall comply with following towards Safety and Social Accountability.</b>
10.8.1	Besides provision with regard to SAFETY under Clause 9.0 of SCC, the contractor will be responsible for Health, Safety & Environment management at site for the construction activities to be carried out by them. The contractor shall continuously take special care to ensure the safety and prevention of human and equipment accidents and maintain good sanitary conditions in and around the site. All the construction work and plant operation must be carried out in the safest possible manner. The Engineer reserves the right to stop any process which, in the Engineer's opinion, is being performed dangerously. In this case the contractor must immediately adhere the requisite safety precautions and any delays attributed to the work stoppage on this account shall not affect the agreed contractual finishing dates.
10.8.2	HSE plan for site operation by Sub Contractor (Doc No. HSEP 13 attached) shall be followed.
10.8.3	Contractor has to abide all the statutory guidelines issued by Government in respect of COVID-19. All the necessary PPEs or other facility required at site in respect of COVID-19 is to be arranged by the bidder within the quoted rates.
10.8.4	<b>Contractor shall make necessary arrangements to ensure following :</b> <ul style="list-style-type: none"> <li>Contractor has to maintain contact with local hospital having ambulance facility, scanning &amp; other ultra-modern medical facilities required during emergency.</li> <li>Contractor has to ensure pre-employment medical check for all staff &amp; workers.</li> </ul>
<b>10.8.5</b>	<b>EMERGENCY VEHICLE:</b> Contractor shall arrange / tie-up with nearest Hospital / Nursing Home to deal with any emergency situation including arrangement of ambulance as and when needed.
<b>10.9</b>	<b>NUISANCE</b>

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10.9.1	The Contractor shall not at any time do, cause or permit any NUISANCE on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.
<b>10.10</b>	<b>TREASURE , TROVE , FOSSILS etc.</b>
10.10.1	All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing, shall immediately upon discovery thereof and before removal acquaint the Engineer with such discovery and carryout the Engineer's directions as to the disposal of the same.
<b>10.11</b>	<b>PROTECTION OF WORKS</b>
10.11.1	Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing.
10.11.2	The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.
10.11.3	The contractor shall have total responsibility for protecting his works till it is finally taken over by the Engineer. No claim will be entertained by the Engineer for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.
<b>10.12</b>	<b>RECORD FOR MATERIALS CONSUMED</b>
10.12.1	The contractor shall maintain and furnish to the Engineer the RECORD OF MATERIALS consumed in the works for each activity. The statement showing the theoretical vis-à-vis actual consumption of specified materials, such as structural /reinforcement steel, cement, bitumen, lead, paint etc., shall be enclosed along with the running bills submitted by the contractor. Contractor has to also furnish the test results of the materials used in the work as per IS specifications.
<b>10.13</b>	<b>PROTECTION OF EMBEDMENTS, BOLTS ETC.</b>

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10.13.1	The contractor shall ensure proper protection to the satisfaction of the Engineer, of all bolts, inserts, embedment etc. from weather etc./ by greasing, rapping them with gunny bags or canvas or by any other means as directed by Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.
<b>10.14</b>	<b>COMPLETION OF WORK AND COMMENCEMENT OF GURANNTTEE PERIOD</b>
10.14.1	The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labor hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.
10.14.2	BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the extra / pending works are executed to the satisfaction of Engineer.
10.14.3	The Engineer shall certify to the contractor the date on which the work is completed and the date thereof for commencement of Guarantee Period. Guarantee Period shall be as given in GCC.
<b>10.15</b>	<b>CLEARANCE OF SITE AND REPAIRS.</b>
10.15.1	Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs notice. In case, he fails to clear the site, this will be done at his risk & cost by BHEL.
<b>10.16</b>	<b>QUALITY ASSURANCE</b>
10.16.1	Contractor shall prepare a Field Quality Plan (FQP) for this tender's scope, in consultation with BHEL and submit to BHEL / Customer for approval. All works shall be carried out in accordance of the approved Field Quality Plan for this work. The contractor has to establish / arrange at site the field-testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality checklist of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.
<b>10.17</b>	<b>NA</b>
<b>10.18</b>	<b>METHOD OF MEASUREMENT</b>

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10.18.1	Method of measurements shall be as per technical specifications included in the tender. For other items measurements shall be as per relevant IS Codes.
<b>10.19</b>	<b>DEVIATION</b>
10.19.1	The Contractor shall not make any alteration in, addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Engineer in writing and incorporated in the Contract.
10.19.2	The Engineer may deviate, either by way of addition or deduction, from the work so described, provided that the Contract sum be not thereby varied on the whole by more than the percentage set out in the tender documents. The value of all additions and deductions shall be added to or deducted from the Contract sum. (Whenever the Engineer intends to exercise such a right his intentions shall specify the deviations which are to be made, the lump-sum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the entire contract). Any objection by the contractor to any matter concerning the order shall be notified by him in writing to the Engineer within seven days from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer) owing to differences or controversy that may arise from such an objection. In the absence of such a notification of objection by the Contractor, he will be deemed to have accepted the order and the conditions stated therein.
10.19.3	Valuation of Deviations shall be as per Clause 2.15 & 2.16 of GCC.
<b>10.20</b>	<b>COMPLIANCE TO REGULATIONS AND BYELAWS</b>
10.20.1	The Contractor shall conform to the provisions of any statute relating to the work and regulations and bylaws of any local authority and of any water and lighting Companies or Undertaking with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer, notice specifying the variation proposed to be made and the reasons therefore and shall not carry out any such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or by-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.
10.20.2	<p><b>In order to give phillip to Pradhan Mantri Kaushal Vikas Yojna:</b></p> <p>"The contractor shall, at all stages of work deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute/ Industrial Training Institute/ National Institute of Construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/ Central Government. The</p>

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	number of such qualified tradesmen shall not be less than 20% of total skilled/ semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer-in-Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.
<b>10.21</b>	<b>PROGRESS REPORTING :</b>
<b>10.21.1</b>	Contractor is required to draw mutually agreed monthly programme in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed programme and shall also timely arrange additional resources considered necessary at no extra cost to BHEL.
<b>10.21.2</b>	Weekly progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled programme shall be discussed for actions to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update / revise his work programme to meet the overall requirement. All quality problems shall be discussed during above review meetings. Necessary preventive and corrective action, shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of non-conformities.
<b>10.21.3</b>	The contractor shall submit weekly and monthly progress reports, materials reports, consumables (gases / electrodes) report and other reports as per proforma considered necessary by the Engineer.
<b>10.21.4</b>	The progress report shall indicate the progress achieved against planned , with reasons indicating delays , if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time , so that further works again proceed as per the original programme and the slippages do not accumulate and effect the overall programme.
<b>10.21.5</b>	The daily manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.
<b>10.22</b>	<b>DRAWING AND DOCUMENTS</b>
<b>10.22.1</b>	The detailed drawings, specifications available with BHEL engineers will form part of this tender specification. These documents will be made available to the contractor

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-X: Other Important Conditions

	during execution of work at site. The contractor will also ensure availability of all drawings / documents at work place.
10.22.2	Necessary drawings / documents by BHEL to carry out the construction work will be furnished to the contractor by BHEL (except those proposed to be prepared by contractor, as mentioned in this contract) on loan which shall be returned to BHEL Engineer at site after completion of work. Contractor shall ensure safe storage and quick retrieval of these documents.
10.22.3	The contractor shall maintain a record of all drawings and documents available with him in a register as per format given by BHEL Engineer. Contractor shall ensure use of pertinent drawings / data / documents and removal of obsolete ones from work place and return to BHEL.
10.22.4	The data furnished in various annexures enclosed with this tender specification are only approximate and for guidance. However, the change in the design and in the quantity may occur as is usual in any such large scale of work.
10.22.5	Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
10.22.6	Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension / details, without specific approval of BHEL.
<b>10.23</b>	<b>Subject package is a critical package hence further extensions for submission of bid may not be given. Bidder is requested to submit their offer within the bid submission date.</b>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI: Annexures

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**Annexure-I:** BOQ cum Rate Schedule for the Work of “ALL CIVIL ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PUMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA” AT KHURJA, UTTAR PRADESH.

**Annexure-II:** NTPC Safety Rules



## **UN-PRICE SCHEDULE**

<b>ITEM NO.</b>	<b>DESCRIPTION OF WORK</b>	<b>TOTAL VALUE IN INR</b>
1.0	TOTAL PRICE ('A') FOR THE TOTAL WORK AS PER TENDER SPECIFICATION FOR "ALL CIVIL ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PIMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA"	
<b>Notes:</b>		
<p>a. The rate of individual item for the entire scope of work shall be arrived as per BOQ CUM RATE SCHEDULE (Annexure - I) of TCC of tender.</p> <p>b. The derived item rate will remain firm throughout the contract period.</p>		

**Notes:**

- i. Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.
- ii. Contractor shall fully understand description and specifications of items mentioned in BOQ.
- iii. Conditional price bids with any deviation/ clarification etc. are liable to be rejected. No cutting/ erasing/ over writing shall be done.
- iv. Quantities mentioned in rate schedules are approximate only and liable for variation on either side depending upon site/ design requirement.
- v. Taxes (GST) shall be payable extra as per relevant clauses in Technical Conditions of Contract.



