

E-TENDER SPECIFICATION

Sl No	E-Tender Specification Number
1	BHE/PW/PUR/TLRPT-CHP/2669

CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS).

at

2x660 MW NTPC Talcher TPS

VOLUME - I

FOR

VOLUME I - TECHNICAL BID

THIS TENDER SPECIFICATION CONSISTS OF:

Notice Inviting Tender	
Volume-IA	Technical Conditions of Contract
Volume-IB	Special conditions of Contract
Volume-IC	General conditions of Contract
Volume-ID	Forms & Procedures
Volume-IE	Technical Specifications
Volume II	Price Bid

Bharat Heavy Electricals Limited



(A Government of India Undertaking)

Power Sector - Western Region
345-Kingsway, Nagpur-440001

CONTENTS		
Volume No	Description	Hosted in website bhel.com (Briefly) and detailed in BHEL e-Procurement Portal as files titled
NIL	Tender Specification Issue Details	(Part of Vol-IA-2669)
NIL	Notice Inviting Tender	(Part of Vol-IA-2669)
I-A	Technical Conditions of Contract	Vol-I-A-2669
I-B	Special Conditions of Contract	Vol-I-BCD-2669
I-C	General Conditions of Contract	(Part of Vol-I-BCD-2669)
I-D	Forms & Procedures	(Part of Vol-I-BCD-2669)
IE	Technical Specifications	Vol-I-E-2669
II	Price Bid Specification as specified in E-Procurement Portal	Volume-II-2669

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1	BHE/PW/PUR/TLRPT-CHP/2669

CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS).

at

2x660 MW NTPC Talcher TPS

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR Refer Notice Inviting Tender
TENDER SUBMISSION

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

M/s.

PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

GM (Purchase)

Place: Nagpur

Date:

2669

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



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Ref: **BHE/PW/PUR/TLRPT-CHP/2669**

Date: 09/11/2022

NOTICE INVITING E-TENDER (NIT)

NOTE: BIDDER MAY DOWNLOAD/ UPLOAD THE TENDER/ OFFER FROM/ON BHEL E-PROCUREMENT PORTAL → <https://eprocurebhel.co.in>

To,

Dear Sir/Madam,

Sub : NOTICE INVITING E-TENDER

Sealed offers in two part bid system (National competitive bidding (NCB) or International Competitive Bidding (ICB) 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

S No.	ISSUE	DESCRIPTION	
i	E-TENDER NUMBER	BHE/PW/PUR/TLRPT-CHP/2669	
ii	Broad Scope of job	CIVIL AND ARCHITECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS). At 2x660 MW NTPC Talcher TPS	
iii	DETAILS OF TENDER DOCUMENT	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i>	<i>Applicable</i>
A	Volume-IA	<i>Special Conditions of Contract (SCC)</i>	<i>Applicable</i>
B	Volume-IB	<i>General Conditions of Contract (GCC)</i>	<i>Applicable</i>
C	Volume-IC	<i>Forms and Procedures</i>	<i>Applicable</i>
D	Volume-ID	<i>Technical Specifications</i>	<i>Applicable</i>
E	Volume-IE	<i>Price Bid as specified in E-Procurement Portal</i>	<i>Applicable</i>
iv	Issue of Tender Documents	Tender documents will be available for downloading from BHEL website (www.bhel.com) or e-procurement portal (https://eprocurebhel.co.in) as per schedule below: Start :09/11/2022 , Time :18:00 Closes : 23/11/2022 , Time : 13:00 Brief information of the tenders shall also be available at central public procurement portal. (https://eprocure.gov.in/epublish/app)	<i>Applicable</i>
v	DUE DATE & TIME	Date: 23/11/2022, Time: 13.00 Hrs	<i>Applicable</i>

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S No.	ISSUE	DESCRIPTION	
	OF OFFER SUBMISSION	<ul style="list-style-type: none"> ▪ <i>Place: on E-Tender Portal https://eprocurebhel.co.in</i> 	
vi	OPENING OF TENDER (Techno-Commercial Bid)	<p>Date: 23/11/2022, Time: 17.00 Hrs Notes: <i>(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.</i> <i>(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.</i></p>	<i>Applicable</i>
vii	EMD AMOUNT	<p>91,50,000/- (Rupees Ninety One Lakh Fifty Thousand Only)</p> <p>Important Note: Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC.</p>	<i>Applicable</i>
viii	COST OF TENDER	<p>Free</p> <p>One day before due date of offer submission. Along with soft version also, addressing to undersigned & to others as per contact address given below:</p> <p>1) Name: Tapish Kumar Designation: Manager Dept: Purchase Address: Floor no. 5 & 6,Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-9010903666 Email :tapishkhandelwal@bhel.in</p> <p>2) Mr. Kamlesh Kumar Designation: DGM Dept: Purchase Address: Floor no. 5 & 6,Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Email: kamleshbhel@bhel.in Mob: 942554615</p> <p>3) Name: R. M. Malhotra Designation: GM Dept: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001</p>	
ix	LAST DATE FOR SEEKING CLARIFICATION		<i>Applicable</i>
x	SCHEDULE OF Pre Bid Discussion (PBD)		<i>Not Applicable</i>
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL	<p>1) <i>Shri Otem Dai, IAS (Retd.)</i> 2) <i>Shri Bishwamitra Pandey, IRAS (Retd.)</i> 3) <i>Shri Mukesh Mittal, IRS (Retd.)</i></p>	<i>Applicable</i>

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S No.	ISSUE	DESCRIPTION
MONITOR (IEM)		
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendum), Central Public Procurement portal (https://eprocure.gov.in/epublish/app) & on e-tender portal https://eprocurebhel.co.in and not in the newspapers . Bidders to keep themselves updated with all such information.

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed 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:-

NAME OF THE BENEFICIARY	BHARAT HEAVY ELECTRICALS LTD
ADDRESS OF THE COMPANY	5th Floor, SHREE MOHINI COMPLEX 345, KINGSWAY, NAGPUR
NAME OF BANK	STATE BANK OF INDIA
NAME OF BANK BRANCH AND BRANCH CODE	SBI, NAGPUR MAIN BRANCH, CODE-00432
CITY	NAGPUR
ACCOUNT NUMBER	40227423158
ACCOUNT TYPE	MC-C C Clean (C&I)
IFSC CODE OF THE BENEFICIARY BANK BRANCH	SBIN0000432
MICR CODE OF THE BANK BRANCH	440002002

(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

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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**)

BHEL has finalized the e-procurement service Provider:-

NIC PORTAL (<https://eprocurebhel.co.in>)

For E-PROCUREMENT ASSISTANCE & TRAINING, NIC PORTAL HELPDESK CONTACTS AS PER FOLLOWING:

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

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

1. Peter Raj, NIC, Ph: 9942069052

Email Support: support-eproc@nic.in

Other details/update yourself from : <https://eprocurebhel.co.in>

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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:-
please refer <http://www.mca.gov.in/> →MCA SERVICES → DSC SERVICES

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

Procedure for Submission of Tenders (To be used in case of Paper bid only): The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:

- ~~PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD)' in two separate sealed and superscribed envelopes (ENVELOPE I & ENVELOPE II)~~
- ~~PART-II (Price Bid) in sealed and superscribed envelope (ENVELOPE III)~~
- ~~One set of tender documents shall be retained by the bidder for their reference~~

6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below. (All pages to be signed and stamped) (To be used in case of Paper bid only):

Sl. no.	Description	Remarks
Part-I A		
	ENVELOPE - I superscribed as:- PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:-	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	Duly filled in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.	
Note:		
	<ul style="list-style-type: none">a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.<ul style="list-style-type: none">i). In case of acceptance of the deviations, appropriate leading shall be done by BHELii). In case of unacceptable deviations, BHEL reserves the right to reject the tender	
iii.	Supporting documents/ annexure/ schedules/ drawing etc. as required in line with Pre-Qualification criteria.	

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

PART-I B	
	ENVELOPE - II superscribed as:- PART-I (EMD) TENDER NO : NAME OF WORK : PROJECT : DUE DATE OF SUBMISSION : CONTAINING THE FOLLOWING:- Earnest Money Deposit (EMD) in the form as indicated in this Tender

PART-II	
	PRICE BID consisting of the following shall be enclosed
	ENVELOPE-III superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT : DUE DATE OF SUBMISSION : CONTAINING THE FOLLOWING
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I
ii	Volume II - PRICE BID (Duly Filled in Schedule of Rates - rate/price to be entered in words as well as figures)

OUTER COVER

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

- **SPECIAL NOTE: All documents/ annexures to be submitted should be uploaded in respective places in the E-Tender portal as per the list mentioned given in this NIT. BHEL shall not be responsible for any in-complete documents.**

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:

A. **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 3rd 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 3rd 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:

- a) $P_1, P_2, P_3, P_4, P_5, \dots, P_N$ etc. be the packages (under execution/ executed during the 'Period of Assessment' in all Regions 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. $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$)
- b) Number of Months 'T₁' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package P₁. Similarly T₂ for package P₂, T₃ for package P₃, etc. for the tendered scope. Now calculate cumulative total months 'T_T' for total similar Packages 'P_T' for all Regions (i.e. $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$)
- c) Sum 'S₁' of 'Monthly Performance Evaluation' Scores (S₁₋₁, S₁₋₂, S₁₋₃, S₁₋₄, S₁₋₅.... S_{1-T1}) for similar package P₁, for the 'period of assessment' 'T₁' (i.e. $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-T1}$). Similarly, S₂ for package P₂ for period T₂, S₃ for package P₃ for period T₃ etc. for the tendered scope for all Regions. Now calculate cumulative sum 'S_T' of 'Monthly Performance Evaluation' Scores for total similar Packages 'P_T' for all Regions (i.e. 'S_T' = $S_1 + S_2 + S_3 + S_4 + S_5 + \dots + S_N$)
- d) **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

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

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

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

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

ii). Calculation of Overall 'Performance Rating' (R_{BHEL}) 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_{BHEL}' 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_{BHEL} 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:

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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

iv). **Performance Systems:** The performance rating as mentioned in II (i) and (ii) above, shall be calculated as per Online Systems i.e. Contractor Performance Evaluation System (CPES) and Safety Performance Evaluation System (HSEPES). The scores assigned in HSEPES shall be scaled down to 10 and assigned in CPES against the category "HSE" (mentioned in Form F-15).

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:

- i). 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
- ii). For $R_{BHEL} = 60$, $P_{Max} = '1'$
- iii). 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)

In addition to above, in case contractor fails to score more than 5 (five) marks in the scaled down scores of HSEPES for "more than 2 months in a period of 6 months preceding and including the cut-off month in any single package", the contractor shall be considered disqualified for ongoing tender(s) of BHEL. Qualification of bidder for further tendering process shall be subject to qualifying this condition in addition to qualifying requirements mentioned in PQR. Bidders who did not qualify this condition shall not be considered under the provisions of clause 9 IV (iv) of NIT.

IV. Explanatory note:

- i). 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
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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)
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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 four, 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_{BHEL} ') ≥ 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 four, then in addition to bidders considered as per option "a", "First timer" bidders having average of

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available performance scores ≥ 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 four, 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 four, then all bidders (a)- having Overall Performance Rating (' R_{BHEL} ') ≥ 60 , (b)- "First timer" bidders having average of available performance scores ≥ 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 27th 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

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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 point (1) 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.	<i>Shri Otem Dai, IAS (Retd.)</i>	<u>iem1@bhel.in</u>
2.	<i>Shri Bishwamitra Pandey, IRAS (Retd.)</i>	<u>iem2@bhel.in</u>
3.	<i>Shri Mukesh Mittal, IRS (Retd.)</i>	<u>iem3@bhel.in</u>

(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:

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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 provided below:

Details of contact person(s):

Name:	R M Malhotra/ GM (Purchase)	Tapish Kumar/Dy Manager (Purchase)
Dept:	Purchase Department	
Address:	Floor No. 5 & 6, Shreemohini Complex, 345 Kingsway, Nagpur-440001	
Email:	rmalhotra@bhel.in	tapishkhandelwal@bhel.in
Phone:	0712-2858633	9010903666

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 **Reverse Auction:** Applicable. "BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on 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) shall be allowed only if specified in Pre-Qualifying Requirement (PQR) criteria, and in such a case the following shall be complied with:

23.1 Prime Bidder and Consortium Partner or partners are required to enter into a consortium agreement for the said contract with a validity period of six months initially. In case bidder becomes L1, Consortium Agreement valid till contractual completion period shall be submitted to BHEL before signing the contract. Consortium Agreement shall be kept valid till scope of work awarded to consortium partner(s) as per contract is completed.

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23.2 'Standalone' bidder cannot become a '**Prime Bidder**' or a '**Consortium bidder**' or '**Technical Tie up bidder**' in a consortium (or Technical Tie up) bidding. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non-compliance, consortium bids of such Prime bidders will be rejected.

23.3 Number of partners for a Consortium Bidding (or Technical Tie up) including Prime Bidder shall be NOT more than 3 (three).

23.4 Prime Bidder shall be as specified in the Pre-Qualification Requirement, else the bidder who has the major share of work.

23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0.

23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'.

23.7 Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified

23.8 In case customer approval is required, then Prime Bidder and Consortium Partner or partners shall have to be individually approved by Customer for being considered for the tender.

23.9 Prime Bidder shall be responsible for the overall execution of the contract.

23.10 In case of award of job, Performance shall be evaluated for Prime Bidder and Consortium Partner or partners for their respective scope of work(s) as per prescribed formats.

23.11 In case the Consortium partner or partners back out, their SDs shall be encashed by BHEL and BHEL shall take necessary action as per extant guidelines. In such a case, other consortium partner or partners meeting the PQR have to be engaged by the Prime Bidder, and if not, the respective work will be withdrawn and executed on risk and cost basis of the Prime Bidder. The new consortium partner or partners shall submit fresh SDs as applicable.

23.12 In case Prime Bidder withdraws or insolvency / liquidation / winding up proceedings have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHEL.

23.13 After execution of work, the work experience shall be assigned to the Prime Bidder and the consortium partner or partners for their respective scope of work. After successful execution of one work with a consortium partner under direct order of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.

23.14 The consortium partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the Prime Bidder for the total contract value. In case

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there are two consortium partners, then each partner shall submit SD equivalent to 0.5% of the total contract value in addition to the SD to be submitted by the Prime Bidder for the total contract value. However, Prime Bidder has also option for submission of SD on behalf of consortium partner (s).

SD submitted by Consortium Partner(s) may be released in case corresponding scope of work of the respective Consortium partner(s) has been completed upto the extent of 80% based on certification by Construction Manager and concurrence by the prime bidder.

23.15 In case of a Technical Tie up, all the clauses applicable for the Consortium partner shall be applicable for the Technical Tie up partner also.

24.0 The bidder shall submit/upload 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 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.

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.

