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2012

# NOTICE INVITING TENDER

(Document No PS:MSX:NIT)

Bharat Heavy Electricals Limited



Ref:

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

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**NOTICE INVITING E-TENDER (NIT)**  
**BIDDER TO SUBMIT OFFERS ON PORTAL**  
<https://bheleps.buyjunction.in>

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To

Dear Sir/Madam

**Sub : NOTICE INVITING E-TENDER**

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

**1.0 Salient Features of NIT**

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHEL/ NR/SCT/TANDA/EW/1014
ii	Broad Scope of job	CONSTRUCTION AND DEVELOPMENT OF OPEN STORAGE YARD AT 2 x 660 MW ESP TANDA THERMAL POWER PLANT, TANDA, UTTAR PRADESH
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> Applicable
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> Applicable
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> Applicable
d	Volume-ID	<i>Forms and Procedures</i> Applicable
e	Volume-II	<i>Price Schedule (Absolute value).</i> Applicable
iv	Issue of Tender Documents	From BHEL website ( <a href="http://www.bhel.com">www.bhel.com</a> ), CPP Portal ( <a href="http://www.eprocure.gov.in">www.eprocure.gov.in</a> ) and <a href="https://bheleps.buyjunction.in"><u>https://bheleps.buyjunction.in</u></a> Tender documents will be available for downloading & submission from website till due date of submission Applicable
v	DUE DATE & TIME OF OFFER SUBMISSION	<b>Date : 16/12/2015 , Time : 15:00 HRS</b> <b>Place : on <a href="https://bheleps.buyjunction.in"><u>https://bheleps.buyjunction.in</u></a></b> Applicable
vi	OPENING OF TENDER	<b>Date : 16/12/2015 at 1530 HRS</b> (within 2 hours of the latest due date and time of offer submission).  Notes: (1) In case the due date of opening of tender Applicable

		becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender. <b>However, being an e-tender it shall be opened on online and can be witnessed online also.</b>	
vii	EMD AMOUNT	Rs 1,50,000/-	Applicable
viii	COST OF TENDER	Rs 2000/-	Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	<b>Five days before bid submission due date.</b> Along with soft version also, addressing to undersigned & to others as per contact address given below	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)		Not applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)		Not applicable
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendums) & portal <a href="https://bheleps.buyjunction.in">https://bheleps.buyjunction.in</a> <b>and not in the newspapers</b> . Bidders to keep themselves updated with all such information	
xiii	Tender submission	on portal <a href="https://bheleps.buyjunction.in">https://bheleps.buyjunction.in</a>	

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

3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Noida issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Noida, Sundays and second/ last Saturdays.

As this tender is an E-Tender and no paper bids will be accepted therefore the scanned copy of the Demand Draft or the Cash Receipt issued by BHEL PSNR should be uploaded in the E procurement portal. Hard Copy of the demand draft should reach BHEL PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard.

4.0 Unless specifically stated otherwise, bidder shall deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Noida. As this tender is an E-Tender and no paper bids will be accepted therefore the scanned copy of the Demand Draft/Pay Order should be uploaded in the E procurement portal. Hard Copy of the Demand Draft/Pay Order should reach BHEL PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard. For other details and for 'One Time EMD' please refer General Conditions of Contract.

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

**Documents Comprising the e-Tender**

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

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

All Technical details(eg. 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. Tender Cost and Earnest money Deposit (EMD) furnished in accordance with NIT Clause 3.0 & 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.
- vi. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, same shall not be considered.

**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:-

**M/s M Junction services Limited, Kolkata**

Godrej Water Side, 3rd Floor, Tower-1, Plot-V, Block - DP  
Sector - V, Salt Lake, Kolkata-700091, West Bengal, INDIA

The contact details of the service provider are given below:

1. M/s MJUNCTION SERVICES LTD., Kolkata:  
Mr. Vipin Singh (Mob: 9717149600), Mr. Ashish Bharadwaj (Mob: 97171 32381)  
Mr. Samya Mukherjee (Mob: 91633 48220), Mr. Sumant Chowdhury (Mob: 91633 48104)
2. Customer care Help Desk of M/s MJUNCTION SERVICES LIMITED, Kolkata:  
Tel ~ 033 - 66011717 (From 9.30 am to 5.30 pm),  
Mob - 91633 48283 - 86/ 85840 08116 (From 5.30 pm to 8.30 pm)  
HELPDESK email: [eps.customercare@mjunction.in](mailto:eps.customercare@mjunction.in),  
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.

3. The contact details of the DSC Certifying Authority as given below

1	<b>GNFC</b>	<a href="http://www.ncodesolutions.com">www.ncodesolutions.com</a>
2	<b>e-Mudhra</b>	<a href="http://www.e-Mudhra.com">http://www.e-Mudhra.com</a>
3	<b>Safescrypt</b>	<a href="http://www.safescrypt.com">www.safescrypt.com</a>

Vendors are also requested to go through seller manual available on [www.bheleps.buyjunction.in](http://www.bheleps.buyjunction.in)

## 6.0 Not Used

- 7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.

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

## 9.0 **Assessment of Capacity of Bidders:**

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

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

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

### i). Total number of Packages

Total number of Packages in hand = P

Where

- 'P' is the sum of all unit wise identified packages under execution with BHEL Regions as of the cut off month defined above, including packages yet to be commenced, excepting packages which are on HOLD due to reasons not attributable to Bidder..

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

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

- i). Calculation of Overall 'Performance Rating' for 'similar Package/Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment':  
This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:
- $P_1, P_2, P_3, P_4, P_5, \dots, P_N$  etc be the packages (**under execution/** executed during the 'Period of Assessment' in all Regions) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions =  $P_T$  ( ie  $P_T = P_1 + P_2 + P_3 + P_4 + \dots P_N$  )
  - Number of Months ' $T_1$ ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package  $P_1$ . Similarly  $T_2$  for package  $P_2$ ,  $T_3$  for package  $P_3$ , etc for the tendered scope. Now calculate cumulative total months ' $T_T$ ' for total similar Packages ' $P_T$ ' for all Regions ( i.e  $T_T = T_1 + T_2 + T_3 + T_4 + \dots T_N$  )
  - Sum ' $S_1$ ' of 'Monthly Performance Evaluation' Scores ( $S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5}, \dots S_{1-N}$  ) for similar package  $P_1$ , for the 'period of assessment' ' $T_1$ ' ( i.e  $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots S_{1-N}$  ). Similarly  $S_2$  for package  $P_2$  for period  $T_2$ ,  $S_3$  for package  $P_3$  for period  $T_3$ , etc for the tendered scope for all Regions. Now calculate cumulative sum ' $S_T$ ' of 'Monthly Performance Evaluation' Scores for total similar Packages ' $P_T$ ' for all Regions ( i.e ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots S_N$  )
  - Overall Performance Rating ' $R_{BEHL}$ ' for the similar Package/Packages (under execution/** executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL):

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

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

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

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

Sl no	Item Description	Details for all Regions							Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	$P_1$	$P_2$	$P_3$	$P_4$	$P_5$	...	$P_N$	Total No of similar packages for all Regions = $P_T$ ie Sum ( $\Sigma$ ) of columns (iii) to (ix)
2	Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment' for corresponding similar Package ( as in row 1)	$T_1$	$T_2$	$T_3$	$T_4$	$T_5$	...	$T_N$	Sum ( $\Sigma$ ) of columns (iii) to (ix)  = $T_T$
3	Monthly performance	$S_{1-1},$	$S_{2-1},$	$S_{3-1},$	$S_{4-1},$	$S_{5-1},$	..	$S_{N-1},$	

	scores for the corresponding period (as in Row 2)	S <sub>1-2</sub> , S <sub>1-3</sub> , S <sub>1-4</sub> , ... S <sub>1-T1</sub>	S <sub>2-2</sub> , S <sub>2-3</sub> , S <sub>2-4</sub> , ... S <sub>2-T2</sub>	S <sub>3-2</sub> , S <sub>3-3</sub> , S <sub>3-4</sub> , ... S <sub>3-T3</sub>	S <sub>4-2</sub> , S <sub>4-3</sub> , S <sub>4-4</sub> , ... S <sub>4-T4</sub>	S <sub>5-2</sub> , S <sub>5-3</sub> , S <sub>5-4</sub> , ... S <sub>5-T5</sub>	... ... ... ... ...	S <sub>N-2</sub> , S <sub>N-3</sub> , S <sub>N-4</sub> , ... S <sub>N-TN</sub>	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	...	S <sub>N</sub>	Sum ( $\Sigma$ ) of columns (iii) to (ix)  = <b>S<sub>T</sub></b>

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

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

- 'Period of Assessment.
- 12 months preceding the cut-off month
- 24 months preceding the cut-off month
- 36 months preceding the cut-off month

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

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

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

III. ‘Assessment of Capacity of Bidder’:

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

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

Note:

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

The Bidder shall be considered ‘Qualified’ as per ‘Assessment of Capacity of Bidder’ for the subject Tender if  $P \leq P_{Max}$   
(where P is calculated as per clause 9.I)

IV. Explanatory note:

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

**Table-1**

	Civil	Electrical & CI	Mechanical
	i). Enabling works ii). Pile and Pile Caps iii). Civil Works including foundations iv). Structural Steel Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil)	i). Electrical ii). CI iii). Others (Elec & CI)	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). LP Piping iv). ESP v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) ix). Material Handling x). Material Management xi). Material Handling & Material Management xii). Others (Mechanical)



- c) Bidders who have not been evaluated for at least six package months in the last 36 months in the online BHEL system for contractor performance evaluation in BHEL PS Regions, wef July'2010 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/ LOA from BHEL.

The "FIRST TIMER" tag shall remain till execution of work for a period of not less than 09 months, from the commencement of work of first package

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 'Capacity Evaluation of Bidders'.

In case assessment of 'FIRST TIMER' cannot be done for 9 months due to completion of work in less than 9 months, the 'FIRST TIMER' tag will be removed and the vendor shall be considered as 'NEW VENDOR' for any new tender/s, provided the average score for which Performance Evaluation has been done, is not less than 60%.

- d) In the unlikely event of all bidders shortlisted against Technical and Financial Qualification criteria not meeting the criteria on 'Assessment of Capacity of Bidders' detailed above, OR leads to a single tender response on applying the criteria of 'Assessment of Capacity of Bidders' or due to non-approval by Customer, then BHEL at its discretion reserves the right to consider the further processing of the Tender based on the **Overall Performance Rating 'R<sub>BHEL</sub>'** only, starting from the upper band.

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

- i. up to Boiler Steam Blowing in case of Steam Generator and Auxiliaries
- ii. upto Synchronisation in case of all other works excepting sl no (i) and (iii)
- iii. Upto execution of at least 90% of anticipated contract value in case of Civil & Structures (unit wise), Enabling works and upto 90% of material unloading (in tonnage) as per the original contract in case of MM Package.

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

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

- 10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.

- 11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**
- 16.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
- 17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.
- 18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.
- 19.0 BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process. In such case all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .
- However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDS' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.
- 20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 23.0 **Not Used**

- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 The offers of the bidders who are on the banned/ hold list as also the offer of the bidders, who engage the services of the banned/ hold firms, shall be rejected. The list of **banned/ hold firms** is available on BHEL web site [www.bhel.com](http://www.bhel.com).
- 27.0 BHEL reserves the right to go for **Reverse Auction (RA)** instead of opening the price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.”

Information and General Terms and Conditions governing RA shall form part of the RFQ/ Enquiry.

- 28.0 It may please be noted that **guidelines/rules** in respect of Suspension of Business dealings', 'Vendor evaluation format', 'Quality, Safety & HSE guidelines', etc may **undergo change** from time to time and the latest one shall be followed. The abridge version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on [www.bhel.com](http://www.bhel.com) on "**supplier registration page**".
- 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	Others
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.

MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM-II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with attested copy of a CA certificate (format enclosed as Annexure – 4 where deemed validity of EM-II certificate of five years has expired) applicable for the relevant financial year (last audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). 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 any deficiency in 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.

MSEs shall be exempted from payment of tender fee.

MSEs shall be exempted from payment of earnest money at the time of tender deposit. However, there is no exemption of security deposit submission.

- 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 Order of Precedence

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC) —Volume-1B
- f. General Conditions of Contract (GCC) —Volume-1C
- g. Forms and Procedures —Volume-1D

for BHARAT HEAVY ELECTRICALS LTD  
(SCT)

### **Enclosure:-**

- (i) Annexure-1: Pre Qualifying criteria.
- (ii) Annexure-2: Check List.
- (iii) Annexure-3: Modification / Deletions in Standard Clause of General Conditions of Contract (GCC) or Special Conditions of Contract (SCC)
- (iv) Annexure-4: Chartered Accountant certificate for MSMED
- (v) Annexure-5: General Terms and Conditions of Reverse Auction (RA)
- (vi) Annexure-6: Authorization of representative who will participate in the online Reverse Auction Process
- (vii) Annexure-7: Feedback form
- (viii) Other Tender documents as per this NIT.

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

JOB	CONSTRUCTION AND DEVELOPMENT OF OPEN STORAGE YARD AT 2 x 660 MW ESP TANDA THERMAL POWER PLANT, TANDA, UTTAR PRADESH.
TENDER NO	TENDER NO. BHEL/ NR/SCT/TANDA/EW/1014

SL NO	NAME AND DESCRIPTION OF PRE QUALIFICATION CRITERIA	
A	Submission of Integrity Pact duly signed	Not applicable
B	Assessment of Capacity of bidder to execute the work as per clause 9.0 pf NIT	Applicable – by BHEL
C	<b><u>Technical</u></b>	applicable
C-1	<b><u>Bidder who wish to participate should have:</u></b>	
	Experience of having successfully Executed <b>Similar Works</b> during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:	
C-1.1	Three (03) similar completed works each costing not less than the amount equal to Rs. 20 Lacs.	
	<b>OR</b>	
C-1.2	Two (02) similar completed works each costing not less than the amount equal to Rs. 26 Lacs.	
	<b>OR</b>	
C-1.3	One (01) similar completed work costing not less than amount equal to Rs. 41 Lacs.	
D	<b><u>Financial</u></b>	applicable
D-1	<b><u>TURNOVER:</u></b> Bidders must have achieved an average annual financial turnover (Audited) of Rs. 15 Lacs or more over last three Financial Years (FY) i.e. (2012-2013, 2013-2014, 2014-2015). Bidder shall submit audited accounts (balance sheets and profit & loss account) in support of this.  In case audited financial statements have not been submitted for all the three years as indicated above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e. total divided by three	
D-2	<b><u>Net worth:</u></b> Net worth of the Bidder based on the latest Audited Accounts as furnished for 'D-1' above should be positive.  Net Worth = Paid up share capital + Reserves.  (Net worth is required to be evaluated in case of companies)	
D-3	<b><u>Profit:</u></b> Bidder should have earned cash profit in any one of the three financial years as applicable in the last three financial years defined in 'D-1' above based on latest Audited accounts.  Profit shall be NET profit (PAT + Non cash expenditure viz. depreciation) earned during any one of the three financial years as in 'D-1' above	
E	<b>Approval of Customer</b>	<b>Not Applicable</b>
F	<b>Consortium Criteria</b>	<b>Not Applicable</b>

**Explanatory Notes for QR 'C'**

- For QR 'C' above the word 'Executed' means the bidder should have achieved the Technical Criteria, specified in the QR (as in 'C' above), even if the total contract has not been completed or closed.  
(The Bidder shall submit the work completion certificate issued by Customer / Contractor.)
- For QR 'C' value of work is to be updated as per the PVC formula of GCC with Indices for "All India Avg. Consumer Price Index for Industrial Workers" with base month as date of execution and indexed up to two months prior to the bid opening month. This condition will be applicable only for the completed jobs and not for the jobs in progress as on date of technical bid opening.
- If the Qualifying work is executed in the last seven years period, as specified above, even if it has been started earlier, the same will also be considered meeting the qualifying requirements.
- The word '**Similar Works**' means Civil works for Construction and development of open yards OR Buildings (Commercial / Industrial / Residential) OR any other civil construction work.
- Relevant documents, meeting above requirements at C & D, shall be submitted by bidders.