## BOQ-CUM-RATE SCHEDULE

## SCOPE OF WORKS : ALL CIVIL ARCHITECTURAL AND STRUCTURAL WORKS OF CW PUMP HOUSE (CWPH), CW CHANNEL, FOREBAY, TRANSITION ZONE AND RAW WATER PIMP HOUSE (RWPH) FOR 2 X 660 MW KHURJA AT KHURJA, UTTAR PRADESH

SL. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	FACTOR	RATE= FACTOR (F) *AMOUNT (A)/100000 (ROUNDED OFF UPTO TWO PLACE OF DECIMAL)	AMOUNT (Rs.) = RATE * QUANTITY
	1	Excavation including stacking of excavated material (rock/ soil) required for backfilling away from the excavated pit upto a lead of 1.00 Km., backfilling with selected excavated material (for all lifts) by mechanical means in layers not exceeding 300 mm compact thickness (higher layer thickness upto 500 mm in case of compaction using special type of equipment, such as vibratory roller etc.) to minimum 85 % Standard Proctor Density at optimum moisture content in case of soil and / or to 85 % of original volume in case of boulders and filling the interstices with selected excavated materials, disposal of surplus excavated material at designated location identified by Engineer upto a total lead of 5.00 Kms. (including dressing the top surface) and / or disposal of surplus excavated material by filling within the plant boundary and compacting the same by mechanical means in layers (not exceeding 300 mm thickness, higher layer thickness upto 500 mm in case of compaction using special type of equipment, such as vibratory roller etc.) to minimum 85% Standard Proctor Density at optimum moisture content in case of soil and / or to 85 % of original volume in case of boulders, clearing grass and vegetation, levelling, draining and pumping out surface water (i.e. water other than water below ground water table), lowering of ground water table to maintain dry working conditions till completion of all activities (such as concreting, curing, water proofing, filling / testing etc.), which require dry working conditions providing cofferdams, sheeting, shoring, strutting, bracing, trimming of excavated bottom, testing, with all labour, material, equipment, handling, transportation, preparation of the scheme for excavation and dewatering and getting the same approved, etc., for all types of work, at all levels, all complete, as per specifications, drawings and instructions of the Engineer, including leads as specified above and lifts upto 3.00 M.					
1	1(a)	In soil ( All types)	Cu.M.	26050	0.095030		
	2	Excavation including stacking of excavated material (rock / soil) required for backfilling near the excavated pits, backfilling with selected excavated material by pushing and spreading (for all lifts), disposal of surplus excavated material at designated location identified by the Engineer upto a total lead of 5.00 Kms. (including dressing the top surface) and / or disposal of surplus excavated material by filling within the plant boundary and compacting the same by mechanical means in layers not exceeding 300 mm thickness, (higher layer thickness upto 500 mm in case of compaction using special type of equipment, such as vibratory roller etc.) to minimum 85 % Standard Proctor Density at optimum moisture content in case of soil and / or to 85 % of original volume in case of boulders, clearing grass and vegetation, levelling, draining and pumping out surface water (i.e. water other than water below ground water table) lowering of ground water table to maintain dry working conditions till completion of all activities (such as concreting, curing, water proofing, filling / testing etc.), which require dry working conditions providing cofferdams, sheeting, shoring, strutting, bracing, trimming of excavated bottom, testing, with all labour, material, equipment, handling, transportation, preparation of the scheme for excavation and dewatering and getting the same approved, etc., for all types of work, at all levels, all complete, as per specifications, drawings and instructions of the Engineer, including leads as specified above and lifts upto 3.00 M.		0	0.000000		
2	2(a)	In soil ( All types )	Cu.M.	33500	0.094586		
3	2(c)	Extra over item no. 2(a) and 2(b) as applicable, for compacting the backfilled material by watering and ramming to minimum 90% Standard Proctor Density at optimum moisture content in case of soil and / or to 85 % of original volume in case of boulders and filling the interstices with selected excavated materials.	Cu.M.	33500	0.013133		
	3	Extra over item nos. 1 and 2 above as applicable, for all types of excavated material (soil and rock), for additional lifts beyond the initial lift of 3 M (included in items 1 and 2), including maintaining dry working conditions, for the following lifts:		0	0.000000		
4	3(a)	Beyond 3.00 M and upto 6.00 M	Cu.M.	19850	0.023930		
5	3(b)	Beyond 6.00 M and up to 9.00 M	Cu.M.	10500	0.047860		
6	4(b)	Extra over item no. 1 above, for additional lead of every 1.00Km for stacking of excavated materials (soil/ rock) required for backfilling, away from the excavated pit beyond the initial lead of 1.00 Km.	Cu.M.	20000	0.005234		
	5	Filling using selected borrow materials brought from borrow areas arranged by the Contractor, in layers not exceeding 300 mm, (higher layer thickness upto 500 mm in case of compaction using special type of equipment, such as vibratory roller etc.), for all leads and all lifts, filling, watering and compacting each layer, dressing, with all labour, material, equipment, handling, transportation, etc., for all types of works at all levels, all complete, as per specifications, drawings and instructions of the Engineer, for following works and materials :		0	0.000000		
7	5(c)	Medium grained sand and compacting to minimum of 80% Relative Density.	Cu.M.	1100	1.199782		

SL. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	FACTOR	RATE= FACTOR (F) *AMOUNT (A)/100000 (ROUNDED OFF UPTO TWO PLACE OF DECIMAL)	AMOUNT (Rs.) = RATE * QUANTITY
	6	Filling using crushed hard stone of specified nominal size, brought from borrow areas arranged by the Contractor, in layers as specified below, for all leads and all lifts, filling, dressing, testing, with all labour, material, equipment, handling, transportation, etc., for all types of works at all levels, all complete, as per specifications, drawings and instructions of the Engineer:		0	0.000000		
	6a)	63 mm to 45 mm graded hard stone aggregate as per IRC specification for road and bridge, watering and compacting each layer (not exceeding 200 mm in thickness) to minimum of 85 % of original volume of stone stack including filling the interstices of stone aggregates with material as mentioned below:		0	0.000000		
8	6(a)(i)	Sand	Cu.M.	350	1.217507		
9	6(a)(ii)	Locally available non-expansive soil	Cu.M.	500	0.138260		
10	6(b)	Clean 40-mm nominal size stone laid in layers not exceeding 200 mm in thickness and lightly tamped.	Cu.M.	155	1.098987		
	7	Providing and laying nominal mix or design mix, Plain Cement Concrete as specified below, at all levels, for all kinds of works, such as mass concrete, lean concrete, bed blocks, mud-mat, grading, underbed, filling, screed concreting, paving, plinth protection, damp proof course, drains, gully chambers, trenches, etc., with all labour, material, equipment, handling, batching, transporting, pumping, including mix design, mixing (no stacking of material shall be done near the work area where concrete is being placed), conveying, placing and compacting, protecting and curing, testing, for all working conditions, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Cement will be issued by BHEL Free of Cost (FOC) item)		0	0.000000		
11	7(a)	M 7.5 (with graded aggregate of nominal size 40mm) nominal mix	Cu.M.	250	1.712931		
12	7(b)	M 10 (with graded aggregate of nominal size 40mm) nominal mix	Cu.M.	770	1.712931		
13	7(c)	M 15 (with graded aggregate of nominal size 40mm) nominal mix	Cu.M.	20	1.688558		
14	7(d)	M 20 (with graded aggregate of nominal size 12.5mm) design mix	Cu.M.	22	1.701657		
15	7(f)	M 20 (with graded aggregate of nominal size 20mm) nominal mix	Cu.M.	0	1.701657		
		CONCRETE		0	0.000000		
	8	Providing and laying design mix cement concrete, for Reinforced Cement Concrete works, as specified below, at all levels, for all kinds of works, with 20 mm nominal size graded stone aggregate (unless specified otherwise), with all labour, material, equipment, handling, batching, transporting, testing, pumping, including mix design, admixture, mixing, conveying, placing and compacting, protecting and curing, testing, cleaning and finishing, rendering to give a smooth and even surface, for all working conditions, preparation of scheme for concreting and getting it approved by the Engineer, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Cement will be issued by BHEL Free of Cost (FOC) item)		0	0.000000		
	8(a)	For all works below ground level		0	0.000000		
16	8(a)(ii)	M 25	Cu.M.	600	1.874072		
17	8(a)(iii)	M 30	Cu.M.	12300	1.903091		
	8(b)	For all works above ground level : (except top deck of machine foundations supported on Vibration Isolation System)		0	0.000000		
18	8(b)(ii)	M 25	Cu.M.	610	1.921986		
		DAMP PROOFING / PROTECTIVE LAYER		0	0.000000		
	10	Providing and applying protective layer as specified below for damp proofing and water proofing to concrete structures, at all levels, for all kinds of works, including all labour, material, equipment, handling, transportation, testing, surface preparation, finishing, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
19	10(a)	Minimum two coats of hot bitumen of Industrial grade 85 / 25, conforming to IS: 702, mixed with 1% anti-stripping compound, on the plastered / unplastered concrete surface, @ 1.70 Kg. / Sq. M. (for all coats).	Sq. M.	70	0.096605		
		REINFORCEMENT		0	0.000000		
	11	Providing and placing reinforcement, as specified below, in reinforced cement concrete and other allied works, at all levels, for all kinds of works (including reinforcement for piling, machine foundations like top decks of TGs, BFPs FANs etc.) with all labour, material, equipment, handling, transportation, cleaning, straightening, cutting, testing, including bending and placing, binding in position, concrete cover blocks, chairs and spacers, laps and anchorage, cover to reinforcement, preparation of bar bending schedules and getting it approved, all complete, as per specifications, drawings and instructions of the Engineer. (Reinforcement steel will be issued by BHEL as Free of Cost (FOC) item)		0	0.000000		
	11(a)	For works below ground level		0	0.000000		
20	11(a)(ii)	High strength deformed TMT bars	M. T.	1344	4.866418		
	11(b)	For works above ground level		0	0.000000		
21	11(b)(ii)	High strength deformed TMT bars	M. T.	105	4.955046		
		FORMWORK AND STAGING		0	0.000000		
	12	Providing and fixing plywood formwork with suitable overlay (film faced), for cast in-situ, reinforced cement concrete, to give an even and smooth surface to exposed faces of concrete, at all levels and for the works of beams, columns, slab foundations but excluding top deck of machine foundations		0	0.000000		
22	12(a)	For works below ground level	Sq.M.	23150	0.261832		
23	12(b)	For works above ground level	Sq.M.	8550	0.302477		
		EMBEDDED PARTS (INCLUDING LAYING OF RAILS, ANCHOR FASTENERS AND ANCHOR STUDS)		0	0.000000		

