
TENDER SPECIFICATION

TENDER NO. BHEL/NR/SCT/UNCHAHAR-IV/ENABLING/994

FOR

Construction & Development of 03 nos. Closed Storage Shed (Size: 900 SQM) including Internal/ External electrification work complete at 1X500 MW FGUTPP (Stage-IV) Unchahar.

PART I – TECHNICAL BID



Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)



ISO 9001, ISO 14001,
OHSAS 18001 & SA 8000
certified company
SubContract and Purchase Deptt.

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)
Phone: 0091-0120- 2416292/ 2416407
Fax 091-0120-2416528
Email: mkj@bhelpsnr.co.in/ rb@bhelpsnr.co.in

TENDER NO. BHEL/NR/SCT/UNCHAHAR-IV/ENABLING/994

IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

Rev 01
1st Jun
2012

NOTICE INVITING TENDER

(Document No PS:MSX:NIT)

Bharat Heavy Electricals Limited



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NOTICE INVITING TENDER (NIT)

NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES

OR

PURCHASE TENDERS FROM THIS OFFICE ALSO

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To

Dear Sir/Madam

Sub : NOTICE INVITING TENDER

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

1.0 Salient Features of NIT

| SL NO | ISSUE | DESCRIPTION |
|-------|-------------------------------------|--|
| i | TENDER NUMBER | BHEL/NR/SCT/UNCHAHAR-IV/ENABLING/994 |
| ii | Broad Scope of job | Construction & Development of 03 nos. Closed Storage Shed (Size: 900 SQM) including Internal/ External electrification work complete at 1X500 MW FGUTPP (Stage-IV) Unchahar. |
| 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> <i>Applicable</i> |
| b | Volume-IB | <i>Special Conditions of Contract (SCC)</i> <i>Applicable</i> |
| c | Volume-IC | <i>General Conditions of Contract (GCC)</i> <i>Applicable</i> |
| d | Volume-ID | <i>Forms and Procedures</i> <i>Applicable</i> |
| e | Volume-II | <i>Price Schedule (Absolute value).</i> <i>Applicable</i> |
| iv | Issue of Tender Documents | <ol style="list-style-type: none"> <u>Sale from BHEL PS Regional office at :</u> Start : 07/05/15 , Time : 0900 HRS Closes: 29/05/15 , Time :1200 HRS From BHEL website (www.bhel.com) Tender documents will be available for downloading from website till due date of submission <i>Applicable</i> |
| v | DUE DATE & TIME OF OFFER SUBMISSION | Date : 29/05/15 , Time : 1500 HRS Place : Noida <i>Applicable</i> |
| vi | OPENING OF TENDER | Date : 29/05/15 <i>(Within 2 hours of the latest due date and time of offer submission).</i> <i>Applicable</i> |

| | | | |
|------|--|--|-----------------|
| | | Notes: (1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender | |
| vii | EMD AMOUNT | Rs 2,00,000/- | Applicable |
| viii | COST OF TENDER | Rs 2000/-. | Applicable |
| ix | LAST DATE FOR SEEKING CLARIFICATION | Date: 18/05/2015 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) and not in the newspapers . Bidders to keep themselves updated with all such information | |

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**
- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at 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
- 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. For other details and for 'One Time EMD' please refer General Conditions of Contract.
- 5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:
- PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD/COST of TENDER)' in two separate sealed and superscribed envelopes (ENVELOPE-I & ENVELOPE-II)
 - PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
 - One set of tender documents shall be retained by the bidder for their reference

- 6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below.
(All pages to be signed and stamped)

| Sl no | Description | Remarks |
|-----------------|--|---------------|
| Part-I A | | |
| | <p>ENVELOPE – I superscribed as : PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:-</p> | |
| i. | Covering letter/Offer forwarding letter of Tenderer. | |
| ii. | <p>Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p>Note:</p> <p>a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.</p> <p>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.</p> <p>i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p>ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p> | |
| iii. | <p>Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.</p> <p>It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.</p> | |
| iv. | All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT. | |
| v. | Integrity Pact Agreement (Duly signed by the authorized signatory) | If applicable |
| vi. | Duly filled-in annexures, formats etc as required under this Tender Specification/NIT | |
| vii. | Notice inviting Tender (NIT) | |
| viii. | Volume – I A : <u>Technical</u> Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc | |
| ix. | Volume – I B : Special Conditions of Contract (SCC) | |
| x. | Volume – I C : General Conditions of Contract (GCC) | |
| xi. | Volume – I D : Forms & Procedures | |
| xii. | Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item | |
| xiii. | Any other details preferred by bidder with proper indexing. | |

| PART-I B | | |
|-----------------|--|--|
| | <p>ENVELOPE – II superscribed as: PART-I (EMD/COST of TENDER) TENDER NO :</p> | |

| | | |
|----|---|--|
| | NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:- | |
| i. | 1. Earnest Money Deposit (EMD) in the form as indicated in this Tender OR Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender 2. Cost of Tender (Demand Draft or copy of Cash Receipt as the case may be) | |

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

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

SPECIAL NOTE: All documents/ annexures submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

- 7.0 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 (ie $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$)
- 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 ' (ie $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-N}$). 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 (ie ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots + S_N$ ')
- Overall Performance Rating ' R_{BHEL} ' for the similar Package/Packages (under execution/** executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL):

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

= -----
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 (Σ) of columns (iii) to (ix) |
| 2 | Number of Months for which ‘Monthly Performance Evaluation’ as per relevant formats should have been done in the ‘period of assessment for corresponding similar Package (as in row 1) | T ₁ | T ₂ | T ₃ | T ₄ | T ₅ | ... | T _N | Sum (Σ) of columns (iii) to (ix) = T_T |
| 3 | Monthly performance scores for the corresponding period (as in Row 2) | S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1} | S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2} | S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3} | S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4} | S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5} | | S _{N-1} , S _{N-2} , S _{N-3} , S _{N-4} , ... S _{N-TN} | ----- |
| 4 | Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3) | S ₁ | S ₂ | S ₃ | S ₄ | S ₅ | ... | S _N | Sum (Σ) of columns (iii) to (ix) = S_T |

ii) Calculation of Overall ‘Performance Rating’ (R_{BHEL}) in case ‘similar Package/Packages’ for the tendered scope ARE NOT AVAILABLE, during the ‘Period of Assessment’:

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

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

In case, R_{BHEL} cannot be calculated as above, then Bidder shall be treated as ‘NEW VENDOR’. Further eligibility and qualification of this bidder shall be as per definition of ‘NEW VENDOR’ described in ‘Explanatory Notes’

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

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

III. 'Assessment of Capacity of Bidder':

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

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

Note:

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

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if $P \leq P_{Max}$
(where P is calculated as per clause 9.1)

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 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'.

- 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_{BHEL}'** 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 list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.

- 27.0 BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope 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.

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, or before price bid opening, attested copies of either EM-II certificate having deemed validity (two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with CA certificate (format enclosed as Annexure - 4) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or Small) where the deemed validity of EM-II is over. Date to be reckoned for determining the deemed validity will be last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.

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

No benefits shall be applicable for that particular enquiry if the required documents are not submitted before price bid opening.

30.0 Order of Precedence

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

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

for BHARAT HEAVY ELECTRICALS LTD
(SCT)

Enclosure

01. Annexure-1: Pre Qualifying criteria.
02. Annexure-2: Check List.
03. Annexure-3: Modification / Deletions in Standard Clause of General Conditions of Contract (GCC) or Special Conditions of Contract (SCC)
04. Annexure-4: Chartered Accountant certificate for MSMED
05. Annexure-5: General Terms and Conditions of Reverse Auction (RA)
06. Annexure-6: Authorization of representative who will participate in the online Reverse Auction Process
07. Other Tender documents as per this NIT.

ANNEXURE - 1**PRE QUALIFYING REQUIREMENTS**

| | |
|-----------|---|
| JOB | Construction & Development of 03 nos. Closed Storage Shed (Size: 900 SQM) including Internal/ External electrification work complete at 1X500 MW FGUTPP (Stage-IV) Unchahar. |
| TENDER NO | BHEL/NR/SCT/UNCHAHAHAR-IV/ENABLING/994 |

| PRE QUALIFICATION CRITERIA | | | |
|-----------------------------------|---|--|---------------------------------|
| Sl. No. | Name and Description of qualifying criteria | Bidders claim in respect of fulfilling the PQR Criteria | |
| | | | Page No. of Supporting document |
| A | Submission of Integrity Pact duly signed | NOT APPLICABLE | |
| B | Assessment of the capacity of the Bidder as per Sl. No. 9 of NIT | APPLICABLE | By BHEL |
| C | <u>Technical</u> <u>Bidder who wish to participate should have:</u> Experience of having successfully completed Similar Works 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 costing not less than the amount equal to Rs. 76 Lacs. OR C-1.2 Two (02) similar completed works costing not less than the amount equal to Rs. 95 Lacs. OR C-1.3 One (01) similar completed work costing not less than amount equal to Rs. 152 Lacs. | APPLICABLE | |
| D | <u>Financial</u> <u>TURNOVER</u> Bidders must have achieved an average annual financial turnover (Audited) of Rs. 57 Lakhs or more over last three Financial Years (FY) i.e. (2011-12, 2012-13, 2013-14). 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. | APPLICABLE | |

| | | | |
|-----|---|-----------------------|--|
| D-2 | <p><u>NETWORTH</u></p> <p>Net worth of the Bidder based on the latest Audited Accounts as furnished for 'D-1' above should be positive.</p> <p>Net Worth = Paid up share capital + Reserves.</p> <p>(Net worth is required to be evaluated in case of companies)</p> | APPLICABLE | |
| D-3 | <p><u>PROFIT</u></p> <p>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.</p> <p>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.</p> | APPLICABLE | |
| E | <u>Approval of Customer</u> | NOT APPLICABLE | |
| F | <u>Consortium Criteria</u> | NOT APPLICABLE | |

Explanatory Notes for the 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 Enabling Works like Construction and Development of Covered / Semi Covered Stores OR Offices OR Buildings (Commercial / Industrial / Residential).
- Relevant documents, meeting above requirements at C & D, shall be submitted by bidders.

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 PRE QUALIFICATION CRITERIA (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format | Applicable | YES / NO |
| 7 | Audited profit and Loss Account for the last three years | Applicable/ Not Applicable | YES/NO |
| 8 | Copy of PAN Card | Applicable/ Not Applicable | YES/NO |
| 9 | Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed | Applicable/ Not Applicable | YES/NO |
| 10 | Integrity Pact | Applicable/ Not Applicable | YES/NO |
| 11 | 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 |
| 17 | Capacity Evaluation of Bidder for current Tender | Applicable/ Not Applicable | YES/NO |

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

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

DATE :