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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 and / or under applicable legal provisions.

29.0 Micro and Small Enterprises (MSE)

~~Any Bidder falling under MSE category, shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer.~~

Type under MSE	SC/ST owned	Women owned	Others (excluding SC/ ST & Women)
Micro			
Small			

~~Note: - If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category.~~

~~a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS & DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration Certificate or EM-II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or Udyog Aadhar Memorandum (UAM) & Acknowledgement or EM-II Certificate along with attested copy of a CA certificate (**format enclosed as Annexure - 3**) where deemed validity of EM-II certificate of five years has expired applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. Documents submitted by the bidder may be verified by BHEL for rendering the applicable benefits.~~

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*

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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*

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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 as well as acceptance of the bids.*

32.0 Bid should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.

All overwriting/cutting, etc., will be numbered by bid opening officials and announced during bid opening.

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 **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.

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For BHARAT HEAVY ELECTRICALS LTD

(Addl. General Manager - Purchase)

Enclosure:

01. Annexure-1: Pre Qualifying Requirements.
02. Annexure-2: Check List.
03. ~~Annexure-3: Certificate by Chartered Accountant~~
04. Annexure-4: Reverse Auction Process Compliance Form
05. Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process
06. Annexure-6: RA Price Confirmation and Breakup
07. Annexure-7: Integrity Pact
08. Annexure-8: Undertaking as per PQR C4 of Annexure-1 i.e. PQR
09. Annexure-9: Declaration reg. Related Firms & their areas of Activities
010. Annexure-10: DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE, 2020 AND SUBSEQUENT ORDER(S)
011. Annexure 11: DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017
012. Annexure 12: Important information

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ANNEXURE - 1

PRE QUALIFYING CRITERIA

JOB	CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS). At 2x660 MW NTPC Talcher TPS	
TENDER NO	BHE/PW/PUR/TLRPT-CHP/2669	
SL NO	PRE QUALIFICATION CRITERIA	<u>Bidders claim in respect of fulfilling the PQR Criteria</u>
A	Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium /Technical Tie up partner jointly in case Consortium bidding is permitted , otherwise by the sole bidder)	Applicability APPLICABLE
B	<p>B <u>Technical PQR</u></p> <p>B.1: Bidder should have Executed “Piling or Civil or Structure or ‘Civil and Structural Works’ or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these works” for any one of the following in the last seven years from latest date of bid submission:</p> <p>B.1.1) Executed One work of value not less than ₹ 6520 Lakhs against single work order.</p> <p style="text-align: center;">OR</p> <p>B.1.2) Executed Two works each of value not less than ₹ 4075 Lakhs against maximum two work orders.</p> <p style="text-align: center;">OR</p> <p>B.1.3) Executed Three works each of value not less than ₹ 3260 Lakhs against maximum three work orders.</p> <p style="text-align: center;">And</p> <p>B.2.1.a.i): Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 16520 Cum within a common period of twelve consecutive months in cumulative of two running/completed contracts</p> <p style="text-align: center;">OR</p> <p>B.2.1.a.ii): Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 11013 Cum within a period of twelve consecutive months against one running/ completed contact.</p> <p style="text-align: center;">And</p>	Applicability APPLICABLE

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	<p>B.2.1.b.i): Completed civil work of at least one "Wagon Tippler" OR "Underground Transfer House" OR "Underground Reclaim Hopper" OR "Underground Pump House" OR "Track Hopper" OR "Intake Pump House in Sea/River/Dam/Any other water body having minimum depth of 8m" below ground level.</p> <p style="text-align: center;">OR</p> <p>B.2.1.b.ii): Executed one civil works comprising of at least one wagon tippler for at least one unit of ≥ 190 MW</p> <p style="text-align: center;">OR</p> <p>B.2.2): Bidder should have executed track hopper or wagon tippler of Coal Handling Plant works of coal based/lignite based power plant of total installed capacity of 500 MW or higher capacity</p> <p>Note: Bidder should satisfy (B.1 and B.2.1) or (B.1 and B.2.2) as a standalone bidder.</p> <p>For qualification against (B.1 and B.2.1) In case a bidder does not satisfy B.2.1.b, then the bidder can form consortium with one party who satisfies the PQR B.2.1.b above. This will be termed as "Consortium Bidding".</p> <p>In case of consortium bidding, following shall be applicable:</p> <ul style="list-style-type: none"> • Prime bidder should satisfy PQR (B.1 and B.2.1.a) above. • Agency satisfying B.2.1.b shall be termed as "Consortium Partner". • Prime bidder shall be responsible for satisfying the financial PQR-C (i.e. C-1, C-2, C-3 & C.4). • Prime bidder shall submit the entire tender along with the credentials, all statutory documents and the documents in support of PQR condition of the Consortium Partner. <p>All conditions as in Clause 23 of NIT shall also be applicable for consortium bidding.</p>	
C.1	Bidders must have achieved an average annual financial turnover (audited) of Rs. 2445.00 Lakhs or more over last three Financial Years (FY) i.e 2019-20, 2020-21 & 2021-2022'	APPLICABLE
C.2	NETWORTH (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive.	APPLICABLE
C.3	PROFIT 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.	APPLICABLE
C-4	Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking (Annexure-8) to this effect.	APPLICABLE
D	<p>Assessment of Capacity of Bidder:</p> <p>The "Assessment of Capacity of Bidders" for this Tender shall be carried out by considering the identified packages i.e. "Civil</p>	APPLICABLE

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	Works including foundations" for Prime bidder as well as Consortium bidder, if any.		
E	<p>Approval of Customer (if applicable): Applicable only if bidder/bidders qualifies/qualify against PQR B.1 and B.2.1 and not applicable if bidder qualifies against PQR B.1 and B.2.2</p> <p>Note: Names of bidders (including consortium/Technical Tie up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval</p>	APPLICABLE	
F	<p>Price Bid Opening</p> <p>Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E</p>		BY BHEL
G	Consortium tie-ups	NOT APPLICABLE	
<u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u>			
<p><u>Explanatory Notes for PQR B.1 (Technical)</u></p> <ul style="list-style-type: none"> For the criteria (B.1), actual executed value shall be considered. 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- $P = R + \frac{0.425 \times R \times (X_N - X_0)}{X_0} + \frac{0.425 \times R \times (Y_N - Y_0)}{Y_0}$ <p>Where</p> <p>P = Updated value of work</p> <p>R = Value of executed work</p> <p>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).</p> <p>X₀ = All India Avg. Consumer Price index for industrial workers for last month of work execution</p> <p>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).</p> <p>Y₀ = Monthly Whole Sale Price Index for All Commodities for last month of work execution</p> <ul style="list-style-type: none"> The evaluation currency for this tender shall be INR. <p><u>Explanatory Notes for Technical Criteria (B2):</u></p> <ol style="list-style-type: none"> VOID Unless otherwise specified, for the purpose of "B2 Technical Criteria", the word 'EXECUTED' means achievement of milestones as defined below - <ol style="list-style-type: none"> "ACHIEVEMENT OF PHYSICAL QUANTITIES" as per PQRs. "READINESS FOR COAL FILLING" of at least one Bunker, in respect of Mill 			

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Bunker Structure.

- c. "CHARGING" in respect of Power Transformers/ Bus Ducts/ "HT/LT Switchgears" / "HT/LT Cabling".
- d. For C&I works: "SYNCHRONISATION" in case of power project / "WORK EXECUTION of the value as defined in PQR" in case of industry.
- e. "BOILER LIGHT UP" in respect of Boiler / CFBC / ESP.
- f. "CHARGING OF ATLEAST ONE PASS" in respect of ESP(R&M)
- g. "GAS IN" in respect of HRSG.
- h. "STEAM BLOWING" in respect of Power Cycle Piping.
- i. "HYDRAULIC TEST"/ ANY OTHER EQUIVALENT TEST LIKE "100% RT/UT OF WELDED JOINTS" of the system in respect of Pressure parts/ LP Piping/CW Piping.
- j. "FULL LOAD OPERATION OF THE UNIT" in respect of Insulation work.
- k. "SYNCHRONISATION" in respect of STG / GTG.
- l. "SPINNING" in respect of HTG.
- m. "GAS IN" in respect of FGD

- 3. Boiler means HRSG or WHRB or any other types of Steam Generator.
- 4. Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass.
- 5. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5 TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating of the same in terms of MW shall be considered for evaluation.

Explanatory Notes for PQR -C (Financial):

C-1:

- i. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above.
- ii. Evaluation of Turnover criteria shall be calculated from the Audited Balance Sheet and Profit & Loss Account for the three Financial Years (FY).
- iii. In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years.
- iv. 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.

C-2: Net Worth (Only in case of companies) of the bidder should be positive.

Note: Net worth shall be calculated based on the latest Audited Accounts as furnished for 'C-1' above.

Net worth = Paid up share capital + Reserves

C-3: 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.

Note: PROFIT shall be PBT earned during any one year of last three financial years as in 'C-1' above.

C-4: Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.

Common Explanatory Notes:

- 1. For evaluation of PQR, in case Bidder alone does not meet the pre-qualifying technical criteria B1 above, bidder may utilize the experience of its Parent/ Subsidiary

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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).
- d. In case Bidder is submitting bid as a Consortium Partner, option of utilizing experience of parent/subsidiary Company can be availed by Prime Bidder only.
- e. Parent Company/ Subsidiary Company of which experience is being used for bidding, cannot participate as a 'Standalone Bidder' or as a 'Consortium bidder'.

2. Completion date for achievement of the technical criteria specified in the 'B' above 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 " Financial Year quarter of bid submission ". (for e.g. -Work completed on 01.01.2014 shall be considered even if latest date of bid submission is 20.03.2021).
3. "Executed" means the bidder should have achieved the technical criteria specified in the Common QR even if the Contract has not been completed or closed.
4. In case the Experience/PO/WO certificate enclosed by bidders do not have separate break up of prices for the E&C portion for Electrical and C&I works (i.e. the certificates enclosed are for composite order for supply and erection of Electrical and C&I and other works if any), then value of Erection & Commissioning for the Electrical and C&I portion shall be considered as 15% of the price for supply & erection of Electrical and C&I.
5. Following shall be complied with in case of consortium:
 - a. The Prime Bidder and Consortium Partner(s) are required to enter in to a consortium agreement and certify to BHEL regarding existence and validity of their consortium agreement in line with validity period mentioned in NIT.
 - b. Prime Bidder and Consortium partners shall be approved by Customer for being considered for the tender (applicable if customer approval is required).
 - c. Number of partners including prime Bidder shall be NOT more than 3 (three).
 - d. Prime Bidder alone shall necessarily comply with "B1Technical Criteria" except for mechanical package where B1 criteria is not applicable.
 - e. Prime Bidder and Consortium Partner shall together comply with the 'Pre-Qualification Requirements' specified for the respective category of technical requirement as per "B2 technical criteria".
 - f. Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified.
 - g. All other conditions shall be read in conjunction with clause no 23.0 of NIT.
 - h. Prime Bidder shall be the Bidder who has a major share of work.
 - i. Prime Bidder shall be responsible for the overall execution of the Contract.
 - j. Performance shall be evaluated for Prime Bidder and the Consortium partner for their respective scope of work.
 - k. In case the Consortium partner backs out, another consortium partner meeting the QRs, has to be engaged by Prime Bidder and if not, the respective work will be withdrawn and executed on risk and cost basis of the prime bidder.

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	<ul style="list-style-type: none">i. In case Prime Bidder withdraws or insolvency / liquidation / winding up proceedings have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHELm. After successful execution of one work with a consortium partner under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.n. The Consortium partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the Prime Bidder for the total contract value.
--	---

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.

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Format-1

Certificate for relationship between Parent Company / Subsidiary Company and the bidder

To,

.....
.....

Dear Sir,

Sub: Bid for NIT Nodated..... 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)

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Format-2

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 fulfillment 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

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ANNEXURE - 2

CHECK LIST

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

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

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16	Non-Disclosure Certificate	Applicable/ Not Applicable	YES/NO
17	Bank Account Details for E-Payment	Applicable/ Not Applicable	YES/NO
18	Capacity Evaluation of Bidder for current Tender	Applicable/ Not Applicable	YES/NO
19	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	YES/NO
20	Power of Attorney for Submission of Tender/Signing Contract Agreement <u>Power of Attorney of Consortium Partner.</u>	Applicable/ Not Applicable	YES/NO
21	Analysis of Unit rates	Applicable/ Not Applicable	YES/NO
22	Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process	Applicable/ Not Applicable	YES/NO
23	Annexure-6: RA Price Confirmation and Breakup	Applicable/ Not Applicable	YES/NO
24	Annexure-8: Undertaking as per PQR C4 of Annexure-1 i.e. PQR	Applicable/ Not Applicable	YES/NO
25	Annexure-9: Declaration reg. Related Firms & their areas of Activities (x) Other Tender documents as per this NIT.	Applicable/ Not Applicable	YES/NO
26	Annexure-10 Declaration regarding minimum local content	Applicable/ Not Applicable	YES/NO
27	Annexure-11: Declaration regarding compliance to restrictions under rule 144 (xi) of GFR 2017	Applicable/ Not Applicable	YES/NO

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

DATE :

AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

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ANNEXURE-3

Certificate by Chartered Accountant on letter head

(applicable upto 31st March'2021 in line with MSME notification no. S.O. 2119 (E), dated 26th June'2020)

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No. (Part II)/ Udyam Registration Certificate No.
dtd: Category: (Micro/Small/Medium)).
(Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722(E) dated October 5, 2006:
Rs Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs Lacs
3. **For Enterprises** (having EM-II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum): Investment in plant and machinery or equipment is Rs Lacs and turnover is Rs. Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)
4. **For Enterprises** (having EM-II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum): Investment in plant and machinery or equipment is Rs Lacs and turnover is Rs. Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)

(Strike off whichever is not applicable)

~~The above investment of Rs Lacs is within permissible limit of
Rs Lacs for Micro / Small/ Medium (Strike off which is not applicable)~~
Category under MSMED Act 2006.

Or

~~The enterprise has been graduated upward from its original category (micro/small/medium) (strike off which is not applicable), the enterprise shall maintain its prevailing status till expiry of one year from the close of year of registration, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

Or

~~The enterprise has been reverse graduated from its original category (micro/small/medium) (strike off which is not applicable), the enterprise will continue in its present category till the closure of the financial year and it will be given the benefit of the changed status only with effect from 1st April of the financial year following the year in which such change took place, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

Date:

(Signature)

Name:

Membership Number:

Seal of the Chartered Accountant

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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.{ BHE/PW/PUR/TLRPT-CHP/2669} 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.

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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	

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ANNEXURE - 6

Reverse Auction price confirmation and breakup
(To be submitted by L1 bidder after completion of Reverse Auction)

To

- *M/s. Service provider*
- *Postal address*

CC: M/s BHEL POWER SECTOR WESTERN REGION, Nagpur

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. BHE/PW/PUR/TLRPT-CHP/2669

~~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. as mentioned in the subject tender.