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.

**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: Please tick ( <input checked="" type="checkbox"/> ) whichever applicable:- 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 <b>PRE QUALIFICATION CRITERIA</b> (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/Not Applicable	YES/NO
8	Copy of 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	
11	Declaration by Authorised Signatory	Applicable/Not Applicable	YES/NO
12	No Deviation Certificate	Applicable/Not Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable/Not Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable/Not Applicable	YES/NO
15	Non Disclosure Certificate	Applicable/Not Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable/Not Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	

19	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable/ <del>Not Applicable</del>	YES/NO
20	Analysis of Unit rates	Applicable/ <del>Not Applicable</del>	

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

DATE :

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



**Annexure-3****Modification / Deletions in Standard Clause of General Conditions of Contract (GCC) or  
Special Conditions of Contract (SCC)**

- i. Clause No. 2.12 of GCC (ORC) shall not be applicable.
- ii. Clause No. 2.13 of GCC (Interest bearing recoverable advance) shall not be applicable.
- iii. Clause No. 2.17 of GCC (PVC) shall not be applicable
- iv. The quantities given in the contract are tentative and may change to any extent (both in plus side and minus side). The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value is within the limits of Minus (-) 20% of awarded contract value.
- v. Clause No. 4.1.4, 4.1.9 & 4.1.10 of SCC (Consumables & Other Items) shall not be applicable.
- vi. Clause No. 4.2.2 of SCC (Obligations in respect of T&Ps and MMEs provided by BHEL) shall not be applicable.
- vii. Clause No. 8.3.2, 8.3.3 and 8.3.4 of SCC (Statutory Inspection of Work) shall not be applicable.

**ANNEXURE - 4****Certificate by Chartered Accountant on letter head**

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) ..... dtd:..... ,  
 Category: ..... (Micro/Small)). (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

**(Strike off which is not applicable)**

The above investment of Rs.....Lacs is within permissible limit of  
 Rs.....Lacs for ..... Micro / Small **(Strike off which is not applicable)**

Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is ..... (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant

**GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION (RA)**

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit “online sealed bid” in the Reverse Auction. Non submission of “online sealed bid” by the bidder for any of the eligible items for which techno commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL’s standard practice.
12. Bidders shall be required to read the “Terms and Conditions” section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the

„Business Rules of Reverse Auction“, which will be communicated before the Reverse Auction.

13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1(s) bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

**ANNEXURE – 6****Authorization of representative who will participate in the on line Reverse Auction Process;**

1	NAME & DESIGNATION OF OFFICIAL	
2	POSTAL ADDRESS (COMPLETE)	
3	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
4	FAX NO.	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

**ANNEXURE – 7****Feedback Form: From where did you get information reg. this tender**

1	NEWSPAPER ADVERTISEMENT (NAME)	
2	BHEL WEBISTE (TENDER NOTIFICATION)	
3	CENTRAL PUBLIC PROCUREMENT PORTAL OF GOVERNMENT OF INDIA (CPP PORTAL)	
4	EMAIL COMMUNICATION FROM BHEL	
5	ANY OTHER SOURCE	

VOLUME- IA: TECHNICAL  
CONDITIONS OF CONTRACT (TCC)

**NAME OF WORK: CONSTRUCTION AND  
DEVELOPMENT OF OPEN STORAGE YARD AT  
2X660 MW ESP TANDA THERMAL POWER  
PLANT, TANDA, UTTAR PRADESH.**

BHARAT HEAVY ELECTRICALS  
LIMITED



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- I: Project Information

Sl. No.	Title	Description
1.	Name of the Owner	<b>NATIONAL THERMAL POWER CORPORATION LTD. (NTPC)</b>
2.	Address	TANDA Thermal Power Station  Village: BAHADURPUR,  District: AMBEDKAR NAGAR (U.P.)
3.	New Installation	2 x 660 MW
4.	Nearest Railway station	AKBARPUR (20 KM) on North Central Railway
5.	Nearest Road	FAIZABAD (65 KM)
6.	Nearest City	FAIZABAD (65 KM)
7.	Nearest Airport	LUCKNOW (240 KM), VARANASI (165 KM)
8.	Highest Temperature	44 deg C
9.	Lowest Temperature	4 deg C
10.	Elevation	102 metres

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

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

<b>2.0</b>	<b>GENERAL SCOPE OF WORK</b>
<b>2.1</b>	The tender specification covers all the works for “Construction and Development of Open Storage Yard 12,500 SQM (Approx.) including Fencing, Internal Roads & Drains, Illumination etc. complete for 2X660 MW ESP TANDA THERMAL POWER PLANT, TANDA, Uttar Pradesh.” Work under this tender includes supply of all required materials, labour, consumables, transportation, sample testing such as cement, TMT, Structural Steel, steel gates, brick work, aggregates etc. for completion of Tender Scope in all respect.
<b>2.2</b>	The complete works shall be carried out as per <b>BOQ cum Rate schedule</b> . If any work covered in the scope of contract cannot be executed using items available in BOQ, additional / extra items shall be made and rates for such items shall be worked out as per <b>GCC clause 2.15.7</b> . However contractor shall be bound to execute all the works under the scope of the contract and decision whether an extra item is applicable or not, shall be taken by BHEL Engineer, which shall be binding on the contractor.
<b>2.3</b>	In case the description / specifications as per BOQ are found to be incomplete, Indian Standard Codes (IS Codes) specifications shall be followed. Quantities mentioned in the BOQ cum Rate Schedules, are approximate only and liable for variation due to change of scope of work / variation in schedule of quantities, changes in design etc. The tenderers shall undertake to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of Individual quantity.
<b>2.4</b>	Any activity which is necessarily required for satisfactory execution of any item of BOQ in line with technical specifications shall be deemed to be included in BOQ item even if it is not described in the item description and no extra payment shall be made against such activity.
<b>2.5</b>	<p><b>The Scope of Work comprise but not limited to the following:</b></p> <ul style="list-style-type: none"> <li>A. Development of Open Storage Yard with Internal Roads, Drains, Security Rooms Etc.- 12,500 SQM Approx.</li> <li>B. Fencing, External / Internal Electrification, Illumination, Sanitary and Drainage Works for above yard.</li> </ul> <p>All above jobs shall be executed as per BHEL Engineer’s instructions, drawings, detailed specifications and respective BOQ cum Rate Schedule.</p>
<b>2.6</b>	<b>RESPONSIBILITY OF CONTRACTOR</b>
<b>2.6.1</b>	Furnishing all labour (skilled, unskilled etc.), materials ( <b>except those specified in BHEL scope</b> ), supervision, construction plans, equipment, supplies, transport to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

	all other incidental items and temporary works not shown or specified but reasonably implied or necessary for the proper completion, maintenance and handing over the works, in accordance with the stipulations and specifications laid down in the contract documents and additional stipulations as may be provided by the BHEL Engineer during the course of works.
2.6.2	Furnishing samples of all materials required by the BHEL Engineers for testing / inspection and approval, for use in the works. The samples may be retained by the BHEL Engineer for final incorporation in the works.
2.6.3	Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the BHEL Engineer.
2.6.4	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.
2.6.5	Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
2.6.6	Carrying out survey of the work area to 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. as required, The contractor shall provide 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.
2.7	<b>GENERAL</b>
2.7.1	Contractor shall furnish the <b>manufacturers test certificate</b> for the steel & cement procured by them. Apart from this all the field test shall be arranged by contractor for concrete, bricks, coarse & fine aggregate, Gravels /Boulders etc. either at site or near by Field Quality Lab. approved by BHEL if so desired by BHEL's Engineer. All the expenses in these regards shall be borne by contractor. <b>Contractor shall procure Reinforcement Steel, Structural Steel &amp; Cement* from reputed manufacturer</b> & approval for the same shall be obtained from BHEL well in advance before ordering for the materials. <b>*Cement shall be PPC Equivalent to OPC Grade 43 or Higher.</b>
2.7.2	The contractor shall visit the site and ascertain the local conditions, entry and traffic restrictions, all obstructions in the area and also ascertain all site conditions and particularly the sub-soil conditions etc. <b>The contractor at his own cost shall carry out the survey to study the properties of soil/sub soil like strength to withstand the weight of structure during all weather conditions without sinking of foundation.</b> If any of such defects like cracks, sinking of foundation etc. occur after completion of work till the performance guarantee period, it shall be rectified by

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

	contractor free of cost including the supply of materials required. No claim shall be entertained on this account under any circumstances from the contractor.
<b>2.7.3</b>	The contractor shall provide and maintain at his own cost pumps and other equipment to keep the work free from water and continue to do so until the handing over of the work. The contractor shall clear all trees, rubbish, vegetation, brickbats, stones etc. And dispense them suitably in allotted areas at own cost.
<b>2.8</b>	<b>DRAWINGS</b>
<b>2.8.1</b>	The tentative drawings will form part of the tender documents. BHEL reserves the right to modify/alter the tender drawings, if necessary during the actual execution at site. However, the Drawings/Sketches are to be read along with specifications and shall be treated as in the scope of work. Please refer <b>Part – II for Drawings</b> .
<b>2.8.2</b>	<b>Drawings are indicative and strictly for tendering purpose, only meant to give an idea to tenderers about nature of job.</b> If any changes in the layout, plan, section etc. are felt necessary to suit the site / work requirement, the same shall be done by contractor as per revised sketches / drawings prepared by contractor in consultation with BHEL Engineer after approval of these drawings by BHEL. Contractor shall ensure/ascertain the stability, safety of the said work. <b>Any modification/variation from the said drawings, if necessary as suggested by the contractor will have to get approved from BHEL in writing.</b>
<b>2.9</b>	<b>SPECIFICATION FOR CIVIL WORKS FOR OPEN STORAGE YARD, CLOSED SHEDS AND ITS ELECTRIFICATION WORK, ETC.:</b>
<b>2.9.1</b>	Standard specifications for various items of work for building construction as per the relevant IS-codes (latest edition) shall be applicable for this work. The work has to be executed as per standards, IS Codes specifications, drawings and as directed by BHEL Engineer to the satisfaction of BHEL.
<b>2.9.2</b>	<b>EXCAVATION</b>
<b>2.9.2.1</b>	Excavation for Column Foundations, Roads, Walls, Plinth Beam, Drains and Trenches etc. shall be made as per IS specifications. Marking of Area shall be done and Levels shall be measured and recorded before start of Excavation in presence of BHEL Engineer. In case of any discrepancy regarding measurement, BHEL Engineer's decision shall be binding.
<b>2.9.3</b>	<b>FILLING</b>
<b>2.9.3.1</b>	Any filling/loose soil met below the foundation shall be made up with lean cement concrete 1:4:8 mix (min).
<b>2.9.3.2</b>	<b>Granular Murrum Filling:</b> 150 / 100 mm thick granular murrum filling shall be done as per drawings and as per relevant IS code specifications, including watering, ramming, compaction etc. below Roads, Storage Yard, Ramp, Closed Sheds etc.
<b>2.9.3.3</b>	<b>Excavated Earth Filling:</b> Filling under floors, sides of foundations, drains, roads with 100mm/150mm thick layer of compacted selected earth/river sand including watering, consolidation etc. shall be executed as per IS specification and drawings if

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

	any. Basement and sides of the foundation wall shall be filled in with selected excavated earth in the layers not exceeding 150 mm including watering, consolidation etc. complete as per IS specification and as directed by BHEL Engineer.
<b>2.9.4</b>	<b>DISPOSAL</b>
	The excess/unutilized suitable earth and debris shall be disposed & levelled to the proposed mentioned area for development of Open Storage Yard. All unusable earth, debris, trees, vegetation etc. shall be disposed off at a location embarked by BHEL / Client.
<b>2.9.5</b>	<b>PCC:</b>
<b>2.9.5.1</b>	<p><b>PCC (1:4:8):</b> 100 mm thick PCC (1:4:8) shall be provided for following:</p> <ul style="list-style-type: none"> <li>i) Below RCC Footing of Security Room Columns.</li> <li>ii) Plinth Beam Base.</li> <li>iii) Base of Drains.</li> </ul> <p><b>Coping (1:2:4):</b> 40 mm thick coping of Cement Concrete (1:2:4) shall be provided over the side walls (230 mm thick) of the Drains in the Open Storage Yard.</p> <p>This shall include supplying and placing PCC at all depths including form work, curing, all materials, tools and plants and labour complete. Concrete of 1:4:8/1:3:6/1:2:4 grade as defined in IS- 456 with 40mm/20mm and downgraded stone aggregates as per drawing and BOQ cum Rate Schedule. Nominal mix (volumetric) shall be allowed to use as per the guidelines of IS-456 (latest edition) with min. W/C ratio &amp; cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine &amp; hand mix is generally not acceptable.</p>
<b>2.9.5.2</b>	<b>However in certain unavoidable circumstances, hand mix shall be permitted with 10% extra cement content as per the discretion of BHEL Engineer.</b>
<b>2.9.6</b>	<b>RCC</b>
<b>2.9.6.1</b>	<p><b>RCC 1:2:4 shall be provided for following Works:</b></p> <ul style="list-style-type: none"> <li>i) <b>RCC Footings:</b> 250 mm thick RCC (1:2:4) Footings for Columns, of size 1.5m X 1.5m with the reinforcement of 12 mm dia. bars both ways (Lateral and Longitudinal) @ 150 mm c/c spacing, shall be provided below the column pedestals for Security Room as directed by BHEL Engineer.</li> <li>ii) <b>RCC Columns:</b> RCC (1:2:4) Column of size 300mm X 300mm, height of 3 m (from F.F.L.) from top of the RCC Footing with the reinforcement of 4 Nos. 16 mm dia. at the corners and stirrups of 8 mm dia @ 200 mm c/c spacing shall be provided.</li> <li>iii) <b>Plinth beam:</b> RCC (1:2:4) plinth Beam of size 230mm X 300 mm (W X D), with the reinforcement of 02 Nos. 20 mm dia. bars at Top, 03 Nos. 16 mm dia. bars at bottom and 8 mm dia. Stirrups (2 Legged) @ 200 mm c/c</li> </ul>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

	<p>spacing, shall be provided throughout the perimeter of the Security Rooms along the Column Foundations as per drawings.</p> <p>iv) <b>RCC Roof Slab:</b> RCC (1:2:4) Roof slab of 150 mm thickness with the reinforcement of 12mm dia both ways @ 250 mm c/c at the bottom of the slabs shall be provided for the roofs of the Security Rooms.</p> <p>v) <b>Roof Beam / Lintels:</b> Lintels of size 230mm X 300mm (WxD) of RCC (1:2:4) at top, below roof slab along the perimeter of Security Room and for Doors Windows and Ventilators, fixed in the brick walls shall be provided, with the reinforcement of 03 Nos. 12 mm dia. bars at bottom and 02 Nos. 10 mm dia bars at top and 8 mm dia stirrups @ 250 mm c/c shall be provided.</p> <p>vi) <b>Projections:</b> Projections for Doors and Windows of Size 450mm X 125mm (WxD) with projections of 300 mm on each side in length (Doors / Windows) of RCC (1:2:4) with the reinforcement of 12 mm dia. bars both ways (Lateral and Longitudinal) at top and bottom shall be provided as per drawings and directions of BHEL Engineer.</p> <p>This shall include supplying and placing RCC at all depths / levels including form work, curing, all materials, tools and plants and labour complete. Concrete of 1:2:4 grade as defined in IS- 456 with 40mm/20mm and downgraded stone aggregates as per drawing and BOQ cum Rate Schedule. Nominal mix (volumetric) shall be allowed to use as per the guidelines of IS-456 (latest edition) with min. W/C ratio &amp; cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine &amp; hand mix is generally not acceptable.</p> <p>For Reinforcement the IS Specifications as per SP-34 (latest addition) shall be followed. HYSD- TMT Steel bars of Grade Fe- 415 / 500 from reputed manufacturer shall be used by contractor for reinforcement purpose.</p>
<b>2.9.7</b>	<b>BRICK MASONRY</b>
<b>2.9.7.1</b>	Brick masonry shall be done by using best quality locally available burnt clay bricks / Fly Ash Lime (FAL) bricks of standard size. Minimum strength of the bricks should not be less than 75 KG/SqCm. Other quality requirement shall be in line with the relevant IS Code. One-brick thick & Half-brick thick brickwork shall be constructed as specified, in Cement Mortar 1:6 & 1:4 respectively including linking, plumbing, levelling, pacing, joints curing etc. Including all materials, tools & plants and labour complete at all level/elevation.
<b>2.9.8</b>	<b>FORMWORK</b>
<b>2.9.8.1</b>	The formwork should be capable of carrying the dead load of concrete, the reinforcements and the forces of vibration. The form works shall be designed by the contractor and approved by BHEL Engineer. After sufficient curing period & after attaining adequate strength of concrete the formwork shall be removed with the approval of BHEL Engineer. The item of PCC/RCC shall be deemed as completed after removal of forms and required finishing is completed.