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

ANNEXURE – 3**Modification / Deletions in Standard Clauses of General Conditions of Contract (GCC) or Special Conditions of Contract (SCC)**

| <u>STANDARD GCC CLAUSES</u> | <u>Standard GCC Clauses modified as:-</u> |
|--|---|
| 2.12: Overrun Compensation | Not Applicable |
| 2.13: Interest Bearing Recoverable Advance | Not Applicable |
| 2.14.1: The Quoted Rates shall remain firm irrespective of any variation in the individual quantities. No compensation becomes payable in case the variation of the final executed value is within the limits of Plus (+) or Minus (-) 15% of awarded contract value. | Clause No. 2.14.1 – “The Quoted Rates shall remain firm irrespective of any variation in the individual quantities. No compensation becomes payable in case the variation of the final executed value is within the limits of Plus (+) or Minus (-) 20% of awarded contract value.” |
| 2.17: Price Variation Compensation | Not Applicable |

| <u>STANDARD SCC CLAUSES</u> | <u>Standard SCC Clauses modified as:-</u> |
|--|--|
| 4.1.4: TIG Filler wire for Boiler and Filler wires for Electrodes for P91/T91 piping: These shall be supplied by BHEL free of cost as supplied by BHEL Manufacturing Units as part of regular supply. Required quantity as arrived at by calculation / standards will only be supplied. It would be the contractors' responsibility to account | Not Applicable |

| | |
|---|----------------|
| <p>for the consumption of these filler wires. Additional consumption beyond standard / calculated quantity will be at cost recovery basis only unless and otherwise accounted for. Surplus quantity of TIG filler wire, if any, shall be properly stored and returned to BHEL stores.</p> | |
| <p>4.1.9: All lubricants and chemicals required for pre-commissioning, commissioning, testing, preservation and lubricants for trial runs of the equipment shall be supplied by BHEL / BHEL's client. All services including labour and T&P will be provided by the contractor for handling, filling, emptying, refilling etc. The consumption of lubricants / chemicals shall be properly accounted for. Surplus material if any shall be properly stacked / tagged and returned to BHEL/ CUSTOMER stores at no extra cost to BHEL. BHEL reserves the right to recover costs for wastage by the contractor.</p> | Not Applicable |
| <p>4.1.10: Transportation of oil drums, from stores, filling of oil for flushing, first filling, subsequent changeover if any, topping/making up till the unit is fully commissioned and handed over to customer is included in scope of this contract. The contractor shall have to return all the empty drums to BHEL / BHEL's client store at no extra cost. Any loss / damage to above drums shall be to contractor's account.</p> | Not Applicable |
| <p>4.2.2: Obligations in respect of T&Ps and MMEs provided by BHEL</p> | Not Applicable |
| <p>8.3.2: Contractor should be qualified to execute pressure parts & piping work coming under the</p> | Not Applicable |

| | |
|--|-----------------------|
| <p>purview of IBR, for which he should register himself with CIB of state concerned. Contractor also should be aware of the latest IBR regulations and Electricity Act, including the amendments thereof.</p> | |
| <p>8.3.3: Contractor shall comply with "Qualification Tests for welders engaged in welding of Boilers and Steam Pipes under Construction, Erection and Fabrication at Site in India and in repairing Boilers and steam pipes by welding" in line with Chapter XIII of Indian Boiler Regulations-1950, for testing his welders / men / workers, including all associated fees, rocedures, required instruments and equipments and their calibration thereof. It shall be contractor's responsibility to obtain approval of Statutory Authorities, wherever applicable, for the conducting of any work which comes under the purview of these authorities, at his cost.</p> | <p>Not Applicable</p> |
| <p>8.3.4: The following fees shall be excluded from scope of Contractor:1. Registration Fee as per Regulation 385 of Chapter IX of Indian Boiler Regulations-19502. Fees for inspection of Boiler at the site of Construction as per Regulation 395 A, sl no 4 of Chapter IX of Indian Boiler Regulations-1950However all other fees like visit fees charged by the Boiler Inspector and other arrangements for his visit or visits till satisfactory completion of work, shall be included in scope of Contractor</p> | <p>Not Applicable</p> |

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 on date..... 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

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

Category under MSMED Act 2006.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant

ANNEXURE - 5**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 | |

VOLUME- IA: TECHNICAL
CONDITIONS OF CONTRACT (TCC)

NAME OF WORK: CONSTRUCTION &
DEVELOPMENT OF 03 NO. CLOSED
STORAGE SHED (SIZE: 900 SQM)
INCLUDING INTERNAL / EXTERNAL
ELECTRIFICATION WORK COMPLETE AT
1X500 MW FGUTPP (STAGE-IV)
UNCHAHAR.

BHARAT HEAVY ELECTRICALS
LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC)

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- I: Project Information

PROJECT SYNOPSIS:

| | | |
|-------------------------|---|---|
| Name of the Owner | : | NATIONAL THERMAL POWER CORPORATION (NTPC) |
| Name of Customer | : | NTPC BHEL POWER PROJECTS Ltd. (NBPPL) |
| Address | : | 1 X 500 MW FGUTPP (Stage-IV), UNCHAHAR, District Rae Bareli, Uttar Pradesh, India. |
| New Installation | : | 1 x 500 MW |
| Nearest Railway station | : | Unchahar Railway Station- 3 Kms from Project Site. |
| Nearest City / Town | : | Raebareli - 40 Kms. Lucknow - 90 Kms. |
| Maximum Temperature | : | 47 deg. C. |
| Minimum Temperature | : | 1 deg. C. |

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

| | |
|------------|--|
| 2.0 | GENERAL SCOPE OF WORK |
| 2.1 | The tender specification covers all the works for “ Construction & Development of 01 No. Closed Storage Shed (Size: 900 SQM) with C&I Room, In-charge Room, Common Hall, Computer Room, Side Racks, Pantry & Toilet and 02 Nos. Closed Storage Sheds (Size: 900 SQM Each) with side racks only for storage purpose including internal / external electrification work complete at 1x500 MW FGUTPP (Stage-IV) UNCHAHAR. ” Work under this tender includes supply of all required materials, labour, consumables, transportation, sample testing such as cement, TMT, Structural Steel, Permanently colour coated GI Sheets, false ceiling, steel / wooden door, brick work, aggregates etc. for completion of Tender Scope in all respect. |
| 2.2 | The complete works shall be carried out as per BOQ cum Rate schedule. If any work covered in the scope of contract cannot be executed using items available in BOQ, additional / extra items shall be made and rates for such items shall be worked out as per GCC clause 2.15.7 . However contractor shall be bound to execute all the works under the scope of the contract and decision whether an extra item is applicable or not, shall be taken by BHEL Engineer which will be binding on the contractor. |
| 2.3 | 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. |
| 2.4 | 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. |
| 2.5 | The Scope of Work comprise but not limited to the following: <ul style="list-style-type: none">A. Construction and Development of Closed Storage Shed (Size: 900 SQM) with C&I Room, In-charge Room, Common Hall, Computer Room, Side Racks, Pantry & Toilet etc. – 01 No.B. Construction and development of Closed Storage Sheds (Size: 900 SQM Each) with side racks only for storage purpose- 02 Nos.C. External / Internal Electrification, Illumination, Sanitary and Drainage Works for above sheds. |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- II: Scope of Work

| | |
|--------------|--|
| | All above jobs shall be executed as per BHEL Engineer's instructions, drawings, detailed specifications and respective BOQ cum Rate Schedule. |
| 2.6 | RESPONSIBILITY OF CONTRACTOR |
| 2.6.1 | Furnishing all labour (skilled, unskilled etc.), materials (except those specified in BHEL scope) , supervision, construction plans, equipment, supplies, transport to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown 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 the Customer / 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 | GENERAL |
| 2.7.1 | Contractor shall furnish the manufacturers test certificate for the steel & cement procured by them. Apart from this all the field test shall be arranged by contractor for cement, bricks, coarse & fine aggregate 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. Contractor shall procure reinforcement steel, structural steel & Cement* from reputed manufacturer & approval for the same shall be obtained from BHEL well in advance before ordering for the materials. *Cement shall be PPC Equivalent to OPC Grade 43 or Higher. |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- II: Scope of Work

| | |
|---------|--|
| 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. 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. If any of such defects like cracks, sinking of foundation etc. occur after completion of work till the performance guarantee period, it shall be rectified by contractor free of cost including the supply of materials required. No claim shall be entertained on this account under any circumstances from the contractor. |
| 2.7.3 | The contractor shall provide and maintain at his own cost pumps and other equipment to keep the work free from water and continue to do so until the handing over of the work. The contractor shall clear all trees, rubbish, vegetation, brickbats etc. And dispense them suitably in allotted areas at own cost. |
| 2.8 | DRAWINGS |
| 2.8.1 | The detailed tentative drawings and specifications will form part of the tender documents. BHEL reserves the right to modify/alter the tender drawings, if necessary during the actual execution at site. However, the Drawings/Sketches are to be read along with specifications and shall be treated as in the scope of work. Please refer Part - II for Drawings. |
| 2.8.2 | Drawings are indicative and strictly for tendering purpose, only meant to give an idea to tenderers about nature of job. If any changes in the layout, plan, section, partition, truss, 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. Any modification/variation from the said drawings, if necessary as suggested by the contractor will have to get approved from BHEL in writing. |
| 2.9 | SPECIFICATION FOR CIVIL WORKS FOR VARIOUS SHEDS AND ITS ELECTRIFICATION WORK, ETC.: |
| 2.9.1 | 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. |
| 2.9.2 | EXCAVATION |
| 2.9.2.1 | Excavation for Column Foundations, Walls, Plinth Beam 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. |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- II: Scope of Work

| | |
|----------------|--|
| 2.9.3 | FILLING |
| 2.9.3.1 | Any filling/loose soil met below the foundation shall be made up with lean cement concrete 1:4:8 mix (min). |
| 2.9.3.2 | Granular Murrum Filling: 150 mm thick granular murrum filling shall be done as per drawings and as per relevant IS code specifications, including watering, ramming, compaction etc. below soling of column foundations in the plan area of 2m X 2m, if black cotton soil/ash/newly backfilled soil is found at the bottom level of soling. |
| 2.9.3.3 | Stone Soling: Stone soling of required thickness (250 mm to 300 mm) shall be provided as per drawing below Flooring, Ramp & Column foundations of storage shed etc. by using 80 mm size hard broken black granite/ quartzite/ gneiss/ trap stone metal including granular murrum packing, watering & compaction etc. complete. as per standard specification and instructed by BHEL Engineer. However requirement of Stone Soling can be eliminated in case a hard strata/good stratum is met within foundation level & PCC shall be done directly in such cases. However this can be decided as per site requirement in consultation with BHEL Site Engineer. |
| 2.9.3.4 | Excavated Earth Filling: Filling under floors / foundations with 100mm/150mm thick layer of compacted selected earth/river sand including watering, consolidation etc. shall be executed as per IS specification and drawings if any. 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. |
| 2.9.4 | DISPOSAL |
| | The excess/unutilized suitable earth and debris shall be disposed & levelled to the proposed mentioned area for development. All unusable earth, debris, trees, vegetation etc. shall be disposed off at a location embarked by BHEL / Client. |
| 2.9.5 | PCC: |
| 2.9.5.1 | PCC (1:4:8): 100 mm thick PCC (1:4:8) shall be provided for following: <ul style="list-style-type: none"> i) Below RCC Footing of Columns in the Plan of 1.7m X 1.7m ii) Plinth Beam Base in the width of 0.6 m. iii) Floor Filling for Plinth raising iv) Floor Filling for Plinth Raising at Pantry and Bathroom v) Below Ramp and Internal Wall Foundations. vi) In the Base of Soak Pit Slab. 200 mm thick PCC (1:4:8) shall be provided for the base of septic tank as per drawings and as directed by BHEL Engineer. PCC (1:3:6): 100 mm thick PCC (1:3:6) shall be provided in the width of approx. 750 mm around the perimeter of the Closed Sheds for Plinth Protection as per standard specifications and as directed by BHEL Engineer. |

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| | <p>This shall include supplying and placing PCC at all depths below plinth level including form work, curing, all materials, tools and plants and labour complete. Concrete of 1:4:8/1:3:6/1:2:4 grade as defined in IS- 456 with 40mm/20mm and downgraded stone aggregates as per drawing 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 & cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine & hand mix is generally not acceptable.</p> |
| 2.9.5.2 | However in certain unavoidable circumstances, hand mix shall be permitted with 10% extra cement content as per the discretion of BHEL Engineer. |
| 2.9.6 | RCC |
| 2.9.6.1 | <p>RCC 1:2:4 shall be provided for following Works:</p> <ul style="list-style-type: none">i) RCC Footings: 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 as per drawings.ii) RCC Pedestals: RCC (1:2:4) Column pedestals of size 400mm X 400mm from top of the Column Footing to the F.F.L. 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 as per drawings.iii) Plinth beam: RCC (1:2:4) plinth Beam of size 400mm X 500mm (W X D), with the reinforcement of 02 Nos. 20 mm dia. bars at Top, 04 Nos. 16 mm dia. bars at bottom and 8 mm dia. Stirrups (2 Legged) @ 200 mm c/c spacing, shall be provided throughout the perimeter of the Closed Sheds along the Column Foundations as per drawings.iv) Tie Beam: Tie Beams of size 230mm X 300mm (WXD) of RCC (1:2:4) with the reinforcement of 02 Nos. 12 mm dia. bars at Top, 04 Nos. 12 mm dia. bars at Bottom and 8 mm stirrups (2 legged) @ 200 mm c/c spacing shall be provided for the Internal Walls.v) Lintels: Lintels of size 230mm X 300mm (WXD) of RCC (1:2:4) for Windows and Ventilators, fixed in the brick walls shall be provided, with the reinforcement of 03 Nos. 12 mm dia. bars at the bottom.vi) Projections: 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 drawings and directions of BHEL Engineer.vii) RCC (1:2:4) for Baffle Beam, Slab of Septic tank, Side racks and Ramp etc. shall be provided as per drawings and as directed by BHEL Engineer. <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</p> |