Yours sincerely,

For _____

Name:

Company:

Date:

Seal:

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ANNEXURE – 7

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 CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS) At 2x660 MW NTPC Talcher TPS (*ETS no.: BHE/PW/PUR/TLRPT-CHP/2669*). 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.

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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

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- 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.

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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 Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.

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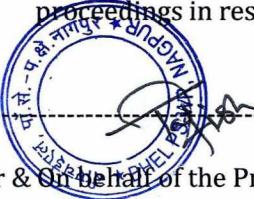
10.2 Changes and supplements as well as termination notices need to be made in writing.

10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.

10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact 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 Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.

10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.



For & On behalf of the Principal

(Office Seal)

Place- Nagpur

Date- 09/11/2022

For & On behalf of the Bidder/ Contractor

(Office Seal)

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____

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ANNEXURE - 8

UNDERTAKING

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

To,

GM-PURCHASE, BHEL-PSWR,
Floor No. 5&6, Shri Mohini Complex
345, KINGSWAY, NAGPUR-440001

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: NIT/Tender Specification No: BHE/PW/PUR/TLRPT-CHP/2669

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:

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Annexure-9

DECLARATION

Date: _____

To

GM-PURCHASE, BHEL-PSWR,
Floor No. 5&6, Shri Mohini Complex
345, KINGSWAY, NAGPUR-440001

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: _____

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Annexure-10

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

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

To,

GM-PURCHASE, BHEL-PSWR,
Floor No. 5&6, Shri Mohini Complex
345, KINGSWAY, NAGPUR-440001

Dear Sir,

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

Ref: 1) NIT/Tender Specification No: BHE/PW/PUR/TLRPT-CHP/2669,
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.)

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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,

GM-PURCHASE, BHEL-PSWR,
Floor No. 5&6, Shri Mohini Complex
345, KINGSWAY, NAGPUR-440001

Dear Sir,

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

Ref : 1) NIT/Tender Specification No: BHE/PW/PUR/TLRPT-CHP/2669,
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)*,

(a) is not from such a country /
(b) 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.

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Annexure-12: IMPORTANT INFORMATION

E -Tender for this work is invited by BHEL PSWR NAGPUR and offer shall be submitted through BHEL e-procurement portal only. All correspondences regarding this tender shall be through E-procurement portal.

Postal Address:

GM /Purchase BHEL PSWR,
SRIMOHINI COMPLEX, Floor No. 5 & 6, 345 KINGSWAY, NAGPUR 440001, INDIA

Following are the concerned BHEL officials to whom bidders can contact in case of any difficulty:

Dy Manager Purchase, Email: tapishkhandelwal@bhel.in Ph: +91-9010903666
Manager Purchase, Email: vivekjh@bhel.in
DGM/Purchase, email: kamleshbhel@bhel.in,
GM Purchase, Email: rmalhotra@bhel.in. Ph: +91 – 712 – 2858 – 633

- 1. Refer the abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' which is available at www.bhel.com on "supplier registration page" at the following link: https://www.bhel.com/sites/default/files/suspension_guidelines_abridged.pdf**
- 2. All Statutory Requirements as applicable for this project shall be complied with.**
- 3. Following clause shall form part of the HSE documents issued under Chapter IX of Volume IB 'Special Conditions of Contract'**

"In case of any financial deduction made by Customer for lapses of safety other than what is provided elsewhere in the contract, the same shall be charged on back-to-back basis on the defaulting contractor without prejudice to any other right spelt anywhere in the tender /contract"

- 4. BHEL Fraud Prevention Policy: "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."**
- 5. "Pradhan Mantri Kaushal Vikas Yojna:** 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 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".

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6. The following clause is added under clause 1.10 Security Deposit in Vol-1C:

Clause No 1.10.8 of Vol-IC General Conditions of Contract: Timely Submission of Security Deposit for Execution of the contract: "Bidder agrees to submit Security Deposit required for execution of the contract within the time period mentioned. In case of delay in submission of Security Deposit, enhanced Security Deposit which would include interest (Base rate of SBI +6%) for the delayed period, shall be submitted by the bidder. Further, if Security Deposit is not submitted till such time the first bill becomes due, the amount of Security Deposit due shall be recovered as per terms defined in NIT/contract, from the bills along with due interest."

7. Acceptance of Bank Guarantee (BG)

Revision in Acceptance of Bank Guarantee (BG) Clause no. 1.10.3 (iii) of Vol I C GCC:

Clause No. 1.10.3 (iii) of Vol IC GCC is revised as below: -

"Bank Guarantee issued by:

- a. Any of the BHEL consortium bank listed below:

State Bank of India
ABN Amro Bank N.V.
Bank of Baroda
Canara Bank
Citi Bank N.A.
Corporation Bank
Deutsche Bank
HDFC Bank Ltd.
The Hongkond and Shanghai Banking Corporation Ltd
ICICI Bank Ltd.
IDBI Ltd.
Punjab National Bank
Standard Chartered Bank
State Bank of Travancore
State Bank of Hyderabad
Syndicate Bank

- b. Any public sector Bank (other than consortium banks) with a clause in the text of Bank Guarantee that "**It is enforceable at Nagpur, Maharashtra**".
- c. Any private sector banks, with a clause in the text of Bank Guarantee that "**It is enforceable by being presented at any branch of the bank**".

Note: "Bank Guarantees issued by Co-operative Banks are not acceptable".

8. Broad Terms & Conditions of Reverse Auction:

In continuation to Clause 19.0 of NIT (Notice Inviting Tender) following are the broad terms and conditions of Reverse Auction:

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) (<https://www.bhel.com/guidelines-reverse-auction-2021>) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

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Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for 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."

Note:-

1. No benefits to MSE bidders w.r.t Reverse Auction Guidelines as available on www.bhel.com against works contract.

2. In case of enquiry through e-procurement the sealed electronic price bid (e-bid) is to be treated as sealed envelope price bid.

9. -Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC

10. Clause no. 2.24 of GCC PERFORMANCE GUARANTEE FOR WORKMANSHIP: The guarantee period shall commence from the date of Completion of contract as certified by BHEL Engineer.

11. Overrun Compensation (Clause no. 2.12 of GCC) shall not be applicable

12. The clause 2.7.9.1 below is added under the heading "Rights of BHEL" of General Conditions of Contract Volume-IC GCC.

2.7.9.1 Provision of Penalty in case of slippage of Intermediate Milestones:

- i) Two major Intermediate Milestones are mentioned as M1 & M2 in Chapter VI: Time Schedule of Vol IA Technical Conditions of Contract.
- ii) In case of slippage of these identified Intermediate Milestones, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to Form 14.
- iii) 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.
- iv) 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.
- v) 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.
- vi) Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.
- vii) Final deduction towards LD (if applicable as per clause 2.7.9 above), 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.
- viii) 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.

*** 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.

13. Scope of consortium bidder shall be the civil works of "Track Hopper".

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC)

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4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V
6	Time Schedule	Chapter-VI
7	Terms of Payment	Chapter-VII
8	Taxes and other Duties	Chapter-VIII
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10	Appendix	Chapter-X
11	WEIGHTAGES & FACTORS PERTAINING TO SCHEDULE OF QUANTITIES	Chapter XI

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: Project Information

Sl. No.	Description	Details
1	Project Title	2x660 MW Talcher Thermal Power Station
2	Customer	National Thermal Power Corporation Limited (NTPC Limited)
3	Location	The proposed site is at a distance of about 4 km from Talcher town and about 25 km from district headquarters Angul in Odisha state, India.
4	Nearest Railway Station	Talcher is on Talcher-Cuttack section of North Eastern Railway (renamed East Coast Railway) at about 2 Km. However, a small railway station named 'Talcher Thermal' is located near project boundary.
5	Nearest Airport	Bhubaneshwar (approx. 150Km by road)
6	Access By Road/Major Cities	The area is accessible by NH-23 (renamed NH-149) at about 1 km.
7	Temperature	Mean of daily minimum temperature = 15.1°C Mean of daily maximum temperature = 39.8°C
8	Seismic Zone	The project site lies in zone III as defined in IS: 1893.
9	Wind Speed	Design wind speed is 50 m/sec as per IS: 875 Part III

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Work and Technical Specifications

2.0 SCOPE OF WORK:

The scope of work comprises of construction of all Civil, Structural and Architectural works in conformity with the approved mechanical/ electrical layout including supply of all materials for buildings, equipment and facilities for the project listed below **except Cement, Structural Steel & Reinforcement Steel (TMT) that shall be supplied by BHEL free of cost** as per Schedule of Items. **Before commencement of any major foundations, the bidders have to check with mechanical/electrical drawings jointly with concerned BHEL Engineers.**

2.1 Civil, Structural and Architectural Works of following Major Buildings/Structures covered under this scope of work but not limited to it:

Dimensions shown below for major buildings/structures are tentative for the guidance of bidder and may vary during execution. The final dimensions for the structures/buildings shall be as per approved civil drawings.

2.1.1 CHP Area : (scope of work)

CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT FOR THE FOLLOWING AREAS.

1	TRACK HOPPER UNDER GROUND STRUCTURE
2	MACHINERY HATCH -1
3	MACHINERY HATCH -2
4	CRUSHER HOUSE
5	TRANSFER POINT-1
6	TRANSFER POINT-2
7	TRANSFER POINT-3
8	CONVEYOR GALLERY 1A/B
9	CONVEYOR GALLERY 2A/B
10	CONVEYOR GALLERY 3A/B
11	CONVEYOR GALLERY 6
12	MCC-1
13	MCC-2
14	MCC-3

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15	DUST SUPPRESSION PUMP HOUSE -1 WITH WATER TANK
16	DUST SUPPRESSION PUMP HOUSE -1 WITH WATER TANK
17	COMPRESSOR HOUSE
18	STACKER RECLAIMER
19	RETAINING WALL WITH DRAIN
20	STOCKYARD
21	COAL SHED
22	WORKSHOP BUILDING
23	PENT HOUSE
24	DOZER SHED
25	PIPE RACK CUM CABLE RACK
26	CABLE RACK
27	DUST EXTRACTION SYSTEM
28	ROAD & DRAIN
29	LIGHTING MAST
30	STREET LIGHT
31	DISMANTLING WORK OF EXISTING STRUCTURE,IF ANY FOR CONSTRUCTION OF FOUNDATION/STRUCTURE IN CHP AREA
32	ANY OTHER STRUCTURES IN COAL HANDLING PLANT AS PER SYSTEM REQUIREMENT
33	Any other buildings/structures beyond the limit of AHP area but within the project premises as per site requirement and direction by Engineering in charge. If it is required to execute the work beyond the limit of AHP area (other than scope as mentioned above), the limit of execution should not be more than the 30% of the awarded contract value.

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Civil, Structural and Architectural works related to following services:

- (1) Storm Water drain system under this contract scope of work
- (2) Crane movement road, main road approach roads, drains culverts
- (3) ERC/IRC
- (4) Sanitary and plumbing system in the buildings (for the buildings within the scope of this contract only)
- (5) RCC Electrical/Instrumentation cable trenches and pipe trenches
- (6) Pipe way Bridges
- (7) Pipe way Sleepers
- (8) Crossings (Culverts, bridges, sleeves as per applicable) of underground services below approach road for all services in the corridor including drains, fire water lines, cooling water lines, waste sewers.
- (9) Hard stand required for erection of heavy equipment.
- (10) Strengthening of existing roads for crane movement if required.
- (11) All approach roads from existing main roads as per detailed engineering requirement for maintenance and operation.
- (12) Maintenance and erection approach roads/ by strengthening of roads.
- (13) Any temporary activities required to complete the work.
- (14) Structural platforms, monorail beams, walkways, crossovers, handrails etc for miscellaneous equipments, piping etc.
- (15) Micro grading & disposal of surplus and unserviceable material beyond project complex's compound wall. Contractor to assess the lead by physically visiting the Plant site.
- (16) The sub-grade for roads & pavements and soil improvement/ preparation below foundation level of drains, culverts, pipe way bridges, manholes, etc. shall be carried out as per Geo- Technical recommendation.
- (17) Excavation for rock (Soft/Hard) may require blasting which require approval of statutory authority of local bodies. Supervision by authorized person shall be ensured as required.

The scope of work will involve:

All civil work required to complete Civil and architectural works for the scope of work including earth work, concrete work, formwork, water proofing/roof treatment, sealing work, steel embedment, grouting, wooden and metal doors, windows and partitions, brickwork, plastering, painting, flooring/false flooring, false ceiling, plumbing works, sanitary works, water works, fabrication of steel structure (including blasting and painting), erection of steel structure, road work, drainage, etc.

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2.2 General Scope:

- 2.2.1 Furnishing all labour, materials, supervision, construction plans, equipment, supplies, transport, to and fro the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.
- 2.2.2 Furnishing samples of all materials required by the engineers for testing/inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works.
- 2.2.3 Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
- 2.2.4 Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
- 2.2.5 Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
- 2.2.6 Carrying out topographic survey of the entire and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identification works etc., The contractor shall provide the owner/BHEL such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.
- 2.2.7 Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
- 2.2.8 Arranging for joint checking (with BHEL / BHEL's Customer / Consultant) of all site construction activities Preparation of joint protocols for each & every activity and maintaining quality records for audit/inspection as per approved FQP by BHEL.
- 2.2.9 Contractor shall set up suitable storage facilities for Cement, sand, deck plate, bolts, aggregate, reinforcement steel, structural steel, handrail, grating, foundation bolts, shuttering item, inserts, water proofing material, admixture other BOI's etc. and all are stored properly as per IS recommendation/technical specifications/ manufacturer recommendation. Wastage due to lapse of storing will be because of contractor.
- 2.2.10 The drawings enclosed with this tender are intended to give the tenderer a general idea of the type and extent of work involved. The drawings are as such only indicative and not to be considered as the exact construction drawings.

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Further this is to be noted that the drawings and the documents furnished along with this specification are the sole property of BHEL. It must not be used directly or indirectly in any way detrimental to the interest of the company.

2.2.11 BHEL at its discretion may include other area works, limited to 15% of awarded contract value, although not be specially mentioned in above scope of works. All such incidental works not specified but reasonably implied and necessary for completion of the project as a whole, contractor shall execute the works as desired and as directed by BHEL engineer which is binding on the contractor. The item rates & contract conditions shall remain unchanged for such works.

2.2.12 Contractor shall be bound to provide Ready Mix Concrete (RMC) of different grade at their Batching Plant as per direction of BHEL Engineer as per mutually agreed rate for which justifications need to submit to BHEL.