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

<b>2.9.9</b>	<b>STRUCTURAL WORKS:</b>
<b>2.9.9.1</b>	All structural works for Fencing, Steel gates, doors, windows and ventilators shall be carried out as per BHEL Engineer's Instructions, drawings and relevant IS Code Specifications. <b>All Associated Fitting and Fixing materials such as foundation bolts, J / L hooks, bolts, nuts, washers, cleats, stiffeners, Handles, L Drops, Door Stoppers etc. shall be measured and paid along with the weight of Structure</b> and No extra payments shall be made on this account or on account of scrap generated.
<b>2.9.10</b>	<b>ISSUE AND ACCOUNTING OF MATERIALS ISSUED BY THE BHEL AS FREE OF COST (FOC).</b>
<b>2.9.10.1</b>	BHEL shall not provide any materials to the contractor as free of cost for this contract. Contractor shall arrange all the materials for this contract at his own cost for Permanent as well as Temporary works.
<b>2.9.11</b>	<b>FENCING:</b>
<b>2.9.11.1</b>	Barbed Wire Fencing along the perimeter of Open Storage Yard shall be provided as per the BOQ cum Rate Schedule, Drawing and as directed by BHEL Engineer. Angle Posts shall be spaced 3 m c/c and struts at 30 m c/c and at all turnings.
<b>2.9.12</b>	<b>ELECTRICAL INSTALLATIONS</b>
<b>2.9.12.1</b>	The electrical installation as per BOQ cum Rate Schedule shall generally be carried out in conformity with the requirements of the Indian electricity act, 1910 as amended up to date and the Indian electricity rules, 1956 framed there under and also the relevant regulations of the electric supply authority concerned as well as IS: 732-1963 (revised). Before commencement of work, Contractor has to submit detail electrical layout drawings prepared by experienced & licensed electrical agency/engineer indicating the cable route, panels, cable sizing, fittings & fixtures etc. in line with the BOQ cum Rate Schedule.
<b>2.9.12.2</b>	Good workmanship is an essential requirement for compliance with the rules in the code. The work shall be carried out under the direct supervision of a person holding a valid certificate of competency, concerned for the type of work involved.
<b>2.9.12.3</b>	All outdoor/external lamps shall have weather-proof fittings of design approved by BHEL Engineer so as to effectively prevent the admission of moisture.
<b>2.9.12.4</b>	Main and branch distribution boards shall be in accordance with Indian Standard IS 732-1963 "Code of practice for electrical wiring installation".
<b>2.9.12.9</b>	The service connection from outside mains to the switchboard inside the BHEL Yard shall also be carried out by the contractor.
<b>2.9.13</b>	<b>EARTHING</b>
<b>2.9.13.1</b>	All Earthing system shall be in accordance with IS: 3043-1966 "Code of practice for Earthing".
<b>2.9.13.2</b>	The installation and Earthing shall generally be carried out in accordance with the Indian electricity rules 1956 as amended from time to time and the relevant regulations of the electricity supply authority concerned.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

<b>2.9.13.3</b>	Bodies of all electrical appliances shall be earthed by the use of three pin plugs. The covers of the regulators if of metallic construction shall be earthed by means of a separate earth wire. A separate earth wire shall be used for earthing these appliances.
<b>2.9.13.4</b>	All earth wires and earth continuity conductors shall be of copper/ galvanized iron. They shall be either stranded or solid bars of flat rectangular strips and may be bard, provided due care is taken to avoid corrosion and mechanical damage to it. Inter connections of earth continuity conductors and main and branch earth wires shall be made in such a way that reliable and good electrical connections are permanently ensured.
<b>2.9.13.5</b>	The neutral conductor shall not be used as earth wire.
<b>2.9.13.6</b>	Welded, bolted and clamped joints only are permissible. For stranded conductor, sleeve connectors are permissible. Bolted connectors and their screws shall be protected against any possible corrosion.
<b>2.9.13.7</b>	The path of the earth wire shall, as far as possible, be out of reach of any person and shall be visible for inspection.
<b>2.9.14</b>	<b>DEWATERING:</b>
<b>2.9.14.1</b>	It is the responsibility of the contractor to engage sufficient dewatering pump (Diesel, electrically operated) of adequate capacity for dewatering of sub-soil, rain water from excavated pit and other localized area and keep the area dry and workable till completion of entire work within their quoted rate.
<b>2.9.15</b>	<b>GENERAL NOTES FOR STEEL DOOR, WINDOWS, AND VENTILATORS</b>
<b>2.9.15.1</b>	<b>Steel Door:</b> - Pressed steel doors as per standard specification, relevant IS code and sizes shall be supplied along with frames and fixed with suitable hold fasts, fixtures and fittings.
<b>2.9.15.2</b>	<b>Steel Window:</b> - All steel Windows shall be supplied and fixed as per standard specifications of relevant IS code and instructions of BHEL Engineer with all fixtures (i.e. handles, locks, latches, hooks etc.), glazing, fittings, holdfasts etc. Complete.
<b>2.9.15.3</b>	<b>Steel Ventilators:</b> - All steel ventilators shall be supplied and fixed as per standard specifications, relevant IS code and instructions of BHEL Engineer with all fixtures (i.e. handles, locks, latches, hooks etc.), glazing, fittings, holdfasts etc. Complete.
	<b>Note:</b> Contractor shall arrange for shop inspection for all steel doors, windows etc. if fabricated outside the plant before delivery at site for BHEL Engineer's clearance.
<b>2.9.16</b>	<b>PAINTING</b>
<b>2.9.16.1</b>	All the steel items such as doors, windows, ventilators, columns, steel gates etc. shall be provided with one coat of red oxide primer & two coats of synthetic enamel paint of approved make, colour and quality. Paint shall be applied after fixing in position to achieve uniform finishing. Rates shall be quoted taking into account cost of painting for steel work.



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II: Scope of Work

<b>2.9.16.2</b>	Three coats of white/color washing shall be provided uniformly on all wall surfaces as per IS specification.
<b>2.9.18</b>	<b>Prior Approval from BHEL Engineer</b>
<b>2.9.18.1</b>	Contractor shall take prior approval from BHEL Engineer for use of Cement, Brick, Steel, structural steel and for other items as specified in respective items description and necessary <b>manufacturer's test certificate (MTC)</b> and laboratory test as required by BHEL shall be arranged by contractor within their quoted rate.
<b>2.10</b>	<b>APPROVED MAKE OF MATERIALS</b>
<b>2.10.1</b>	<p>1. STRUCTURAL/REINF. STEEL : SAIL / TATA / JINDAL</p> <p>2. PPC EQUIV. TO OPC 43 : ACC / BIRLA / JAYPEE</p> <p>3. ENAMEL PAINTS : JOHNSON &amp; NICHOLSON / BERGER/ ICI / ASIAN PAINT / NEROLAC</p> <p>4. GI &amp; MS PIPES : SURYA/ PRAKASH/ JINDAL-HISSAR/ TATA</p> <p>5. ELECTRICAL EQUIPMENT</p> <p>a) SODIUM VAPOUR LAMP : CROMPTON/ PHILIPS</p> <p>b) WEATHER PROOF FLOOD LIGHT LUMINARIES : CROMPTON/PHILIPS/BAJAJ</p> <p>c) ELECTRIC ENERGY METER : BHEL/ GE/ L&amp;T</p> <p>d) AMETER, VOLTMETER, SELECTOR SWITCHES : AE / KAYCEE</p>
<b>2.10.2</b>	Approval of BHEL Engineer is to be obtained before procurement of materials. The make of material mentioned if not available in the market or is not suiting the site conditions or the make of any material is not mentioned in the above list equivalent make may be used after the approval from BHEL Engineer.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1.0	<b><u>ESTABLISHMENT</u></b>			
3.1.1	<b><i>FOR CONSTRUCTION PURPOSE:</i></b>			
A	<b><i>OPEN SPACE FOR OFFICE</i></b>	Yes		Limited space ( free of charge) As and where made available by customer M/s NTPC
B	<b><i>OPEN SPACE FOR STORAGE</i></b>	Yes		Limited space ( free of charge) As and where made available by customer M/s NTPC
C	<b><i>CONSTRUCTION OF BIDDER'S OFFICE, CANTEEN AND STORAGE BUILDING INCLUDING SUPPLY OF MATERIALS AND OTHER SERVICES</i></b>		Yes	
D	<b><i>BIDDER'S ALL OFFICE EQUIPMENT, OFFICE / STORE / CANTEEN CONSUMABLES</i></b>		Yes	
E	<b><i>CANTEEN FACILITIES FOR THE BIDDER'S STAFF, SUPERVISORS AND ENGINEERS ETC.</i></b>		Yes	
F	<b><i>FIRE FIGHTING EQUIPMENT LIKE BUCKETS, EXTINGUISHERS ETC.</i></b>		Yes	
G	<b><i>FENCING OF STORAGE AREA, OFFICE, CANTEEN ETC. OF THE BIDDER</i></b>		Yes	
3.1.2	<b><i>FOR LIVING PURPOSES OF THE BIDDER</i></b>			
A	<b><i>OPEN SPACE</i></b>		Yes	Contractor have to make their own arrangement
B	<b><i>LIVING ACCOMMODATION</i></b>		Yes	

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.2.0	<b><u>ELECTRICITY</u></b>			
3.2.1	<b><u>ELECTRICITY FOR CONSTRUCTION PURPOSES</u></b>	<b>Yes</b>		Electricity (415 V) shall be provided free of charge at a single point.
3.2.1.1	<b><u>SINGLE POINT SOURCE</u></b>	<b>Yes</b>		
3.2.1.2	<b><u>FURTHER DISTRIBUTION FOR THE WORK TO BE DONE WHICH INCLUDE SUPPLY OF MATERIALS, ENERGY METER AND EXECUTION</u></b>		Yes	
3.2.2	<b><u>ELECTRICITY FOR THE OFFICE, STORES, CANTEEN ETC. OF THE BIDDER WHICH INCLUDE:</u></b>	<b>Yes</b>		Electricity (415 V) shall be provided free of charge at a single point.
3.2.2.1	<b><u>DISTRIBUTION FROM SINGLE POINT INCLUDING SUPPLY OF MATERIALS AND SERVICE</u></b>		Yes	
3.2.2.2	<b><u>SUPPLY, INSTALLATION AND CONNECTION OF MATERIAL OF ENERGY METER INCLUDING OPERATION AND MAINTENANCE</u></b>		Yes	
3.2.2.3	<b><u>DUTIES AND DEPOSITS INCLUDING STATUTORY CLEARANCES FOR THE ABOVE</u></b>		Yes	
3.2.3	<b><u>ELECTRICITY FOR LIVING ACCOMMODATION OF THE BIDDER'S STAFF, ENGINEERS, SUPERVISORS ETC ON THE ABOVE LINES.</u></b>		Yes	Contractor have to make their own arrangement
3.3.0	<b><u>WATER SUPPLY</u></b>			

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.3.1	<b><u>FOR CONSTRUCTION PURPOSES:</u></b>			
3.3.1.1	<b><i>MAKING THE WATER AVAILABLE AT SINGLE POINT</i></b>		<b>Yes</b>	Contractor has to arrange for construction water at his own cost by resorting to the methods like bore well, water tankers etc.
3.3.1.2	<b><i>FURTHER DISTRIBUTION AS PER THE REQUIREMENT OF WORK INCLUDING SUPPLY OF MATERIALS AND EXECUTION</i></b>		Yes	
3.3.2	<b><u>WATER SUPPLY FOR BIDDER'S OFFICE, STORES, CANTEEN ETC.</u></b>		Yes	
3.3.2.1	<b><i>MAKING THE DRINKING WATER AVAILABLE AT SINGLE POINT</i></b>		<b>Yes</b>	Bidder shall arrange for safe drinking water for staff and labour at his own.
3.3.2.2	<b><i>FURTHER DISTRIBUTION AS PER THE REQUIREMENT OF WORK INCLUDING SUPPLY OF MATERIALS AND EXECUTION</i></b>		Yes	
3.4.0	<b><u>LIGHTING</u></b>			
3.4.1	<b><i>FOR CONSTRUCTION WORK (SUPPLY OF ALL THE NECESSARY MATERIALS)</i></b> 1. At office storage area 2. At the construction site /area		Yes	

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.4.2	<b><i>FOR CONSTRUCTION WORK (EXECUTION OF THE LIGHTING WORK/ ARRANGEMENTS)</i></b> 1. At office storage area 2. At the construction site /area		Yes	
3.4.3	<b><i>PROVIDING THE NECESSARY CONSUMABLES LIKE BULBS, SWITCHES, ETC. DURING THE COURSE OF CONSTRUCTION</i></b>		Yes	
3.4.4	<b><i>LIGHTING FOR THE LIVING PURPOSES OF THE BIDDER AT THE COLONY / QUARTERS</i></b>		Yes	
3.5.0	<b><u>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</u></b>			
3.5.1	<b><i>TELEPHONE, FAX, INTERNET, INTRANET, E-MAIL ETC.</i></b>		Yes	
3.6	<b><i>CONSTRUCTION FACILITIES</i></b>			
3.6.1	<b><i>ENGINEERING WORKS FOR CONSTRUCTION:</i></b>			
3.6.1.1	<b><i>PROVIDING THE CONSTRUCTION DRAWINGS</i></b>	<b>Yes</b>		BHEL shall provide tentative drawings only for tendering purpose.
3.6.1.2	<b><i>DRAWINGS FOR CONSTRUCTION METHODS / DETAILED DRAWINGS AS PER SITE REQUIREMENT</i></b>		Yes	<b>In consultation with BHEL.</b>