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| | <p>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 & cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine & 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-500 from reputed manufacturer shall be used by contractor for reinforcement purpose.</p> |
| 2.9.7 | BRICK MASONRY |
| 2.9.7.1 | Brick masonry shall be done by using best quality locally available burnt clay bricks / Fly Ash Lime (FAL) bricks of standard size. Minimum strength of the bricks should not be less than 35 KG/sq. cm. Other quality requirement shall be in line with the relevant IS Code. One-brick thick & 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. |
| 2.9.8 | FORMWORK |
| 2.9.8.1 | 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. |
| 2.9.9 | ROOFING & SIDE CLADDING |
| 2.9.9.1 | <p>0.63 mm thick Permanently Profiled Color Coated GI (PPGI) Sheets over the roof trusses of sheds and for side cladding shall be supplied and fixed as per BHEL drawing including providing and fixing suitable flashing, trim closure caps, hips, ridges, galvanized iron J or L hook, bolts / self tapping screws, bituminous washers, GI cramp bolts, nuts, scaffolding etc. complete, all as per latest IS 459, 3307 and 730.</p> <p>Roof cover with FRP/RMP (2.0mm thick) sheet of size 3m X 0.9m at 5 m c/c on both side of Truss, for natural lighting shall be provided with suitable 'J' bolts, GI Cup Washers, GI Plain Washers, and Bitumen Washers / self tapping screws etc. including cutting of GI sheets in shape and size as required for fixing FRP /RMP sheets complete.</p> <p>Wind ties for protection against lifting of roof by wind etc. if any as per standard practice shall be provided by the contractor.</p> |
| 2.9.10 | STRUCTURAL WORKS: |
| 2.9.10.1 | All structural works like Columns, roof truss, etc. shall be carried out as per BHEL Engineer's Instructions, drawings and relevant IS Code Specifications. All Associated Fitting and Fixing materials such as foundation bolts, J / L hooks, bolts, nuts, washers, |

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| | cleats, stiffeners etc. shall be paid along with the weight of Structure (Columns / Trusses etc.) and No extra payments shall be made on this account or on account of scrap generated. |
| 2.9.10.2 | <p>Partially fabricated Structure Materials & PPGI Roof Sheeting shall be provided by BHEL as Free of Cost (FOC) materials for the following Items of BOQ Cum Rate Schedule:</p> <ul style="list-style-type: none"> i) Item Code No. C 20: Erection and Fixing of Columns (ISMB 200 / 250) ii) Item Code No. C21: Erection and Fixing of Roof Trusses (Tubular) iii) Item Code No. C 25: Erection and Fixing of PPGI Roof Sheeting. <p>The structural steel materials being provided by BHEL is dismantled and transported from other BHEL sites to Unchahar Site. The structure materials (Columns & Trusses) being provided by BHEL is complete for 02 Nos. Closed Sheds of Size 15m X 60m and for partial completion of third closed shed. As this structural material is being reused there is certain requirements of rectification, modification, fabrication, straightening, cutting, welding, checking, testing, scraping the surface to make it ready for fresh primer/ painting etc. All such works shall be carried out by the contractor as per the standards, relevant IS specifications and as directed by BHEL Engineer within the quoted rates for the relevant Item.</p> |
| 2.9.10.3 | ISSUE AND ACCOUNTING OF STRUCTURAL STEEL & ROOF SHEETING (Issued as FOC item by BHEL) |
| 2.9.10.3.1 | Materials being provided by BHEL as Free of Cost (FOC) Items shall be properly accounted for, measured and recorded before issuing the same to the contractor. Contractor shall provide all such assistance, materials, labour, supervisors, T&Ps, MMEs, Transportation & Handling as required for measuring and issuing the Materials (FOC) to contractor and shall prepare joint records with BHEL before taking delivery of any material from BHEL Stores / any other place (within the project premises) as directed by BHEL Engineer. |
| 2.9.10.3.2 | Materials will be issued only for permanent works and not for making templates, other temporary works, contractor's own establishment etc. and the same shall not be taken into account for purpose of material reconciliation. |
| 2.9.10.3.3 | The contractor shall bear all other costs including the lifting, carting from issue points to works site/contractor's stores, custody and handling etc. and return of surplus /serviceable materials to BHEL's stores to be designated by the BHEL Engineer. |
| 2.9.10.3.4 | All steel shall be issued in available lengths / shapes and no claims for extra payment on account of issue of non-standard lengths/shapes will be entertained. |
| 2.9.10.3.5 | The contractor shall submit proper account of material / material reconciliation statement for the material drawn by him from stores with every Running Account (RA) Bill. Failing compliance of this requirement further issue of steel to the contractor may be suspended and no claim of compensation for delay in execution on this account shall be entertained. |

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| 2.9.10.3.6 | The Structural steel (Partially Fabricated) thus issued for Fabrication & Erection shall be properly accounted for as per the permissible maximum allowable wastage of 4% over the theoretical quantity / consumption incorporated in the works. |
| 2.9.10.3.7 | Any unused / serviceable quantity of Structural Steel not returned in good condition & wastages / loss / consumption beyond specified / agreed limit shall be charged at penal rate of Rs. 70,000 per MT for structural steel at the time of preparing final bill, during finalization of the contract. The decision of BHEL Engineer with regard to applicability of penal rates shall be final & binding upon the contractor. |
| 2.9.10.3.8 | Since the Structure Steel is being issued free of cost, the scrap generated shall belong to BHEL. All Structural steel of length above 2 Metre shall be considered as serviceable materials provided the materials are in good and acceptable condition. Structural Steel in length less than 2 Metre shall be treated as scrap. |
| 2.9.10.4 | Contractor is permitted to get steel truss & other structures fabricated at workshop outside of the plant premises with prior permission of BHEL. In this case contractor has to arrange for shop inspections periodically as required by BHEL Engineer to ensure the quality of fabrication work. Fabricated structures without inspection/certified by BHEL shall not be allowed for erection. |
| 2.9.10.5 | The trusses shall be tubular, fabricated in pieces of convenient length for transportation by truck and speedy erection at site. The base plates shall be welded to the trusses for fixing/resting the same on supports. Suitable cleats or fixing plates shall be provided on the trusses for holding the purlins and the bottom tie runners. Bolts shall be fixed in columns and posts by using templates for fixing truss. These foundation bolts, base plates, cleats etc. fixed with truss shall be paid under tonnage of truss only. No separate payment shall be made for templates. Work shall be done as per BHEL Drawings. |
| 2.9.10.6 | Any new structural materials required shall be brought to the notice of BHEL Engineer prior to ordering and procured only after the approval of BHEL Engineer. Structural Steel materials shall be bought from the BHEL approved manufacturer only and shall be confirming to the relevant IS Code specifications; contractor shall submit the manufacturing test certificate and other relevant documents for the materials as per BHEL requirement. Note: All efforts shall be made by contractor for reusing the materials available with BHEL and being issued to contractor as Free of Cost (FOC). New Structural Steel Materials shall only be procured if required, as approved by BHEL Engineer. |
| 2.9.11 | SANITARY & DRAINAGE WORKS: |
| 2.9.11.1 | Necessary sanitary and plumbing works shall be provided with necessary water taps and all connections with supply lines/septic tank shall be provided by the contractor for BHEL Storage Sheds. The materials used and the location etc. shall be as per the directions of BHEL Engineer. Contractor shall procure the materials from the reputed manufacturers only as approved by BHEL Engineer. Prior Approval of sample from BHEL Engineer is necessary before supplying the materials at site. |

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| 2.9.11.2 | Septic tanks with soak pit/leaching cesspool shall be provided by the contractor at the location specified by BHEL complete in all respects as per IS specification. The drawing attached with tender is indicative only & any changes required at site shall be done as per the instruction of BHEL Engineer. |
| 2.9.12 | ELECTRICAL INSTALLATIONS |
| 2.9.12.1 | The electrical installation shall generally be carried out in conformity with the requirements of the Indian electricity act, 1910 as amended up to date and the Indian electricity rules, 1956 framed there under and also the relevant regulations of the electric supply authority concerned as well as IS: 732-1963 (revised). Before commencement of work Contractor has to submit detail electrical layout drawings prepared by experienced & licensed electrical agency/engineer indicating the cable route, internal/external panels, cable sizing, fittings & fixtures etc. in line with the BOQ cum Rate Schedule. |
| 2.9.12.2 | Good workmanship is an essential requirement for compliance with the rules in the code. The work shall be carried out under the direct supervision of a person holding a valid certificate of competency, concerned for the type of work involved. |
| 2.9.12.3 | All outdoor/external lamps shall have weather-proof fittings of design approved by BHEL Engineer so as to effectively prevent the admission of moisture. |
| 2.9.12.4 | All main switches shall be of metal clad enclosed pattern, which shall be fixed at close proximity to the point of entry of supply. |
| 2.9.12.5 | Main and branch distribution boards shall be in accordance with Indian Standard IS 732-1963 "Code of practice for electrical wiring installation". |
| 2.9.12.7 | PVC conduit (concealed type) wiring system should be adopted through out and all conduit pipes/channel shall be conforming to latest IS. |
| 2.9.12.8 | Approved and good quality copper wire with adequate current carrying capacity/voltage rating with proper insulation as per IS should be used for the entire electrical wiring/installation. |
| 2.9.12.9 | The service connection from outside mains to the switchboard inside the building shall also be carried out by the contractor. |
| 2.9.13 | EARTHING |
| 2.9.13.1 | All Earthing system shall be in accordance with IS: 3043-1966 "Code of practice for Earthing". |
| 2.9.13.2 | The installation and Earthing shall generally be carried out in accordance with the Indian electricity rules 1956 as amended from time to time and the relevant regulations of the electricity supply authority concerned. |
| 2.9.13.3 | All plugs and sockets shall be of three-pin type, one of the pins being connected to earth. |

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| 2.9.13.4 | 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. |
| 2.9.13.5 | All earth wires and earth continuity conductors shall be of copper/ galvanized iron. They shall be either stranded or solid bars of flat rectangular strips and may be bard, provided, due care is taken to avoid corrosion and mechanical damage to it. Inter connections of earth continuity conductors and main and branch earth wires shall be made in such a way that reliable and good electrical connections are permanently ensured. |
| 2.9.13.6 | The neutral conductor shall not be used as earth wire. |
| 2.9.13.7 | Welded, bolted and clamped joints only are permissible. For stranded conductor, sleeve connectors are permissible. Bolted connectors and their screws shall be protected against any possible corrosion. |
| 2.9.13.8 | The path of the earth wire shall, as far as possible, be out of reach of any person and shall be visible for inspection. |
| 2.9.13.9 | Earthing Pits: The galvanized iron pipe electrodes shall be used, which is not smaller than 38MM internal diameter and shall not be less than 4M in length and shall, as far as possible, be embedded below permanent moisture level with charcoal & salt and shall be one piece only without any joints. Earthing Pits shall be provided as per relevant IS Code specifications to fulfil the functional and statutory requirements. |
| 2.9.14 | DEWATERING: |
| 2.9.14.1 | It is the responsibility of the contractor to engage sufficient dewatering pump (Diesel, electrically operated) of adequate capacity for dewatering of sub-soil, rain water from excavated pit and other localized area and keep the area dry and workable till completion of entire work within their quoted rate. |
| 2.9.15 | GENERAL NOTES FOR STEEL DOOR, WINDOWS, AND VENTILATORS |
| 2.9.15.1 | Steel Door: - Pressed steel doors as per standard specification, relevant IS code and sizes shall be supplied along with frames and fixed with suitable hold fasts, fixtures and fittings. |
| 2.9.15.2 | Steel Window: - 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. |
| 2.9.15.3 | Steel Ventilators: - 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. |