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

2.2.14 The detail scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements as per RFC Drawings.

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

2.2.16 Setting Up of Laboratory Works: The contractor shall set up laboratory in the very close vicinity of the work site as required field QA & QC laboratory set up and as the directions of engineer-in-charge. The laboratory shall be equipped with latest testing equipment in sufficient number to carry out all the tests as required under a contract. The contractor should ensure that the equipment is available well in advance of starting of the work to avoid stoppage of work on this account. All the tests shall be carried out by the contractor in the presence of the Engineer's representative and a joint record of all observations and results thereof shall be maintained, and available with the Engineer. **Bidder can tie up with approved third party Lab for testing.**

2.2.17 In certain cases, Crushed Stone Sand/M-Sand may be added to Natural sand in order to achieve the required grading with prior approval of the Customer/Consultant and subsequent design mix report from reputed institute like IITs/NITs/Any Other Government Institutes. Crushed Stone Sand/M-sand alone may be used only with the prior approval of the BHEL Engineer/Customer/Consultant for filling and Concreting works.

2.2.18 The bidder shall quote his price considering only River Sand usage. If crushed stone sand/M-sand (arranged by contractor) is used in place of river sand, suitable

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rebate (rate shall be mutually decided based on market rate with applicable BHEL overhead) of M-Sand consumed shall be applicable for all items/ works where M-Sand is used in place of River sand.

In case, BHEL at its discretion and subject to availability, may issue the crushed stone sand/M-sand free of cost for usage in place of river sand, suitable rebate (rate shall be mutually decided based on market rate with applicable BHEL overhead) of crushed stone sand/M-Sand consumed shall be applicable for all items/ works where M-Sand is used in place of River sand.

Measurement for the rebate shall be calculated based on quantity of M-Sand consumed in the particular item, not on the quantity of the particular item.

2.2.19 Labour and Staff Colony: The following are in the Bidder's scope of work for labour & staff colony:

- Development of Bidders temporary staff colony and labour colony having adequate no. of rest rooms along with toilets & fencing etc. (enclosing drawing for ready reference).
- All Civil and Structural work associated with drinking and service water for Bidder's labour and other personnel at the work site/colony/offices including pump houses, pipes, overhead tank, tube wells etc.
- Providing and maintaining facilities for safety, welfare, drinking water and sanitation, hygiene, biennial health check-up etc. for construction workers at their workplaces as well as at labour & staff colonies.
- The facilities for occupational safety, healthy environment, first aid, drinking water, resting place & toilets, canteen, crèche, etc. shall be provided at the workplace for construction workers by the contractor.
- Development and maintenance of above facilities for construction workers hired by the Contractor shall solely rest with the Contractor.

2.3 Preamble for the schedule of quantities/BOQ:

- 2.3.1 Details of the items in this Schedule shall be read in conjunction with the Corresponding Consultants/ NTPC specifications, drawings and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
- 2.3.2 The work shall be carried out as per construction drawings, specifications, the description of the items in this schedule and/or Engineer's instructions, Drawings enclosed with these documents are only indicative giving some idea of the type of work involved. The layout, sizes and details of the building, structures and foundations shown in tender drawings may vary at a large extent during actual construction. Final drawings will be issued progressively during the execution of the work.
- 2.3.3 Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.

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2.3.4 Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant, temporary works, labour materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.

2.3.5 The rate quoted shall be inclusive of cleaning the site of any vegetation, dressing and levelling etc., required for commencement of site activities. The rates shall also be inclusive of final micro grading before handing over. No separate payment will be made towards the same.

2.3.6 The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, form existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.

2.3.7 The quantities of the various items mentioned in the schedule are approximate and may vary up to any extent or be deleted altogether. The overall variation in contract value on execution shall be dealt as per GCC. Contractor has to obtain prior approval of BHEL/ NTPC before procurement of bought out items/ building materials.

2.3.8 Engineer decision shall be final and binding on the contractors regarding clarification of items in this schedule with respect to the other section of the contract.

2.3.9 In case of any discrepancy between item description, relevant drawing and/or specification, clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

2.4 Hierarchy:

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

- (1) Statutory Regulations
- (2) BOQ Items in Schedule of quantities
- (3) Technical specification (NTPC Talcher)/ Technical specifications (Section-C)
- (4) IS standards
- (5) BHEL's standard specification (Section D)

2.5 Construction Power (Provided by BHEL free of cost for Construction purpose only):

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2.5.1 Construction power (three phase, 415 V/ 440 V) will be provided free of cost at one point near the site at a distance of approx. 500M. Further distribution shall be arranged by the contractor at his own cost and services. Contractor shall be responsible for fulfilment of all requirements including statutory requirements in this regard. Contractor shall deploy and install required energy meter, cables, fuses, distribution boards, switchboards, bus bars, earthing arrangements, protection devices and any other installation as specified by statutory authority/act. Contractor shall also obtain approvals of appropriate authority and pay necessary fees, levies etc towards the clearance of such installations, prior to use. Sufficient power factor compensation equipments like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.

2.5.2 Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.

2.5.3 It shall be the responsibility of the Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply in all respects with the appropriate statutory requirements. The installation and maintenance of this shall be done by licensed and experienced electrician.

2.5.4 While reasonable efforts will be made to ensure continuous electric power supply, interruptions cannot be ruled out and no claim from the Contractor shall be entertained on this account such as idle labor, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.

2.5.5 **Contractor to note that till construction power is made available by BHEL (approx. within 3 months from start of work); contractor shall make his own arrangement like DG set etc. The contractor shall also take the approval/permission of statutory authorities for his DG set installation.** The Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. Nothing extra shall be paid on this account of DG set up and running for construction and office maintenance etc.

2.5.6 Contractor shall be well equipped with back-up power supply arrangement like DG set and diesel operated welding machine etc. to tackle situations arising due to failure of supplied power, so as to ensure continuity and completion of critical processes that are underway at the time of power failure or important activities planned in immediate future.

2.5.7 BHEL is not responsible for any loss or damage to the Contractor's equipment as a result of variations in voltage or frequency or interruptions in power supply.

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2.5.8 **Contractor is advised to maintain the calibrated energy measuring instruments and use their system as efficiently as possible to maintain the HT side input energy meter reading and LT side outgoing energy meter reading to sub-contractors as equal.**

2.5.9 The bidder will have to Procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back-up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.

2.5.10 Contractor to arrange energy meter for office.

General:

If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized/ accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.

Contractor to arrange calibrated energy meter (tamper proof, suitably housed in a weather proof box with lock & key arrangement) **for office** and this construction power at office is chargeable as per applicable tariff rates.

2.6 Construction water (Provided by BHEL free of cost):

Construction water will be provided free of cost at one point within the plant boundary. Bidder has to make arrangement of further distribution of water at his own cost. No extra payment shall be made under this account. The agency should also construct a sump of suitable size for storage of construction water as per their site requirement for use in batching plant and construction purposes.

2.7 Field Quality Assurance:

The contractor shall be responsible for day-to-day quality checks of concrete and other building materials during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/BHEL'S customer and as per field quality plan approved by **BHEL/ BHEL'S customer**.

2.8 Handling of Materials issued by BHEL free of cost:

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2.8.1 Materials shall be issued by BHEL based on the weight basis/linear measurements & sectional weight. However, on specific request of the contractor **“as a special case to expedite the job”** the consignment received at BHEL stores can directly be diverted to the work site following issuance procedure of BHEL. Such direct issues shall be as per the Challan/dispatch document/LR received with the consignment. In such cases, Contractor shall do unloading of materials from trucks/lorry at their own cost.

2.8.2 All materials issued by BHEL shall be stacked, stored above ground level by use of concrete or wooden sleepers. No materials shall remain on ground at any time. All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipments like winches, D-Shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. Required for such handling of steel from BHEL stores/storage yard etc. Shall be arranged by contractor within quoted/accepted rates.

2.8.3 The contractor shall take delivery of the materials from the designated place within the project premises at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & No extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent works. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering. Excessive rusting of steel in custody of agency/contractor must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occurs rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.

2.9 Cement (Issued by BHEL free of Cost):

1. Cement as received from the manufacturer/ stockiest will be issued free of cost to the contractor. Cement shall be issued normally through bulkers and emptied in cement silos of batching plant. Necessary assistance shall be provided by contractor.
2. Contractor to note that batching plant of capacity 30 Cum per Hour being established at site shall have minimum three cement silos of 100 MT capacities each respectively. The number of silos shall be increased based on the site requirement.

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3. On advance request of the contractor, the cement shall be supplied in 50kg tamper proof sealed Bags for other than RCC works like masonry, flooring works etc.
4. The contractor shall submit to the engineer, a statement indicating estimated quantity of cement required during a quarter, at least two months in advance of the quarter. In addition, the contractor shall also furnish the estimated requirement of cement during a month by the third week of the previous month indicating his requirement.
5. The theoretical weight of each bag of cement for issued purposes will be considered as 50kg, the contractor shall be accountable for the cement issued to the contractor on this notional weight only. No claim whatsoever will be entertained because of difference between theoretical and actual weight of the bags of cement.
6. The empty cement bags duly accounted for against issue shall be the contractor's property and the same shall be disposed as per statutory regulation prevailing in the project.
7. The contractor shall satisfy himself of the quality and quantity of supplied cement at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
8. Contractor will be responsible for unloading the cement as soon as the arrival of cement in the weather proof cement storage sheds having dense impervious bituminous or concrete floors which shall be kept swept clean at all times. The storage arrangements shall be fully completed and approved by the owner before any cement is delivered to site. The construction of cement storage sheds as per the requirement of BHEL, unloading of cement bags, stacking properly in the storage sheds, removal of the sheds after the completion of the work are in the scope of bidder. Though the cement is unloaded directly at the contractor storage shed, it will be deemed to be considered that the cement was issued from BHEL stores. Necessary documents are to be submitted by the contractor to the BHEL stores for having received cement.
9. Contractor will be responsible for sampling and testing of cement as per Indian Standard / Specification / approved quality plan in the testing laboratory established by the contractor.
10. One month shall be limit for the maximum quantity of BHEL issued cement that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).
11. "BHEL/BHEL's agency for providing RMC" shall carry out design mix as per IS 456/10262 latest revision and specification, using the OPC and/or OPC with Fly Ash and/or PPC (as the case may be) and get the design mix proportions approved by BHEL's Customer/Consultant. The design mix proportion shall be used for concreting at this project.

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12. Before commencement of work, Contractor has to satisfy/ensure the above design mix proportion through conducting trial mix. Contractor shall not be absolved from the responsibility of quality of concrete works as per relevant specification, standard and to ensure satisfactory performance as per terms and conditions of contract. Any issue raised regarding design mix after successful completion of trial mix shall not be entertained and contractor shall not be entitled for any cost or damages.

2.10 Bottom Ash / Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of contractor.

1. Contractor shall have to establish one additional silo of 100 MT capacities for Fly Ash and storage facility of bottom ash along with batching plant. The number of silos shall be increased based on the site requirement.

2.11 The following specifications of PCE-type BIS approved high performance superplasticizer shall be used for concrete works as per BOQ item.

1. High performance superplasticizer PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30%.
2. The performance compliance of the Super-plasticizer should be ensured based on the following test.
 - a) Marsh cone test for optimum dosage of admixture with specific brand of cement.
 - b) Slump retention test of concrete.
 - c) Water reduction capability test by doing trial mix.
 - d) Rheological properties of fresh concrete on trial mix.

2.12 Steel (Issued by BHEL free of Cost):

1. The structural and reinforcement steel shall be issued to the contractor on weighment basis. Embedment/Inserts, Earthing Rod/Round Bar, MS/GI Flats, etc. as applicable based on BOQ description shall also be issued to the contractor on weighment basis.
2. All the steel (as applicable) issued by BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, approved laps, chairs and lugs etc. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS/BS/EN specifications.
3. The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length and section as available in the project stores, no claims for extra payment because of issue of non-standard length will be entertained.

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4. The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
5. The contractor shall submit to BHEL, a statement indicating estimated quantity of steel required during a quarter. In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.
6. One month shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).
7. The contractor must note that steel required for the contractor's enabling job like store/ site office/batching plant/temporary works etc. shall be arranged by the contractor at his own cost.

2.13 Return of Materials issued by BHEL free of cost:

2.10.1 **Return of Cement:** Sealed cement bags remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned promptly, (within 15 days from assessment) if BHEL/ engineer is satisfied of the physical condition of the cement. Return of such cement to the project stores / place as identified within the project area by engineer/ BHEL will not be entitled to handling and incidental charges. Surplus sealed and good conditioned cement bags will be taken back on weighment basis.

Cement that has been unloaded in silo will not be taken back by BHEL. Sweep cement will not be taken back by BHEL.

2.10.2 **Return of Steel including Scrap:** All surplus steel and all wastage materials will be taken back on weighment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately at a place directed by BHEL/Engineer within the project area. All wastage/ scrap (including melting scrap, wastage, and unusable scrap) shall be promptly returned to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any transportation and incidental charge.

2.14 Scrap and Serviceable Materials:

1. All Structural steel (Rolled Section, MS/ GI Flats and MS Rails) of length above 2 metre except MS/SS Plates shall be considered as serviceable materials provided the materials is in good and acceptable condition. Structural steel in length less than 2 metre shall be treated as scrap.
2. MS/SS Plates having both sides greater than 1 metre or if any side is less than 1 metre but greater than 0.5 metre and the total area is equal or greater than 2 Sqm shall be considered as serviceable.

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3. All reinforcement steel and earthing rod/round bar measuring 3 metre and above in length shall be treated as serviceable material provided they are in good acceptable condition otherwise shall be treated as scrap.

2.15 Consumption and wastage of materials issued by BHEL free of cost:

1. Cement Consumption:

The theoretical consumption of cement shall be based on the following:

- For design mix concrete as per approved design mix.
- For nominal mix concrete work, as per minimum cement as specified or as approved by engineer-in-charge.
- For item of works, where volume mix is permitted in writing by the BHEL, for masonry works, plaster other miscellaneous items, the cement consumption shall be governed by the "Statement of cement consumption" attached to the Delhi Schedule of Rates CPWD DSR Latest Revision unless otherwise specified in the specifications or the drawing of contract or mutually agreed by engineer-in-charge and the contractor.
- Actual consumption = Issue – Surplus/ unused quantity of cement returned in good condition by the contractor to store.

2. Cement Wastage:

- Allowable wastage:** One and half percent (+1.5%) of theoretical consumption of cement unless specified otherwise in the technical specification.
- For cement issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be affected at penal rates.

Sl. No.	Cement consumption	Basis of issue & penal recovery
1	Theoretical consumption (without considering any wastage or loss).	Free
2	Actual consumption being Limited to one and half percent (+1.5%) of aforesaid theoretical consumption towards allowable wastage.	Free
3	Actual consumption beyond one and half percent (+1.5%) of Sl. No. (1) above.	Penal rate

3. Steel Consumption:

The theoretical consumption of various sections of structure steel and/or diameter of reinforcement steel shall be based on approved construction

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drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

- Actual consumption = Issue – Surplus.
- Surplus = un-tampered, unused, uncut QTY of steel **including serviceable material returned** by the contractor to BHEL store along-with relevant documents.
- Wastage = Actual consumption – Theoretical consumption.