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.6.1.3	<i>AS-BUILT DRAWINGS – WHERE EVER DEVIATIONS OBSERVED AND EXECUTED AND ALSO BASED ON THE DECISIONS TAKEN AT SITE</i>		Yes	
3.6.1.4	<i>SHIPPING LISTS / PROCUREMENT PLAN ETC. FOR REFERENCE AND PLANNING THE ACTIVITIES</i>		Yes	
3.6.1.5	<i>PREPARATION OF SITE CONSTRUCTION SCHEDULES AND OTHER INPUT REQUIREMENTS</i>		Yes	
3.6.1.6	<i>REVIEW OF PERFORMANCE AND REVISION OF SITE CONSTRUCTION SCHEDULES IN ORDER TO ACHIEVE THE END DATES AND OTHER COMMITMENTS</i>	Yes	Yes	
3.6.1.7	<i>WEEKLY CONSTRUCTION SCHEDULES BASED ON SL. No 3.6.1.5</i>		Yes	
3.6.1.8	<i>DAILY CONSTRUCTION / WORK PLAN BASED ON SL. No 3.6.1.7</i>		Yes	
3.6.1.9	<i>PERIODIC VISIT OF THE SENIOR OFFICIAL OF THE BIDDER TO SITE, REVIEW THE PROGRESS SO THAT WORKS ARE COMPLETED AS PER SCHEDULE. IT IS SUGGESTED THIS REVIEW BY THE SENIOR OFFICIAL OF THE BIDDER SHOULD BE DONE ONCE IN EVERY TWO MONTHS.</i>		Yes	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

<b>A</b>	<b><u>TOOL &amp; PLANTS (T&amp;Ps)</u></b> - INDICATIVE LIST OF T & Ps
<b>Sl. No.</b>	<b>EQUIPMENT</b>
1	CONCRETE MIXER M/C OF SUITABLE CAPACITY
2	CONCRETE VIBRATORS
3	JCB, EXCAVATOR, DOZER, JACK HAMMER WITH COMPRESSOR, VIBRO ROLLERS (8-12 MT)
4	TRUCKS/LORRIES/TRACTORS/DUMPERS
5	WATER TANKER
6	DEWATERING PUMP
7	WINCHES
8	WELDING MACHINES
9	TYRE MOUNTED MOBILE CRANES / HYDRA (14MT TO 20MT)
NOTES:	<p>1 The above list is only indicative and these T&amp;Ps may not be required for entire contract period but contractor will ensure that these T &amp; Ps are provided as per need. Contractor will assess actual quantity and period of requirement based on his experience. <b>Contractor has to mobilize / maintain adequate numbers of equipment for meeting the work schedule and intermediate milestones as notified by BHEL Engineer.</b></p> <p>2 Other terms and conditions regarding T&amp;Ps / MMEs please also refer clause for T&amp;Ps &amp; MMEs in SCC.</p> <p>3 All the tools and plants required for this scope of work are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. Any additional T&amp;Ps required to be arranged by the contractor.</p> <p>4 If work gets delayed due to non-availability of T&amp;Ps, BHEL reserves the right to get the work done at the risk and cost of contractor without prejudice to rights of BHEL as in GCC.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

<b>B</b>	<b><u>MONITORING AND MEASURING EQUIPMENTS (MMEs)</u>- INDICATIVE LIST OF MMEs</b>
<b>SL NO</b>	<b>EQUIPMENT</b>
1	TOTAL STATION
2	AUTO LEVEL
3	MEASURING TAPE
4	PLUMB BOBS
5	COMPRESSION STRENGTH TESTING EQUIPMENT
6	CONSTRUCTION MATERIAL TEST EQUIPMENT
7	CONCRETE CUBE MOULD (150mm X 150mm X 150mm)
8	CONCRETE SLUMP CONE
9	COARSE AGGREGATE SIEVES & SAND SIEVES
10	SIEVE SHAKER
NOTES:	<p>1. The above list is only indicative and these MMEs may not be required for entire contract period but contractor will ensure that these T &amp; Ps are provided as per need. Contractor will assess actual quantity and period of requirement based on his experience</p> <p>2. Other terms and conditions regarding T&amp;Ps / MMEs please also refer clause for T&amp;P &amp; MMEs in SCC.</p> <p>3. All the MMEs required for this scope of work are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. Any additional MMEs required to be arranged by the contractor.</p> <p>4. Contractor should set up the field laboratory with facilities required for material &amp; concrete testing, alternatively all the materials used and proposed to be used for construction may be tested in an authorized and accredited laboratory outside and the material test reports shall be furnished to BHEL Engineer before use of material in work.</p> <p>5. If work gets delayed due to non-availability of MMEs, BHEL reserves the right to get the work done at the risk and cost of contractor without prejudice to rights of BHEL as in GCC.</p>



**NOT APPLICABLE**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VI: Time Schedule

TIME SCHEDULE		
<b>6.0</b>	<b>MOBILIZATION, TIME SCHEDULE, CONTRACT PERIOD AND GRACE PERIOD</b>	
<b>6.1</b>	<b>INITIAL MOBILIZATION</b> After receipt of fax LOI, Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilization. Contractor shall mobilize necessary resources within 2 weeks of issue of fax letter of intent or as per the directive of Project Manager / Construction Manager. Such resources shall be progressively augmented to match the schedule of milestones as directed by BHEL Engineer.	
<b>6.2</b>	<b>START DATE / ZERO DATE</b> The schedule date of start of work shall be the date after 2 weeks of issue of LOI; The Actual Date of Start of Contract Period (Zero Date) shall be date of handing over of site to contractor for work and shall be certified by the BHEL Engineer.	
<b>6.3</b>	<b>COMPLETION PERIOD</b> Entire work as detailed in tender specification <b>shall be completed within 2.5 months from the actual date of start of contract period (Zero Date)</b> . Contractor has to mobilize adequate resources to meet BHEL's commitments to their customer as indicated from time to time.	
<b>6.4</b>	Detailed Work completion Schedule will be submitted for approval by the successful bidder within 2 weeks of issue of LOI.	
<b>6.5</b>	In case due to reasons not attributable to the contractor, the work gets delayed and scheduled completion gets extended, time extension will be accordingly granted by BHEL.	
<b>6.6</b>	The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.	
<b>6.7</b>	In order to meet above schedule in general, and any other intermediate targets set, to meet customer/ project schedule requirements, contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL.	
<b>6.8</b>	<b>MILESTONES FOR COMPLETION OF WORKS</b>	
<b>6.8.1</b>	COMPLETE WORKS : <b>Two and half (2.5) Months from Actual Date of Start of Contract Period (Zero Date)</b> with indicative milestones as below:	
<b>6.8.2</b>	A. Completion of Development of Open Storage Yard Area with Internal Roads and Drains.	Within 01 Months from Zero Date

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VI: Time Schedule

	B. Completion of Fencing, Security Rooms, Entry /Exit Gates.	Within 1.5 Months from Zero Date
	C. Completion of all Illumination and Electrification Work of Open Storage Yard and handing over the completed works after removal of all temporary structures, materials etc. to BHEL	Within 2.5 Months from Zero Date
<b>6.9</b>	<b><u>CONSEQUENCE OF DELAY</u></b> In case of delay in completion is attributable to the contractor, BHEL may impose LD on the contractor as per GCC.	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VII: Terms of Payment

<b>7.0</b>	<b>TERMS OF PAYMENT</b>
<b>7.1</b>	The 'Engineer' will certify regarding the actual work executed in the measurement books and bills, which shall be accepted by the contractor in measurement book.
<b>7.2</b>	<b>The Contractor shall be paid monthly running bill as per chapter – X of SCC and Clause Nos. 2.22 &amp; 2.23 of GCC.</b> The format for billing shall be approved by BHEL before raising invoices.
<b>7.3</b>	The contractor on certification of the BHEL Engineer at site is entitled for payments of his running bills which shall be subject to any deduction/retention specifically under clauses 2.22 of GCC and 10.0 of SCC.
<b>7.4</b>	<b>Interest bearing recoverable advance: Not Applicable</b>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VIII: Taxes & Duties

<p><b>8.0</b></p>	<p><b>TAXES &amp; DUTIES</b></p> <p>The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods &amp; services consumed and output goods &amp; services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding <b>Service Tax</b> and <b>Value Added Tax (VAT)</b> on output services and goods shall be as per following clauses.</p>
<p><b>8.1</b></p>	<p><b>Service Tax &amp; Cess on Service Tax</b></p> <p>Service Tax and Cess on Service Tax as applicable on output Services are included in contractor's scope; therefore contractor's price/rates shall be <b>inclusive</b> of Service Tax and Cess on Output Services. BHEL shall not reimburse any amount to service tax A/c due to any reason whatsoever.</p> <p>Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. The Service Tax Rules permit more than one option or methodology for discharging the liability of tax/levy/duty and BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor. Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract.</p> <p>For the purpose of claiming any Service Tax from BHEL, the following procedure shall be adopted:</p> <p>Contractor shall submit serially numbered Service Tax and Cess Invoices, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely:</p> <ul style="list-style-type: none"> <li>A. The name, address and registration number of the contractor</li> <li>B. The name and address of the party receiving taxable service (BHEL)</li> <li>C. Description, classification and value of taxable service provided and</li> <li>D. The Service Tax payable thereon.</li> </ul> <p>All the four conditions shall be fulfilled in the invoice for payment of Service Tax by BHEL. Where more than one nature of Service under Service Tax Rules is involved, the invoice mentioned above shall contain the breakup of all values for each nature of Service.</p> <p>Name and address of the contractor should be same in the service tax invoice and monthly bill. Any change in the name and address in past should be supported by documentary evidence duly certified by the registering authority.</p> <p>Purpose of above requirements, inter alia, is to enable availment of CENVAT credit by BHEL. As per recent amendment time restrictions for taking cenvat credit is within 12 months from date of invoice. Wherever CENVAT credit could not be</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VIII: Taxes & Duties

	availed by BHEL within statutory time limit of 12 months due to delay in submission of invoice or for any other reason attributable to contractors, liability towards loss of such CENVAT credit shall be passed on to contractors.
<b>8.2</b>	<b>VAT (Sales Tax /WCT)</b>
<b>8.2.1</b>	<p><b>Civil Works:</b></p> <p>As regards Value Added Tax (VAT) on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, the price quoted by the contractor shall be <b>inclusive</b> of the same. Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. In case contractor opts for composition, it will be with the prior express consent of BHEL. The VAT Rules permit more than one option or methodology for discharging the liability of tax/levy/duty and BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor. BHEL also reserves the right to demand "Tax Invoice" under the relevant VAT Act, from the Contractor. Where such taxes are required to be paid by the contractor subject to the above, this will be reimbursed on production of proof of payment made to the authorities by the Contractor. The contractor has to take all necessary steps to <b>minimize tax on input goods</b> by purchasing the materials from any registered dealer of the concerned state only.</p>
<b>8.2.2</b>	<p><b>Works other than Civil Works:</b></p> <p>The rates quoted by the Contractor shall be inclusive of VAT/Sales Tax and BHEL shall not reimburse any amount on this account due to any reason whatsoever.</p>
<b>8.2.3</b>	<p><b>Common to all Works (Both Civil and Other than Civil)</b></p> <p>The Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA bill. Deduction of tax at source shall be made as per the provisions of law unless otherwise found exempted. In case tax is deducted at source as per the provisions of law, this is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made unless specifically agreed to.</p> <p>Contractor has to make his own arrangement at his cost for completing the formalities, if required, with Sales Tax/VAT Authorities, for bringing all their material, plant and equipment etc. at site for the execution of the work, including arrangement of Road Permits if and as applicable under the relevant VAT Act.</p>
<b>8.3</b>	<p><b>Modalities of Tax Incidence on BHEL</b></p> <p>Wherever the relevant tax laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- VIII: Taxes & Duties

<b>8.4</b>	<p><b>New Taxes/Levies</b></p> <p>In case the Government imposes any new levy/tax on the output service/goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of Price Bid. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.</p> <p>No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his price bid.</p>
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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- IX: Materials and Other Requirements

<b>9.0</b>	<b>MATERIALS</b>
<b>9.1</b>	The contractor shall, at his own expenses (Inclusive of Taxes), provide all materials required for the work.
<b>9.2</b>	All materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant Indian standard and the Contractor shall, if requested by the BHEL Engineer, furnish proof to the satisfaction of BHEL Engineer that the materials so comply.
<b>9.3</b>	The Contractor shall, at his own expense and without delay, supply to the BHEL Engineer samples of materials proposed to be used in the works. The BHEL Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the BHEL Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
<b>9.4</b>	The BHEL Engineer shall have full powers for removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the BHEL Engineer shall be at liberty to have them removed by other means. The BHEL Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply; he may cause the same to be supplied by other means. All costs, which may attend upon such removal and / or substitution, shall be borne by the Contractor.
<b>9.5</b>	The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings / specifications issued after submission of the tender.
<b>9.6</b>	The BHEL Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and such tests are required by the Engineer, the Contractor shall provide all



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- IX: Materials and Other Requirements

	facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.
<b>9.7</b>	In addition, the Contractor shall perform / submit at his own cost such tests / samples as may be required by the BHEL Engineer out of the materials used by the company except for the costs of materials used in such tests/ samples.
<b>9.8</b>	After acceptance of the Contract, if Contractor desires BHEL to supply any other materials, such material may be supplied by BHEL, if available, at rates to be fixed by the BHEL Engineer along with prevailing departmental charges (current rate of 30%). BHEL reserve the right not to issue any material. The non-issue of such material will not entitle the Contractor for any compensation whatsoever either in time or in cost.
<b>9.9</b>	Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by the Engineer. Storage and safe custody of material shall be the responsibility of the contractor.
<b>9.10</b>	BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.
<b>9.11</b>	All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the BHEL Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him and upon such removal, the same shall re-vest in and become the property of the Contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- XI: Annexures

<b>10.0</b>	<b>EXECUTION OF WORK</b>
<b>10.1</b>	The work shall be executed in a workman like manner and to the entire satisfaction of the BHEL Engineer and as per technical specification issued with tender, IS codes, CPWD specifications as applicable. In case of conflict, the decision of the <b>BHEL</b> Engineer shall be final & binding.
<b>10.2</b>	<b>SETTING OUT</b>
<b>10.2.1</b>	All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark shall be made available for setting out the works under the contract. This reference lines shall be used as datum for the works under the contract and the contractor has to establish for his work area at available points horizontal and vertical control points. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractor's expenses.
<b>10.2.2</b>	The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessarily placed by BHEL / Customer at contractor's expenses.
<b>10.3</b>	<b>SITE DRAINAGE</b>
<b>10.3.1</b>	All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and excavations, including monsoon period shall be removed by the contractor from the Site to the satisfaction of the BHEL Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. Considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.
<b>10.4</b>	<b>INSPECTION AND STAGE APPROVAL OF THE WORK</b>
<b>10.4.1</b>	All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the BHEL Engineer when each stage is ready. In default of such notice being received, the BHEL Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the BHEL Engineer thereon shall be final and conclusive.
<b>10.5</b>	<b>UNCOVERING AND MAKING GOOD</b>
<b>10.5.1</b>	The Contractor shall uncover any part of the Works and/or make openings in or through the same as the BHEL Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the BHEL Engineer. If any such part has been covered up or put out of view after

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- XI: Annexures

	being approved by the BHEL Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor.
<b>10.6</b>	<b>NUISANCE</b>
<b>10.6.1</b>	The Contractor shall not at any time do, cause or permit any nuisance on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.
<b>10.7</b>	<b>MATERIAL OBTAINED FROM EXCAVATION</b>
<b>10.7.1</b>	Materials of any kind obtained from excavation on the Site shall remain the property of BHEL / its client and shall be disposed of as the BHEL Engineer may direct.
<b>10.8</b>	<b>TREASURE, TROVE, FOSSILS etc.</b>
<b>10.8.1</b>	All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing and immediately upon discovery thereof and before removal, acquaint the BHEL Engineer with such discovery and carryout the BHEL Engineer's directions as to the disposal of the same.
<b>10.9</b>	<b>PROTECTION OF WORKS</b>
<b>10.9.1</b>	Trees designated by the BHEL Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing.
<b>10.9.2</b>	The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the BHEL Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.
<b>10.9.3</b>	The contractor shall have total responsibility for protecting his works till it is finally taken over by the BHEL. No claim will be entertained by the BHEL for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.