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| | Note: Contractor shall arrange for shop inspection for all steel doors, windows, rolling shutters & trusses etc. if fabricated outside the plant before delivery at site for Engineer's clearance. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.16 | PAINTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.16.1 | All the steel items such as doors, windows, ventilators, roof trusses, purlins, columns 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 woodwork, steel work etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.16.2 | Three coats of white/color washing shall be provided uniformly on all wall surfaces as per IS specification. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.17 | PVC water tank of Syntax or any approved make shall be supplied and erected on steel staging and to be constructed on location shown as per item rate given in BOQ cum Rate schedule | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.18 | Prior Approval from BHEL Engineer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9.18.1 | Contractor shall take prior approval from BHEL Engineer for use of Sanitary items, FRP/RMP sheets, Overhead water tanks, Doors, Windows, ventilators, Cement, Brick, Steel, structural steel and for other items as specified in respective items description and necessary manufacturer's test certificate (MTC) and laboratory test as required by BHEL shall be arranged by contractor within their quoted rate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.10 | APPROVED MAKE OF MATERIALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.10.1 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1. STRUCTURAL/REINF. STEEL</td> <td style="width: 5%;">:</td> <td>SAIL / TATA / JINDAL</td> </tr> <tr> <td>2. PPC EQUIV. TO OPC 43</td> <td>:</td> <td>ACC / BIRLA / JAYPEE</td> </tr> <tr> <td>3. ENAMEL PAINTS</td> <td>:</td> <td>JOHNSON & NICHOLSON / BERGER/ ICI / ASIAN PAINT / NEROLAC</td> </tr> <tr> <td>4. GI & MS PIPES</td> <td>:</td> <td>SURYA/ PRAKASH/ JINDAL-HISSAR/ TATA</td> </tr> <tr> <td colspan="3">5. ELECTRICAL ACCESSORIES</td> </tr> <tr> <td> a) SWITCHES AND SOCKETS</td> <td>:</td> <td>ANCHOR / MK / LK</td> </tr> <tr> <td> (MODULAR TYPE)</td> <td></td> <td></td> </tr> <tr> <td colspan="3">6. ELECTRICAL EQUIPMENT</td> </tr> <tr> <td> a) EXHAUST FANS</td> <td>:</td> <td>ALSTOM / CROMPTON</td> </tr> <tr> <td> b) LIGHT FITTINGS</td> <td>:</td> <td>CROMPTON/PHILIPS /WIPRO</td> </tr> <tr> <td> c) WALL MOUNTING FANS</td> <td>:</td> <td>ORIENT/ CROMPTON/ USHA</td> </tr> <tr> <td> d) CFL & FL LAMPS</td> <td>:</td> <td>PHILIPS/ OSRAM / WIPRO / BAJAJ</td> </tr> <tr> <td> e) KWH METERS ETC</td> <td>:</td> <td>BHEL/ GE/ L&T / HAVELS</td> </tr> <tr> <td> f) MCBs & MCB DBs (10 KA)</td> <td>:</td> <td>MDS/ L&T-HAGGER/ RAJ.L/HAVELS</td> </tr> </table> | 1. STRUCTURAL/REINF. STEEL | : | SAIL / TATA / JINDAL | 2. PPC EQUIV. TO OPC 43 | : | ACC / BIRLA / JAYPEE | 3. ENAMEL PAINTS | : | JOHNSON & NICHOLSON / BERGER/ ICI / ASIAN PAINT / NEROLAC | 4. GI & MS PIPES | : | SURYA/ PRAKASH/ JINDAL-HISSAR/ TATA | 5. ELECTRICAL ACCESSORIES | | | a) SWITCHES AND SOCKETS | : | ANCHOR / MK / LK | (MODULAR TYPE) | | | 6. ELECTRICAL EQUIPMENT | | | a) EXHAUST FANS | : | ALSTOM / CROMPTON | b) LIGHT FITTINGS | : | CROMPTON/PHILIPS /WIPRO | c) WALL MOUNTING FANS | : | ORIENT/ CROMPTON/ USHA | d) CFL & FL LAMPS | : | PHILIPS/ OSRAM / WIPRO / BAJAJ | e) KWH METERS ETC | : | BHEL/ GE/ L&T / HAVELS | f) MCBs & MCB DBs (10 KA) | : | MDS/ L&T-HAGGER/ RAJ.L/HAVELS |
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| 2. PPC EQUIV. TO OPC 43 | : | ACC / BIRLA / JAYPEE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. ENAMEL PAINTS | : | JOHNSON & NICHOLSON / BERGER/ ICI / ASIAN PAINT / NEROLAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. GI & MS PIPES | : | SURYA/ PRAKASH/ JINDAL-HISSAR/ TATA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. ELECTRICAL ACCESSORIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a) SWITCHES AND SOCKETS | : | ANCHOR / MK / LK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (MODULAR TYPE) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. ELECTRICAL EQUIPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a) EXHAUST FANS | : | ALSTOM / CROMPTON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b) LIGHT FITTINGS | : | CROMPTON/PHILIPS /WIPRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c) WALL MOUNTING FANS | : | ORIENT/ CROMPTON/ USHA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d) CFL & FL LAMPS | : | PHILIPS/ OSRAM / WIPRO / BAJAJ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| e) KWH METERS ETC | : | BHEL/ GE/ L&T / HAVELS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f) MCBs & MCB DBs (10 KA) | : | MDS/ L&T-HAGGER/ RAJ.L/HAVELS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.10.2 | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | 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. |
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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 | <u>ESTABLISHMENT</u> | | | |
| 3.1.1 | FOR CONSTRUCTION PURPOSE: | | | |
| A | OPEN SPACE FOR OFFICE | Yes | | BHEL shall provide free of charge limited open space for office and store as and where made available by its Customer. |
| B | OPEN SPACE FOR STORAGE | Yes | | |
| C | CONSTRUCTION OF BIDDER'S OFFICE, CANTEEN AND STORAGE BUILDING INCLUDING SUPPLY OF MATERIALS AND OTHER SERVICES | | Yes | |
| D | BIDDER'S ALL OFFICE EQUIPMENT, OFFICE / STORE / CANTEEN CONSUMABLES | | Yes | |
| E | CANTEEN FACILITIES FOR THE BIDDER'S STAFF, SUPERVISORS AND ENGINEERS ETC. | | Yes | |
| F | FIRE FIGHTING EQUIPMENT LIKE BUCKETS, EXTINGUISHERS ETC. | | Yes | |
| G | FENCING OF STORAGE AREA, OFFICE, CANTEEN ETC. OF THE BIDDER | | Yes | |
| 3.1.2 | FOR LIVING PURPOSES OF THE BIDDER | | | |
| A | OPEN SPACE | | Yes | |
| B | LIVING ACCOMMODATION | | 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 | <u>ELECTRICITY</u> | | | |
| 3.2.1 | <u>ELECTRICITY FOR CONSTRUCTION PURPOSES</u> | | Yes | Electricity may be provided at a single point source by customer free of cost as per availability. However Contractor shall ensure DG Set as an alternate arrangement at his own cost for Electricity. |
| 3.2.1.1 | <i>SINGLE POINT SOURCE</i> | | | |
| 3.2.1.2 | <i>FURTHER DISTRIBUTION FOR THE WORK TO BE DONE WHICH INCLUDE SUPPLY OF MATERIALS AND EXECUTION</i> | | Yes | |
| 3.2.2 | <i>ELECTRICITY FOR THE OFFICE, STORES, CANTEEN ETC. OF THE BIDDER WHICH INCLUDE:</i> | | Yes | |
| 3.2.2.1 | <i>DISTRIBUTION FROM SINGLE POINT INCLUDING SUPPLY OF MATERIALS AND SERVICE</i> | | Yes | |
| 3.2.2.2 | <i>SUPPLY, INSTALLATION AND CONNECTION OF MATERIAL OF ENERGY METER INCLUDING OPERATION AND MAINTENANCE</i> | | Yes | |
| 3.2.2.3 | <i>DUTIES AND DEPOSITS INCLUDING STATUTORY CLEARANCES FOR THE ABOVE</i> | | Yes | |
| 3.2.2.4 | <i>LIVING FACILITIES FOR OFFICE USE INCLUDING CHARGES</i> | | 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 | |
| 3.2.2.5 | <i>DEMOBILIZATION OF THE FACILITIES AFTER COMPLETION OF WORKS</i> | | Yes | |
| 3.2.3 | <i><u>ELECTRICITY FOR LIVING ACCOMMODATION OF THE BIDDER'S STAFF, ENGINEERS, SUPERVISORS ETC ON THE ABOVE LINES.</u></i> | | Yes | |
| 3.3.0 | <i><u>WATER SUPPLY</u></i> | | | |
| 3.3.1 | <i><u>FOR CONSTRUCTION PURPOSES:</u></i> | | | |
| 3.3.1.1 | <i>MAKING THE WATER AVAILABLE AT SINGLE POINT</i> | | Yes | Construction Water may be made available at single point source, free of cost as per availability. However Bidder has to ensure an alternate arrangement for construction water at his own cost by resorting to the methods like bore well, water tankers etc. |
| 3.3.1.2 | <i>FURTHER DISTRIBUTION AS PER THE REQUIREMENT OF WORK INCLUDING SUPPLY OF MATERIALS AND EXECUTION</i> | | Yes | |
| 3.3.2 | <i><u>WATER SUPPLY FOR BIDDER'S OFFICE, STORES, CANTEEN ETC.</u></i> | | 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 | |
| 3.3.2.1 | <i>MAKING THE WATER AVAILABLE AT SINGLE POINT</i> | | Yes | Bidder shall arrange for safe drinking water for staff and labour at his own. |
| 3.3.2.2 | <i>FURTHER DISTRIBUTION AS PER THE REQUIREMENT OF WORK INCLUDING SUPPLY OF MATERIALS AND EXECUTION</i> | | Yes | |
| 3.4.0 | <u>LIGHTING</u> | | | |
| 2.4.1 | <i>FOR CONSTRUCTION WORK (SUPPLY OF ALL THE NECESSARY MATERIALS)</i> 1. At office storage area 2. At the preassembly area 3. At the construction site /area | | Yes | |
| 3.4.2 | <i>FOR CONSTRUCTION WORK (EXECUTION OF THE LIGHTING WORK/ ARRANGEMENTS)</i> 1. At office storage area 2. At the preassembly area 3. At the construction site /area | | Yes | |
| 3.4.3 | <i>PROVIDING THE NECESSARY CONSUMABLES LIKE BULBS, SWITCHES, ETC. DURING THE COURSE OF CONSTRUCTION</i> | | Yes | |
| 3.4.4 | <i>LIGHTING FOR THE LIVING PURPOSES OF THE BIDDER AT THE COLONY / QUARTERS</i> | | Yes | |
| 3.5.0 | <u>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</u> | | | |