4. Steel Wastage:

- (a) **Allowable Wastage of Reinforcement steel and Earthing Rod/Round Bar:** Three percent (+3%) of the theoretical consumption shall be considered as allowable wastage. Invisible wastage (Maximum limit to 0.5%), if any, shall be considered to be included in the specified 3% allowable wastage.
- (b) **Allowable Wastage of Structural Steel (Rolled Section, MS/SS Plates and MS/GI Flats):** Four percent (+4%) of the theoretical consumption shall be considered as allowable wastage. Invisible wastage (Maximum limit to 0.5%), if any, shall be considered to be included in the specified 4% allowable wastage.
- (c) For steel issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be affected at penal rates.

Sl. no.	Steel	Basis of issue & penal recovery
1	Theoretical consumption (without considering wastage and scrap or loss)	Free
2	Wastage limited to plus Three percent (+3%) for reinforcement steel of aforesaid theoretical consumption (1) towards allowable wastage.	Free
3	Wastage beyond Three percent (+3%) for reinforcement steel of the theoretical consumption as per Sl. No. (1) above.	Penal rate

2.16 Reconciliation of materials issued by BHEL free of cost:

1. The contractor shall submit a reconciliation statement of cement and reinforcement steel issued to the contractor with each RA Bill.
2. At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material is available in the contractor custody at site.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Work and Technical Specifications

3. At the time of submission of bills, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate then, BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.
4. The reference drawings for actual material consumption to be used for the purpose of reconciliation shall be drawings prepared by the BHEL and drawings approved by BHEL for fabrication works and such other drawings approved by BHEL. This shall also include the bar bending schedule prepared by the contractor and approved by BHEL.

2.17 General Notes:

1. BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
2. The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However, in case of non-availability of any specific section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F14) and shall be considered for time extension of contract.
3. Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.
4. The contractor shall maintain proper store account for all the BHEL issued materials and shall give Three (03) copies of monthly-computerized reconciliation statement of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed reconciliation (diameter/section wise or as required) shall be done at least once in three months (03) or before submission of final bill which comes earlier.
5. Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.
6. The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.
7. BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.
8. In case of non-finalization of delay analysis, BHEL at its discretion may provide provisional time extension with withholding 10% of running bills.

2.18 Recovery of Materials (Penal Rates):

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Work and Technical Specifications

If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA Bills as per following penal rates (excluding GST):

Sl. No.	Materials	Penal rate (Rs)
1	Cement	6,500/- per MT
2	Reinforcement Steel / Earthing Rod	65,000/- per MT
3	Structural Steel (Rolled Section, MS Plates, MS/GI Flats, etc.)	75,000/- per MT

2.19 Procurement and Testing of Materials by Contractor:

Material required for the entire job (other than issued by BHEL as explained above) like sand, aggregates, windows, doors, ventilators, rolling shutter, sanitary fixtures, painting & finishing material, electrical fittings and wiring material and all other material required for the completion of entire scope, have to be arranged by the contractor, except those specifically indicated as BHEL scope of supply. BHEL reserves the right to reject any material not found satisfactory. Rate quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of **BHEL/NTPC** representative.

2.20 Bidders are requested to specifically note the following:

*Bidders are requested to have **pre-bid visit/ inspection of site** to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site conditions. Bidders may fix up their site visit in consultation with below mentioned contact person:*

Sh P K Biswas BHEL Site Office: 2x660 MW Talcher TPS Email: pkgbiswas@bhel.in Ph. No: +91-8617711054, 8331015585	Sh Anand Kumar PSWR Nagpur Email: aanand@bhel.in Ph. No: +91-7387356299
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TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.1	Establishment:			
3.1.1	For Construction Purpose:			
a	Open space for office (as per availability)	Yes		Location will be finalized after joint survey with owner
b	Open space for storage (as per availability)	Yes		Location will be finalized after joint survey with owner
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	For living purpose of the bidder:			
a	Open space for labour colony (as per availability)		Yes	Contractor has to make his own arrangements shelter and transportation of labours as per their requirement.

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

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	Construction Plan shall be approved by BHEL
3.2	Electricity:			
3.2.1	Electricity for construction purposes 3 Phase 415/440 V			
a	Single point source	Yes		Free of cost at one point near the site at a distance of approx. 500 meter. Further distribution and Metering is in scope of bidder.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for office, stores, canteen etc. of the bidder.(Chargeable)			
a	Single point source	Yes		Single point as above for construction purpose, no separate point shall be given.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc .(Chargeable)			

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

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
a	Single point source		Yes	Single point as above for construction purpose, no separate point shall be given.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3	Water Supply:			
3.3.1	For construction purposes: (free)			
a	Making the water available at single point	Yes		Free of cost at one point near the plant boundary. Further distribution and Metering is in scope of bidder.
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	Water supply for bidder's office, stores, canteen etc. (Chargeable)			
a	Making the water available at single point		Yes	Single point as above for construction purpose, no separate point shall be given
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	Contractor has to make his own arrangements for distribution.

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

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.3.3	Water supply for Living Purpose(Chargeable)			
a	Making the water available at single point		Yes	Single point as above for construction purpose, no separate point shall be given
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	Contractor has to make his own arrangements for distribution.
3.4	Lighting			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5	Communication facilities for site operations of the bidder			
a	Téléphone, fax, internet, intranet, e-mail etc		Yes	
3.6	Compressed air wherever required for the work		Yes	
3.7	Demobilization of all the above facilities		Yes	

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

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.8	Transportation			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl. No	Description PART II	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9	Erection Facilities			
3.9.1	Engineering works for construction:			
a	Providing the erection/constructions drawings for all the equipments covered under this scope	Yes		
b	Drawings for construction methods		Yes	In consultation with BHEL
c	As-built drawings where ever deviations observed and executed and also based on the decisions taken at site		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.
d	Shipping lists etc for reference and planning the activities			Not Applicable
e	Preparation of site erection schedules and other input requirements	Yes	Yes	In consultation with BHEL
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on Sl No. e		Yes	In consultation with BHEL

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

Sl. No	Description PART II	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9	Erection Facilities			
h	Daily erection / work plan based on Sl No. g		Yes	In consultation with BHEL
i	Periodic visit of the senior official of the bidder to site to review the progress so that works is completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
j	Preparation of preassembly bay		Yes	
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor /bidder himself		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

4.0 Tools and Plants:

Nos. of T&Ps to be deployed at site shall be decided w.r.t. monthly plan and review format (F-14) based on site requirement. Below given Nos are tentative for planning purposes by the bidder.

Sl. No.	Description of T&P	Quantity
Major T&Ps for Civil Works		
1	Concrete Batching Plant (30 Cum/Hr.) with three (03) Nos. of Silos of 100 MT capacity each for cement and one additional silo of 100MT capacity fly ash	01 Set and Additional 01 set as per requirement
2	Concrete Transit Mixer	05 Nos
3	Concrete Mixer	As per Requirement
4	Concrete Pump of Suitable Capacity with Sufficient lift in order to pour concrete at roof of Transfer Points	As per Requirement
5	Hydraulic Excavator /Poclain	As per Requirement
6	JCB	01 No.
7	Dumper	As per requirement
8	Concrete Boom placer min. 35m long	01 No.
9	Vibrators (electrical/diesel)	As per requirement
10	Self-priming Dewatering pump of various capacity (Diesel/Electric) From 2 HP to 7.5 HP	As per requirement
11	Curing / dewatering pump – 1.5 / 2 HP	As per requirement
12	De-watering pump (diesel operated) – 20 HP & 30 HP	02 Nos. each
13	Hydraulic Excavator /Poclain with rock breaker arrangement	02 Nos.
14	Pneumatic rock breaker with jack hammer	02 Nos.
15	Ply Shuttering board with adequate supporting structure – (Old steel shuttering plates will not be	As per requirement

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

	allowed).	
16	Farana crane (Required Capacity) *Note- Hydra is not allowed at project site	As per requirement
17	Trailer (20MT Capacity)	As per requirement
18	Tractor mounted grader/ loader	As per requirement
19	Scaffolding Pipes, Clamps / Swivel Couplers (One/Two Way), Props, Jacks, Screw Heads, MS Pipes, Wooden Battens, Planks, Bullies, H Frames, Tie Rods with Nuts, Adjustable Achrom Span (Considering Individual Areas)	Scaffolding Pipes with clamps- Min. 1500 Nos. for execution purpose for safety related other than Scaffolding Pipes – As per requirement.
20	Reinforcement bending machine	As per requirement.
21	Reinforcement cutting machine	As per requirement.
22	Plate compactor	As per requirement.
23	Earth Compactor- 3MT Capacity	As per requirement.
24	Total Station	02 No.
25	Auto level & staff	02 Nos.
26	Road roller/Vibro roller	02 Nos.
27	Water Tanker with sprinkler attachment	02 Nos.
28	All equipments for area Lighting like LED/Halogen bulbs and Portable light Towers etc.	As per requirement
29	Computer with printing/photocopy & CD writing facility	As per Requirement
30	Man lift crane of Minimum 20m reach	As per requirement
31	DG Set of 125 KVA Capacity	As per Requirement

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

Note:

T&Ps shown in the above mentioned list is suggestive requirement considering parallel working in CHP area. However, mobilization schedule as mutually agreed at site for major T&Ps, have to be adhered to. Numbers/time of requirement will be reviewed from time to time at site and contractor will provide required T&Ps/equipment to ensure completion of entire work within schedule/target date of completion without any additional financial implication to BHEL. Vendor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipment. Also on completion of the respective activity, demobilization of T&Ps in total or in part can be done with the due approval of engineer in charge. Retaining of the T&Ps during the contract period will be mutually agreed in line with construction requirement. In the event of non-mobilization of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof.

4.1 Measuring and Monitoring Device (MMD):

To be finalized as per site requirement.

4.2 Supervisors and Computer for exclusive use of BHEL:

- (a) The successful bidder(s) will have to provide **two supervisors (Diploma in Civil Engineering)** acceptable to BHEL Site with sufficient computer knowledge (knowledge of MS office) to whom works will be assigned in consultation and acceptance of BHEL for original contract period. In case, the contractor fails to provide supervisors from 3rd month from LOI date till completion of site works or as decided by BHEL, deduction of Rs. 25,000/- per supervisor per month.
- (b) The bidder will have to **provide Two (02) Nos. of PCs** (multimedia PC work station Core i5/i7, 1 GHZ or above, 320 GB HDD, 4 GB RAM, 100 MBPS LAN card of DELL/HP/ASUS or equivalent make with window 10 O/S with required accessories like mouse, keyboard, UPS and required software like MS Office 2010 Professional, AutoCAD 2011, ADOBE PDF CREATOR (version 8.0) with one laser jet printer compatible for A4 and A3 size printing (ink/ cartridge for which to be supplied as and when required, (the consumption may be assumed as 1 cartridge per month) with power backup at places, as per instruction of BHEL.
- (c) These computers/ printers along with two supervisors shall remain contractor's property/ownership for all legal/technical purposes. However, contractor will be allowed to take out the same after completion of the site works. However, the computer/printer along with technical supervisor shall remain at BHEL offices.
- (d) This facility has to be provided from **3rd** month from LOI date till completion of site works or as decided by BHEL. If contractor fails to provide computer/ printer as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to purchase it at risk and cost of bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

(e) In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to the bidder, the bidder will be reimbursed at Rs. 50,000/- per month for two computers with printer facility including two supervisors, if the services of computer and printer are being used by BHEL.

NOTE:

The above list is only indicative and neither exhaustive nor limiting. Quantities indicated above are only the minimum required. Contractor shall deploy all necessary T&P to meet the schedules & as prescribed by BHEL engineer and required for completion of work. In the event of non-mobilization of any T&P by the successful bidder and as a result if progress of work gets suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof.

Note:

- 1 Heavy equipment will be tracked with real-time position location for fleet management. Deployment vs planned reports shall be generated. Equipment Condition monitoring data like Service Meter Reading, Operation maps, Loading, fuel levels, operating information, idle time etc. shall be captured. This data shall be captured through Integrated Online Project Monitoring system. All T&P equipment deployed by contractor will be covered/ monitored through this system. Minimum 5 signals per equipment should be made available to provide the input to Integrated Online Project Monitoring system. Necessary software/ hardware for aforesaid system shall be provided by BHEL.
- 2 All manpower hired/deployed by Contractor for this project shall be monitored through Integrated Online Project Monitoring system by BLE beacons & LoRa backhaul. Every personnel entering in to NTPC site premises for carry out any work shall be tracked. [Separate tagging for visitors]. Geo-fencing /BLE beacon based zoning of the erection area shall be done to track workforce deployment and safety purposes. Work force monitoring Dash board (planned vs actual deployment) shall be made available. BLE beacons & LoRa backhaul shall be provided by BHEL on chargeable basis to contractor. BHEL will provide Tags free of cost for maximum 300 workers, additional tags as required shall be provided by BHEL on chargeable basis @ Rs. 1000/- per tag. In case of damage or missing of issued worker tag, Rs. 1000/- per tag will be charged for issuing new worker tag.
- 3 Medical/First aid center/medicine purchased for emergency/Doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed / shared among the vendors working in Talcher Project site proportionately based on contract value.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – V: T&Ps and MMEs to be Provided by BHEL

5. LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:

BHEL shall not provide any T&Ps for this scope of work.

All T&Ps required for handling of items / materials to be arranged by bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.0 Time Schedule and Mobilization:

6.1 Initial Mobilization and Time Schedule:

After issue of LOI (through Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within two weeks and make a MOM (Minutes of meeting) for mobilization of manpower, T&Ps, date of start of work and detailed completion program.

The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period of **30 (Thirty) Months** from the date of start of work in a manner required by BHEL to match with the project schedule.

Date of Start of earthwork (excavation or stripping or filling) shall be considered as START OF WORK

6.2 Schedule of Completion:

The entire work under the scope of this contract shall be carried out in such a manner that the following listed major milestones are achieved as per completion schedule given against each activity & release for erection by other agency.