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## Chapter- XI: Annexures

<b>10.10</b>	<b>PROTECTION OF EMBEDMENTS BOLTS ETC.</b>
<b>10.10.1</b>	The contractor shall ensure proper protection to the satisfaction of the BHEL Engineer, of all bolts, inserts, embedment etc. from weather etc. by greasing, rapping them with gunny bags or canvas or by any other means as directed by BHEL Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.
<b>10.11</b>	<b>CLEARANCE OF SITE AND REPAIRS.</b>
<b>10.11.1</b>	Contractor has to clear the site / area where mechanical / storage and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. notice, In case he fails to clear the site, this will be done at his risk & cost by BHEL.
<b>10.12</b>	<b>QUALITY ASSURANCE</b>
<b>10.12.1</b>	The contractor has to establish / arrange at site the field testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality check list/ relevant IS Code specifications as specified by BHEL Engineer. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.
<b>10.13</b>	<b>COMPLETION OF WORK</b>
<b>10.13.1</b>	The works shall be completed to the entire satisfaction of the BHEL Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labour hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the BHEL Engineer at the Contractor's expenses.
<b>10.13.2</b>	BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the BHEL Engineer. Such work however shall not be treated as have been completed until the extra works are executed to the satisfaction of BHEL Engineer.
<b>10.14</b>	<b>COMMENCEMENT OF GUARANTEE PERIOD</b>
<b>10.14.1</b>	<b>The Guarantee period shall commence only after completion &amp; handing over of the entire works.</b> The BHEL Engineer shall certify to the contractor the date on which the work is completed & handed over and the date thereof for commencement of Guarantee Period. The duration of Guarantee Period shall be as per GCC.
<b>10.15</b>	<b>METHOD OF MEASUREMENT</b>
<b>10.15.1</b>	Method of measurements if not specified in the tender, shall be as per relevant IS Codes / CPWD codes.
<b>10.16</b>	<b>HSE &amp; OHSAS:</b>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- XI: Annexures

	<b>The contractor shall comply with the requirements / stipulations of Chapter-IX of SCC towards Health, Safety and Environment.</b>
<b>10.17</b>	<b>DISCREPANCIES AND ADJUSTMENT OF ERRORS:</b>
<b>10.17.1</b>	The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawings and figures dimensions in preference to scale and special conditions in preference to general conditions.
<b>10.17.2</b>	In case of discrepancies between schedules of quantities, the specification and / or the drawings, the following order of preference shall be observed: <ul style="list-style-type: none"> <li>(a) Description in schedule of quantities.</li> <li>(b) Technical Conditions of Contract</li> <li>(c) Drawings</li> <li>(d) Technical Specifications / Standard Specifications</li> <li>(e) Special Conditions of Contract</li> <li>(f) General conditions of contract</li> </ul>
<b>10.17.3</b>	If there are varying or conflicting provisions made in any one document forming part of the contract, the BHEL Engineer shall be the deciding authority with regard to the document.
<b>10.17.4</b>	Any error in description, quantity in schedule of quantities or any omission therefrom shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to the drawings and specifications or from any of his obligations under the contract.
<b>10.18</b>	<b>MODIFICATION/ DELETION OF GCC &amp; SCC CLAUSES:</b> <ul style="list-style-type: none"> <li>I. Clause No. 4.1.4, 4.1.9 &amp; 4.1.10 of SCC (Consumables &amp; Other Items) shall not be applicable.</li> <li>II. Clause No. 4.2.2 of SCC (Obligations in respect of T&amp;Ps and MMEs provided by BHEL) shall not be applicable.</li> <li>III. Clause No. 8.3.2, 8.3.3 and 8.3.4 of SCC (Statutory Inspection of Work) shall not be applicable.</li> <li>IV. Clause No. 2.12 of GCC (ORC) shall not be applicable.</li> <li>V. Clause No. 2.17 of GCC (PVC) shall not be applicable</li> <li>VI. Clause No. 2.13 of GCC (Interest bearing recoverable advance) shall not be applicable.</li> <li><b>VII.</b> Clause No. 2.14.1 of GCC modified as: The quantities given in the contract are tentative and may change to any extent (both in plus side and minus side). The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value is within the limits of Minus (-) 20% of awarded contract value.</li> </ul>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- XI: Annexures

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**Annexure-I:** BOQ cum Rate Schedule for the Work of “Construction and Development of Open Storage Yard including Fencing, Internal Roads & Drains, Illumination etc. complete for 2X600 MW ESP TANDA THERMAL POWER PLANT, TANDA, Uttar Pradesh.”

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Drawings

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Following Drawings are attached for reference purpose only.

SL. NO.	DRAWING NO.	DESCRIPTION
<b>OPEN STORAGE YARD DRAWINGS</b>		
1.	BHE/PW/OY-01	TYPICAL LAYOUT FOR OPEN STORAGE YARD- 12500 SQM
2.	BHE/PW/OY-02	SECTION OF STORAGE YARD BLOCK
3.	BHE/PW/OY-03	DETAILS OF 0.4 M DEPTH DRAIN
4.	BHE/PW/OY-04	DETAILS OF 0.5 M DEPTH DRAIN
5.	BHE/PW/OY-05	SECTION OF 8M / 6M WIDE WBM ROAD
6.	BHE/PW/OY-09	CULVERT DETAILS OF 400 MM DIA, RCC HUME PIPE
7.	BHE/PW/GATE	MS PIPE GATE
8.	BHE/PW/OY-11	DETAILS OF BARBED WIRE FENCING
9.	BHE/PW/SR-01 (SHEET 01 OF 02)	DETAILS OF SECURITY CABIN FOR OPEN YARD
10.	BHE/PW/SR-01 (SHEET 02 OF 02)	DETAILS OF SECURITY CABIN FOR OPEN YARD

**Note:** Drawings are indicative and strictly for tendering purpose, only meant to give an idea to tenderers about nature of job.

BOQ CUM RATE SCHEDULE						ANNEXURE-I	
SCOPE: CONSTRUCTION AND DEVELOPMENT OF OPEN STORAGE YARD INCLUDING FENCING, INTERNAL ROADS AND DRAINS, ILLUMINATION ETC. COMPLETE FOR 2X660 MW ESP TANDA THERMAL POWER PLANT, TANDA, UTTAR PRADESH.							
SL.NO	ITEM CODE NO.	DESCRIPTION OF WORK	UNIT	QTY.	FACTOR (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after decimal)	AMOUNT (Rs.) = RATE *QUANTITY
	C	CIVIL WORK- OPEN STORAGE YARD					
1	C1	SUB GRADE PREPARATION: CUTTING & DISPOSAL OF GRASS, VEGITATIONS, BUSHES, TREES (GIRTH LESS 300MM), LEVELLING, WATERING AND CONSOLIDATION ( 90% OF PROCTOR DENSITY) BY MEANS OF 10-12 MT CAPACITY POWER/VIBRO ROLLER FOR SUB BASE PREPARATION. THIS WILL INCLUDE AVERAGE CUTTING & FILLING UP TO ± 250MM THICK, GRADING THE AREA WITH PROPER SLOPE FOR DRAING OUT THE RAIN WATER WITH ALL T&P, LABOURS, MATERIALS, DEWATERING (IF REQUIRED) ETC. COMPLETE. FOR DEVELOPMENT OF OPEN STORAGE YARD.	M2	12500.00	0.35	-	-
2	C2	BACK FILLING IN LAYERS NOT EXCEEDING I5 CM THICKNESS FOR LOW LYING AREA OF OPEN STORAGE YARD WHEREVER REQUIRED TO BE DEVELOPED INCLUDING WATERING AND CONSOLIDATING, ROYALTY ETC. COMPLETE AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER.			-	-	-
3	(i)	WITH GOOD AVAILABLE EARTH FROM EXCAVATION WORK	M3	332.46	2.08	-	-
4	C3	EXCAVATION /CUTTING OF EARTH BEYOND INITIAL 250MM THICK WHICH IS COVERED UNDER ITEM NO.(1) ABOVE IF REQUIRED AND SPREADING THE SAME IN LOW LYING AREA, WATERING, COMPACTION BY MEANS OF 10-12 MT CAPACITY POWER/VIBRO ROLLER FOR DEVELOPMENT OF OPEN STORAGE YARD AS PER INSTRUCTION OF BHEL ENGINEER.	M3	312.50	0.93	-	-
5	C4	EXCAVATION FOR ROADWAY IN ALL TYPES OF SOILS, SAND AND GRAVEL OR SOFT MURAM INCLUDING DRESSING OF SECTION TO THE REQUIRED GRADE, CAMBER & SIDE SLOPES AND SPREADING OF SURPLUS EXCAVATED EARTH UNIFORMLY OVER THE SPECIFIED AREA FOR SITE LEVELING & DEVELOPMENT OF REQUIRED DEPTH TO MAINTAIN UNIFORM GROUND LEVEL AS DIRECTED BY THE BHEL & CONSOLIDATION OF THE SURFACE INCLUDING SUB- BASE BY ROLLING THE SURFACE WITH 8 - 10 MT CAPACITY POWER/VIBRO ROLLER, DEWATERING (BOTH GROUND WATER AS WELL AS RAIN WATER) AND KEEP THE AREA DRY TILL COMPLETION OF ALL THE WORKS, LABOURS, MATERIALS AND REQUIRED T&Ps ETC. COMPLETE.AS PER DRAWINGS & SPECIFICATIONS.	M3	443.00	3.02	-	-



6	C5	<b>EXCAVATION FOR SIDE DRAIN/DRAINS, PLINTH BEAM, FOUNDATIONS OF SECURITY ROOMS AND CULVERTS</b> IN ALL KINDS OF SOILS, TO THE SPECIFIED SECTION AS PER DRAWINGS & SPECIFICATIONS. INCLUDING <b>SPREADING OF SURPLUS EXCAVATED EARTH UNIFORMLY OVER THE SPECIFIED AREA FOR SITE LEVELING &amp; DEVELOPMENT OF REQUIRED DEPTH TO MAINTAIN UNIFORM GROUND LEVEL</b> , DEWATERING (BOTH GROUND WATER AS WELL AS RAIN WATER) AND KEEP THE AREA DRY TILL COMPLETION OF ALL THE WORKS, LABOURS, MATERIALS AND REQUIRED T&Ps ETC. COMPLETE. DIRECTED BY THE BHEL ENGINEER.			-	-	-
7	(i)	<b>IN ORDINARY SOIL</b>	M3	269.00	3.04	-	-
8	C6	<b>BACK FILLING</b> THE SIDES OF DRAINS, CULVERTS WITH <b>GOOD EXCAVATED SOIL AVAILABLE FROM WORK</b> IN LAYERS NOT EXCEEDING 15 CM THICKNESS INCLUDING WATERING AND CONSOLIDATING ETC. COMPLETE AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER.	M3	47.09	2.08	-	-
9	C7	<b>DISPOSAL</b> OF EXCAVATED EARTH/ROCK ( <b>NOT SUITABLE FOR BACK FILLING</b> ) UPTO A MAXIMUM LEAD OF 2 KM OR PART THEREOF INCLUDING LOADING,UNLOADING ,CONVEYING AND SPREADING AS PER DIRECTION OF ENGINEER INCHARGE.AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER.	M3	332.46	2.36	-	-
10	C8	PROVIDING & FILLING OF <b>COMPACTED THICK GRANULAR MURUM IN LAYERS (THICKNESS OF EACH LAYER SHOULD NOT EXCEED 150MM )</b> IN SUB-BASE OF ROAD BELOW SOLING, YARD DEVELOPMENT ETC.COMPLETE INCLUDING WATERING AND COMPACTION WITH 8-10 T POWER ROLLER COMPLETE. RATE SHALL INCLUDE TRANSPORTATION, ROYALTY, DEWATERING (BOTH GROUND WATER AS WELL AS RAIN WATER) AND KEEP THE AREA DRY TILL COMPLETION OF ALL THE WORKS, LABOURS, MATERIALS AND REQUIRED T&Ps ETC. COMPLETE ETC.	M3	148.80	13.30	-	-
11	C9	PROVIDING <b>COMPACTED THICK WATER BOUND MACADAM (WBM) IN TWO LAYERS OF EACH 75 MM</b> , WITH 40MM TO 60MM METAL (STONE AGGREGATE) INCLUDING SUPPLYING AND SPREADING GRAVEL/MURRUM OVER THE SOLING/CONSOLIDATED BASE, COMPACTING THE SAME WITH POWER ROLLER INCLUDING NECESSARY LABOUR, WATERING, MATERINGS ETC. COMPLETE, ALL AS PER RELEVANT SPECIFICATIONS AND DIRECTIONS OF BHEL ENGINEER (RATE SHALL BE INCLUSIVE OF ALL LABOUR, MATERIALS ETC., COMPLETE).	M3	647.20	33.74	-	-
12	C10	PROVIDING AND LAYING OF <b>PLAIN CEMENT CONCRETE OF MIX 1:4:8</b> USING 20MM & DOWN SIZE HARD BROKEN GRANITE STONE JELLY FOR DRAINS, CULVERTS, SECURITY ROOM ETC. INCLUDING SHUTTERING, CURING, CONSOLIDATION ETC. COMPLETE AS PER STANDARD SPECIFICATIONS AND AS DIRECTED BY BHEL ENGINEER.	M3	49.00	84.48	-	-