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 | |
| 3.5.1 | <i>TELEPHONE, FAX, INTERNET, INTRANET, E-MAIL ETC.</i> | | Yes | |
| 3.6 | CONSTRUCTION FACILITIES | | | |
| 3.6.1 | ENGINEERING WORKS FOR CONSTRUCTION: | | | |
| 3.6.1.1 | PROVIDING THE CONSTRUCTION DRAWINGS | Yes | | BHEL shall provide tentative drawings only for tendering purpose only. |
| 3.6.1.2 | DRAWINGS FOR CONSTRUCTION METHODS / DETAILED DRAWINGS AS PER SITE REQUIREMENT | | Yes | In consultation with BHEL. |
| 3.6.1.3 | AS-BUILT DRAWINGS - WHERE EVER DEVIATIONS OBSERVED AND EXECUTED AND ALSO BASED ON THE DECISIONS TAKEN AT SITE | | Yes | |
| 3.6.1.4 | SHIPPING LISTS / PROCUREMENT PLAN ETC. FOR REFERENCE AND PLANNING THE ACTIVITIES | | Yes | |
| 3.6.1.5 | PREPARATION OF SITE CONSTRUCTION SCHEDULES AND OTHER INPUT REQUIREMENTS | | Yes | |
| 3.6.1.6 | REVIEW OF PERFORMANCE AND REVISION OF SITE CONSTRUCTION SCHEDULES IN ORDER TO ACHIEVE THE END DATES AND OTHER COMMITMENTS | Yes | 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 | |
| 3.6.1.7 | <i>WEEKLY CONSTRUCTION SCHEDULES BASED ON SL. No 2.1.5</i> | | Yes | |
| 3.6.1.8 | <i>DAILY CONSTRUCTION / WORK PLAN BASED ON SL. No 2.1.7</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 | |
| 3.7 | <i>PREPARATION OF PREASSEMBLY BAY</i> | | Yes | As per Work Requirement. |

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter- IV: T&Ps and MMEs to be deployed by Contractor

| A | <u>TOOL & PLANTS (T&Ps)</u>- INDICATIVE LIST OF T & Ps |
|----------------|--|
| Sl. No. | EQUIPMENT |
| 1 | CONCRETE MIXER M/C OF SUITABLE CAPACITY |
| 2 | CONCRETE VIBRATORS |
| 3 | JCB/ EXCAVATOR/ DOZER/ JACK HAMMER WITH COMPRESSOR. |
| 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&Ps may not be required for entire contract period but contractor will ensure that these T & Ps are provided as per need. Contractor will assess actual quantity and period of requirement based on his experience. Contractor has to mobilize / maintain adequate numbers of equipment for meeting the work schedule and intermediate milestones as notified by BHEL Engineer.</p> <p>2 Other terms and conditions regarding T&Ps / MMEs please also refer clause for T&Ps & 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&Ps required to be arranged by the contractor.</p> <p>4 If work gets delayed due to non-availability of T&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 | <u>MONITORING AND MEASURING EQUIPMENTS (MMEs)</u>- INDICATIVE LIST OF MMEs |
|--------------|--|
| SL NO | EQUIPMENT |
| 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: | <ol style="list-style-type: none"> 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 & Ps are provided as per need. Contractor will assess actual quantity and period of requirement based on his experience 2. Other terms and conditions regarding T&Ps / MMEs please also refer clause for T&P& MMEs in SCC. 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. 4. Contractor should set up the field laboratory with facilities required for material & 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. 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. |

NOT APPLICABLE

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- VI: Time Schedule

| TIME SCHEDULE | | | | | |
|---|---|---|---------------------------------|---|---------------------------------|
| 6.0 | MOBILIZATION, TIME SCHEDULE, CONTRACT PERIOD AND GRACE PERIOD | | | | |
| 6.1 | <p>INITIAL MOBILIZATION</p> <p>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.</p> | | | | |
| 6.2 | <p>START DATE / ZERO DATE</p> <p>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.</p> | | | | |
| 6.3 | <p>COMPLETION PERIOD</p> <p>Entire work as detailed in tender specification shall be completed within 4 months from the actual date of start of contract period (Zero Date). Contractor has to mobilize adequate resources to meet BHEL's commitments to their customer as indicated from time to time.</p> | | | | |
| 6.4 | Detailed Work completion Schedule will be submitted for approval by the successful bidder within 2 weeks of issue of LOI. | | | | |
| 6.5 | 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. | | | | |
| 6.6 | 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. | | | | |
| 6.7 | 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. | | | | |
| 6.8 | MILESTONES FOR COMPLETION OF WORKS | | | | |
| 6.8.1 | <p>COMPLETE WORKS :</p> <p>Four (4) Months from Actual Date of Start of Contract Period (Zero Date) with indicative milestones as below:</p> | | | | |
| 6.8.2 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">A. Completion of Closed Storage Shed with C&I Room, In-charge Room etc.</td> <td style="width: 50%;">Within 02 Months from Zero Date</td> </tr> <tr> <td>B. Completion of 1st Closed Shed with Side Racks Only</td> <td>Within 03 Months from Zero Date</td> </tr> </table> | A. Completion of Closed Storage Shed with C&I Room, In-charge Room etc. | Within 02 Months from Zero Date | B. Completion of 1 st Closed Shed with Side Racks Only | Within 03 Months from Zero Date |
| A. Completion of Closed Storage Shed with C&I Room, In-charge Room etc. | Within 02 Months from Zero Date | | | | |
| B. Completion of 1 st Closed Shed with Side Racks Only | Within 03 Months from Zero Date | | | | |

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter- VI: Time Schedule

| | | |
|------------|--|----------------------------------|
| | C. Completion of 2 nd Closed Shed with Side Racks only | Within 3.5 Months from Zero Date |
| | D. Clearing the Site and Handing over the Complete Works | Within 04 Months from Zero Date. |
| 6.9 | <u>CONSEQUENCE OF DELAY</u> 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

| | |
|------------|---|
| 7.0 | TERMS OF PAYMENT |
| 7.1 | 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. |
| 7.2 | The Contractor shall be paid monthly running bill as per chapter - X of SCC and Clause Nos. 2.22 & 2.23 of GCC. The format for billing shall be approved by BHEL before raising invoices. |
| 7.3 | The contractor on certification of the engineer at site is entitled for payments of his running bills which shall be subject to any deduction/retention specifically under clauses 2.22 of GCC and 10.0 of SCC. |
| 7.4 | Interest bearing recoverable advance: Not Applicable |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- VIII: Taxes & Duties

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| 8.0 | TAXES & DUTIES <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 & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.</p> |
| 8.1 | Service Tax & Cess on Service Tax <p>Service Tax and Cess on Service Tax as applicable on output Services are included from contractor's scope; therefore contractor's price/rates shall be inclusive of Service Tax and Cess on Output Services. BHEL shall not reimburse any amount to Service Tax Account 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">A. The name, address and registration number of the contractorB. The name and address of the party receiving taxable service (BHEL)C. Description, classification and value of taxable service provided andD. The Service Tax payable thereon. <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</p> |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- VIII: Taxes & Duties

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| | <p>within Six months from date of invoice. Wherever CENVAT credit could not be availed by BHEL within statutory time limit of 6 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.</p> |
| 8.2 | VAT (Sales Tax /WCT) |
| 8.2.1 | <p>Civil Works: 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 inclusive 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 minimize tax on input goods by purchasing the materials from any registered dealer of the concerned state only.</p> |
| 8.2.2 | <p>Works other than Civil Works: 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> |
| 8.2.3 | <p>Common to all Works (Both Civil and Other than Civil) 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. 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> |
| 8.3 | <p>Modalities of Tax Incidence on BHEL Wherever the relevant tax laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.</p> |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- VIII: Taxes & Duties

| | |
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| 8.4 | <p>New Taxes/Levies</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

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| 9.0 | MATERIALS |
| 9.1 | The contractor shall, at his own expenses (Inclusive of Taxes), provide all materials (save the materials to be provided by BHEL as Free of Cost) required for the work. |
| 9.2 | 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. |
| 9.3 | 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. |
| 9.4 | 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. |
| 9.5 | 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. |
| 9.6 | 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 |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- IX: Materials and Other Requirements

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| | 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 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. |
| 9.7 | 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. |
| 9.8 | 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. |
| 9.9 | 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. |
| 9.10 | 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. |
| 9.11 | 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- X: Other Important Conditions

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|---------------|--|
| 10.0 | EXECUTION OF WORK |
| 10.1 | 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 BHEL Engineer shall be final & binding. |
| 10.2 | SETTING OUT |
| 10.2.1 | All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark 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. |
| 10.2.2 | The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessarily placed by BHEL / Customer at contractor's expenses. |
| 10.3 | SITE DRAINAGE |
| 10.3.1 | 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. |
| 10.4 | INSPECTION AND STAGE APPROVAL OF THE WORK |
| 10.4.1 | 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. |
| 10.5 | UNCOVERING AND MAKING GOOD |
| 10.5.1 | The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the BHEL Engineer. If any such part has been covered up or put out of view after |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- X: Other Important Conditions

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| | being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor. |
| 10.6 | NUISANCE |
| 10.6.1 | The Contractor shall not at any time do, cause or permit any nuisance on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally. |
| 10.7 | MATERIAL OBTAINED FROM EXCAVATION |
| 10.7.1 | 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. |
| 10.8 | TREASURE, TROVE, FOSSILS etc. |
| 10.8.1 | All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing 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. |
| 10.9 | PROTECTION OF WORKS |
| 10.9.1 | Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing. |
| 10.9.2 | The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the BHEL Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public. |
| 10.9.3 | 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 Engineer for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes. |
| 10.10 | PROTECTION OF EMBEDMENTS BOLTS ETC. |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- X: Other Important Conditions

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| 10.10.1 | 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. |
| 10.11 | CLEARANCE OF SITE AND REPAIRS. |
| 10.11.1 | Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. notice, In case he fails to clear the site, this will be done at his risk & cost by BHEL. |
| 10.12 | QUALITY ASSURANCE |
| 10.12.1 | 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 of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor. |
| 10.13 | COMPLETION OF WORK |
| 10.13.1 | 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. |
| 10.13.2 | BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the 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. |
| 10.14 | COMMENCEMENT OF GUARANTEE PERIOD |
| 10.14.1 | The Guarantee period shall commence only after completion & handing over of the entire works. 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. |
| 10.15 | METHOD OF MEASUREMENT |
| 10.15.1 | Method of measurements if not specified in the tender, shall be as per relevant IS Codes / CPWD codes. |
| 10.16 | HSE & OHSAS: |
| | The contractor shall comply with the requirements / stipulations of Chapter-IX of SCC towards Health, Safety and Environment. |
| 10.17 | DISCREPANCIES AND ADJUSTMENT OF ERRORS: |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- X: Other Important Conditions

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| 10.17.1 | The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawings and figures dimensions in preference to scale and special conditions in preference to general conditions. |
| 10.17.2 | 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"> (a) Description in schedule of quantities. (b) Technical Conditions of Contract (c) Drawings (d) Technical Specifications / Standard Specifications (e) Special Conditions of Contract (f) General conditions of contract |
| 10.17.3 | 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. |
| 10.17.4 | 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. |
| 10.18 | <p>MODIFICATION/ DELETION OF GCC & SCC CLAUSES:</p> <ul style="list-style-type: none"> I. Clause No. 4.1.4, 4.1.9 & 4.1.10 of SCC (Consumables & Other Items) shall not be applicable. II. Clause No. 4.2.2 of SCC (Obligations in respect of T&Ps and MMEs provided by BHEL) shall not be applicable. III. Clause No. 8.3.2, 8.3.3 and 8.3.4 of SCC (Statutory Inspection of Work) shall not be applicable. IV. Clause No. 2.12 of GCC (ORC) shall not be applicable. V. Clause No. 2.17 of GCC (PVC) shall not be applicable VI. Clause No. 2.13 of GCC (Interest bearing recoverable advance) shall not be applicable. VII. Clause No. 2.14.1 of GCC modified as: The quoted rates 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 Plus (+) or Minus (-) 20% of awarded contract value. |
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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter- XI: Annexures

UNPRICED-RATE SCHEDULE

Job: “Construction & Development of 03 nos. Closed Storage Shed (Size: 900 SQM) including Internal/ External electrification work complete at 1X500 MW FGUTPP (Stage-IV) Unchahar.”

| S.No. | Description of Item | QTY | Total Amount “A” in Rupees (in figures and words) |
|--------------|---|--------------|--|
| 1 | Lumpsum price for complete scope of work for “Construction & Development of 03 Nos. Closed Storage Sheds (Size: 900 SQM) including Internal / External Electrification Work complete at 1x500 MW FGUTPP (Stage-IV) Unchahar.” | 1 set | |

Note:- The rates of different items for the entire scope shall be worked out & awarded as per '**Annexure II**'.