SL. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	FACTOR	RATE= FACTOR (F) *AMOUNT (A)/100000 (ROUNDED OFF UPTO TWO PLACE OF DECIMAL)	AMOUNT (Rs.) = RATE * QUANTITY
24	14	Transportation, erection and installation of embedded steel parts, supplied by the Engineer, at all levels, for all kind of works, including all labour, material, equipment, handling, transportation, setting material in concrete, transportation from anywhere within the project area to the place of work, layout, welding, bolting, drilling, cutting, scaffolding, holding in position, providing primer painting on exposed surfaces, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Steel will be issued by BHEL as Free of Cost (FOC) item)	M.T.	15	11.876147		
	15	Providing, fabricating, transporting, erecting and installing, at all levels, mild steel / PVC pipes, for all kinds of works, including all labour, material, equipment, handling, transportation, setting material in concrete, layout, scaffolding, fabrication, cutting, grinding, drilling, bolting, welding, jointing, erection, embedding, holding in position, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
25	15(a)	MS pipes of all diameters	Quintal	10	4.520026		
26	15(b)	PVC conduits of all sizes	Quintal	2	13.382822		
		<b>GROUTING</b> (Cement will be issued by BHEL Free of Cost (FOC) item)		0	0.000000		
27	18(a)	Providing and laying cement : sand grout (fluid mix and /or plastic mix) for grouting of block-outs, pockets, foundation bolt holes and underside of base plates, with grout consisting of 2 parts by weight of sand, 1 part by weight of cement, blended with, non-metallic anti-shrinkage admixtures in required proportions as specified by manufacturer / Engineer, including all labour, material, equipment, handling, transportation, surface preparation, mixing, placing, curing, testing etc., all complete, as per specifications, drawings and instructions of the Engineer.	CU.DM.	45	0.132942		
28	18(b)	Providing and laying cement aggregate grout (stiff mix) for dry pack application for grouting of underside of base plates, where grout thickness is more than 40 mm, with cement concrete mix (1 : 1.25 : 2) by weight, blended with anti-shrinkage admixtures in required proportions, as specified by manufacturer / Engineer, including all labour, material, equipment, handling, transportation, surface preparation, mixing, placing, curing, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer.	CU.DM.	1600	0.124966		
		<b>JOINTS IN CONCRETE</b>		0	0.000000		
	19(a)	Providing and installing bitumen impregnated fiber board joint filler, conforming to IS : 1838, at joints in concrete, at all levels, including all labour, material, equipment, handling, transportation, testing, cutting, nailing, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
29	19(a)(ii)	25 mm thick	Sq.M.	250	0.621176		
	20	Providing following type of material for joints in concrete, at all levels, including all labour, material, equipment, handling, transportation, testing, cutting, bending, jointing, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
30	20(a)	For expansion joint, PVC water stops of minimum size 225 mm x 6 mm ribbed with central bulb.	R. M.	300	0.218719		
31	20(c)	For construction joints, cement slurry modified with acrylic polymer @ minimum 1.0 litre with every 3 kg. of cement and 1.0 liter of water and applying this slurry on the concrete surface @ 2.0kg./sqm.	Sq.M.	1950	0.274747		
	21	Providing and filling in position, sealing compound as specified below, including all labour, material, equipment, handling, transportation, testing, cleaning, mixing, heating, pouring / injecting sealing compound in gaps and joints, at all levels, application of primer, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
32	21(a)	Hot applied bitumen sealing compound, conforming to Grade A of IS : 1834	Kg.	140	0.054950		
33	21(b)	Two part polysulphide gun grade, conforming to IS : 12118	Kg.	40	0.203845		
		<b>DISMANTLING, CHIPPING AND MAKING AN OPENING IN RCC AND PCC</b>		0	0.000000		
34	22	Dismantling concrete work (both PCC and RCC of all grades), for all types of structures, at all levels, including all labour, equipment, scaffolding, staging, stacking of serviceable material upto a lead of 500 m and disposal of unserviceable material upto a lead of 2 Km. beyond the plant boundary or as directed by the Engineer, cutting of reinforcement, propping, shoring, enclosures, including all labour, material, equipment, handling, transportation, etc., all complete, as per specifications, drawings and instructions of the Engineer.	CU.M.	1.5	1.078355		
35	23(a)	Chipping of Cement Concrete work (both PCC and RCC), for all type of structures, at all levels, for making grooves, removing surface concrete etc., according to shapes, sizes and profiles as shown on the construction drawings, stacking of serviceable material upto a lead of 500 m, disposal of unserviceable material upto a lead of 2.00 Km. beyond the plant boundary or as directed by the Engineer, cutting of reinforcement, including all labour, equipment, scaffolding, staging, handling, transportation, propping and shoring, enclosures, etc., all complete, as per specifications, drawings and instructions of the Engineer.	CU.DM.	700	0.034326		

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36	23(b)	Making of Circular opening of diameter varying from 25 mm to 150 mm and depth upto 450 mm in cement concrete work (both PCC and RCC) of all grades, for all type of structures, at all levels and for all positions, by coring using diamond bits for pockets / thorough opening according to size as shown on the construction drawings, stacking of serviceable material upto a lead of 500 m, disposal of unserviceable material upto a lead of 2.00 Km. beyond the plant boundary or as directed by the Engineer, finishing neatly the surface area of cement concrete exposed after creation of circular opening including all labour, equipment, scaffolding, staging, handling, transportation, propping and shoring, enclosures, etc., all complete, as per specifications, drawings and instructions of the Engineer.	SQ.M.	3	1.223066		
37	23(c)	Making of slit type opening of rectangular, square and or similar shape of varying size (in plan) and depth upto 450 mm in cement concrete work (both PCC and RCC, cutting of reinforcement) of all grades, for all type of structures, at all levels and for all positions, by sawing using wall saw machine with diamond bits, according to size as shown on the construction drawings, locating the reinforcement before making the opening, by use of rebar detector and obtaining specific clearance from the Engineer, if the cutting of the reinforcement bar are involved in the making of the opening, stacking of serviceable material upto a lead of 500 m, disposal of unserviceable material upto a lead of 2.00 Km. beyond the plant boundary or as directed by the Engineer, finishing neatly the surface area of cement concrete exposed after creation of opening including all labour, equipment, scaffolding, staging, handling, transportation, propping and shoring, enclosures, etc., all complete, as per specifications, drawings and instructions of the Engineer.	SQ.M.	3	1.453499		
		<b>PRECAST CEMENT CONCRETE</b>		0	0.000000		
38	24(a)	Providing and laying all types of pre-cast cement concrete units (plain or reinforced) of grade M-25, in all kinds of works, like trench / floor covers, drain covers, fins, coping, fascia, lintel, chajjas, wall panels, blocks for road edging, kerb block, separators, roof units, etc., at all levels, with graded stone chips (20 / 12.5 / 10 mm nominal size), including all labour, material, equipment, handling, trans-portion, formwork, batching, mixing, casting, compacting, curing, testing, rendering, exposed surface with cement sand mortar 1:3, handling, storing, trans-portion, for all leads and lifts, erection, setting in position with cement sand mortar 1:3, filling gaps between adjacent Pre-cast units with M-30 concrete or Cement Sand mortar 1:3, making of holes for bolts, / fixing/lifting, welding etc., all complete, as per specifications, drawings and instructions of the Engineer. (reinforcement, steel embedments and inserts, if provided, shall be paid separately under relevant items). <b>(Cement will be issued by BHEL Free of Cost (FOC) item)</b>	CU.M.	10	3.879778		
		<b>STRUCTURAL STEEL</b>		0	0.000000		
39	25	Providing, fabrication, erection, installation and alignment of MS foundation bolt/bolt assembly in concrete, along with nuts, lock nuts, anchor plates, stiffener plates, protection to treaded portion, preparation of fabrication drawing and getting the same approved etc., up to and including 80 mm diameter and upto and including 3000 mm length, including all labour, material, equipment, handling, transportation, etc., all complete, as per specifications, drawings and instructions of the Engineer.	M.T.	20	45.915433		
	26	Providing, fabrication, erection, alignment, welding, bolting etc. of structural steel, mild steel, medium and high strength steel at all levels, involving rolled sections, (including rounds), pipes/ rectangular & circular hollow sections including bending to curvature, built-up sections fabricated out of plates and / or rolled sections (including pipes / hollow sections), plates, <b>chequered plates</b> , etc., in columns, beams, crane girders, roof trusses, roof girders, trestles, galleries, purlins, space frames, shear connectors, hangers, struts, monorail beams, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, base plates, splice plates, chequered plate flooring, decking plates, floor plates, seal plates, diaphragms, steel frame grid over false ceiling, walkways, platforms, ladders, stairs, stringers, treads, landings, hand-rails, toe plates, rungs, insert plates, edge protection structures, embedments, lugs, posts, stays, gates, louvers, lacings, stiffeners, gusset plates, washers, bunkers, silos, hoppers, CW liners etc., including design of connections and splicing, preparation and checking of fabrication drawings and getting the same approved, site fabrication, collection of steel, straightening, preparation of cutting plans, cutting, bending and rolling, grinding, clearances, drilling, assembly, bolting, (supply of permanent bolts and nuts to be paid separately under relevant item), erection bolts and nuts (weight not payable), welding, edge preparation, pre-heating, post-heating, sequence of welding, testing of welders, inspection and testing of welds, (visual inspection, non destructive and special testing), rectification / correction of defective welding works, production test plate, erection mark, erection scheme, embedding in concrete, protection against damage in transit, ensuring stability of structures, installation of temporary structures, (weight of temporary structures not payable), setting column bases, etc., with all labour, material, consumables, equipment, handling, transportation, testing (mechanical and non-destructive), etc., and all other activities required for completion of the works, all complete, as per specifications, drawings and instructions of the Engineer.		0			
	26(a)	For Mild Steel		0	0.000000		
40	26(a)(iv)	Steel embedments, insert plates, edge protection angles, MS pipe sleeves including lugs and rung ladders.	M. T.	4	36.883947		