13	C11	PROVIDING AND LAYING OF <b>RCC OF MIX 1:2:4 USING 20MM DOWN SIZE</b> HARD BROKEN GRANITE STONE AGGREGATE FOR RCC SLAB OF CULVERT, RCC COPING OVER BRICK WALL OF DRAIN AND SLAB FOR SECURITY ROOM INCLUDING MECHANICAL MIXING, VIBRATION, CURING, FORM WORK AND CENTERING AS PER DRAWING AND SPECIFICATION AND AS DIRECTED BY BHEL ENGINEER	M3	3.00	116.58	-	-
14	C12	PROVIDING AND FIXING OF <b>REINFORCEMENT</b> INCLUDING CUTTING, BENDING AND FABRICATION OF REINFORCEMENT USING HIGH TENSILE TOR STEEL ( <b>Fe-415</b> ) AS PER DRAWING AND SPECIFICATION AND AS DIRECTED BY BHEL ENGINEER INCLUDING COST OF ALL LEADS, LIFT AND MATERIALS, LABOUR AND MS BINDING WIRE 18/20 GAUGE ETC. COMPLETE.	MT	0.30	1,367.89	-	-
15	C13	PROVIDING BRICK WORK IN CM 1:6 (1 CEMENT & 6 COARSE SAND) USING <b>PPC CONFIRMING TO IS 1489 (Part-I)</b> WITH LOCALLY AVAILABLE BURNT CLAY BRICKS (MIN STRENGTH 75 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR DRAINS, CULVERTS, SECURITY ROOMS AND WHERE REQUIRED INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING , AT ALL ELEVATIONS AND LEVELS , RAKING OUT JOINTS ETC. COMPLETE AND AS DIRECTED BY ENGINEER .	M3	53.40	85.79	-	-
16	C14	PROVIDING BRICK WORK IN CM 1:6 (1 CEMENT & 6 COARSE SAND) USING <b>PPC CONFIRMING TO IS 1489 (Part-I)</b> WITH FLY ASH LIME BRICKS (FAL - MIN STRENGTH 75 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR DRAINS, CULVERTS, SECURITY ROOMS AND WHERE REQUIRED INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING , AT ALL ELEVATIONS AND LEVELS , RAKING OUT JOINTS ETC. COMPLETE AND AS DIRECTED BY ENGINEER .	M3	35.60	91.96	-	-
17	C15	PROVIDING AND <b>PLASTERING WITH CEMENT MORTAR 1:6 (12MM THICK)</b> OVER BOTH INTERNAL AND EXTERNAL FACES OF BRICKWORK AND CONCRETE SURFACES ETC. OF ALL HEIGHTS INCLUDING PREPARING THE SURFACE, RAKING JOINTS, SCAFFOLDING, CURING, COST OF ALL MATERIALS, LABOUR ETC. COMPLETE.	M2	567.00	2.75	-	-
18	C16	40MM THICK <b>COPING</b> OVER THE DRAIN WALL TOP USING <b>MIX - 1:2:4</b>	M3	9.00	105.06	-	-
19	C17	PROVIDING <b>2 MM THICK NEAT CEMENT FINISH</b> OVER CONCRETE BASE FOR FLOORING PAVING AND INTERNAL SURFACE OF BRICK DRAINS ETC.	M2	567.00	0.74	-	-
20	C18	SUPPLYING & FIXING IN POSITION OF <b>RCC HUME PIPE OF NP2</b> WHEREVER DRAIN CROSSES THE ROADS INCLUDING ALIGNING, LEVELLING ETC. COMPLETE AS PER THE DIRECTION OF ENGINEER. INCLUDING P.C. & INCLUDING COLLAR JOINTS, ENCASEMENT WITH CONCRETE 1:3:6 OF 300 MM DIA , ENCASING SHALL BE PAID EXTRA UNDER RESPECTIVE ITEMS OF CONCRETE..			-	-	-
21	(i)	400mm dia	RM	9.00	14.15	-	-

22	C19	PROVIDING AND FIXING <b>BARBED WIRE FENCING</b> AROUND OPEN STORAGE YARD <b>AS PER BHEL DRAWING</b> . POSTS SHALL BE SPACED AT <b>3M CENTRES AND STRUTS AT 30M CENTRES</b> AND AT ALL TURNINGS WITH FOUNDATIONS, SUPPLYING AND FIXING GI BARBED WIRES, 10 HORIZONTAL LINES, TWO DIAGONALS BETWEEN POSTS BY MEANS OF GI STAPLES AS PER STANDARD PRACTICE. THE BARBED WIRE SHALL CONFORM TO IS 278 AND BE MADE OF TWO STRANDS OF GALVANISED TWISTED 2.5MM DIA (12.5 GAUGE) STEEL WIRE WITH FOUR POINT BARS. RATE QUOTED SHALL BE INCLUSIVE OF <b>EXCAVATION, DISPOSAL OF SURPLUS EARTH, CONCRETE (1:3:6), FORM WORK AND ALL MATERIALS, COST OF POSTS, BARBED WIRES, TRANSPORTING, FIXING IN POSITION</b> ETC. INCLUDING COST OF ALL LABOUR AND TWO COATS OF ENAMEL PAINT OF APPROVED SHADE WITH A SHOP COAT OF PRIMER IN ALL STRUCTURAL MEMBERS ETC COMPLETE.	RM	520.80	9.93	-	-
23	C20	<b>REMOVAL OF WILD GROWTH</b> , BUSHES VEGETATIONS AND DISPOSAL AS PER INSTRUCTION WITHIN THE PLANT BOUNDARY <b>(SIZE OF STEM FROM 150MM TO 600MM DIA.)</b>	NOS	15.00	3.66	-	-
24	C21	SUPPLY FABRICATION, AND FIXING IN POSITION OF <b>MS GATES FOR YARD</b> , STEEL DOORS, GRILLED WINDOWS FOR SECURITY ROOMS WITH STRUCTURAL/TUBULAR STEEL FRAMES, STEEL PLATES, ANGLE, CHANNELS, RODS ETC. AS PER BHEL DRAWING INCLUDING COST OF FOUNDATION & POSTS, PAINTING, GLAZING WITH 5.5 MM THICK TOUGHENED GLASS FOR WINDOWS TWO COATS BY SYNTHETIC ENAMEL PAINT OF APPROVED COLOUR AND QUALITY OVER ONE COAT OF RED OXIDE PRIMER, COST OF ALL MATERIALS, LABOUR, TRANSPORT ETC. COMPLETE. ONLY WEIGHT OF STRUCTURAL STEEL SHALL BE MEASURED FOR PAYMENT.	MT	2.00	1,514.95	-	-
25	C22	SUPPLYING AT SITE OF WORK, TRENCHING, CARRYING TO TRENCHES AND LOWERING INTO TRENCHES AND ON WALLS, FLOORS ETC., LAYING TO PROPER ALIGNMENT, GRADE, LEVEL AND JOINTING WITH ALL NECESSARY SPECIALS, TEES, ELBOWS, UNIONS AND APPURTENANCES AND INCLUDING PRESSURE TESTING OF THE FOLLOWING SIZES OF <b>GI PIPE LINES</b> INCLUDING REFILLING OF TRENCHES WITH EXCAVATED EARTH IN LAYERS, WATERING AND RAMMING AND RESTORATION OF GROUND, ALL COMPLETE AS PER SPECIFICATIONS. RATE TO INCLUDE EARTH WORK EXCAVATION IN ALL SOILS, EXCEPT HARD ROCK REQUIRING BLASTING , SHORING, BALLING OR PUMPING OUT OF WATER WHEREVER REQUIRED, REMOVAL OF SLUSH ETC. REMOVING AND DEPOSITING SURPLUS EARTH AS DIRECTED BY THE BHEL ENGINEER INCLUDING ALL LEADS AND LIFTS AS PER SITE CONDITIONS.			-	-	-
26	(i)	40MM DIA GI PIPE LINE WITH ALL SPECIALS	RM	100.00	6.72	-	-
27	(ii)	25MM DIA GI PIPE LINE WITH ALL SPECIALS	RM	30.00	4.91	-	-
28	C23	PROVIDING <b>PRECAST REINFORCED CONCRETE SLEEPER</b> OF SIZE 300MM WIDE X150MM DEPTHX1200MM LENGTH USING 1:2:4 CONCRETE MIX INCLUDING MOULDING AND REINFORCEMENT (2-10 MM DIA T&B AND STIRRUPS @ C/C 250MM).	EACH	600.00	14.73	-	-
		<b>SUB-TOTAL VALUE OF SECTION C- CIVIL WORKS</b>			-	-	-
	<b>E</b>	<b>ELECTRICAL / ILLUMINATION OF OPEN STORAGE YARD</b>			-	-	-

30	E1	<p>SUPPLY &amp; INSTALLING <b>3 PHASE METERING AND POWER DISTRIBUTION BOARD</b> COMPLETE WITH :</p> <p>(1) INCOMING SFU TPN 400 AMPS- 1NO,  (2) OUTGOING SFU TPN 200 AMPS -2NOS.  (3) OUTGOING SFU TPN 100 AMPS -2NOS.  (4) OUTGOING SFU TPN 32 AMPS -2NOS.</p> <p>3 PHASE ELECTRONIC ENERGY METER - BHEL / L&amp;T / GEC MAKE.  AMMETER, VOLTMETER AND SELECTOR SWITCHES FOR BOTH - AE AND KAYCEE MAKE.</p> <p>PHASE INDICATION LAMPS, HRC FUSES FOR IC AND OG FEEDERS, CABLE GLANDS, POWER TERMINALS FOR CABLES TERMINATION, CABLE LUGS AND PROVISION FOR DOUBLY EARTHING THE PANEL ENCLOSURE.</p> <p>PANEL ENCLOSURE SHALL BE MADE OF SHEET METAL THICKHNNNESS NOT LESS THAN 1.6 MM AND SUITABLE FOR OUT DOOR INSTALLATION, MODULAR CONSTRUCTION, HINGED DOOR WITH LOCKING ARRANGEMENT, BASE FRAME, SHOULD HAVE SLOPPED CANOPY, DULY PAINTED WITH FIRST COAT OF PRIMER AND TWO COATS OF SYNTHETIC ENAMEL PAINT (INTERIOR WITH WHITE PAINT AND EXTERIOR WITH LIGHT GREY AS PER SHADE 5, IS 630) INTERNAL POWER DISTRIBUTION TO DEVICES SHALL BE WITH AL BUSBARS OR COPPER FLEXIBLE SINGLE CORE PVC CABLES OF 1.1 KV GRADE, CONTROL WIRING WITH 1.5 SQMM, SUITABLE STOOL MADE OUT OF MS STRUCTURE OF 1.2 METER HIGH FOR MOUNTING OF PANEL WITH ANCHORING ARRAGEMENT AT FOUNDATION, SUITABLE FOR BOTTOM ENTRY OF CABLES.</p>	NO	1.00	1,834.39	-	-
31	E2	<p>PROVIDING <b>SUITABLE FOUNDATION FOR MOUNTING AC DISTRIBUTION BOARD</b> AS SPECIFIED IN SL. NO.15, INSTALLATION &amp; COMMISSIONING OF PANEL</p>	NO	1.00	113.37	-	-
32	E3	<p>SUPPLY OF <b>415 VOLT AC , 3 PHASE /FOUR WIRE POWER FEEDER PILLAR BOARD</b> , BOARD SHALL BE COMPRISES OF THREE NUMBER AND ONE NUMBER ALUMINIUM BUS BAR FOR PHASE &amp; NEUTRAL RESPECTIVELY. BUS BAR RATING SHALL BE 200 AMPS AND SHALL BE MOUNTED ON EPOXY INSULATOR OF 1.1 KV GRADE, EACH BUS BAR SHALL HAVE DRILLED HOLE FOR CONNECTING INCOMING / OUT GOING CABLES, PROVISION FOR EARTHING THE PANEL ENCLOSURE. PANEL ENCLOSURE SHALL BE MADE OF SHEET METAL THICHNNESS NOT LESS THAN 1.6 MM AND SUITABLE FOR OUT DOOR INSTALLATION, HINGED DOOR WITH LOCKING ARRAGEMENT , BASE FRAME , SHOULD HAVE SLOPPED CANOPY, DULY PAINTED WITH FIRST COAT WITH PRIMER AND TWO COATS OF SYNTHETIC ENAMEL PAINT ( INTERIOR WITH WHITE PAINT AND EXTERIOR WITH SMOKE GREY AS PER IS), SUITABLE STOOL MADE OUT OF MS STRUCTURE OF 1.2 METER HIGH FOR MOUNTING OF PANEL WITH ANCHORING ARRAGEMENT AT FOUNDATION .</p>	NO	1.00	341.08	-	-

33	E4	PROVIDING <b>SUITABLE FOUNDATION FOR MOUNTING 415 VOLT AC POWER FEEDER PILLAR BOARD</b> AS SPECIFIED IN SL. NO.12 , INSTALLATION & COMMISSIONING OF PANEL	NO	1.00	113.37	-	-
34	E5	SUPPLYING, INSTALLATION & COMMISSIONING OF <b>SODIUM VAPOUR LAMP STREET LIGHT FITTING 150 WATT</b> SSG-2315 IH OF CROMPTON OR SIMILAR PHILIPS MAKE, COMPLETE WITH ONE PIECE CANOPY, INTEGRAL CONTROLGEAR COMPRISING OF COPPER WOUND CHOKE , IGNITOR , HPF CAPACITOR, HPSV LAMP AND SUITABLE FOR DIRECTLY SLIPPING OVER LIGHT MOUNTING BRACKET MADE OUT OF 40 MM OD PIPE AND SUITABLE FOR LAMPS, CONTROL GEAR BOX CABLING & TERMINATION OF ITEMS SUPPLIED (TO BE MOUNTED ON 9 MTR POLE - ITEM NO. E6).	NOS.	8.00	89.45	-	-
35	E6	SUPPLY AND ERECTING <b>STEEL TUBULAR SWAGED POLES, 9 MTR</b> LONG MADE OF SHEET STEEL HAVING ULTIMATE TENSILE STRENGTH 42 KG F/SQ.MM CONFIRMING TO BIS :2713 (RPART-II) COMPLETE WITH 300X300X6 MM THICK M. S. BASE PLATE FOR WELDING AT SITE AND SIZE AS PER CONFIGURATION GIVEN IN BIS FOR 410 SP-28 (113 KG- POLE WEIGHT ) WITH 1.5 MTR. DEEP EXACAVATION, CONCRETING IN 1:4:8 RATIO SIZE 45 CMS X 45 CMS X 150 CMS AND POLE PLINTH IN 1:3:6 CEMENT CONCRETING HAVING 300 MM HEIGHT AND 300 MM DIA .INCLUDING DOUBLE EARTHING OF POLE WITH SUITABLE ARRANGEMENT, DULY PAINTED WITH TWO COATS OF RED OXIDE PAINT AND ONE COAT OF ALUMINIUM PAINT TO BE APPLIED AFTER ERECTION; THE LENGTH OF POLE BELOW GROUND TO BE PAINTED WITH TWO COATS OF BLACK BITUMINUS PAINT. THE POLE SHALL BE COMPLETE WITH JB, FUSE AND MINOR FABRICATION AS BELOW : <b>I)</b> DRILING 20 MM DIA HOLE AT ABOUT 2.5 MTR FROM GROUND LEVEL FOR WIRE LEADS FROM JUNCTION BOX TO LIGHT FIXTURE . <b>II)</b> DRILING 15MM DIA HOLES AT ABOUT 0.7 AND AT 2.5 MTR FROOM GROUND LEVEL AND WELDING 12 MM NUTS FOR USING A 12 MM G.I BOLT FOR FASTENING EARTH CONDUCTERS. <b>III)</b> WELDING REQUIORED HOLES FOR FIXING POLE CAP OF STREET LIGHT BRACKET. <b>IV)</b> WELDING DIAMETRALLY 10 MM M.S. ROUND 30 MM BELOW POLE TOP EDGE FOR CLIPPING WIRE LEADS .	NOS.	13.00	201.70	-	-