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|--|------|------|------------|---|-----------------------------------|
| | | CONSTRUCTION AND DEVELOPMENT OF 03 NO. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) AT 1X500 MW FGUTPP, NTPC UNCHAHAHAR (STAGE-IV). | | | | | |
| | C | CIVIL WORK | | | | | |
| 1 | C1 | EARTH WORK IN EXCAVATION FROM 0 (ZERO) TO 2 M DEPTH IN ALL KINDS OF SOIL (EXCEPT SOFT ROCK AND HARD ROCK) FOR FOUNDATIONS, SEPTIC TANK, SOAK PIT, RAMPS ETC., AS DIRECTED BY BHEL ENGINEER INCLUDING REMOVING THE EXCAVATED MATERIALS UP TO A DISTANCE OF 50M, 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. | CUM | 1014 | 0.88 | | |
| 2 | C2 | EARTH WORK IN EXCAVATION FROM 0 (ZERO) TO 2 M DEPTH FOR SOFT ROCK AND HARD ROCK (BY MANUAL CHISELING OR BY MECHANICAL MEANS BUT WITHOUT BLASTING) FOR FOUNDATIONS, SEPTIC TANK, SOAK PIT, RAMP ETC., AS DIRECTED BY BHEL ENGINEER INCLUDING REMOVING THE EXCAVATED MATERIALS UP TO A DISTANCE OF 50M, 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. | CUM | 254 | 1.445 | | |
| 3 | C3 | EARTH WORK IN EXCAVATION FROM 2.0 M TO 4.0 M DEPTH IN ALL KINDS OF SOIL (EXCEPT HARD ROCK AND SOFT ROCK) FOR FOUNDATIONS, SEPTIC TANK, SOAK PIT, RAMPS ETC., AS DIRECTED BY BHEL ENGINEER INCLUDING REMOVING THE EXCAVATED MATERIALS UP TO A DISTANCE OF 50M, 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. | CUM | 37 | 1.18 | | |
| 4 | C4 | EARTH WORK IN EXCAVATION FROM 2.0 M TO 4.0 M IN ALL KINDS OF SOIL INCLUDING SOFT & HARD ROCK (BY MANUAL CHISELING OR BY MECHANICAL MEANS BUT WITHOUT BLASTING) DEPTH FOR SEPTIC TANK AND SOAK PIT, WHEREVER REQUIRED INCLUDING REMOVING THE EXCAVATED MATERIALS UP TO A DISTANCE OF 50 M, 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. | CUM | 82 | 1.95 | | |
| 5 | C5 | SUB GRADE PREPARATION: CUTTING LEVELLING, FILLING WITH EXCAVATED EARTH (IN LAYERS NOT EXCEEDING 150 MM THICK), WATERING AND CONSOLIDATION FOR PLINTH PROTECTION AREA BEFORE LAYING THE PCC WITH ALL T&Ps, LABOURS, MATERIALS ETC. COMPLETE. | SQM | 345 | 0.30 | | |
| 6 | C6 | DISPOSAL OF EXCAVATED EARTH / ROCK (NOT SUITABLE FOR BACK FILLING / EXTRA) BEYOND INITIAL LEAD OF 50 M AND UPTO A MAXIMUM LEAD OF 3 KM OR PART THEREOF INCLUDING LOADING, UNLOADING , TRANSPORTING AND SPREADING AS PER DIRECTION OF BHEL ENGINEER . | CUM | 418 | 0.76 | | |
| 7 | C7 | BACKFILLING OF FOUNDATION, FLOORS AND PLINTH IN LAYERS NOT EXCEEDING 150 MM THICK INCLUDING WATERING AND CONSOLIDATING ETC. COMPLETE AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER. | | | | | |
| 8 | I | WITH GOOD EXCAVATED SOIL AVAILABLE FROM THE EARTH WORK. | CUM | 967 | 0.60 | | |
| 9 | II | WITH GRANULAR MURUM IN LAYERS (THICKNESS OF EACH LAYER SHOULD NOT EXCEED 150 MM) BELOW FOUNDATIONS, AND RAMP AS PER STANDARD SPECIFICATION, RELEVANT DRAWINGS AND INSTRUCTED BY BHEL ENGINEER INCLUDING ROYALTY. CONTRACTOR HAS TO SUBMIT ROYALTY CERTIFICATE FROM CONCERNED STATE GOVT. MINING DEPARTMENT. | CUM | 249 | 4.42 | | |
| 10 | III | WITH GOOD EARTH BROUGHT FROM OUTSIDE FROM CONTRACTOR'S OWN SOURCE INCLUDING ROYALTY ETC. ALL COMPLETE. | CUM | 105 | 2.43 | | |
| 11 | C8 | PROVIDING & FILLING IN SOAK PIT WITH BRICK BATS 40-80MM INCLUDING SAND PACKING ETC. COMPLETE, AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER. | CUM | 9 | 4.14 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|--|------|------|------------|---|-----------------------------------|
| 12 | C 9 | PROVIDING STONE SOLING OF REQUIRED THICKNESS AS PER DRAWING / SPECIFICATIONS BELOW FLOORING, RAMP, COLUMN FOUNDATIONS OF STORAGE SHED ETC. BY USING 80 MM SIZE HARD BROKEN BLACK GRANITE/ QUARTZITE/ GNEISS/ TRAP STONE METAL INCLUDING GRANULAR MURRUM PACKING, WATERING & COMPACTION ETC COMPLETE. AS PER STANDARD SPECIFICATION AND INSTRUCTED BY BHEL ENGINEER. | CUM | 844 | 5.335 | | |
| 13 | C 10 | PROVIDING AND LAYING OF PLAIN CEMENT CONCRETE OF MIX 1:4:8 USING PPC (POZZOLANA PORTLAND CEMENT) , 20 MM DOWN SIZE HARD BROKEN GRANITE STONE AGGREGATE FOR FOUNDATION, FLOORING, COLUMN ETC. INCLUDING SHUTTERING, FINISHING, CURING, CONSOLIDATION ETC. COMPLETE AS PER STANDARD SPECIFICATIONS AND AS DIRECTED BY BHEL ENGINEER. | CUM | 348 | 23.18 | | |
| 14 | C 11 | PROVIDING AND LAYING OF 100 MM THICK PLAIN CEMENT CONCRETE OF MIX 1:3:6 USING PPC (POZZOLANA PORTLAND CEMENT) , 20 MM DOWN SIZE HARD BROKEN GRANITE STONE AGGREGATE FOR PLINTH PROTECTION WITH TROWEL FINISH INCLUDING SHUTTERING, FINISHING, CURING, CONSOLIDATION ETC. COMPLETE AS PER STANDARD SPECIFICATIONS AND AS DIRECTED BY BHEL ENGINEER. | CUM | 36 | 26.11 | | |
| 15 | C 12 | PROVIDING AND LAYING OF RCC MIX 1:2:4 USING PPC (POZZOLANA PORTLAND CEMENT) , 20 MM DOWN SIZE HARD BROKEN GRANITE STONE AGGREGATE INCLUDING MECHANICAL MIXING, VIBRATION, CURING, FORM WORK & CENTERING AS PER DRAWING AND SPECIFICATION AND DIRECTED BY BHEL ENGINEER BUT EXCLUDING COST OF REINFORCEMENTS. | CUM | 224 | 40.12 | | |
| 16 | C 13 | PROVIDING AND LAYING DPC (DAMP PROOF COURSE) 50MM THICK IN 1:2:4 CEMENT CONCRET LAYER USING PPC (POZZOLANA PORTLAND CEMENT), AND 6 MM DOWN AGGREGATE, INCLUDING FORMWORK, BITUMEN FELT USING CEMENT WITH WATER PROOFING COMPOUND ETC. COMPLETE | SQM | 186 | 1.94 | | |
| 17 | C 14 | PROVIDING, CUTTING, BENDING AND FIXING IN POSITION REINFORCEMENT OF VARIOUS DIA. USING HIGH TENSILE TMT STEEL (Fe - 500) FOR FOUNDATIONS, COLUMNS, BEAMS, FLOORS, SUNSHED, SLAB ETC. AS PER DRAWING AND SPECIFICATION AND AS DIRECTED BY BHEL ENGINEER INCLUDING COST OF ALL MATERIALS, LEADS, LIFT, LABOURS, MS BINDING WIRE 18/20 GAUGE, TACK WELDING AND SUPPORTING IF REQUIRED COMPLETE. | MT | 20.9 | 393.18 | | |
| 18 | C 15 | PROVIDING BRICK WORK IN CM 1:6 (1 CEMENT & 6 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT), AND LOCALLY AVAILABLE BURNT CLAY BRICKS (MIN STRENGTH 35 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR FOUNDATION, SUPER STRUCTURE, SEPTIC TANK ETC. INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING , AT ALL ELEVATIONS AND LEVELS , RAKING OUT JOINTS ETC. COMPLETE AND AS DIRECTED BY ENGINEER . EXCLUDING PLASTERING & PAINTING. | CUM | 171 | 31.485 | | |
| 19 | C 16 | PROVIDING BRICK WORK IN CM 1:6 (1 CEMENT & 6 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT), AND FLY ASH LIME BRICKS (MIN STRENGTH 35 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR FOUNDATION, WALL, SEPTIC TANK ETC. INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING , AT ALL ELEVATIONS AND LEVELS , RAKING OUT JOINTS ETC. COMPLETE AND AS DIRECTED BY BHEL ENGINEER . EXCLUDING PLASTERING & PAINTING. | CUM | 416 | 30.30 | | |
| 20 | C 17 | PROVIDING HALF BRICK WORK, PARTITION WALL IN CM 1:4 (1 CEMENT & 4 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT), AND LOCALLY AVAILABLE BURNT CLAY BRICKS (MIN STRENGTH 35 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR FOUNDATION, WALL ETC. INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, RAKING OUT JOINTS, CURING AS PER DRAWING AND DIRECTED BY BHEL ENGINEER. | SQM | 3 | 3.83 | | |
| 21 | C 18 | PROVIDING HALF BRICK WORK FOR PARTITION WALL IN CM 1:4 (1 CEMENT & 4 COARSE SAND) PPC (POZZOLANA PORTLAND CEMENT), AND FLY ASH LIME BRICKS (MIN STRENGTH 35 KG/CM2) AS PER DRAWING AND SPECIFICATION FOR FOUNDATION, WALL ETC. INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, RAKING OUT JOINTS,CURING AS PER DRAWING AND DIRECTED BY BHEL ENGINEER. | M2 | 2 | 3.83 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|--|------|------|------------|---|-----------------------------------|
| 22 | C 19 | SUPPLY, FABRICATION AND ERECTION OF STRUCTURAL STEEL BEAMS (ISMB), PLATES, CHANNELS, JOISTS, GUSSET PLATES, BOLTS, NUTS ETC. COMPLETE AS PER DRAWINGS AND AS DIRECTED BHEL ENGINEER FOR ISMB-250 / ISMB - 200 COLUMNS FOR CLOSED STORAGE SHEDS INCLUDING PROVIDING AND FIXING FOUNDATION BOLTS TO FIX THE COLUMNS TO FOUNDATIONS, ALL MATERIALS, LABOUR, T&Ps ETC., ONE COAT OF PRIMER, FOLLOWED BY TWO COATS OF ENAMEL PAINT OF APPROVED MAKE, COLOUR AND QUALITY FOR FINISHED PRODUCTS AT SITE, PREPARATION OF DESIGN & DETAILED FABRICATION DRAWINGS AND GETTING APPROVED FROM BHEL COMPLETE AS PER IS CODES SPECIFICATIONS AND DIRECTION OF BHEL ENGINEER. | MT | 2 | 435.465 | | |
| 23 | C 20 | ERECTION, FIXING AND ALIGNMENT OF ISMB-200 / ISMB-250 COLUMNS FOR CLOSED STORAGE SHEDS INCLUDING ISSUANCE OF THESE COLUMNS FROM BHEL STROES / YRAD, LOADING & UNLOADING, TRANSPORTATION (AT SITE), FABRICATION (IF ANY), PROVIDING & FIXING IN POSITION WITH HOLDING DOWN BOLTS , LABOUR, T&Ps, CLEANING / SCRAPPING THE COLUMNS TO RECIEVE THE FRESH PRIPMER / PAINT, AND COST OF RED OXIDE PRIMER AND TWO COATS OF SYNTHETIC ENAMEL PAINTS (OVER PRIMER COAT OF RED OXIDE) OF APPROVED MAKE, COLOUR AND QUALITY AT SITE, AS PER SPECIFIATIONS, STANDARDS AND AS DIRECTED BY BHEL ENGINEER. NOTE: STRUTURAL STEEL COLUMNS SHALL BE PROVIDED BY BHEL AS FREE OF COST (FOC) ITEM. COLUMNS SHALL BE THOROUGHLY CLEANED, STRAIGHTENED AND RECTIFIED AS PER SITE REQUIREMENT AND AS DIRECTED BY BHEL ENGINEER. | MT | 13.1 | 70.95 | | |
| 24 | C 21 | ERECTION, FIXING, JOINTING AND ALIGNMENT OF TUBULAR TRUSSES (BY USING CLASS B, MEDIUM QUALITY PIPE) AND SIDE RUNNERS FOR SIDE CLADDING AS PER BHEL APPROVED DRAWING WITH WIND TIES (USING FLAT OF SIZE 40X5MM) TO BE PROVIDED ABOVE SHEETS AND PROVIDING & FIXING BASE PLATES WITH HOLDING DOWN BOLTS ON ISMB COLUMNS, GUSSETS, RIBS, PINS, SPLICES ETC. AS REQUIRED INCLUDING TRANSPORT, LOADING, UNLOADING FROM FABRICATION YARD / STORE TO SITE ETC. COMPLETE. RATE IS INCLUSIVE OF ALL MATERIALS, LOADING & UNLOADING, FABRICATION, FIXING IN POSITION, LABOUR, T&Ps AND COST OF RED OXIDE PRIMER AND TWO COATS OF SYNTHETIC ENAMEL PAINTS (OVER PRIMER COAT OF RED OXIDE) OF APPROVED MAKE, COLOUR AND QUALITY AT SITE. NOTE: TRUSSES / PIPE MATERIALS SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM .THE TRUSSES SHALL BE THOROUGHLY CLEANED, STRAIGHTENED AND SURFACE PREPARED FOR RECEIVING THE FRESH PRIMER / PAINT. THUS PREPARED TRUSSES SHALL BE THOROUGHLY CHECKED FOR THEIR CORRECTNESS AND RECTIFIED AS REQUIRED AND AS DIRECTED BY BHEL ENGINEER BEFORE ERECTION. | MT | 44 | 70.95 | | |
| 25 | C 22 | DESIGN, SUPPLY, FABRICATING AND ERECTION OF TUBULAR TRUSSES (BY USING CLASS B, MEDIUM QUALITY PIPE) AND SIDE RUNNERS FOR SIDE CLADDINGS AS PER APPROVED DRAWING WITH WIND TIES (USING FLAT OF SIZE 40X5MM) TO BE PROVIDED ABOVE SHEETS AND PROVIDING & FIXING BASE PLATES WITH HOLDING DOWN BOLTS ON ISMB COLUMNS, GUSSETS, RIBS, PINS, SPLICES ETC. AS REQUIRED INCLUDING TRANSPORT, LOADING, UNLOADING CHARGES FROM FABRICATION SHOP / YARD TO SITE ETC. COMPLETE. RATE IS INCLUSIVE OF ALL MATERIALS, LOADING & UNLOADING, FABRICATION, FIXING IN POSITION, LABOUR CHARGES, T&Ps AND COST OF RED OXIDE PRIMER AT FACTORY/ YARD AND TWO COATS OF SYNTHETIC ENAMEL PAINTS (OVER PRIMER COAT OF RED OXIDE) OF APPROVED MAKE, COLOUR AND QUALITY AT SITE, PREPARATION OF DETAILED DESIGN & FABRICATION DRAWINGS AND GETTING APPROVED FROM BHEL ETC. COMPLETE AS PER DIRECTIONS OF BHEL ENGINEER. | MT | 15 | 444.33 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|---|------|------|------------|---|-----------------------------------|