SL. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	FACTOR	RATE= FACTOR (F) *AMOUNT (A)/100000 (ROUNDED OFF UPTO TWO PLACE OF DECIMAL)	AMOUNT (Rs.) = RATE * QUANTITY
	28	Providing and applying Primer/ Painting system of approved colour and shade to steel surfaces of all types, shapes and sizes, at all levels, to achieve an even shade, including all labour, material, consumables equipment, handling, transportation, protection and cleaning, scaffolding, and staging, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
41	28(a)(i)	Cleaning of steel surfaces in accordance with IS: 1477 (Part-I) by using mechanical power tools and application of chlorinated rubber based Zinc Phosphate primer of minimum 50 micron (DFT) on steel structures to be embedded in concrete (including external surface of CW Deck) including touch up painting for the damaged surfaces of primer.	M. T.	100	1.418048		
42	28(a)(ii)(1)	Removal of oil, grease, dirt, etc. from steel surfaces in accordance with IS:1477 (Part-I), Blast cleaning of steel surfaces by shot blasting to near white metal surface (Sa 2½) and applying inorganic Zinc Silicate primer of minimum 70 micron (DFT), including touch up painting for the damaged surfaces of primer.	M. T.	530	2.038443		
43	28(b)(i)	Applying intermediate (under) coat over inorganic Zinc Silicate primer / Zinc rich Epoxy primer, (excluding cost of primer), consisting of minimum 100 micron DFT high build epoxy based Micaceous iron oxide (pigmented) including touch up painting for the damaged surfaces of intermediate paint.	M. T.	530	1.542127		
44	28(c)	Applying finish coat over Intermediate (under) coat, (excluding cost of Intermediate coat), of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT and of approved Colour and shade	M. T.	530	1.107050		
45	30(a)	Providing and fixing in position at all level, permanent mild steel bolts (Property class 4.6 as per IS:1367 and Product grade 'C' as per IS:1363), nuts, washers, etc. upto and inclusive of 39 mm diameter and 300 mm long for structural steel works, including all labour, material, equipment, handling, transportation, testing, all complete, as per specifications, drawings and instructions of the Engineer.	QUINTAL	20	4.568993		
46	30(b)	Providing and fixing in position at all levels, high strength structural steel bolts (Property class 8.8 and product grade 'C' as per IS:1367) conforming to IS : 3757 and high strength structural hardened and tempered nuts (Property class '8' as per IS:1367) conforming to IS : 6623 with hardened and tempered washers as per IS:6649 etc., up to and inclusive of 39 mm diameter and 300 mm long, installing the same as per IS:4000 for structural steel works including all labour, material, equipment, handling, transportation, testing, all complete, as per specifications, drawings and instructions of the Engineer.	QUINTAL	100	4.773281		
47	32	Dismantling of erected structural steel members at any elevation, lowering of material and carriage of dismantled material up to field fabrication shop or return to Owner's store, including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position of all temporarily dismantled members, realignment of adjacent connected members to their correct position, (Weight of such temporarily dismantled and adjacent members not to be paid), including all labour, material, equipment, handling, transportation, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer.	M.T.	10	8.222127		
	33	Additions to, alterations in and / or modification of "Erection Marks" (of structural steel) either in erected position or in shop, including all labour, material, equipment, handling, transportation, cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to required levels, primer painting, with chlorinated rubber based zinc phosphate, touch up painting, transportation, return of unutilised steel pieces to the Owner's store, temporarily dismantling, cutting, rewelding, supporting and restoring to correct position of all temporarily dismantled members, realignment of adjacent connected members to their correct position, (Weight of such temporarily dismantling and adjacent members not to be paid), etc., including all labour, material, equipment, handling, transportation, all complete, as per specifications, drawings and instructions of Engineer.		0	0.000000		
48	33(a)	In erected position	M. T.	10	10.382548		
49	33(b)	In fabrication yard	M. T.	10	8.406949		
50	34	Re-erection of dismantled fabricated structural steel members requiring addition to, alterations in and / or modification, (dismantling and additions to, alterations in and / or modification to be paid separately under relevant items), including all labour, material, equipment, handling, transportation, carriage of modified "Erection Marks" from the field fabrication shop to erection site, raising to required levels, aligning in position, tack welding, final welding, touch up painting, including temporarily dismantling, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, realignment of adjacent connected members to the correct position, (Weight of such temporarily dismantled and adjacent members not to be paid), etc., all complete, as per specifications, drawings and instructions of the Engineer.	M.T.	20	8.090109		
		<b>MASONRY AND ALLIED WORKS</b>		0	0.000000		

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	36	Providing and laying in position brick masonry (with or without RCC band / reinforcement), with bricks of minimum crushing strength of 75 Kg/cm <sup>2</sup> , at all levels, for all kinds of works, for all thicknesses including all labour, material, equipment, handling, transportation, etc., in Cement Sand mortar of specified proportion, mixing mortar, laying bricks, raking out joints, scaffolding, staging, curing, including making holes /opening of size upto 0.1 Sq. M., etc., all complete, as per specifications, drawings and instruction of the Engineer. (RCC / Reinforcement /form work if provided any to be paid separately under relevant items). <b>(Cement will be issued by BHEL Free of Cost (FOC) item)</b>		0	0.000000		
	36(a)	With fly ash bricks conforming to IS : 12894 or IS : 13757,		0	0.000000		
51	36(a)(i)	with 1 : 6 (1 Cement and 6 Sand) mortar	Cu.M.	320	2.657357		
52	36(a)(ii)	with 1 : 4 (1 Cement and 4 Sand) mortar	Cu.M.	6	2.268876		
53	37	Dismantling of brick/ Aerated Concrete Block masonry work, including making opening of any shape (round / square / rectangular / etc.) and any size, for all types of structures, at all levels, including all labour, equipment, handling, transportation, scaffolding, staging, removing mortar and cleaning bricks, stacking of serviceable material upto a lead of 1 Km. within the plant boundary, and / or using the same for filling within the plant boundary and compacting in layers to 85 % of the original volume, disposal of unserviceable material upto a lead of 2km. beyond the plant boundary, cutting of reinforcement, propping, shoring, enclosures, etc., all complete, as per specifications, drawings and instructions of the Engineer.	CU.M.	2	0.447219		
	38	Providing cement sand plaster, as specified below in one or more layers, at all levels, for all types of masonry and / or concrete surfaces, (both interior and exterior) in all kinds of works (excluding grading under bed and lathe plaster) for skirting and dado, canopies, fins, fascia, ceiling, slab, beams, columns, lintel, canopies, projections, stairs, landings, including forming groove of uniform size from 12 mm x 12 mm upto 20 mm x 15 mm in plastered surface, as per approved pattern using wooden batton, all labour, material, equipment, handling, transportation, scaffolding, staging, surface preparation, handling, mixing, mortar, application, plastering, formation of drip course, on the ceiling of the exterior projected surface, finishing, curing, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer. <b>(Cement will be issued by BHEL Free of Cost (FOC) item)</b>		0	0.000000		
54	38(a)	18 mm thick, using 1:6 cement : sand mortar, in two layers	Sq.M.	1150	0.180070		
55	38(b)	12 mm thick, using 1:6 cement :sand mortar, in single layers	Sq.M.	1150	0.154951		
56	38(d)	6 mm thick, using 1:4 cement : sand mortar, in single layers	Sq.M.	430	0.140764		
	39(a)	Providing plastering as specified below, including all labour, material, equipment, handling, transportation, surface preparation, mixing, mortar application, finishing, curing, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer. <b>(Cement will be issued by BHEL Free of Cost (FOC) item)</b>		0	0.000000		
57	39(a)(ii)	Providing Cement Sand mortar 1:4 for fixing the floor tiles/Stones	Cu. M.	2	1.737108		
58	39(a)(iii)	Providing Cement Sand mortar 1:3 for fixing the wall tiles/Stones	Cu. M.	1	1.825736		
59	39(b)	Providing and fixing galvanised hexagonal wire netting of 0.9 mm wire diameter and 19 mm mesh size, for all types of members and all types of surfaces, for plastering on masonry / concrete/ steel sections and for reinforcing the wearing course on water proofing for roofs, in all kinds of works, at all levels, including all labour, material, equipment, handling, transportation, scaffolding, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Plastering & wearing course to be paid separately under relevant item).	SQ.M.	400	0.084197		
		<b>WALL / CEILING FINISHES</b>		0	0.000000		
	41(a)	Providing and applying of minimum three coats of finish paint with low VOC content conforming to GRIHA rating for reduction of VOC content of approved colour, shade and make, and a coat of compatible primer, for all types of plastered and / or exposed concrete surface, in all kinds of works, at all levels, all labour, material, equipment, handling, transportation, scaffolding, finishing, testing, etc., all complete, as per specifications, drawings, and instructions of the Engineer.		0	0.000000		
60	41(a)(i)	Acrylic distemper.	Sq.M.	950	0.058827		
61	41(a)(iii)	Acrylic emulsion paint	Sq.M.	500	0.073641		
62	41(a)(iv)	Chemical resistant paint (chlorinated rubber based)	Sq.M.	165	0.155957		
63	41(b)(ii)	Premium Acrylic Smooth Exterior Paint with Silicone additives : The paint should be applied in minimum 2 coats @1.67litre/10 sq.m over and including priming coat of exterior primer/ water proof cement paint, applied @ 2.20 kg/10 sq.m, on new plastered surfaces inclusive of all required tools, material, scaffolding and other painting accessories etc. The paint shall be applied as per the manufacturer's specifications and instructions and to the entire satisfaction of engineer-in-charge. The paint shall have excellent water resistant property.	SQ.M.	1130	0.138260		
64	42(b)	Preparation of all types of plastered and / or exposed concrete surface, in all kind of works, at all levels, by providing minimum 2mm of white cement based water resistant putty (wall putty) to give an even and smooth surface.	SQ.M.	1980	0.086147		
		<b>SHEETING AND ALLIED WORKS</b>		0	0.000000		