36	E7	<b>SUPPLY INSTALLATION &amp; COMMISSIONING OF WEATHER PROOF FLOOD LIGHT LUMINIARIES</b> OF CROMPTON MAKE (FBD 1425/40- WITH HIGH PRESSURE SODIUM VAPOUR LAMP 1X 400 WATT ALONG WITH NON- INTEGRAL TYPE CONTROL GEAR BOX HAVING ADEQUATE NUMBER OF TERMINAL CONNECTORS FOR TERMINATING TWO CABLE OF 3X 10 SQMM AL AND SUITABLE FOR OUT DOOR APPLICATION ) OR EQUIVALENT IN BAJAJ, PHILLIPS ONLY , INCLUDING SUPPLY & FIXING CABLES BETWEEN THE CONTROL GEAR BOX AND LIGHT LUMINIARIES AND MOUNTING FIXTURE WITH HARDWARE FOR MOUNTING OF LIGHT LUMINIARIES AND CONTROL GEAR BOX ON POLE TYPE 410 SP-28.	NOS.	5.00	97.98	-	-
37	E8	<p>ENGINEERING, SUPPLY AND INSTALLATION OF <b>LATTICE TYPE STRUCTURAL TOWER OF HEIGHT 15M</b>. TOWER SHALL BE FABRICATED IN THREE SECTION OF EQUAL LENGHT OF 5 METER EACH.PREPARATION OF FABRICATION DRAWING &amp; ITS APPROVAL FROM BHEL. BRIEF DETAILS ARE AS GIVEN BELOW :</p> <p>TOWER SHALL BE ADEQUATELY STRONG TO WITHSTAND HEAVY WIND. NO STAY/GUY ROPES SHALL BE TIED WITH IT AT TOP OF THE TOWER. ADEQUATE SIZE OF PLATFORM SHALL BE PROVIDED WITH RAILING AROUND THE PLATFORM FOR MOUNTING OF LIGHTING LUMINIARIES (TENTATIVELY EIGHT FITTING ON EACH TOWER) AND MAINTENANCE PURPOSE , FLOOR OF PLATFORM SHALL BE COVERED WITH CHEQURED PLATE. A LADDER ALONG WITH PROTECTIVE CAGE SHALL BE PROVIDED ALONG THE HEIGHT OF TOWER. IT SHOULD BE PAINTED WITH ONE COAT RED OXIDE PRIMER AND TWO COATS OF ALUMINIUM PAINT AFTER INSTALLATION. EACH TOWER SHALL BE PROVIDED WITH POWER DISTRIBUTION BOX OUT DOOR TYPE AND SHOULD HAVE PROVISION OF TERMINATING ONE NUMBER INCOMING AND EIGHT OUT GOING CABLE .ERECTING AT SITE INCLUDING ALL CIVIL WORKS LIKE EXCAVATION, CASTING OF FOUNDATION OF REQUIRED SIZE AND DEPTH WITH CONCRETE OF GRADE 1:2:4 WITH BASE PLATES, GROUTING OF LATTICE STRUCTURE, ONE EARTH PIT AS PER BIS STANDARD IS TO BE MADE NEAR THE TOWER AND EARTHING OF THE TOWER INCLUDING SUPPLY OF MATERIAL ETC. COMPLETE.</p> <p>SUPPLY, INSTALLATION &amp; COMMISSIONING OF FLOOD LIGHT LUMINIARIES OF BAJAJ MAKE TYPE BGENF 22 OR EQUIVALENT IN CROMPTON , PHILLIPS ONLY, EACH LUMINIARIES SHALL BE WITH TWO NUMBER 400 WATT HPSV LAMPS AND CONTROL GEAR BOX INTEGRAL/ NON INTEGRAL TYPE INCLUDING CABLES FOR INTERCONNECTION. (THESE FITTING SHALL BE MOUNTED ON LIGHTING MAST /TOWER , ON EACH TOWER 8 SUCH FITTING SHALL BE MOUNTED).</p>	NOS.	1.00	6,817.62	-	-
38	E9	<b>SUPPLY OF CABLES 3 -1/2 COREX 185 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 ( PART -I)	RM	300.00	12.10	-	-

39	E10	INSTALLATION OF <b>CABLES 3 -1/2 COREX 185 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE CONFIRMING TO IS 1554 ( PART - I) INCLUDING LAYING OF CABLE BELOW GROUND , EXCAVATION OF TRENCH OF 600 MM DEPTH IN ALL KIND OF SOIL, TERMINATION OF CABLES CORES WITH CRIMP TYPE LUGGS, PROVIDING SAND LAYER BELOW/ ABOVE THE CABLE, BRICK LAYING BOTH SIDE /ABOVE THE ABOVE THE CABLE AND BACK FILLING ETC. CABLES ARE TO BE LAID FROM TRANSFORMER SUB STATION TO 415 VOLT AC DISTRIBUTION BOARD.	RM	300.00	4.01	-	-
40	E11	SUPPLY OF <b>CABLES 3-1/2 CORE X 95 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 ( PART -I) (TO BE USED FORM SHEDS AS WELL AS OPEN STORAGE YARD WHEREVER REQUIRED)	RM	192.00	7.89	-	-
41	E12	INSTALLATION OF <b>CABLES 3 -1/2 CORE X 95 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE CONFIRMING TO IS 1554 ( PART - I) INCLUDING LAYING OF CABLE BELOW GROUND, EXCAVATION OF TRENCH OF 600 MM DEPTH IN ALL KIND OF SOIL, TERMINATION OF CABLES CORES WITH CRIMP TYPE LUGGS, PROVIDING SAND LAYER BELOW/ ABOVE THE CABLE, BRICK LAYING BOTH SIDE /ABOVE THE ABOVE THE CABLE AND BACK FILLING ETC COMPLETE. CABLES ARE TO BE LAID FROM 415 VOLT AC DISTRIBUTION BOARD TO FEEDER PILLAR BOARD .	RM	192.00	3.88	-	-
42	E13	SUPPLY OF <b>CABLES 3 -1/2 COREX 35 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 (PART -I)	RM	96.00	3.66	-	-
43	E14	INSTALLATION OF <b>CABLES 3 -1/2 COREX 35 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE CONFIRMING TO IS 1554 ( PART -I) INCLUDING LAYING OF CABLE BELOW GROUND , EXCAVATION OF TRENCH OF 600 MM DEPTH IN ALL KIND OF SOIL, TERMINATION OF CABLES CORES WITH CRIMP TYPE LUGGS, PROVIDING SAND LAYER BELOW/ ABOVE THE CABLE, BRICK LAYING BOTH SIDE /ABOVE THE CABLE AND BACK FILLING ETC. CABLES ARE TO BE LAID FROM FEDDER PILLER TO HIGH MAST TOWER.	RM	96.00	3.72	-	-
44	E15	SUPPLY OF <b>CABLES 2 CORE X 10 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE CONFIRMING TO IS 1554 ( PART -I)	RM	2475.00	1.50	-	-

45	E16	INSTALLATION OF <b>CABLES 2 CORE X 10 SQMM ALUMINIUM ARMoured</b> PVC INSULATED CABLE CONFIRMING TO IS 1554 ( PART - I) INCLUDING LAYING OF CABLE BELOW GROUND , EXCAVATION OF TRENCH OF 600 MM DEPTH IN ALL KIND OF SOIL, TERMINATION OF CABLES CORES WITH CRIMP TYPE LUGGS, PROVIDING SAND LAYER BELOW/ ABOVE THE CABLE, BRICK LAYING BOTH SIDE /ABOVE THE ABOVE THE CABLE AND BACK FILLING ETC COMPLETE. CABLES ARE TO BE LAID FROM 415 VOLT AC POWER FEEDER PILLAR BOARD TO LIGHTING POLES & POLE TO POLE.	RM	2475.00	3.72	-	-
46	E17	SUPPLY AND INSTALLATION <b>SUITABLE ELECTRICAL PUMP FOR MINIMUM HEAD OF 10M (BUT NOT LESS THAN 2 H.P.)</b> OF REPUTED MANUFACTURER LIKE <b>SUGUNA/ CRI/ KILOSKAR/ SHAKTI/SHARP/ CROMPTON</b> INCLUDING ALL ACCESSORIES, STARTER, D.B., ETC. AND TO BE CONNECTED TO OVER HEAD TANK FROM WATER STORAGE TANK BELOW G.L. GURRANTY/WARRANTY CARD TO BE SUBMITTED TO BHEL. SUCTION, DISCHARGE GI PIPES SHALL BE PAID SEPERATLY UNDER RELEVANT ITEMS.	NO	1	300.93	-	-
		<b>SUB- TOTAL OF SECTION E- ILLUMINATION WORK</b>				-	-
		<b>TOTAL AMOUNT FOR COMPLETE WORK 'A'</b>				-	-
<b>NOTES:</b>							
1	Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.						
2	Contractor shall fully understand description and Specifications of items mentioned in BOQ.						
3	Conditional price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.						
4	Quantities mentioned in rate schedules are approximate only and liable for variation on either side depending upon site / design requirement. The tentative contract value (CV) of entire scope of work shall be calculated as per finally quoted / accepted rates & the Quantities indicated in BOQ cum Rate Schedule .						
5	Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same.						
6	In case of any mis-match in rate and amount on price discrepancy, the same will be dealt as per clause no. 1.4 of GCC.						

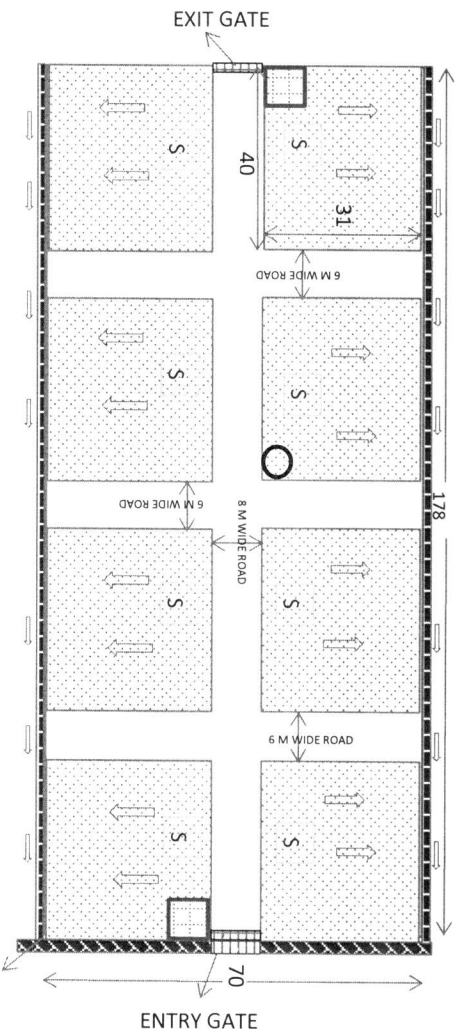


Note:

- 01 No. storage Block shall be developed as the Monsoon Storage Block by providing 100 mm thick Murrum and 150 thick WBM as per drawing.
- All other storage block shall be developed by proper levelling, grading, consolidation and proding slopes towards periferal darins.
- Road Crossing Culvert (RCC Hume Pipe over the drain), shall be provided wherever the drain crosses the road.
- One 8m Main Road and Three 6m Brach Roads to be provided.
- Security Cabins (3mX3m)- 02 Nos. to be located near the Entry & Exit gate as shown.
- For Sectional Details refer the respective drawings.
- 600 Nos. Concrete Sleepers of size 1200mmX300mmX150mm to be provided

**LEGENDS**

	CULVERT
	STORGE BLOCKS OF SIZE 31M x 40M
	DRAINS 0.4M DEPTH
	DRAINS 0.5M DEPTH
	ENTRY / EXIT GATE
	SECURITY CABIN 3M X3M
	LIGHTING MAST

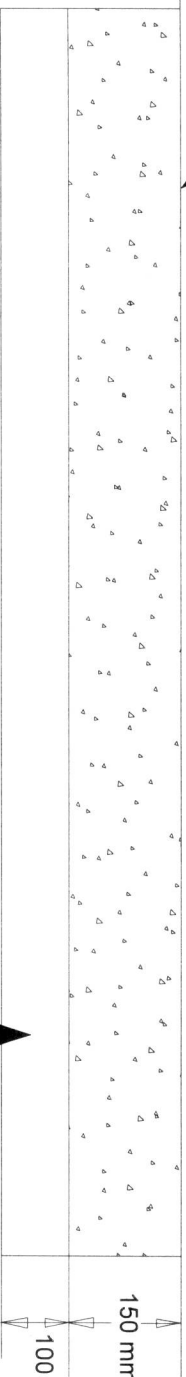


To be extended to the nearest existing drain

<b>PROJECT:</b>	2X660 MW ESP TANDA THERMAL POWER PLANT
<b>TITLE:</b>	TYPICAL LAYOUT FOR OPEN STORAGE YARD- 12500 SQM
<b>DRG NO.</b>	BHE/PW/OY-01
<b>OWNER:</b>	BHEL-PSNR-NOIDA

WBM IN TWO LAYERS-EACH  
75 MM THICK(COMPACTED)

GL



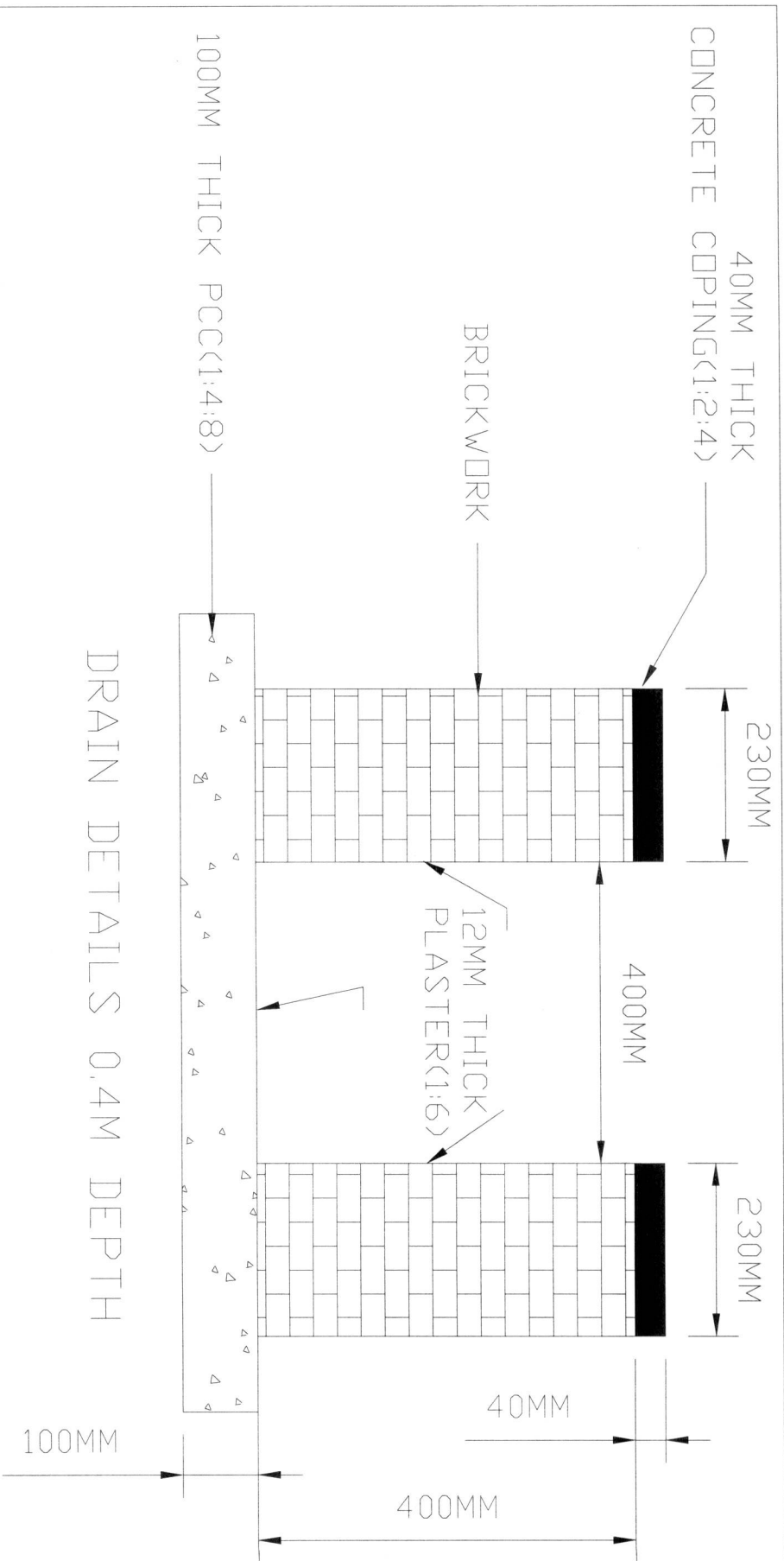
STORAGE YARD BLOCK 31M WIDE

MURRUM FILLING IN TWO  
LAYER EACH 50MM  
THICK(COMPACTED)