Sl. No.	Activity	Schedule of completion from start of work
1	Track Hopper Underground Structure with Machinery Hatch-1 & 2 and Conveyor (1A/B)	20 th Months
2	Transfer Point-1 (TP-1)	5 th Months
3	Connecting Conveyor (BCN-2A/B) including Trestles from TP-1 to Crusher House	4 th Months
4	Crusher House	16 th Months
5	Coal Settling Pond	12 th Months
6	Connecting Conveyor (BCN-3A/B) including Trestles from Crusher House to TP-2	6 th Months
7	Transfer Point-2 (TP-2)	14 th Months
8	Transfer Point-3 (TP-3)	14 th Months
9	Balance Conveyors	15 th Months

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

10	MCC-I	16 th Months
11	MCC-II	18 th Months
12	MCC-III	20 th Months
13	Dust Suppression Pump House-1 with Water Tank	22 nd Months
14	Dust Suppression Pump House-1 with Water Tank	23 rd Months
15	Compressor House	15 th Months
16	Stacker Reclaimer	18 th Months
17	Retaining Wall with drain	17 th Months
18	Workshop Building	12 th Months
19	Stock Yard	25 th Months
20	Pent House	16 th Months
21	Dozer Shed	20 th Months
22	Pipe cum Cable Rack	12 th Months
23	Roads and Drains	28 th Months
24	Any other structures as per system requirement	30 th Months

6.2.1 The above schedule is only tentative. The above schedule shall be advanced, if there are requirements to advance the project schedule and the civil works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.

6.2.2 In order to meet the 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 Engineer.

6.3 Provision of penalty in case of slippage of intermediate milestones:

In case of slippage of Two Major Intermediate Milestones, mentioned as M1 & M2 hereunder, delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to F-14.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

Milestones	Activity	Schedule of completion from start of work
M1	Crusher House	16 th Months
M2	Track Hopper Underground Structure with Machinery Hatch-1 & 2 and Conveyor (1A/B)	20 th Months

Note: Refer clause no 12 of NIT "Annexure-12" regarding modalities against provision of penalty in case of slippage of Intermediate Milestones.

Notes:

- Common activities like Plant roads, drains, fencing, paving and other misc. works etc. shall be completed in Phase wise manner/ Instruction of Engineer within the Contractual time.
- **Above milestone dates has to be completed in parallel.**
- Bidders are requested to submit Resource deployment plan Area wise with detail program in line with above schedule in the form of Bar Chart/ MS project planer along with their offer.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.0 Terms of Payment:

7.1 **Progressive Payment/ Final Payment:** The payments for works under the scope of this contract shall be as per clause no 2.6; 2.22; 2.23 of General Conditions of Contract and Volume-IB, Chapter-X of SCC. However, Clause No. 10.5 on RA Bill Payments, in Volume-IB, Chapter-X of SCC, is revised as under:

The contractor will be eligible for payment of RA Bills after 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile.

All documents like HR Clearance, Quality and Safety Compliances, etc. required for processing the RA Bills should be submitted along with RA Bills.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII : Taxes and Duties

TAXES, DUTIES, LEVIES (Rev 14 dated 09/10/2020)

1. All taxes excluding GST, GST Cess & BOCW Cess but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by you and shall not be payable extra.
2. Any increase of the taxes excluding GST, GST Cess & BOCW Cess, at any stage during execution including extension of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements. Please note that since GST on output will be paid by BHEL separately as enumerated below, your quoted rates/ price should be after considering the Input Credit under GST law at your end.
3. **GST :**
The successful bidder shall furnish proof of GST registration .GST along with Cess (as applicable) legally leviable & payable by the successful bidder as per GST Law, shall be paid by BHEL. Hence Bidder shall not include GST along with Cess (as applicable) in their quoted price.
4. GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return
5. E-invoicing under GST has been implemented with effect from 1st October 2020 for all the taxable persons having turnover more than the threshold limit in any preceding financial year from 2017-18 onwards. Therefore, for all the taxable persons falling under the purview of E-invoice, it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from E-Invoicing portal of the Government for the purpose of issuing a valid Tax Invoice. Only an E-invoice issued in the manner prescribed under rule 48(4) of CGST Rules shall be treated as valid invoice for reimbursement of GST amount.
If the successful Bidder is not falling under the purview of E-Invoicing then he has to submit a declaration in that respect along with relevant financial statements.
6. Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:
BHEL GSTN – As per Annexure -1
NAME -- Bharat Heavy Electricals Limited
ADDRESS – Site address

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII : Taxes and Duties

7. Bidder to immediately intimate on the day of removal of Goods (in case of any supply of goods) to BHEL along with all relevant details and a scanned copy of Tax Invoice to below email ids to enable BHEL to meet its GST related compliances :-
Email id ---- to be intimated later on.
In case of delay in submission of the abovementioned documents on the date of dispatch, BHEL may incur penalty /interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from the successful bidder, if such delay is not attributable to BHEL.
8. In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with Rule 53.
9. Bidder shall note that in case GST credit is delayed/ denied to BHEL due to delayed / non receipt of goods and /or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from the vendor along with interest levied / leviable on BHEL, as the case may be.
10. Bidder shall upload the Invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law , GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the bidder along with interest levied / leviable on BHEL.
11. Way Bill: Successful Bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract.

The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose.

12. **New taxes and duties**:-Any New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period including extension, if the same is not attributable to you, shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.

Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII : Taxes and Duties

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 must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of the price bids. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

13. For transportation work, bidder shall declare in his quotation whether he is registered under GST, if yes, whether he intends to claim GST on forward charge basis. In absence of this declaration, BHEL will proceed further with the assumption that bidder intends not to claim GST on forward charge basis. However, in case of GST registered transporter, the amount to the extent of goods and service tax will be retained till BHEL avails the credit of GST. Further, transporter shall issue tax invoice which inter alia includes gross weight of the consignment, name of the consigner and the consignee, registration number of vehicle in which the goods are transported, details of goods transported, details of place of origin and destination, GSTIN of the person liable for paying tax whether as consigner, consignee or goods transport agency, and also containing other information as mentioned under rule 46.
14. **TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills unless exemption certificate from the appropriate authority/ authorities is furnished.**
15. **TDS under GST shall be deducted at prevailing rates on applicable value from the running bills.**
16. **TCS under Income Tax 1961 has been implemented with effect from 1st October 2020 for every seller having turnover more than threshold limit during financial year immediately preceding financial year in which the sale of goods is carried out, who receives any amount as consideration for sale of any goods of the value or aggregate of such value exceeding threshold limit other than export of goods or who is already covered under other provision of section 206C, collect from the buyer, TCS as per applicable rates of the sale consideration exceeding threshold limit subject to following conditions**
 - i. Buyer shall be as per clause (a) of section 206C- (1H)
 - ii. Seller shall be as per clause (b) of section 206C- (1H)

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iii. No TCS is to be collected, if the seller is liable to collect TCS under other provision of section 206C or the buyer is liable to deduct TDS under any provision of the Act and has deducted such amount.

If Successful Bidder is falling under the purview of TCS then he has to submit a declaration in that respect along with relevant financial statements before the start of work or if bidder is falling under preview of TCS during the work in progress then bidder is compulsorily required to submit relevant financial statement in the beginning of the respective FY.

For TCS claim, vendor has to submit relevant documents required as per Income Tax Act.

17. Refer Annexure – 2 for BOCW Act & Cess Act.

ANNEXURE-1

State wise GSTIN no.s of BHEL

Sl. No	Projects under state	GSTIN
1	Andhra Pradesh	37AAACB4146P7Z8
2	Bihar	10AAACB4146P1ZU
3	Chhattisgarh	22AAACB4146P1ZP
4	Gujarat	24AAACB4146P1ZL
5	Jharkhand	20AAACB4146P5ZP
6	Madhya Pradesh	23AAACB4146P1ZN
7	Maharashtra	27AAACB4146P1ZF
8	Orissa	21AAACB4146P1ZR
9	Telangana	36AAACB4146P1ZG

ANNEXURE-2

BOCW Act & Cess Act

Bidder may please note that the sub-contractor/bidder of BHEL engaging building or construction worker in connection with building or other construction work, are required to follow the procedures enumerated below:

1. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
2. It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and

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obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.

3. It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.
4. It is responsibility of the contractor to register under the Building and other Construction Workers' Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may , by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager.
5. It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.
6. It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
7. It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.
8. It shall be the responsibility of the sub-contractor as employer to make payment/deposit of applicable cess amount on the extent of work involving building or construction workers engaged by the sub-contractor within a period of one month from the receipt of payment. It shall also be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics :
 - (i)Number of Building Workers employed during preceding one month.
 - (ii) Number of Building workers registered as Beneficiary during preceding one month.
 - (iii)Disbursement of Wages made to the Building Workers for preceding wage month.

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(iv) Remittance of Contribution of Beneficiaries made during the preceding month

9. BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.

10. It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board , within the fifteen days from such deduction.

11. Bidders may please note that though the quoted price is exclusive of BOCW (which will be reimbursed by BHEL as per sub-clause 9 above) , however, If at any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to deduct the applicable cess (1%) on the contract value and penalty (if any, imposed by Cess Authorities) from the payables on account of non-compliance.

12. The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.

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9.0 Following technical Specifications and Drawings shall be integral part of this tender:

SL. NO.	Document
1.	Detailed Technical NTPC Specification- C
2.	Section-D (General Specification of BHEL)
3.	Workers Accommodation Floor plan and Elevations & Plot Plan
4.	Approved BOI Vendor List

Above documents have been uploaded as Vol IE.

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Tentative Manpower Requirement

1. Project manager – with 15 Years' experience in Industrial Foundation, Building & Power Plant Civil & Architectural Works.
2. Experienced Civil Engineers – 04 heads
3. Experienced Foreman / Supervisors – 04 heads
4. Planning & Billing Engineer – 01 head
5. Stores, Gate Pass – 01 heads
6. Accounts & Administration – 02 heads
7. Quality Control Engineer/Chemist – 02 head
8. Safety Engineer – 02 head
9. Surveyor – 4 head capable to handle total station
10. Operator, Licensed Electrician, Mechanic - As per requirement
11. Experienced Carpenters & Helpers – lot for similar nature of work
12. Experienced Bar Benders & Helpers – lot for similar nature of work
13. Security Guards (Round The Clock) – As per requirement.

Note: Above manpower requirement is tentative only. Contractor shall augment manpower to meet the project schedule/ milestones.

- 10.1 Deputation of above man-power shall be jointly decided at site in line with construction Schedule.
- 10.2 Engineer/ supervisor for other functions like store & purchase, material management, planning, finance, administration etc. are to be provided as per site requirement and not considered in above list.
- 10.3 In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs 50,000.00 per man-month for engineer, Rs 35,000.00 per man-month for the supervisor/ safety officer/chemist and Rs. 30,000 per man-month for safety supervisor from RA bills. Further, induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.
- 10.4 BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.
- 10.5 In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities,

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guidance etc. to contractor's own team during the complete execution period of contract.

10.6 The contractor should also submit the fitness/calibration certificate for T&Ps regularly and renew it as per applicable IS standards and statutory requirements. The tools & tackles shall not be removed from site without written permission of BHEL.

ANNEXURE - A LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY CONCRETE TESTING EQUIPMENT			
SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT
1	Concrete Compressive test	Digital Compressive Testing Machine with 2000 KN capacity.	2000KN capacity
2	Concrete Cube casting	Concrete testing Mould	Minimum 125 sets desired considering major concreting activity.
3	Workability of concrete	Slump cone	Standard, at least 04 Nos.
4	Course aggregate Sieve analysis (Concrete & Road Works)	Sieve set	450mm dia GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover
5	Fine aggregate sieve analysis	Sieve set	Minimum 200 mm dia Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron, 75 micron, 75 micron, Pan and cover
	Soil Testing Equipment (Levelling & Grading)		
1	Compaction of filling test	Core cutter apparatus	Rammer, 6 Nos. of standard core cutter mould, dolly
2	Proctor density test	Standard proctor Compaction apparatus	Standard

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3	Moisture Content	Rapid moisture meter	Standard, at least 02 Nos.
Process Control Accessories			
1	Electronic balance	1 Nos.	600gx0.01g, 10g and 10 kg
2	Physical balance	5 kg capacity	Weights up to 5 kg
3	Thermometer	Temperature range 0° C to 150° C. 2 Nos.	Digital
4	Measuring jars	2 Nos. set of each size	100ml, 200ml, 500ml & 1000 ml
5	Spatula	2 Nos. each size	100mm & 200 mm with long blade wooden handle
6	Venire calipers	2 Nos. each	12" and 6" Sizes
7	Digital pH meter	01 Nos.	.01 mm least count
8	Digital micrometer	01 Nos.	0.01 mm least count
9	GI tray	02 Nos. each	600x450x50mm, 450x300x40mm, 300x250x40mm
10	Rebound hammer test	01 Nos.	Digital Rebound hammer
11	Screw Gauge	02 Nos.	0.1 mm-10mm, Least count 0.05

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ST NO	Item Description	Unit	TOTAL QUANTITY	RATE	AMOUNT	Weightage(%)
A	<p>Construction and maintenance of labour colony having adequate no. of rest rooms along with toilets & fencing etc. as per drawing attached and TCC including associated civil and structural works on built, own and operate basis. Proposal for construction of these hutment is to be got approved from BHEL before organizing material and execution.</p> <p>One-time payment towards construction/development of labour colony of 03 Sets as per drawing attached and as above shall be paid by BHEL as per following payment terms:</p> <ul style="list-style-type: none"> i) On receipt of material for each set of labour colony at site - 50% ii) On completion of installation of labour colony for each set - 20% iii) Handing over for accommodation of labour with all amenities for each set - 30% <p>Land for labour colony shall be provided by BHEL free of cost as per availability outside project area within 5Km, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.</p>	LS	1	1,50,00,000/-	1,50,00,000/-	Fixed Value

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ST NO	Item Description	Unit	TOTAL QUANTITY	RATE	AMOUNT	Weightage(%)
Continued... A	<p>The labour colony shall be handed over for accommodation with all amenities within Three (03) Months from date of start. Date of start shall be decided jointly by BHEL/NTPC and Contractor based on availability of Land, Fronts, etc. If the contractor fails to maintain the required progress of work which results in delay in the completion of the labour colony as per above completion period, BHEL shall have the right to impose Penalty at the rate of Rs. 75,000/- per weeks of delay or part thereof beyond Three (03) Months of completion period for a maximum delay of Three (03) Months.</p> <p>In case, contractor fails to complete the labour colony within Six (06) Months Period, BHEL reserves the right to execute the work at risk and cost of contractor.</p> <p>Risk & Cost Amount= $[(A-B) + (A \times H/100)]$</p> <p>Where,</p> <p>A= Value of Balance scope of Work new contract</p> <p>B= Value of Balance scope of Work of this contract being paid to the contractor.</p> <p>H = Overhead Factor to be taken as 5</p> <p>In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).</p>					

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.			
101	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 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.		*	
a	Depth from ground level but not exceeding 2 m	CUM	126999	1.44390172
b	Depth exceeding 2 m but not exceeding 4 m	CUM	56855	0.80957760
c	Depth exceeding 4 m but not exceeding 6 m	CUM	120	0.00213258
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	0.00221868
e	Depth exceeding 8 m but not exceeding 10 m	CUM	100	0.00266021
f	Depth exceeding 10 m but not exceeding 15 m	CUM	100	0.00305759
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	20920	0.78051003
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), 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.		*	
a	Depth from ground level but not exceeding 2 m	CUM	1000	0.01688851
b	Depth exceeding 2 m but not exceeding 4 m	CUM	40093	0.81430384