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65	46(a)(i)	Providing, fitting and fixing troughed permanently colour coated sheets for roofing and side sheeting (with / without insulation), covering of exposed metal/ concrete / brick surfaces, of steel with zinc coated to class Z275 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.6mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 or of steel with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.5mm of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 or of steel with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.4mm of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN 10326, colour coated with total coating thickness of 35 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester (SMP with silicon content of 30% to 50%) paint or Polyester paint, of 20 microns (nominal) SMP or polyester paint on one side (exposed face), over 5 micron (nominal) primer coat and 5 micron (nominal) SMP or Polyester paint over 5 micron (nominal) primer coat on other side (SMP and Super Polyester paint shall conform to product type 4 of AS/NZS 2728), and of approved profile, sectional properties, (suitable for the specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer (insulation, if provided, shall be paid separately under relevant item).	SQ.M.	1450	0.646985		
66	46(b)	Extra over item no. 46(a)(i) or 46(a)(ii) or 46(a)(iii) for crimping and curving	SQ.M.	150	0.075334		
67	47(a)(i)	Providing, fitting and fixing plain permanently colour coated sheets, for ridge and hips, flashing / rimming / closure for vertical / horizontal joints, capping etc., having steel with zinc coated to class Z275 with bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.6mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M/grade s250GD as per EN 10326 or steel with aluminium-zinc alloy coated to class AZ150 with bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.5mm of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 or steel with aluminiumzinc alloy coated to class AZ150 with bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.4mm of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN 10326, colour coated with total coating thickness of 35 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester (SMP with silicon content of 30% to 50%) paint or Polyester paint, of 20 microns (nominal) SMP or polyester paint on one side (exposed face), over 5 micron (nominal) primer coat and 5 micron (nominal) SMP or Polyester paint over 5 micron (nominal) primer coat on other side (SMP and Polyester paint shall conform to Product type 4 of AS/NZS 2728), and of approved profile, sectional properties, (suitable for specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fasteners conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer (insulation, if provided, shall be separately under relevant item).	SQ.M.	150	0.694844		
		<b>INSULATION</b>		0	0.000000		
	49(a)	Providing and fixing insulation of mineral wool upto 50 mm nominal thickness conforming to IS : 8183, having a density of 32 kg / Cu.M. for glass wool or 48 kg/ Cu.M. for rock wool, for cladding insulation, under-deck insulation, insulation for hollow doors, insulation over false ceiling, at all levels, for all kinds of work, handling, transportation, etc., including all labour, material, scaffolding, equipment, with or without framed strips 25x3 mm (min) at maximum 300 mm c/c spacing, to hold the insulation between the horizontal sheeting runners, keeping in position with galvanised hexagonal wire netting of 0.3mm wire diameters and 19mm mesh size, for glass / rock wool, as per manufacturer's recommendation, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
68	49(a)(i)	With framed strips	Cu.M.	10	1.400322		
69	49(a)(ii)	Wrapped in polyethylene sheet bags but without framed strips.	Cu.M.	10.5	2.002992		
70	49(b)	Extra over item 49(a)(ii) above for providing and installing minimum 0.05 mm thick aluminium foil (instead of wrapping in polythelene sheet) for under deck insulation work on exposed faces, followed by 0.56 mm dia and 25 mm mesh GI wire netting and fixed with metal expansion fasteners.	SQ.M.	175	0.301336		
		<b>FLOOR FINISHES</b> (Cement will be issued by BHEL Free of Cost (FOC) item)		0	0.000000		

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	51	Providing and laying following materials/finishes of approved shade and colour (non - premium colours), over under bed of cement mortar / concrete (PCC) of thickness as per approved drawings where required, at all levels and for all kind of works, elevations, on horizontal and vertical surfaces for all types of work (like flooring, skirting, dado, wall lining & facing, tread and risers etc.), including all workmanship, preparation of working drawings, laying to plumb and water level in desired pattern, line and flush butt square jointing, curing, rubbing, grinding, polishing, edge moulding, finishing and cleaning, testing, providing opening of required size and shape, casting in panels wherever specified, including all labour, material, equipment, scaffolding, handling, transportation, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge. (Under bedding of cement mortar / concrete (PCC), if provided, shall be paid separately under relevant item). (Note : The size of tiles specified herein below are the minimum acceptable sizes.)		0	0.000000		
	51(a)	Vitrified floor tiles in different sizes (with minimum thickness 9.5 mm) with water absorption less than 0.08% and conforming to IS : 15622, of approved make in all colour and shades including grouting the joints with white cement and matching pigments etc.		0	0.000000		
71	51(a)(iv)	Mat finish minimum 800 mm x 800 mm size	Sq.M.	132	0.877417		
72	51(b)	Concrete hardener topping - with ordinary grey cement - 12mm thick (insitu) with metallic floor hardener in varied colours (Battle ship grey/Fresh Grey / Black / Seal Brown / Terra Cota / Tile Red) with cleaned and graded iron aggregate in a high strength cementitious binder.	Sq.M.	1150	0.236378		
	51(m)	Heavy duty dust pressed ceramic tiles as per IS 15622, including pointing the joints with white cement mixed with matching pigment.		0	0.000000		
73	51(m)(i)	300mmx300mm	Sq.M.	30	0.508195		
74	51(n)	Designer ceramic wall tiles of size 300 mm x 200 mm including pointing the joints with white cement mixed with matching pigment.	Sq.M.	55	0.744475		
	52(a)(ii)	Providing and laying acid resistant tile conforming to IS:4457-2007 on horizontal and vertical surfaces, at all levels for all type of works including one coat of bitumen primer followed by 12 mm thick bituminastic layer, A.R. tiles of specified thickness and size, 6 mm thick under-bed by potassium silicate mortar, pointing of joints of tiles with acid/alkali resistant epoxy/furane mortar up to a depth of 20 mm and bitumastic end sealing. The item shall include all labour, material, equipment, scaffolding, handling, transportation, preparation of surface etc all complete as per specifications, drawings and instructions of the Engineer-in-charge.		0	0.000000		
75	52(a)(ii)(a)	20 mm thick acid resistant tile on horizontal surfaces	Sq.M.	27	1.737108		
76	52(a)(ii)(b)	12 mm thick acid resistant tile on vertical surfaces	Sq.M.	38	1.577578		
		<b>DOORS, WINDOWS, PARTITIONS, ETC.</b>		0	0.000000		
77	53	Providing, fitting and fixing in position, pressed or cold rolled steel door frames of profile A, as per IS : 4351, manufactured from mild steel sheet of 1.25 mm thickness, for wooden or other non-metallic shutters, at all levels, for all kind of works, including all labour, material, workmanship, preparation of working drawings, equipment, handling, transportation, hinges, jamb, lock jamb, bead and mild steel angle threshold section 50x25 mm, or base ties of 1.25 mm pressed mild steel, welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb, steel butt hinges 2.5 mm thick with mortar guards, lock strike plate and shock absorbers, handling, blast cleaning of steel surfaces to near white metal surface (Sa 2½ of Swedish standard), applying inorganic zinc silicate primer of minimum 75 micron (DFT), followed by intermediate coat of minimum 75 micron (DFT) epoxy based titanium dioxide / micaceous iron oxide pigmented and finish coat of minimum 75 microns (DFT) of epoxy based coloured pigmented finish polyamide cured paint and final finish coat with minimum 25 micron DFT polyurethane colour pigmented paint etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge.	R.M.	50	0.514043		
78	54	Providing and fixing 35 mm thick ISI marked flush door shutters, conforming to IS: 2202 (Part-I), decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters with ISI marked stainless steel butt hinges with necessary screws at all levels, for all types of work, including all labour, material, equipment, handling, transportation, workmanship, preparation of working drawings, tower bolt, sliding bolt, handles, knobs, door stoppers, (all fittings shall be of anodised aluminium and electro colour dyed), hydraulic door closure, screws, morticed lock (6 lever), provision of vision panels, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge	SQ.M.	30	2.003283		