PROJECT: TYPICAL SECTION

TITLE: SECTION OF STORAGE YARD BLOCK

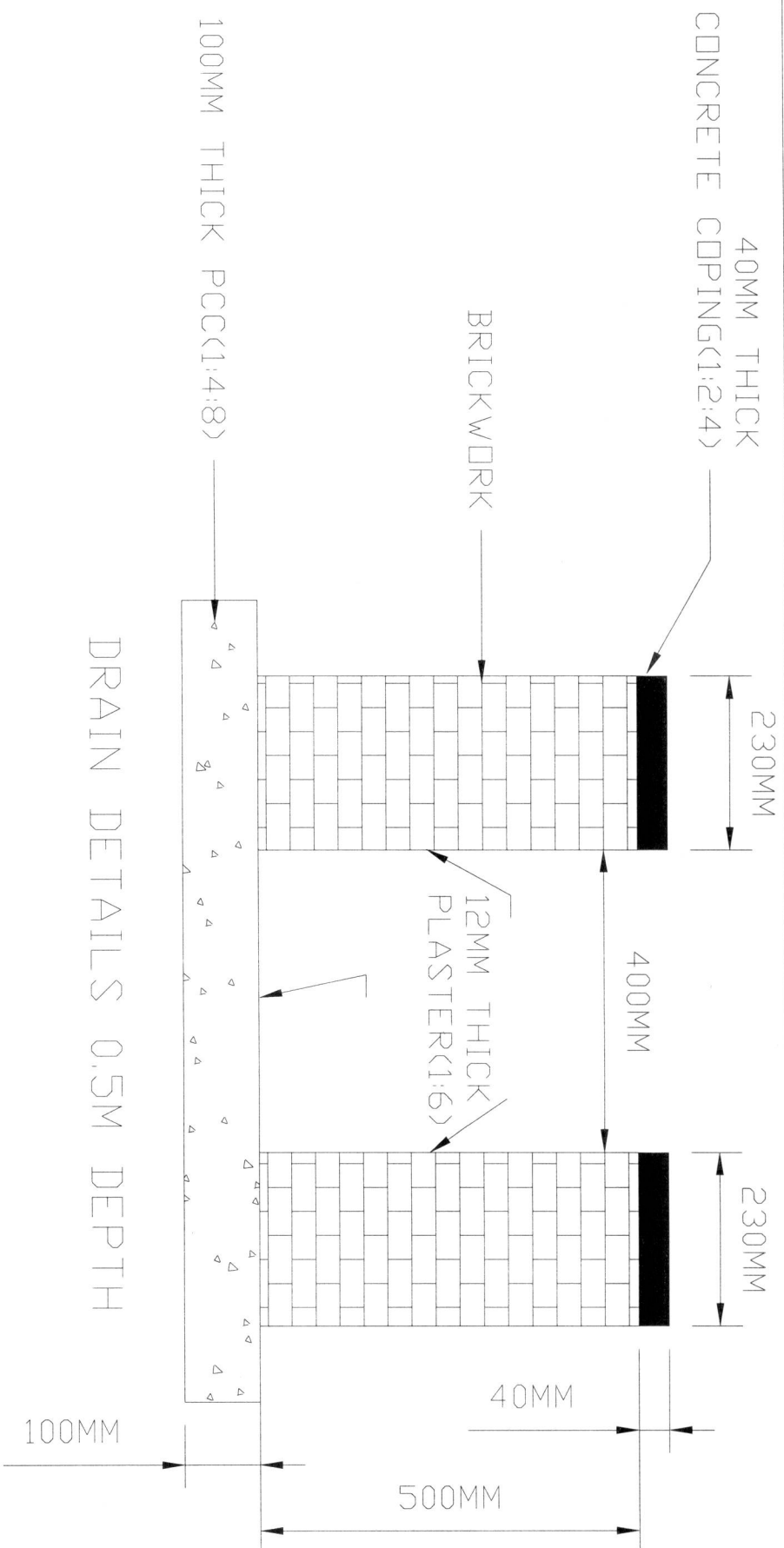
DRG. NO. : BHE/PW/OY - 02



DRAIN DETAILS 0.4M DEPTH

# DETAILS OF 0.4M DEPTH DRAIN

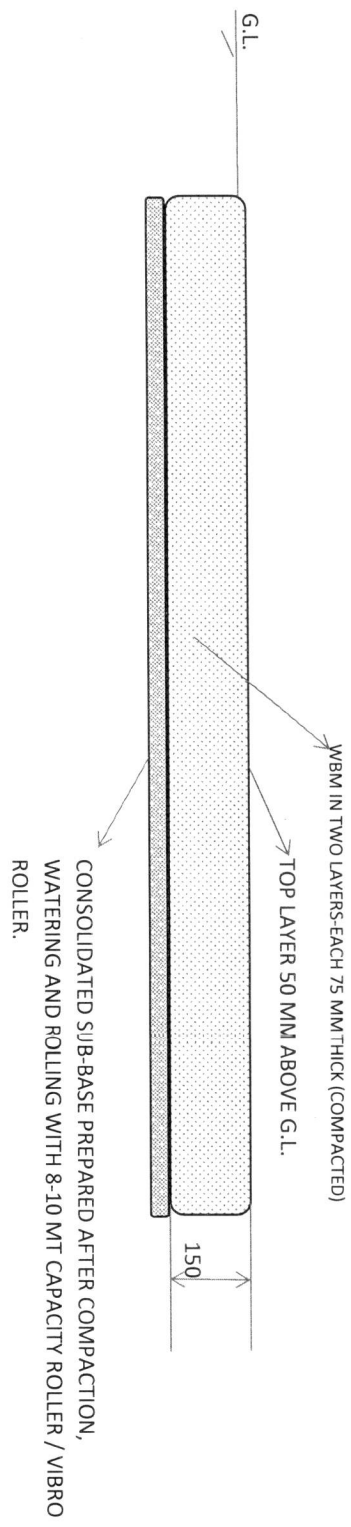
PROJECT: TYPICAL DRAWING
TITLE: DETAILS OF 0.4M DEPTH DRAIN
DRG. NO. BHE/PW/OY - 03



DRAIN DETAILS 0.5M DEPTH

# DETAILS OF 0.5M DEPTH DRAIN

PROJECT: TYPICAL DRAWING
TITLE: DETAILS OF 0.5M DEPTH DRAIN
DRG. NO. BHE/PW/OY - 04



SECTIONAL DETAILS OF 8 M / 6 M WIDTH WBM ROAD

NOTE:

1) CAMBER SHALL BE MAINTAINED FROM THE SUBGRADE LEVEL

PROJECT:	2X660 MW ESP TANDA THERMAL POWER PLANT
TITLE:	SECTION OF 8M / 6M WIDE WBM ROAD
DRG. NO.	BHE/PW/OY-05
OWNER	BHEL PSNR NOIDA



**BARBED WIRE FENCING**

3000 c/c

ENLARGED DETAILS AT 'X'

ENLARGED DETAILS AT 'Y'

VERTICAL ANGULAR POST  
ISA-50X50X6-2350MM LONG

75

125

P.C.C. - 300X300X450MM  
(1:3:6)

125

SUPPORTING ANGLE  
ISA-50X50X6

1500

450

125.00

300

VERTICAL ANGLE POST  
ISA-50X50X6-2350MM LONG

1500

30.00 M. c/c

12.5 BARBED WIRES  
12.5 GAUGE, 2 STRANDS

ENLARGED DETAILS AT 'Y'

450

1500

-VERTICAL ANGLE POST  
ISA-50X50X6-2350MM LONG

SUPPORTING ANGLE  
ISA-50X50X6

ENLARGED  
DETAILS AT 'Y'

VERTICAL ANGULAR  
POST ISA-50X50X6-  
2350MM LONG

2000 ABOVE GROUND LEVEL

350MM BELOW GROUND LEVEL

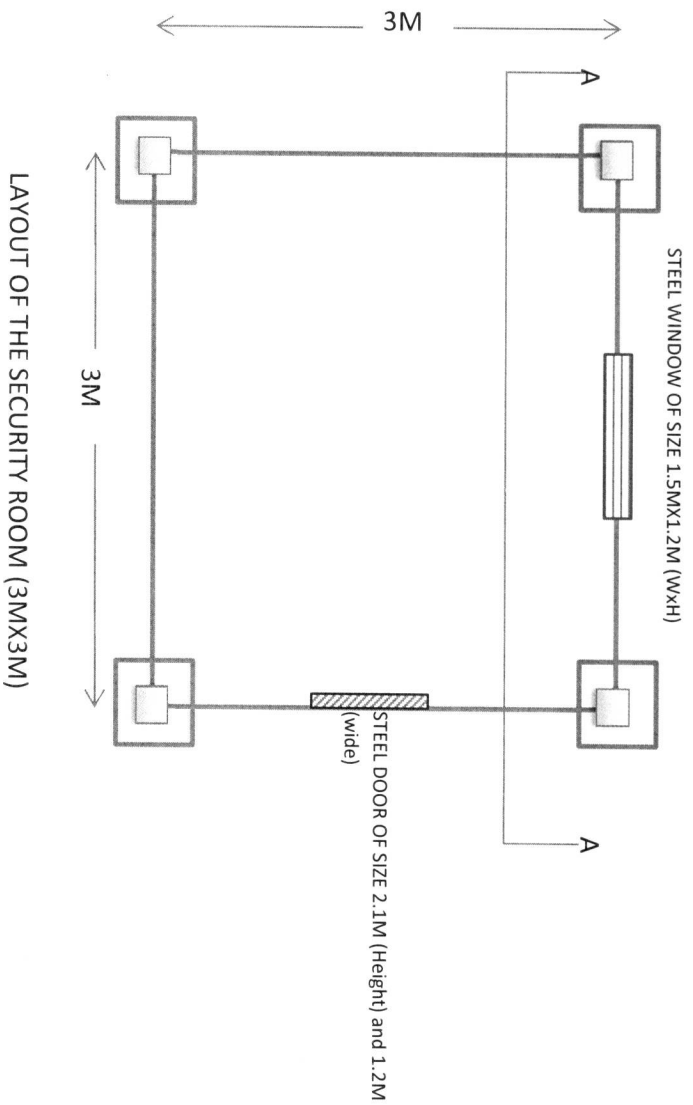
PROJECT: TYPICAL DRAWING

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TITLE: DETAILS OF BARBED WIRE FENCING

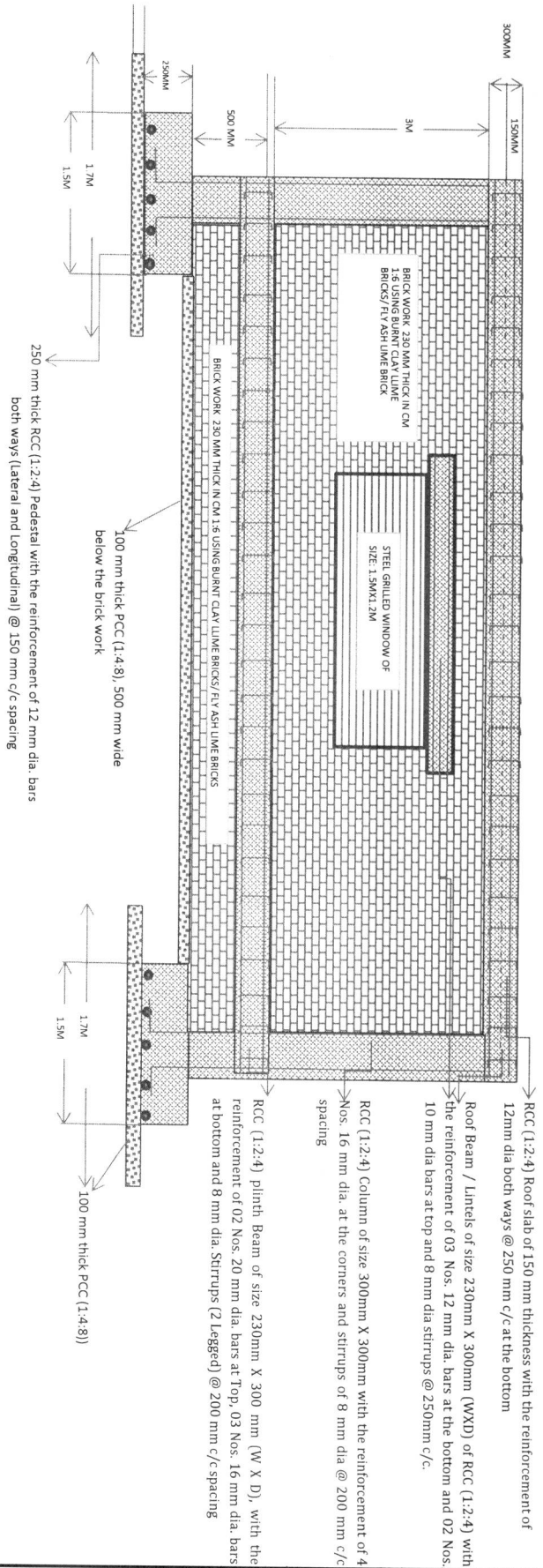
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DRG. NO. BHE/PW/OY - 11



PROJECT:	2X660 MW ESP TANDA THERMAL POWER PLANT
TITLE:	DETAILS OF SECURITY CABIN FOR OPEN YARD
DRG. NO.	BHE/PW/SR-01 (SHEET 01 OF 02)
OWNER	BHEL PSNR NOIDA





SECTION A-A

PROJECT:	2X660 MW ESP TANDA THERMAL POWER PLANT
TITLE:	DETAILS OF SECURITY CABIN FOR OPEN YARD
DRG. NO.	BHE/PW/SR-01 (SHEET 02 OF 02)
OWNER	BHEL PSNR NOIDA