| 26 | C 23 | DESIGN, SUPPLY, FABRICATING AND ERECTION OF STRUCTURAL STEEL STAGING (APPROX. Ht. 4.0M) FOR INSTALLATION OF PVC OVER HEAD WATER TANK (OHT) OF CAPACITY- 1000 LITRES AS PER BHEL DRAWING. RATE IS INCLUSIVE OF ALL MATERIALS, LOADING & UNLOADING, FABRICATION, FIXING IN POSITION, LABOUR CHARGES , T&Ps AND COST OF RED OXIDE PRIMER AND TWO COATS OF SYNTHETIC ENAMEL PAINTS (OVER PRIMER COAT OF RED OXIDE) OF APPROVED MAKE COLOUR AND QUALITY AT SITE. | MT | 1 | 435.46 | | |
| 27 | C 24 | PROVIDING AND FIXING 0.63 MM THICK PPGI SHEETS OVER THE ROOF OF SHED AND FOR SIDE CLADDING AS PER BHEL DRAWING INCLUDING PROVIDING AND FIXING SUITABLE FLASHING, TRIM CLOSURE CAPS, HIPS, RIDGES, VALLEYS, GALVANISED IRON J OR L HOOK, BOLTS / SELF TAPPING SCREWS, BITUMINOUS WASHERS, GI CRAMP BOLTS, NUTS, SCAFFOLDING ETC. COMPLETE, ALL AS PER LATEST IS 459, 3307 AND 730. | SQM | 3537 | 4.085 | | |
| 28 | C 25 | ERECTION AND FIXING THE PPGI SHEETS OVER THE ROOF OF SHEDS AND FOR SIDE CLADDIG AS PER BHEL APPROVED DRAWING INCLUDING ISSUANCE OF THESE SHEETS FROM BHEL STORES, LOADING, UNLOADING, TRANSPORTATION AT SITE, PROVIDING AND FIXING SUITABLE FLASHING, TRIM CLOSURE CAPS, HIPS, RIDGES, VALLEYS, GALVANISED IRON J OR L HOOKS, BOLTS / SELF TAPPING SCREWS, BITUMINOUS WASHERS, GI CRAMP BOLTS, NUTS, SCAFFOLDING, CLEANING AND NECESSARY RECTIFICATION WORK ETC. COMPLTE, ALL AS PER LATEST IS 459,3307 AND 730 AND AS DIRECTED BY BHEL ENGINEER. NOTE: THE GI SHEETS SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM . THESE SHEETS SHALL BE THOROUGHLY CLEANED, STRAIGHTENED AND RECTIFIED AS REQUIRED INCLUDING SCRAPPING THE DAMAGED PAINTS AND APPLYING FRESH PAINT TO MATCH THE EXISTING SURFACE WHEREVER REQUIRED AS PER I.S. CODE /CPWD SPECIFICATIONS AND DIRECTION OF BHEL ENGINEER. | SQM | 800 | 0.52 | | |
| 29 | C 26 | PROVIDING AND FIXING OF UV STABILISED TRANSLUCENT RMP/FRP (FIBRE GLASS REINFORCED PLASTIC) SHEETS - 2.00 MM THICK OF APPROVED MAKECONFIRMING TO IS 10192 AND IS 12866 INCLUDING COST OF GI J OR L HOOKS, BOLTS / SELF TAPPING SCREWS, NUTS, WASHERS, BITUMEN WASHERS, SCAFFOLDING ETC. COMPLETE SO AS TO MATCH WITH PPGI SHEETS FOR NATURAL LIGHTING. | SQM | 201 | 5.68 | | |
| 30 | C 27 | PROVIDING AND FIXING OF FALSE CEILING OF 12.5 MM THICK TAPERED EDGE GYPSUM PLAIN BOARD CONFIRMING TO IS:2095 PART I WITH 4MM THICK PANELS OF APPROVED QUALITY AND DESIGN OF SIZE 600x600 MM WITH SQUARE EDGES SUPPORTED BY ANODISED ALUMINIUM FRAMES OF TEES 35x23.5x1.5 MM THICK AS MAIN MEMBER AND 19x23.5x1.5 MM TEES AS CROSS SUPPORTING MEMBERS AND WALL ANGLES OF 23.5x23.5x1.5MM. THE MAIN RUNNERS SHALL BE SUSPENDED FROM ROOF AT 1200 MM CENTRE TO CENTRE BY MEANS OF MS RODS WITH GI 'J' THREADED HOOK FOR ADJUSTMENTS. THE CROSS RUNNERS SHALL BE FIXED TO MAIN RUNNER TO FORM 'A' GRID PATTERN OF 600x600MM AND PROVIDING 25 MM WIDE ALUMINIUM STRIP TEES OR MOULDED SECTIONS AT ALL JOINTS. THE RATE SHALL BE INCLUSIVE OF TWO COATS OF APPROVED OBD ON GYPSUM BOARD, SUPPLY & FIXING OF ALUMINIUM FRAME AND SCAFFOLDING ETC. COMPLETE. | SQM | 190 | 4.76 | | |
| 31 | C 28 | PROVIDING AND FIXING OF BEST QUALITY COUNTRY WOOD DOORS COMPRISING OF FRAME 95 X 70MM OF 1st CLASS HARD WOOD AND 38/40MM THICK FLUSH SHUTTERS OF SOLID CORE TYPE USING COMMERCIAL PLY INCLUDING HOLD FASTS, WIND APPLIANCES, HANDLES, TOWER BOLTS AND ALDROPS, MORTISE OR SUITABLE LOCKS ETC. AS PER THE STANDARD PRACTICE AND APPLYING TWO COATS OF SYNTHETIC ENAMEL PAINT OF APPROVED SHADE & COLOR OVER A COAT OF PRIMER AS DIRECTED BY BHEL ENGINEER. | SQM | 17 | 14.11 | | |
| 32 | C 29 | PROVIDING AND FIXING OF BEST QUALITY PVC PANELED DOORS OF THICKNSS 29MM, SINTEX/BAJAJ MAKE OR APPROVED EQUIVALENT FOR TOILETS INCLUDING ALL FITTINGS AND FIXTURES, MS ANGLE FRAME OF SIZE 40 X 40 X 6 MM ETC. ALL COMPLETE AS PER DRAWINGS AND SPECIFICATIONS. | SQM | 2 | 18.45 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|--|------|------|------------|---|-----------------------------------|
| 33 | C 30 | PROVIDING AND FIXING OF 18 GAUGE M.S. SHEET DOOR WITH FRAME WORK 40 X 40 X 6 MM M.S. ANGLE INCLUDING LOCKING ARRANGEMENTS, HOLD FAST, APPLYING ANTICORROSSIVE PRIMER COAT OF RED LEAD PAINT AND 2 COATS OF SYNTHETIC ENAMEL PAINT OF APPROVED COLOUR COMPLETE AS DIRECTED BY BHEL ENGINEER. | SQM | 3 | 17.40 | | |
| 34 | C 31 | SUPPLYING, MANUFACTURING AND FIXING IN POSITION OF STEEL WINDOWS AND VENTILATORS INCLUDING FRAMES & IRON BARRED (GUARD BAR OF SQUARE SECTION @ 100 MM C/C) AND GLAZED WITH 4 MM PLAIN GLASS AS PER STANDARD SPECIFICATIONS & RELEVANT IS CODE AND INSTRUCTIONS OF BHEL ENGINEER. THE COST SHALL BE INCLUSIVE OF ALL ACCESSORIES FITTINGS, HOLD FASTS, PAINTING TWO COATS OF SYNTHETIC ENAMEL PAINT OF APPROVED COLOUR AND QUALITY OVER ONE COAT OF RED OXIDE PRIMER ETC. COMPLETE. | | | - | | |
| 35 | A | STEEL WINDOWS | SQM | 9 | 4.97 | | |
| 36 | B | STEEL LOUVERED VENTILATORS (TO BE FIXED IN SIDE CLADDING SHEETS) | SQM | 27 | 4.97 | | |
| 37 | C31 | PROVIDING AND LAYING OF IPS FLOORING 40MM THICK USING PPC (POZZOLANA PORTLAND CEMENT) WITH CEMENT CONCRETE 1:2:4 (USING 12 MM DOWN AGGREGATES) AS PER STANDARD PRACTICE / SPECIFICATIONS IN PANELS OF SIZE NOT EXCEEDING 2.0 x 2.0 SQ.M BY PROVIDING, FIXING GLASS STRIPS. INCLUDING CURING & CLEANING ETC. ALL COMPLETE. | SQM | 2586 | 1.87 | | |
| 38 | C 32 | PROVIDING 2 MM THICK NEAT CEMENT FINISH USING PPC (POZZOLANA PORTLAND CEMENT) OVER CONCRETE BASE FOR FLOORING, PAVING, PLASTERED SURFACE ETC. INCLUDING CURING & CLEANING AND SCAFFOLDING COMPLETE. | SQM | 2731 | 0.22 | | |
| 39 | C 33 | PROVIDING AND LAYING OF 5.5 MM THICK CERAMIC TILES OF APPROVED MAKE CONFIRMING TO IS: 15622, REQUIRED SIZE IN COLOURS WHITE, IVORY, GREY, FUME RED BROWN, LAID OVER THE BED OF CM - 1:4 (1 CEMENT & 4 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT). TILES FROM REPUTED MANUFACTURER LIKE JONSON / KAJARIA OR EQUIVALENT INCLUDING ALL MATERIALS COMPLETE AS PER STANDARD PRACTICE AND SPECIFICATION. | | | - | | |
| 40 | I | FLOORING - 300MM X 300MM | SQM | 77 | 4.86 | | |
| 41 | II | SKIRTING - 300MM X 150MM | SQM | 7 | 4.69 | | |
| 42 | C 34 | SUPPLYING AND FIXING OF WHITE GLAZED TILES OF REQUIRED SIZES LAID OVER THE BED OF CM - 1:4 (1 CEMENT & 4 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT). DADO IN TOILET & PANTRY ROOM UP TO 1.5 M ELEVATIONS INCLUDING PEREPARATION OF BASE LAYING UNDERBED, FINISHING AND ROUNDING CORNERS AND JUNCTIONS, CURING ETC. COMPLETE AS PER DRAWINGS AND SPECIFICATIONS. | | | - | | |
| 43 | I | FLOORING (5.0MM TO 6.0MM THICK OF SIZE 300MM X 300MM) | M2 | 28 | 5.84 | | |
| 44 | II | DADO (5MM TO 6MM THICK OF SIZE 150MM X 150MM) - 1.5M HEIGHT FROM FINISHED FLOOR LEVEL | M2 | 32 | 4.69 | | |
| 45 | C 35 | PROVIDING PLASTERING WITH CEMENT MORTAR -1:6 (1 CEMENT & 6 COARSE SAND) USING PPC (POZZOLANA PORTLAND CEMENT) OVER BOTH INTERNAL AND EXTERNAL FACES OF BRICKWORK AND CONCRETE SURFACES, PARTITION WALLS ETC. AT ALL LEVELS INCLUDING PREPARING THE SURFACE, RAKING JOINTS, SCAFFOLDING, CURING, COST OF ALL MATERIALS, LABOUR ETC. COMPLETE. | | | - | | |
| 46 | I | EXTERNAL PLASTERING - 18MM THICK | M2 | 1659 | 1.17 | | |
| 47 | II | INTERNAL PLASTERING -12MM THICK | M2 | 2313 | 0.79 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|---|------|------|------------|---|-----------------------------------|
| 48 | C 36 | PROVIDING & APPLYING COLOUR WASH -THREE COATS ON NEWLY PLASTERED EXTERNAL SURFACE OF SHED BY USING BEST SHALE LIME TO GIVE AN EVEN SHADE INCLUDING PREPARING THE SURFACE LIKE CLEANING AND BRUSHING & BROOMING OF WALLS AND IN ACCORDANCE WITH STANDARD SPECIFICATION. RATE INCLUDE COST OF ALL MATERIALS , COLOURING AGENT, BASE COAT OF WHITE WASH, APPROVED ADDESSIVE, SCAFFOLDING AT ALL LEVEL, BRUSH ETC. COMPLETE. | M2 | 1659 | 0.12 | | |
| 49 | C 37 | PROVIDING & APPLYING WHITE WASH - THREE COATS ON NEWLY PLASTERED INTERNAL SURFACE OF SHED (EXCLUDING INNER WALLS OF OFFICE, C&I ROOM, PANTRY, TOILET, COMMON HALL, COMP. ROOM) BY USING BEST SHALE LIME TO GIVE AN EVEN SHADE INCLUDING PREPARING THE SURFACE LIKE CLEANING AND BRUSHING & BROOMING OF WALLS AND IN ACCORDANCE WITH STANDARD SPECIFICATION. RATE INCLUDE COST OF ALL MATERIALS , APPROVED ADDESSIVE, SCAFFOLDING AT ALL LEVEL, BRUSH ETC. COMPLETE. | M2 | 1784 | 0.08 | | |
| 50 | C 38 | PROVIDING & APPLYING TO INTERIOR SURFACES OF STORE OFFICE AND C&I ROOM BY TWO COATS OF OIL BOUND DISTEMPER (OBD) OF APPROVED SHADE ,COLOR AND MAKE CONFIRMING TO IS : 428 TO OBTAIN AN EVEN FINISH AND UNIFORM COLOR OVER A COAT OF PRIMER AS PER MANUFACTURE RECOMMENDATION INCLUDING COST OF PAINT, SURFACE PREPARATION LIKE CLEANING, BRUSHING & BROOMING OF WALLS , SCAFFOLDING AT ALL LEVEL ETC, COMPLETE. SURFACE PREPARATION SHALL BE DONE BY APPLYING PUTTY/PLASTER OF PARIS (POP) INCLUDING COST OF MATERIAL, LABOUR ETC. COMPLETE. | M2 | 457 | 0.47 | | |
| 51 | C 39 | PROVIDING AND FIXING OVER HEAD HYDRAULIC DOOR CLOSER (HEAVY DUTY, HAVING BRAND LOGO WITH ISI, IS : 3564, EMBOSSED ON THE BODY) OF APPROVED BRAND AND SIZE, WITH DOUBLE SPEED ADJUSTMENT ON NECESSARY DOORS WITH NECESSARY ACCESSORIES AND SCREWS ETC. COMPLETE AS DIRECTED BY BHEL ENGINEER. | NO. | 7 | 6.07 | | |
| 52 | C 40 | PROVIDING , SUPPLYING AND FIXING OF 20 GAUGE MS ROLLING SHUTTERS OF SIZE 5 M X 5 M OR 5M X 6M (APPROX.) AS PER I.S. SPECIFICATIONS, COMPLETE, MECHANICALLY OPERATED FROM IN AND OUTSIDE BOTH AS INSTRUCTED BY BHEL ENGINEER INCLUDING TWO COATS OF SYNTHETIC ENAMEL PAINT OF APPROVED COLOUR AND QUALITY OVER ONE COAT OF RED OXIDE PRIMER LOCKING ARRANGEMENT. RATE SHALL BE INCLUSIVE OF ALL THE ABOVE COMPLETE. | M2 | 87.6 | 16.23 | | |
| | | SUB TOTAL- SECTION C | | | | | |
| | S | SANITARY WORKS- PRIOR APPROVAL OF SAMPLE AND BRAND BY BHEL ENGINEER IS NECESSARY BEFORE USE. | | | | | |
| 53 | S 1 | PROVIDING AND FIXING WHITE GLAZED VITREOUS CHINA, HAND WASH BASIN OF 55 CM X 40 CM SIZE INCLUDING COLD WATER PILLER TAP, BRACKETS, STOP TAP, CHROMIUM PLATED BOTTLE TRAP AND NECESSARY PIPE CONNECTIONS INCLUDING UPVC WASTE PIPE AND TRAP UPTO THE OUT SIDE FACE OF THE WALL, MAKING GOOD THE DAMAGED SURFACE, TESTING ETC. COMPLETE. | NO | 1 | 10.05 | | |
| 54 | S 2 | PROVIDING AND FIXING EUROPEAN TYPE WHITE GLAZED VITREOUS CHINA W.C. PAN WITH UPVC SEAT AND LID WITH CHROMIUM PLATED BRASS HINGES AND RUBBER BUFFERS INCLUDING UPVC VENT PIPE (APPROX. 2M. HT. WITH COWL) ON THE OUTSIDE FACE OF WALL, 10 LITRE PVC LOW LEVEL FLUSHING CISTERN WITH ALL FITTINGS, PIPE AND STOP COCK, BRACKETS FOR FIXING CISTERN, 32 MM DIA. UPVC FLUSH PIPE WITH FITTINGS AND CLAMPS, 20 MM DIA. UPVC OVERFLOW PIPE, FLOAT VALVES, CUTTING AND MAKING GOOD TO THE WALLS AND FLOORS, TESTING ETC. COMPLETE. | NO | 1 | 18.86 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