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
c	Depth exceeding 4 m but not exceeding 6 m	CUM	41035	0.99649982
d	Depth exceeding 6 m but not exceeding 8 m	CUM	21383	0.62312140
e	Depth exceeding 8 m but not exceeding 10 m	CUM	2090	0.07013260
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1000	0.03686774
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.		*	
a	Depth from ground level but not exceeding 2 m	CUM		
b	Depth exceeding 2 m but not exceeding 4 m	CUM	585	0.02318197
c	Depth exceeding 4 m but not exceeding 6 m	CUM	500	0.02378742
d	Depth exceeding 6 m but not exceeding 8 m	CUM	115	0.00656278
e	Depth exceeding 8 m but not exceeding 10 m	CUM	100	0.00656775
f	Depth exceeding 10 m but not exceeding 15 m	CUM		
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.		*	
a	Depth from ground level but not exceeding 2 m	CUM	150	0.00521557
b	Depth exceeding 2 m but not exceeding 4 m	CUM	550	0.02294851
c	Depth exceeding 4 m but not exceeding 6 m	CUM	960	0.04810909
d	Depth exceeding 6 m but not exceeding 8 m	CUM	840	0.05053309
e	Depth exceeding 8 m but not exceeding 10 m	CUM	350	0.02422343
f	Depth exceeding 10 m but not exceeding 15 m	CUM	34402	2.62019064

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
106	Earth work in excavation upto any depth below ground level in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.		*	
a	Depth from ground level but not exceeding 2 m	CUM		
b	Depth exceeding 2 m but not exceeding 4 m	CUM	150	0.03612818
c	Depth exceeding 4 m but not exceeding 6 m	CUM	150	0.04334719
d	Depth exceeding 6 m but not exceeding 8 m	CUM	150	0.05202325
e	Depth exceeding 8 m but not exceeding 10 m	CUM	150	0.05982177
f	Depth exceeding 10 m but not exceeding 15 m	CUM	150	0.06579899
A106	Providing scaffolding pipes (6m Length) with clamps and barricading the excavated pit of required height as per safety norms. The scaffolding pipes with clamps will be under control of BHEL and can be used any where by BHEL during entire duration of contract period.	Nos	1500	0.01672294
107	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 250 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.		*	
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	194546	2.04007446
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	2000	0.02340108
c	Each layer compacted so as to achieve at least 98% maximum dry density as per IS-2720 (Part-VII)	CUM	2000	0.02494643

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
108	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 250 mm thickness using/ with selected materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.		*	
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	395	0.00196204
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	100	0.00054087
109	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM		
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	75000	0.08278685
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	78000	0.08609832
110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:	CUM	100	0.00911759
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	30480	2.98090952

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. <i>(Cement shall be provided by BHEL free of cost however, Fly Ash shall be collected with a nominal charge of Rs. 1 per MT from TSTPP Kaniha)</i>			
A201	Design Mix Concrete of grade M7.5 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors, at any depth below finished floor level etc. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in bidder scope)</i>	CUM	6135.00	2.30991711
B201	Extra over item no. A201 for using Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash). <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>	CUM	6135.00	0.08871273
A202	Design Mix Concrete of grade M10 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	301	0.11333089

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
B202	Extra over item no. A202 for using Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5 <i>(Cement shall be issued by BHEL free of cost as per TCC.)</i>	CUM	301	0.00435249
A203	Design Mix Concrete of grade M15 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	119	0.04480523
B203	Extra over item no. A203 for using Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5 <i>(Cement shall be issued by BHEL free of cost as per TCC.)</i>	CUM	119	0.00172075
A204	Design Mix Concrete of grade M20 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) under floors, paving, plinth protection, pipe encasing etc complete at any depth below finished floor level. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	21	0.00740842
B204	Extra over item no. A204 for using Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) in place of Design Mix Concrete of grade M20 <i>(Cement shall be issued by BHEL free of cost as per TCC.)</i>	CUM	21	0.00030366

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
A204(A)	Concrete of grade M25 (1 part cement, 1 part sand, 2 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete. (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) (Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)	CUM	267	0.10052939
B204(A)	Extra over item no. A204(A) Concrete of grade M25 (1 part cement, 1 part sand, 2 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete. (Cement shall be issued by BHEL free of cost as per TCC.	CUM	267	0.00386084
A205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors, pipe encasement etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing for the following. (Cement shall be issued by BHEL free of cost as per TCC)			
a	M 25 Grade	CUM	28655	12.0700449 7
b	M 30 Grade	CUM	360	0.15291062
c	M 35 Grade	CUM	3030	1.29770047

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
B205	Extra over item No. A205 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	M 25 Grade	CUM	28655	0.05377116
b	M 30 Grade	CUM	360	0.00075501
c	M 35 Grade	CUM	3030	0.00635471
A206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level , any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to IS:9103 (latest) with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M 25 Grade	CUM	6338	2.66898963
b	M 30 Grade	CUM	52	0.02208135
c	M 35 Grade	CUM	75	0.03211302
B206	Extra over item No. A206 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	M 25 Grade	CUM	6338	0.01189326
b	M 30 Grade	CUM	52	0.00010905
c	M 35 Grade	CUM	75	0.00015729

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over/without vibration isolation system but including TG foundation Columns with addition of suitable plasticizer conforming to IS 9103(latest) with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing			
a	M 30 Grade	CUM	10	0.00453230
b	M 35 Grade	CUM	260	0.11875829
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)			
a	M 20	CUM	49	0.01915776
A212	Scree concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) on the roof at all level or thickness, drains etc complete as per following. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	01:02:04	CUM	111	0.04179312
b	01:01:02	CUM	75	0.02823859

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
B212	Extra over item no. A212 for using concrete with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size in place of Design Mix Concrete of equivalent grade. <i>(Cement shall be issued by BHEL free of cost as per TCC.)</i>			
a	01:02:04	CUM	111	0.00160507
b	01:01:02	CUM	75	0.00108450
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works of Boundary Wall and other works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc. at all levels in all kinds of work including formwork/moulds , curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
a	M25	CUM	25	0.01830969
b	M30	CUM	349	0.25683605
A213	Extra over item No. 213 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	M25	CUM	25	0.00004691
b	M30	CUM	349	0.00073194

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% cum water proofing cement additives to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
a	M25	CUM		
b	M30	CUM	1	0.00059275
c	M35	CUM	29293	17.74508417
A214	Extra over item No. 214 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
b	M30	CUM	1	0.00000209
c	M35	CUM	29293	0.06143524
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	Plain cement concrete of all grades	CUM	421	0.04846927
b	Reinforced cement concrete of all grades	CUM	721	0.12232331

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
WR 215A	Demolishing brick work manually/ by mechanical means stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	In cement morter	CUM	100	0.00937423
WR 215B	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking within 50 metres lead as per direction of Engineer-in-charge. (Dismantling structural materials shall be deposited to BHEL, as per direction of Engineering in charge)	Kg	200000	0.03532239
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement.	CUDM	69	0.00049506
217	Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	47	0.00002593
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	114	0.00351082
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	226	0.00301851

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
A220	Design Mix Concrete of grade M10 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as Plum cement concrete with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	380	0.13493815
B220	Extra over item no. A220 for using Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm in place of Design Mix Concrete of equivalent grade <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>	CUM	380	0.00549483
A 221	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in sloped surface of canal lining or channel cast in alternate panels with provision of expansion gap/construction joints at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete, compaction with special equipments, etc all complete as per specification & drawing for the following. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
b	M25 Grade	CUM	117	0.05597252
B 221	Extra over item No. A221 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
b	M25 Grade	CUM	117	0.00169183

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.			
301	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	119249	6.75261859
302	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing for all heights as per specification, drawing and instruction of engineer in charge.	SQM	20798	1.54962086
A302	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301 & A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	5403	1.06398075
B302	One time payment shall be made for mobilization of complete set (Minimum 03 Sets) of shuttering and staging materials required for casting of Hopper (Track Hopper) and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.	LS	1	0.50749003

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.			
a	Upto 150 mm depth	Each	66	0.00174845
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	123	0.00549870
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	181	0.01448493
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	238	0.02992270
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	126	0.02287897
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	119	0.02853033
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.			
401	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	MT		
402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	114	0.99380252

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc. complete all as per specifications, drawings and as directed by Engineer. <i>(TMT steel shall be issued by BHEL free of cost)</i>	MT	8584	9.52639750
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.			
a	12mm Reinforcement bar	Nos.	114	0.00510894
b	16mm Reinforcement bar	Nos.	114	0.00802833
c	20mm Reinforcement bar	Nos.	114	0.01124973
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <i>(Agency has to supply reinforcement bar couplers).</i>			
a	12mm dia	Nos.	40	0.00030465
b	16mm dia	Nos.	40	0.00042386
c	20mm dia	Nos.	40	0.00053425
d	25mm dia	Nos.	40	0.00074618
e	28mm dia	Nos.	40	0.00114797
f	32mm dia	Nos.	38	0.00125836

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
g	36mm dia	Nos.	21	0.00090171
h	40mm dia	Nos.	15	0.00079309
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be issued by BHEL free of cost as per TCC)			
501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	2730	0.02953172
506	Providing and applying PU based water proofing treatment with one coat of polyurethane or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge.	SQM	3459	0.40548536
A507	Providing and laying wearing course consisting of 20 mm thick plain cement mortar 1:4 (1 cement : 4 sand) cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	3459	0.29743229

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
A510	Providing and laying cement concrete chequered roof / floor tiles of 22 mm thickness and size min. 200x200 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making).	SQM	3459	0.21228800
511	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	62652	1.04426806
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	204	0.00256705
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.			
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	217	0.01394064
b	20 mm wide joints.	SQM	217	0.02062352
c	25 mm wide joints	SQM	217	0.02505483
d	50 mm wide joints	SQM	126	0.02798328
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	64	0.00396317
b	20 mm wide joints.	SQM	64	0.00631564
c	25 mm wide joints	SQM	64	0.00741063
d	50 mm wide joints	SQM	64	0.01404418

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
603	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:			
a	25mmX25mm	RM	25	0.00114521
b	50mmX25mm	RM	25	0.00211934
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	24	0.00012186
b	12mm X 25mm	RM	23	0.00010662
c	20mmX25mm	RM	11	0.00006192
605	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	5	0.00002318
b	20 mm wide joints.	SQM	5	0.00003532
c	25 mm wide joints	SQM	5	0.00004470
d	50 mm wide joints	SQM	5	0.00008554
606	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanised as needed.	RM	181	0.00275713

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
607	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer's recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc all complete.	SQM	41	0.00077389
608	Supplying and filling in position hot applied bitumin sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	11	0.00005585
b	12mm X 25mm	RM	16	0.00007417
c	20mmX25mm	RM	11	0.00006192
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)			
d	230 mm wide and 6 mm thick	RM	6088	0.13708972
611	Providing and fixing copper water stops in joints of deep underground structure all complete for the following:			
b	230 mm wide and 8 mm thick	RM	5185	1.30148549
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	26	0.00061990
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
701	Supply, fabricating and fixing of mild steel embedments , inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete. Payment Terms:a) On receipt of material site - 60%b) Execution as per item description - 40%	MT	25	0.28202997

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	MT	25	0.32993320
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.			
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	129	0.30865190
B	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	122	0.31396174
704	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. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%			
a	MS pipes of all diameters	kg	84	0.00073249
b	PVC pipes / conduits of all diameters	kg	76	0.00315428
c	UPVC pipes / conduits of all diameters	kg	66	0.00311808
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
ii	10mm Dia	Nos	10	0.00006512
iii	12mm Dia	Nos	10	0.00007395

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	HST M8	Nos	65	0.00119820
ii	HST M10	Nos	30	0.00080468
iii	HST M12	Nos	30	0.00129478
iv	HST M16	Nos	5	0.00038578
f	Chemical Expansion fasteners (galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod, nuts, washers, chemicals all complete, etc:			
i	HAS-E5.8 M8	Nos	49	0.00188224
ii	HAS-E5.8 M10	Nos	53	0.00238106
iii	HAS-E5.8 M12	Nos	9	0.00050069
iv	HAS-E5.8 M16	Nos	9	0.00083647
v	HAS-E5.8 M20	Nos	9	0.00139081
vi	HAS-E5.8 M24	Nos	1	0.00020785
707	Providing, laying and fixing rails and guide rails in concrete for transformer , rail track including cutting of rails, joining of rails, anchoring lugs etc. all complete. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	MT	54	0.56391357
707(a)	Providing, laying and fixing rails(60kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	MT	55	0.57435641
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level, drawings and as directed by engineer - in - charge.			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). (Cement shall be issued by BHEL free of cost as per TCC)	CUM	150	0.33921085
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent as per specification, drawing and direction of engineer-in-charge.(Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	30	0.15359279
807	Providing on the outer surface of walls, frames, rafts and roof slabs coming in contact with earth, Polymer modified cementitious coating in two layers as specified and as per manufacturer's specifications shall be provided directly on the concrete surface : 50 mm thick P. C. C. (1 : 2 : 4 with 10 mm nominal size stone aggregates) shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers (slurry mix application) as per manufacturer's specification. 50 mm thick P. C. C. (1 : 2 : 4) with 10 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft. (Cement will be provide by BHEL as per TCC)	SQM	26869	0.80078398

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
808	<p>Providing Chemical Injection Grouting with Minimum, 12 mm dia (NB) threaded nozzle of suitable length over the surface and along the construction joint line in a grid pattern at a spacing not exceeding 1.5m c/c before concreting operation. After the nozzles are fully set, neat cement slurry admixed with water soluble non-shrink polymer / monomer based chemical shall be injected through the net - work of nozzles with low pressure grout pumps at a pressure of about 2.0 Kg/Sqcm. Cement slurry shall be prepared by mixing cement with non-shrink polymer/monomer @ 500 gm/50 kg bag of cement and water, ensuring that Water: Cement ratio does not exceed 2 (by weight). Wetter the structure, lesser should be the water cement ratio. The property of the polymer/monomer should be such that when it is mixed with water @ 0.5% by weight of water, the viscosity of the resultant solution (water and polymer/monomer) should not be more than 1.2 centipoises. Plasticizing agent shall be added wherever required. The grouting shall be started at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting operation, the nozzles shall be sealed properly to the satisfaction of the Engineer</p>	SQM	17532	1.20177501
900	<p>DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.</p>			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
904	<p>Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.</p> <p>Payment Terms:</p> <p>a) On receipt of material at site - 60%</p> <p>b) Execution as per item description - 40%</p>	SQM	35	0.02962444
906	<p>Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)</p>	KG	400	0.01920654
908	<p>Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)</p>			
a	Openable type	SQM	2104	0.61753870
b	Fixed type	SQM	708	0.13809244