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79	56(a)	Providing, fitting and fixing in position, hollow metal double sheet plain shutter (45 mm thick) steel doors, at all levels and for all type of works, including all labour, material, equipment, handling, transportation, workmanship, preparation of working drawings, pressed steel frames, shutters, mastic caulking, grouting frames, hold fasts, butt hinges, tower / sliding bolts, handles, Aldrops, door stoppers, hydraulic door closures, locks, screws, handling, blast cleaning of steel surfaces to near white metal surface (Sa 2 ½ Swedish standard), applying inorganic zinc silicate primer of minimum 75 microns (DFT), followed by intermediate coat of minimum 75 micron (DFT) epoxy based titanium dioxide / micaceous iron oxide pigmented and finish coat of minimum 75 microns (DFT) of epoxy based coloured pigmented finish polyamide cured paint and final finish coat with minimum 25 micron DFT polyurethane colour pigmented paint filling with insulation, wherever required, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge (insulation, if provided any shall be paid separately under the relevant item).	SQ.M.	30	3.811003		
80	57(a)	Providing, fitting and fixing in position, fire proof single leaf/double leaf metal doors, with insulation, conforming to IS:3614, Part-II & BS 476, Part-22 and having a fire rating of two hours (minimum), at all levels and for all type of works, including all labour, material, workmanship including preparation of working drawings, equipment, handling, transportation, steel frames, shutters, insulation, fittings, hinges, panic device having panic lock, latch, horizontal full width lever, openable on pressing door stoppers, hold-fasts /expanding anchor bolts, bolting arrangement, grouting frames, blast cleaning of steel surfaces to near white metal surface (Sa 2 ½ Swedish standard), applying inorganic zinc silicate primer of minimum 75 microns (DFT) and finish with suitable fire redartant painting system, testing, etc., all complete, as per specifications, drawing and instructions of the Engineer-in-charge.	SQ.M.	16	10.014960		
81	57(b)	Extra above item 57(a) for Supply and installation of Vision Panel of size 200mmx400mm of clear size with 6 mm thick 2 hours fire rated 'toughened Glass' at required location on door shutters (as per drawing).	EACH	6	1.098987		
82	58	Providing, fitting and fixing in position, at all levels, for all type of works, anodised aluminium work, for doors, windows, louvered windows, ventilators, partitions, cover strips at expansion joints, dividing strips in floors etc., with extruded standard tubular and other sections of Indalco/Hindalco/Jindal/Bhoruka, including all labour, material, equipment, handling, transportation, accessories, conforming to IS : 733 and IS : 1285, anodised and Electro colour dyed to required colour and shade, according to IS: 1868 and IS : 11857 (Minimum anodic coating of Grade AC 15), fixed with metal expansion fasteners, screws or fixing clips, necessary filling up of gaps at junctions, at top, bottom and sides, with required neoprene felt for bi-metallic protection, and sealing with silicon sealant at all joints (wherever aluminium comes in contact with masonry / stone work). preparation of working drawings, aluminum cleat angle, aluminium snap-on-beading for glazing / panelling, stainless steel screws, all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, aldrops, stays, floor springs/ hydraulic door closures, etc.), C.P. brass/ stainless steel screws, fixing hinges / pivots, making provision for fixing of fittings wherever required, neoprene gasket, etc., all complete, as per specifications, drawings and instructions of Engineer-in-charge. Aluminium sections shall be smooth, rust free, straight, mitred & jointed mechanically wherever required . (Glazing /panelling shall be paid separately under relevant items).	KG	600	0.241173		
83	59	Providing, and fixing in position, anodised aluminium sections in window grills and associated aluminium beading, of all sizes and thickness and as per approved design pattern, at all levels and for all type of work, elevations, including all labour, material, equipment, handling, transportation, workmanship, preparation of working drawings, with or without openings for operating window handles, testing, handling, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge.	KG	240	0.239296		
	60(a)	Providing, manufacturing, assembling, fitting and fixing in position, rolling steel shutters and accessories at all levels, and for all type of work, including all labour, material, equipment, handling, transportation, fittings and fixtures, locking arrangements, manual operation / gear arrangement / electric motor drive and associated cabling, preparation of working drawings, blast cleaning of steel surfaces to near white metal surface (Sa 2 ½) of Swedish standard, applying inorganic zinc silicate primer of minimum 75 microns (DFT), followed by intermediate coat of minimum 75 micron (DFT) epoxy based titanium dioxide / micaceous iron oxide pigmented and finish coat of minimum 75 microns (DFT) of epoxy based coloured pigmented finish polyamide cured paint and final finish coat with minimum 25 micron DFT polyurethane colour pigmented paint etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
84	60(a)(ii)	For Geared arrangement (more than 10.50 sq.m. area)	Sq.M.	22	2.756330		
		GLASS AND GLAZINGS		0	0.000000		

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	62	Providing, fitting and fixing in position, glazing, of superior (selected) quality, first grade glass, at all levels, for all kind of work, including all labour, material, equipment, handling, transportation, scaffolding, staging, workmanship, preparation of working drawings, cleaning after filling and fixing, etc., all complete with all clips, beading, perforated Al.spacers, dessicants, silicon sealant & EPDM gasket , mastic, drilling, etc., as required and as per manufacturers specifications, drawings and instructions of the Engineer with following thickness and quality (anodised aluminium work including beading shall be paid separately under relevant item).		0	0.000000		
85	62(b)(i)	6 mm thick clear toughened glass	Sq.M.	60	1.098987		
86	62(c)(ii)	6 mm thick toughened tinted glass	Sq.M.	2	1.036471		
87	62(f)	Composite double glazing, 24mm thick consisting of 6mm thick clear toughened glass on inner side and 6mm thick reflective toughened glass on outer side. The two glasses shall be separated by 12mm air-gap and thermatically sealed by beading of anodized aluminium with outer edge sealed with silicon sealant. Composite double Glazing shall have following technical characteristics: Solar factor 25% or less, U-value less than 1.6 W/m2.K, VLT min 40%: The glass should be free from distortion and thermal stress.	Sq.M.	20	3.412011		
		<b>FALSE CEILING</b>		0	0.000000		
	64	Providing and fixing 12.5mm thick tapered edge Gypsum moisture resistant board false ceiling system having fine texture finish, at all levels, for all kind of work, which includes providing & fixing G.I. perimeter Channels of size 0.55 mm thickness having one flange of 20 mm and another flange of 30 mm, and a web of 27mm alongwith perimeter of ceiling, screw fixed to brick wall / partition with the help of nylon sleeves & screws at 610 mm centres. Then suspending G.I. intermediate channels of size 45 mm, 0.9mm thick with two flanges of size 15 mm each from the soffit at 1200mm centres with ceiling angle of width 25 mm x 25 mm x 0.55 mm thick fixed to soffit with G.I. cleat and steel expansion fastner. Ceiling section of 0.55 mm thickness having knurled web of 51.5 mm and two flanges of 26 mm each with lips of 10.5 mm are then fixed to the intermediate channel with the help of connecting clips and in direction perpendicular to the intermediate channel at 457 mm centres. 12.5mm thick GRG Board is then screw fixed to ceiling sections with 25 mm dry wall screws at 230 mm centres. The item to include all labour, material, supporting grid system equipment, handling, transportation, workmanship, expansion fasteners for suspension arrangement from RCC, preparation of working drawings, providing openings for AC ducts, return air grills, light fixtures, etc., all complete as per specifications, drawings and instructions of the Engineer-in-charge. (catwalkway grid, if provided, shall be paid separately under relevant item).		0	0.000000		
88	64(b)	Providing and fixing 15 mm thick Mineral Fibre Board false ceiling system, in tile form of size 600mm x 600mm along with galvanised light gauge rolled form supporting system in double web construction pre painted with steel capping, of approved shade and colour, having fine texture finish, at all level, for all kind of work, consisting of light weight galvanised steel member (minimum 0.8 mm thick and galvanised @ 180 g. / Sq. m. as per IS : 277) having maximum grid size of 1200 mm x 600 mm for supporting panels of specified size, suspended from RCC structural steel or catwalkway grid above, with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm width along the perimeter of ceiling, including all labour, material, supporting grid system (minimum 0.8 mm thick and galvanised @ 180 Gms / Sq. m.), equipment, handling, transportation, workmanship, expansion fasteners for suspension arrangement from RCC, preparation of working drawings, providing openings for AC ducts, return air grills, light fixtures, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge. (catwalkway grid, if provided, shall be paid separately laid in profile to suit the profile of dome.	Sq.M.	150	0.859692		
		<b>FENCING and GATES</b>		0	0.000000		
	66	Providing and installation of Fencing, for Transformer Yard, boundary wall and other areas, including all labour, material, workmanship, including preparation of working drawings, equipment, fixing on structural steel members, all fixtures, clips, transportation, handling, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Structural Steel posts and stays, toe wall, brickwall, concrete, etc., if provided, shall be paid separately under relevant item).		0	0.000000		
89	66(a)	Comprising of PVC coated chain link, mesh size 75 mm, diameter of the PVC coated wire as 4 mm (minimum), diameter of bare wire not less than 2.5 mm, as per IS : 272	Sq.M.	250	0.655847		
90	67	Providing, fabrication, transportation and erection of structural steel work in gates, conforming to IS : 2062, including all labour, material, equipment, workmanship, preparation of working drawings, transportation, handling, hardware, fixtures and fittings like fabricated hinges, mild steel Aldrops, locking arrangement, tower bolts, pipes, stubs / post, tempered steel template, tempered steel pivots, Guide track of MS Tee, bronze aluminium ball and bearing arrangement, castor wheel, placing in position embedded parts in concrete/brick work/road surface, cutting, grinding, drilling holes, welding, blast cleaning of steel surfaces to near white metal surface (Sa 2 ½), applying inorganic zinc silicate primer of minimum 75 micron (DFT), touch-up painting, application of intermediate (under) coat of minimum 75 micron (DFT) epoxy based titanium dioxide / micaceous iron oxide, followed by finish painting with Epoxy based colour pigmented finish Poly Amide cured paint, all complete, as per specifications, drawings and instructions of the Engineer.	KG	900	0.052291		

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		<b>WATER SUPPLY, DRAINAGE &amp; SANITATION</b>		0	0.000000		
	68(a)	Providing and fixing, including preparation of working drawings, medium grade galvanised (galvanising shall be as per IS:4736) mild steel pipes, conforming to IS:1239, for water supply and rain water down comer, at all levels, for all kind of work, including supply & installation of gate valves of suitable size, laying, installation, jointing of pipes and fittings, with all labour, material, equipment, tees, bends, elbows, couplings, flanges, reducers, plugs, clamps, cutting, forming chases and making good the walls, testing, disinfecting, etc., all complete, as per specifications, drawings and instructions of the Engineer, for following nominal bores (NB)		0	0.000000		
91	68(a)(i)	20 mm (NB) to 40 mm (NB) (pipe for water supply) inclusive of 20 mm (NB) and 40 mm (NB)	Quintal	12	4.342770		
92	68(a)(ii)	100 mm (NB) to 150 mm (NB) (pipe for rain water down comer) inclusive of 100 mm (NB) and 150 mm (NB) (without gate valves)	Quintal	2.2	4.431398		
93	69	Providing and fixing oxidised brass stop cocks of size 20 mm (NB) to 40 mm (NB), conforming to IS : 781, at all levels, for all kind of work, with all labour, material, equipment, etc., all complete, as per specifications, drawings and instructions of the Engineer.	KG	2	0.184347		
	70	Providing the toilet block consisting of fitting and fixtures as specified below, with built in floor drain, GI concealed water supply pipe of minimum 12 mm dia. of medium class, cast iron sanitary pipe (with lead joints) of minimum 75 mm diameter, floor trap with stainless steel grating, inlet and outlet connections for supply and drainage, with all bends, tees, junctions, sockets, etc., as are necessary for the commissioning and efficient functioning of the toilet block (all sanitary items shall be of first quality Vitreous China and of approved colour, all sanitary fittings shall be of heavy duty chrome plated brass), including preparation of working drawings, with all water supply, granite counter, embedded service pipes, (water supply and sanitary) and flexible brass pipes, bib cocks, stop cocks, brackets, etc., installation of sanitary items and fittings, fixtures, laying (installation) and jointing of pipes and fittings, with all labour, material, equipment, etc., all complete, as per specifications, drawings and instructions of the Engineer-in-charge. (Masonry, wall & floor finishing items shall be paid separately under relevant items). All fixtures and faucets' shall be conforming to GRIHA rating for reduction in water consumption.		0	0.000000		
94	70(a)	One number wall mounted coloured (excluding premium colours) glazed vitreous China European water closet (low flush WC with flow rate of 6.0 litres and 3.0 litres of water per flush, Dual flush adapters for standard flushing for solid waste and a modified smaller flush for liquid waste, flush valves with 20-25mm inlets for restricting water flow), water faucet (low flow rate faucets and taps with flow rate upto 25 l/min. without compromising on water pressure by having flow restrictors, pressure inhibitors, aerators and auto control valves), toilet paper holder, one number colour (excluding premium colours) glazed ceramic oval shaped wash basin 450x 550 mm (approx.) mounted over 18mm thick granite beveled edge counter fitted with photo-voltaic control system for water controls, bottle trap, one number looking mirror 600 x 900 x 6 mm, edge mounted with teak beading and minimum 12 mm thick plywood backing, one number stainless towel ring 150 mm dia, one number liquid soap dispenser, one stainless steel paper holder.	Each	2	34.210392		
95	70(e)	Extra above 70(a) or 70(b) for providing and fixing One number white glazed vitreous China flat back lipped urinal of 390 x 375 x 610 mm (approx) fitted with photo-voltaic controls for flushing system, with white glazed vitreous China partition of standard size, fixed with required fittings complete.	Each	2	8.331028		
	71(c)	Providing and fixing one number of HDPE loft type / over head water storage tank 'Sintex' or equivalent as per IS :12701, approved make having closed top with lid, complete with inlet, outlet, overflow pipe, ball valve mosquito proof coupling and proper anchorage arrangement, complete as per drawings, specifications and instruction of the Engineer-in-charge.		0	0.000000		
96	71(c)(ii)	500 litres net capacity	Each.	2	3.013351		
	72	Providing, laying and fixing, including preparation of working drawings, sand cast iron soil, waste and ventilation pipes, at all levels, for all kind of work, conforming to IS : 1729, for above ground works, with all fittings and fixtures, junctions, bends, offset, etc., with perfectly air and water tight lead joints, floor trap (Nahni type), slotted vent cowl, CI grating cover for gully trap including laying, installation and jointing of pipes and fittings, with all labour, material, equipment, coal tar coating, finish painting with two coats of ready mixed black bituminous paint, holders, and clamps, cutting and making good walls, floors, etc., all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
97	72(a)	100 mm (NB)	R. M.	20	0.833103		
	73	Providing, laying and installing cast iron pressure soil pipe class LA, conforming to IS : 1536, at all levels, for all kinds of work, with all fixtures and fittings, junctions, bends, offset, etc., (fittings shall conform to IS : 1538), rubber tight joints for underground pipe work, including laying, installation and jointing of pipes and fittings, with all labour, material, equipment, perfectly air and water tight joints, coal tar coating, etc., all complete, as per specifications, drawings and instructions of the Engineer. (excavation and filling shall be paid separately under relevant items).		0	0.000000		
98	73(a)	150 mm (NB)	R. M.	100	0.974908		