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bimetallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately). Weight of aluminium section only shall be measured.	Kg	150	0.00908999
913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely riveted with stiffening angles.(partly coiled and lath/full lath). Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%			
b	Mechanically Operated	SQM	96	0.06104768
c	Electrically operated	SQM	5	0.00353831

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			
h	6 mm thick clear toughened safety glass	SQM	2253	0.58343074
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	137	0.05959737
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	20	0.00366690
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.			
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths , places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm² (including cost of cement for brick making)	CUM	835	0.50960440
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights , places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm² (including cost of cement for brick making)	CUM	1541	1.17997944

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² (including cost of cement for brick making)	SQM	147	0.01382474
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	117	0.02584241
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	117	0.00271209
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1101	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @1.7Kg/sqm shall be applied one before & one after the DPC.			
b	50mm thick	SQM	2674	0.09504239
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc. at all level as per specification, drawings and as directed by engineer-in-charge. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete	SQM	7092	0.22467292
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	SQM	10696	0.26210450
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	2668	0.05978358
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	5	0.00001948
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	13364	0.14205707
1305	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	2400	0.03610831
1316	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	5	0.00005817
1317	Providing and applying 2 mm thick white cement punning on walls including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	2025	0.02235245

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
A131 9	Providing and applying two or more coats of Premium Acrylic Smooth Exterior paint with silicone additives of approved brand and manufacture and required shade over one coat of primer of waterproof cement paint after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellent and extremely durable with color fastness as per specification.	SQM	7092	0.09644496
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring without metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm well graded) (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips): <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>	SQM	60124	3.74306250
1406	Providing and laying polished Kota stone 18mm to 20mm thk in flooring. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>	SQM	355	0.06242294

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
1407	Providing and laying polished Kota stone 14mm to 16mm thk in flooring. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	0.00838906
1408	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	50	0.00970813
1411	Marble stone Flooring laid in 50mm overall thickness with 14 -16mm thick marble slabs (grade -1) with minium 35mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	15	0.00465262
1412	Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30 mm thick of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	15	0.00526358

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
1413	Providing and laying 14 to 16mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	30	0.00992117
1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following			
a	7mm thick tiles In flooring	SQM	200	0.02291540
c	7mm thick tiles In skirting and dado upto specific height	SQM	120	0.01470294
1417	Providing and laying vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following			
b	10mm thick tiles In flooring	SQM	125	0.01966187
d	10mm thick tiles In skirting and dado upto specific height	SQM	225	0.03717957
1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes			
b	600X600 mm	SQM	450	0.06894489
1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including 20mm underbed of cement mortar 1:3 with neat cement slurry @3.3kg/sqm etc. all complete.			
b	600X600 mm	SQM	353	0.03990017

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
b	38mm thick	SQM	264	0.16391796
1428	Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.	SQM	150	0.00821245
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	394	0.12116507
1700	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.			
1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.	RM	454	0.08935262
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
a	100 mm Dia	RM	35	0.00475196
b	150 mm Dia	RM	135	0.02946052
c	200 mm Dia	RM	35	0.01179878
1708	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.			
a	100 mm Dia	RM	45	0.00829027
b	150 mm Dia	RM	45	0.01102720
c	200 mm Dia	RM	45	0.01738027
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			
a	110 mm Dia	RM	90	0.00582157
b	160 mm Dia	RM	90	0.00895091
c	200 mm Dia	RM	90	0.01286507
1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.			
a	200 mm Dia	RM		
b	250 mm Dia	RM		
c	273mm OD and 4mm thick	RM	3913	1.52988404
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.			
A180 1	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 275 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with well graded selected sand and compacting to 90 % 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	8294	1.69278207

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
B180 1	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 compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 90 % 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	474	0.09365511
1807	Anti termite chemical treatment of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	1767	0.03120733
1808	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	120	0.14375771
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	each	60	0.07245505
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items).	NO	27	0.02531489
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	75	0.21600745
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	220	0.00267125
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.			
a)	Steel scrap / metal scrap	MT	25	0.00167781

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
b)	Debris & Other waste materials.	CUM	50	0.00062918
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	200	0.00011038
1833	Supplying, stacking and laying 150 mm thick sand filter of approved quality behind retaining wall including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CUM	1050	0.26564645
1834	Supplying, stacking and laying 150 mm thick gravel filter of approved quality behind retaining wall including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CUM	1050	0.32139511
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.			
2001	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge . GI barbed wire fencing of height of 600 mm confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be paid separately under item 2007)	RM	663	0.17542103
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing . Rate of zinc coating shall not be less than 710 g/m ² on steel posts.	MT	30	0.37179906

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	MT	4	0.05439648
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	74	0.00645295
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	58	0.00311786
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:			
a	25mm nominal bore.	NOS	110	0.00762522
b	50mm nominal bore.	NOS	80	0.01162106
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	345	0.01774618
b	20 mm nominal bore.	RM	550	0.03096228
c	25 mm nominal bore.	RM	505	0.03182933
d	50 mm nominal bore.	RM	270	0.02449828
2105	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:			

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QUANTITIES

ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
a	15 mm nominal bore.	RM	345	0.01389991
b	20 mm nominal bore.	RM	550	0.02483053
c	25 mm nominal bore.	RM	505	0.02619927
d	50 mm nominal bore.	RM	270	0.02148815
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	NOS	45	0.00603019
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	NOS	45	0.00385455
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	45	0.00471885
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	NOS	45	0.00404827
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	45	0.00335286
2111	Providing and fixing stainless steel / C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	NOS	45	0.00316908
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	NOS	45	0.00228491
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	NOS	11	0.00044925
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
a	500 litres capacity	NOS	5	0.00225787
b	1000 litres capacity	NOS	5	0.00451574
2200	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2201	Supply and fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.			
a	White	EACH	20	0.02231271
b	Colored	EACH	10	0.01182527
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 40mm CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	4	0.00246903
2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
a	Floor mounted	EACH	22	0.01564141
b	Wall mounted	EACH	22	0.02153032
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	13	0.00882220
2206	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	45	0.06939194
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.			
a	75mm dia pipes	RM	35	0.00135604

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
b	110mm dia pipes	RM	35	0.00181579
c	160mm dia pipes	RM	35	0.00281640
d	200mm dia pipes	RM	35	0.00346932
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
a	200mm dia	RM	20	0.00176391
b	300mm dia	RM	20	0.00304214
c	450mm dia	RM	20	0.00508200
d	600mm dia	RM	20	0.00695851
e	900mm dia	RM	15	0.00918437
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
2400	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge. (Cement shall be issued by BHEL free of cost as per TCC for fixing of tiles, manufacturing of block/tiles and concreting work)			
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	6105	0.04447640
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	2920	0.24463846

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	60	0.00974897
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size (IRC 19 - grading -1), stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	30	0.00707330
2405	Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size(IRC 19 - grading -1), stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	1913	0.55852260
A240 5	Providing & laying Granular base/sub-base course in layers of required thickness with stone aggregate size as per IRC 19 - grading-1 or 2, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	10	0.00291961
2406	Providing & Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone (IRC 19 -grading -1) screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of blinding material moorum etc all complete.	CUM	20	0.00583923
2410	Providing, mixing & laying 25 mm compacted thick premix carpet in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all complete.	SQM		

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
A241 0	A 40mm bitumen mastic wearing course over concrete pavement shall be provided with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen fine grainedhard stone chipping of approved size at the rate of 0.005 precoated cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surfaceprotruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debrisetc. all complete. (Considering bitumen using 10.2% as per MORTH specification).This 40mm bitumen mastic wearing course shall be laid after completion of construction activities i.e at the time of handover.	SQM	20000	0.56957354
2413	Supplying and laying 400mmx150mmx350mm deep precast concrete kerb stone of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	3000	0.11500749
A241 4	Providing & laying edge protection on edges with M-25 GRADE PCC BLOCKS etc all complete..	RM	100	0.00101551
B241 4	Supply and laying 200 mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	10	0.00088195
2416	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadem course, WBM, prepairing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	50	0.00060489
2418	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	1122	0.40114733

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2419	Providing and laying cement concrete of grade M35 using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)	CUM	1594	0.68250872
2420	Supplying and filling sand for preparation of read sub-base/ sub-grade in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/ compaction by manual/ mechanical means, dressing, royalty (if any) etc all complete.	CUM	10	0.00095922
2421	Providing & laying dry lean cement concrete of grade M15 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	1080	0.42225268
2422	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	10	0.08717565
2423	Providing & installation of bitumen impregnated fibre board of specified thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.			
a	12 mm wide joints.	SQM	15	0.00096363
b	20 mm wide joints.	SQM	10	0.00095039
c	25 mm wide joints	SQM	3000	0.34638019
2424	Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.			
a	10mm X 40mm	RM	100	0.00050775
b	12mm X 25mm	RM	300	0.00139081
c	20mmX25mm	RM	20	0.00011259

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2425	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM		
a	12 mm wide joints.	RM	50	0.00023180
b	20 mm wide joints.	RM	50	0.00035322
c	25 mm wide joints	RM	1000	0.00894098
d	50 mm wide joints	RM	100	0.00171092
2426	Providing & laying 75 mm thick precast interlocking concrete pavers of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	3800	0.32717364
2427	Providing and laying 50mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	3800	0.01858178
A242 7	Providing and laying 100mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	100	0.00097798
2428	Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.	SQM	3750	0.00827868
2429	Providing and laying Inverted Choke with 25 mm course of screenings (Grading-B) over prepared subgrade including compaction etc all complete as per specification, drawing and as directed by Engineer.	CUM	5	0.00275956
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.			
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	4148	0.01007306

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
2603	Earth work in excavation upto any depth below ground level in all types of soil including moorum, ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	2386	0.02317678
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock from compulsorily excavated earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	1488	0.01741040
2610	Extra over ST No. 2601 to 2609 for carriage of unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.			
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	640	0.00070644
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	60	0.00006622
2612	Providing and laying 225mm thick stone pitching including caulking with 1 cement: 4 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	1456	0.40982803
3101	GUNITING/SHOTCRETING			
	Shotcreting (Guniting) specified concrete surfaces as per the following specifications including all materials. Labour, tools and plants, scaffolding etc all complete as per the directions of Engineer in charge :			
	i. Fabricating and fixing in position 6mm M S bars at 750mm c/c including connecting to the lugs for fastening			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
	ii. Fixing wire fabric confirming to IS:1566 as reinforcement with 3mm diameter spaced at 50mm c/c both ways electrically cross welded including securely tying to the 6mm MS bars by maintaining 100mm overlap for adjacent sheets			
	iii. Fine aggregate shall consist of natural sand or crushed stone from a known source and shall be strong, hard, coarse, sharp, chemically inert, clean and free from any coating. It shall be free from clay, coal or coal residue, organic or any other impurities that may impair the strength or durability of the concrete and shall conform to IS: 383. The fineness modulus shall be preferably between 2.5 and 3.3. Any other value can be used, with prior approval of the Engineer. Fine aggregate (Sand) shall be well graded and particles shall range in size within limits. The Engineer may approve the use of any other grading as per requirement or as per IS: 9012.			
	iv. The surface after the placement of reinforcement and / or welded mesh and not more than six hours prior to the application of concrete, shall be thoroughly cleaned of all loose materials and dirt. The Contractor shall properly prepare the surfaces, reinforcement and / or welded mesh to receive the shotcrete. Cleaned surfaces shall be wetted not more than hour prior to shotcreting.			
	v. The mix as placed on surface shall be one part cement to three parts approved sand by mass. Cement and sand shall be dry mixed; no water shall be added after mixing and before using in the gun. The quantity of water when added shall be only that which is sufficient to hydrate the cement. For average atmospheric conditions, the water cement ratio for shotcrete in place shall be between 0.35 and 0.5 by mass. Suitable admixture shall be used wherever required.			
	vi. A uniform pressure of not less than 25 Kgf / cm ² at the nozzle shall be maintained. Necessary adjustments shall be made to ensure this pressure, taking into account the length of hose and height of the place to be shotcreted, above location of the machine.			

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ST NO	Item Description	Unit	TOTAL QUANTITY	Weightage(%)
	vii. The application shall proceed in an upward direction. Beams, stiffeners and intermediate walls, if any, shall be wrapped with wire fabric and completely covered with shotcreting. All rebound shall be removed from the area of application as the work progresses and such rebound material shall not be reused.			
	viii. As soon as the freshly shotcreted surface shows the first dry patches, a fine spray of water shall be applied to keep too moist. After the surface has hardened, it shall be kept continuously moist for minimum seven days. If there is extreme heat, especially when accompanied by hot winds, the shotcreted surface, immediately upon completion, shall be covered with burlap or similar covering, which must be kept continuously moist for 14 days after shotcreting. The temperature of the lining shall not be permitted to exceed 38oC during placing and curing.			
	Note: 6mm MS Reinforcement and welded wire mesh as specified shall be used for thickness of Shotcreting above 50mm			
	a. Shotcreting for thickness 50mm and above of with 6mm MS Reinforcement and welded wire mesh as specified	SQM	4812	0.84348279
	b. Shotcreting for thickness 25mm <u>without</u> 6mm MS Reinforcement and welded wire mesh as specified	SQM	50	0.00637458

Instructions to the bidders

1. **Bidders shall quote Total Lump-sum Price for the entire scope of work (Except for BOQ ST No. A) in Rupees in VOL II PRICE BID at BHEL E-procurement Portal.** Any other entry elsewhere in the offer of the bidder shall be treated as Null and Void. The total value including value of St No. A shall be automatically calculated on E-portal
2. This **Quoted** Lump-sum Price shall be distributed based on the BHEL fixed percentage weightages w.r.t the total Total Lump-sum Price quoted by the bidder for the subject tender.
3. BHEL has pre-fixed the Weightage/Factor as detailed above in this chapter for deriving the Unit Rates. By multiplying BHEL pre-fixed the Weightages / Factor and the total prices derived in sl no. 2 above; unit rate of individual items shall be derived. Unit Rate/Item Rate thus arrived shall be rounded off to two decimal places.

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- 4. Based on the quantities of individual item and the item rates arrived in Sl No 3 above, the total amount for individual items shall be derived. Total amount thus derived shall be rounded off to zero decimal places.
- 5. **Grand Total amount for the work shall be derived by BHEL by summing up respective total amounts including fixed value for St No. A.**
- 6. **Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per Sl No.3 above.**
- 7. For the convenience of bidders, BHEL has issued an excel sheet with all the requisite formulae as described above. ***However the referred excel sheet shall not form part of contract document. Further, this sheet should not be uploaded at the e-Portal.***