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	74	Providing and laying non-pressure RCC pipes, conforming to IS : 458, at all levels, for all kinds of work, collar jointed with stiff mixture of 1 Cement : 2 Sand mortar, including laying installation and jointing of pipes and fittings, with all labour, material, equipment, testing, etc., all complete, as per specifications, drawings and instructions of the Engineer. (excavation and filling shall be paid separately under relevant items).		0	0.000000		
99	74(a)	200 mm NB, class NP3	R. M.	10	0.380011		
100	74(b)	300 mm NB, class NP3	R. M.	10	0.497086		
101	74(c)	400 mm NB, class NP3	R. M.	20	0.886280		
102	74(h)	1200 mm NB, class NP3	R. M.	250	3.988259		
	75	Constructing RCC manhole of grade M25, foundation concrete M7.5 with 40 mm size graded stone aggregate, with inside concrete surfaces finished with a floating coat of neat cement slurry, making / benching in cement concrete M - 20 grade, neatly finished with floating coat of cement slurry, M.S. Rungs, heavy duty CI covers with frame, sealing of manhole covers with thick grease, 560 mm internal diameter as per IS : 1726, coating and painting of MS rungs, including making connection of drain or sewer line, all labour, material, equipment, handling, transportation, excavation, backfilling, disposal of surplus earth upto a lead of 1 Km. within the plant boundary concreting, etc., all complete, as per specifications, drawings and instructions of the Engineer. (concreting, formwork, reinforcement and MS rungs, if provided, shall be paid separately under relevant items)		0	0.000000		
103	75(a)	Rectangular shaped manhole, inside size 0.90 M x 0.80 M, depths 0.60 M to 0.90 M.	Each	2	11.521635		
		<b>EARTHING MAT</b>		0	0.000000		
104	78	Providing and installation of Earthing Mat (grounding system), using 40 mm diameter (nominal) mild steel bars, in form of grid, placed at a nominal depth of 1.0 metre from finished ground level, including preparation of working drawing, all labour, material, equipment, handling, transportation, ground electrode, risers, all excavation, back filling, disposal of surplus excavated material upto a lead of 2 Kms, bending, welding, laying, coating bitumen on welded areas of riser / pigtails, over two coats of red oxide primer, dressing, finishing, etc., all complete, as per specifications, drawings and instructions of the Engineer. (Supply of Below ground earthing is in the scope of BHEL)	M.T.	6	13.294194		
	326	Providing, fabrication, erection, alignment, welding, bolting etc. of structural steel, mild steel, medium and high strength steel at all levels, involving rolled sections, (including rounds), pipes/ rectangular & circular hollow sections including bending to curvature, built-up sections fabricated out of plates and / or rolled sections (including pipes / hollow sections), plates, chequered plates, etc., in columns, beams, crane girders, roof trusses, roof girders, trestles, galleries, purlins, space frames, shear connectors, hangers, struts, monorail beams, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, base plates, splice plates, chequered plate flooring, decking plates, floor plates, seal plates, diaphragms, steel frame grid over false ceiling, walkways, platforms, ladders, stairs, stringers, treads, landings, <b>hand-rails</b> , toe plates, rungs, insert plates, edge protection structures, embedments, lugs, posts, stays, gates, louvers, lacings, stiffeners, gusset plates, washers, bunkers, silos, hoppers, CW liners etc., including design of connections and splicing, preparation and checking of fabrication drawings and getting the same approved, site fabrication, collection of steel, straightening, preparation of cutting plans, cutting, bending and rolling, grinding, clearances, drilling, assembly, bolting, (supply of permanent bolts and nuts to be paid separately under relevant item), erection bolts and nuts (weight not payable), welding, edge preparation, pre-heating, post-heating, sequence of welding, testing of welders, inspection and testing of welds, (visual inspection, non destructive and special testing), rectification / correction of defective welding works, production test plate, erection mark, erection scheme, embedding in concrete, protection against damage in transit, ensuring stability of structures, installation of temporary structures, (weight of temporary structures not payable), setting column bases, etc., with all labour, material, consumables, equipment, handling, transportation, testing (mechanical and non-destructive), etc., and all other activities required for completion of the works, all complete, as per specifications, drawings and instructions of the Engineer.		0	0.000000		
		(Structural Steel will be issued by BHEL Free of Cost (FOC) item)			0.000000		
105	326(a)	For Mild Steel	M.T.	560	13.500176		
		<b>UNDER DRAINAGE FOR CW SYSTEM</b>		0	0.000000		
109	450	Supplying and fixing pressure relief valves of 100mm internal diameter made of PVC pipe to be fixed in RCC base slab including cost of all materials, labour, leads, lifts, dewatering, testing etc. complete as per technical specifications, drawings and directions of the Engineer.	EACH	200	2.038443		
110	451	Supply and laying of filter for longitudinal & transverse drains around perforated PVC pipe in sizes and arrangements as shown in drawings and as specified in IS:4558 for under drainage including spreading in layers and compacting the same as per specification and relevant codal provisions including cost of materials, labour, leads, lifts, testing, dewatering, dressing the bed complete (excluding cost of excavation which shall be paid under excavation item)	C.U.M.	850	1.010359		
111	452	Supplying and laying perforated PVC pipe of 180mm nominal outside diameter Class 5 as per IS: 4985 for under drainage arrangement including cost of all jointing, materials, labour, leads, lifts, dewatering, testing etc. complete as per specifications and directions of the Engineer.	R.M.	1050	0.664710		

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112	453	Supplying and laying well designed filter comprising of well graded coarse sand of fineness modulus (FM) 1.5 or above as per IS: 4558 on underside of raft including the cost of labour, equipment, material, all leads and lifts, compacting, dressing the bed, dewatering etc. complete as per specifications, drawings and instructions of the Engineer (excluding cost of excavation which shall be paid under excavation item)	CUM.	350	1.223066		
		<b>STOPLOG, TRASH RACK &amp; LIFTING BEAMS</b>		0	0.000000		
	454	Design, preparation of fabrication drawings, fabrication, supply including freight & insurance, painting, erection, testing of structural steel stop logs, along with first and second stage fittings and fixtures, setting embedded parts like seal seats, tracks, guides from bottom of sump to top of operating floor, latches etc. in second stage concreting and grouting, if required, along with lifting beam complete as per specifications, approved drawings and direction of Engineer (Structural steel shall not be supplied by the BHEL for this item).		0	0.000000		
113	454(a)(i)	Stop log in set of four units, consisting of one top unit and three interchangeable units, to cover a clear opening of size 5.6M x 8.65M in CWPB	Set	2	2392.954818		
114	454(a)(ii)	Embedded parts (1st & 2nd stage) for stop logs of CWPB	Sets	5	1329.419344		
115	454(a)(iii)	Lifting beam for stop logs of CWPB	Each	1	443.139782		
116	454(c)(i)	Stop log in set of two units to cover a clear opening of size 1.6M x 2M in Raw water Pump House	Set	2	886.279563		
117	454(c)(ii)	Embedded parts (1st & 2nd stage) for stop logs of Raw water Pump House	Set	5	354.511825		
118	454(c)(iii)	Lifting beam for stop logs of Raw water Pump House	Each	1	301.335052		
	455	Design, preparation of fabrication drawings, fabrication, supply including freight and insurance, painting, erection of structural steel (min. 10 mm thick flat for grill to be used) vertical lift removable type trash racks along with first and second stage fittings and fixtures, setting embedded parts like guides, tracks, latches, etc. in second stage concreting and grouting if any required along with common lifting beam complete as per specifications, approved drawings and direction of Engineer (Structural steel shall not be supplied by the BHEL for this item).		0	0.000000		
119	455(a)(i)	Trash rack with clear opening of size of grill 100mm x 100mm to cover a clear opening of size 5.6M x 9.5M consisting five units to form a set for CW Pump House	Set	6	634.576167		
120	455(a)(ii)	Embedded parts (1st & 2nd stage) for trash rack of CWPB	Set	5	239.295482		
121	455(a)(iii)	Lifting beam for trash rack of CWPB	Each	1	239.295482		
122	455(c)(i)	Trash rack with clear opening of size of grill 100mm x 100mm to cover a clear opening of size 1.6M x 10.5M consisting of five units to form a set for Raw water Pump House	Set	6	521.132383		
123	455(c)(ii)	Embedded parts (1st & 2nd stage) for trash rack of Raw water Pump House	Set	5	159.530322		
124	455(c)(iii)	Lifting beam for trash rack of Raw water Pump House	Each	1	388.190449		
125	NS1	<b>Civil works of STP including 2 nos. Biodigester sump &amp; 2 Nos. of Reed bed sump for CWPB &amp; RWPH and its connection to nearest drain (supply of STP is in the scope of BHEL)</b>			0.000000		
	NS1(1)	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level.			0.000000		
	a	Depth from ground level but not exceeding 2 m	CUM	319	0.047970		
	b	Depth exceeding 2 m but not exceeding 4 m	CUM	105	0.060232		
	NS1(2)	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			0.000000		
	a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	187	0.035177		
	NS1(3)	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			0.000000		
	a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	80	0.012794		
	NS1(5)	Providing and applying concrete structures two coats of ERPB (Epoxy resin based anticorrosive and chemical resistant paint) over a coat of CPCI (concrete penetrating bipolar corrosion inhibitor) with 300 to 325 micron DFT for protection of concrete against carbonation and chloride penetration in saline/marine environment all complete of approved make and as per manufacturer's recommendation.	SQM	74	0.372039		
	NS1(6)	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			0.000000		



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	a	25mmX25mm	RM	15	0.353382		
	NS1(7)	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)			0.000000		
	a	230 mm wide and 6 mm thick	RM	10	0.215867		
	NS1(8)	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand/ moorum/ non-expansive soil and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	135	1.079875		
	NS1(9)	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 610 g/sqm etc. all complete.	Kg	122	0.041040		
	NS1(10)	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	5	1.512144		
	NS1(11)	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	5	1.312798		
	NS1(12)	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			0.000000		
	a	100mm dia pipes	RM	75	1.457030		
	b	150mm dia pipes	RM	25	1.821287		
	NS1(13)	Supply, fabrication and fixing of hot dipped galvanized (as per IS 4736) MS pipe hand railing (minimum galvanization of 610 g/Sqm) of 32/40/50 mm dia including transportation, loading/unloading, surface preparation, painting etc. all complete as per specifications. Payments terms - a) on receipt of materials at site - 65%; b) Erection & fixing - 35%;	MT	0.25	53.477148		
	NS1(14)	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.			0.000000		
	a	UPVC pipes / conduits of all diameters	kg	5	0.217467		
		TOTAL AMOUNT "A" (Rs.)					

**NOTE:**

1	Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.
2	Contractor shall fully understand description and Specifications of items mentioned in BOQ.
3	Conditional price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.
4	Quantities mentioned in rate schedules are approximate only and liable for variation on either side depending upon site / design requirement. The tentative contract value (CV) of entire scope of work shall be calculated as per finally quoted / accepted rates & the Quantities indicated in BOQ cum Rate Schedule .
5	Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same.
6	In case of any mis-match in rate and amount on price discrepancy, the same will be dealt as per clause no. 1.4 of GCC.
7	Taxes (GST) shall be payable extra as per relevant clause in Technical Conditions of Contract.