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|-------|----------|---|------|------|------------|---|-----------------------------------|
| 55 | S 3 | PROVIDING AND FIXING IN POSITION OF WHITE GLAZED EARTHENWARE FLAT BACK/CORNER TYPE LIPPED FRONT URINALS OF SIZE 430X260X350 MM / 340X460X265 MM OF APPROVED MAKE AND QUALITY WITH AUTOMATIC FLUSHING CISTERN (5 LITRES), WITH GI FLUSH PIPE AND SPREADERS WITH BRASS UNIONS, GI CLAMPS, CUTTING OF WALLS AND MAKING GOOD OF ALL DAMAGES AND FINISHING TO MATCH THE EXISTING WORK ETC. COMPLETE. RATE QUOTED SHALL INCLUDE COST OF ALL MATERIALS AND LABOUR FOR CARRYING, LAYING & FIXING AND ALL OTHER INCIDENTAL CHARGES ETC. COMPLETE. | NO | 2 | 18.77 | | |
| 56 | S 4 | PROVIDING AND FIXING IN POSITION OF HIGH CLASS BELGIUM OR SUPERIOR MAKE BEVELLED EDGE MIRROR OF SIZE 450MM X 550MM X 6MM WITH 16 MM DIA & 550 MM LENGTH NICKEL PLATED TOWEL ROD MOUNTED ON 6 MM THICK PLYWOOD OR PLASTIC FOLDER SHEET. RATE TO INCLUDE COST OF ALL MATERIALS, LABOUR FOR FIXING THE WOODEN PLUGS WITH CP BRASS SCREWS AND WASHERS ETC. COMPLETE. | NO | 1 | 4.51 | | |
| 57 | S 5 | PROVIDING AND FIXING IN POSITION OF 15 MM DIA CONCUSSION PUSH BUTTON TYPE BRASS/ GUN METAL SELF CLOSING TAP INCLUDING NECESSARY SOCKET, TESTING ETC. COMPLETE FOR URINALS AS PER DIRECTION OF BHEL ENGINEER. | NO | 2 | 2.53 | | |
| 58 | S 6 | PROVIDING AND FIXING IN POSITION OF 15 MM DIA NOMINAL SIZE SCREW DOWN TYPE CHROMIUM PLATES BRASS BIB COCKS OF STANDARD TYPE OF APPROVED MAKE AND QUALITY (LEADER MAKE OR EQUIVALENT) AS PER STANDARD SPECIFICATION.RATE INCLUDES JOINTING MATERIALS,SOCKETS, UNION NUT, TESTING, LABOURS FOR CARRYING AND FIXING ETC. COMPLETE | NO | 3 | 2.71 | | |
| 59 | S 7 | PROVIDING AND FIXING IN POSITION OF 25 MM DIA GUN METAL GATE VALVE . INCLUDING ALL NECESSARY FITTING & FIXTURE ETC. COMPLETE AS PER STANDARD SPECIFICATION. | NO | 1 | 2.53 | | |
| 60 | S 8 | PROVIDING AND FIXING IN POSITION OF 40 MM DIA GUN METAL GATE VALVE . INCLUDING ALL NECESSARY FITTING & FIXTURE ETC. COMPLETE AS PER STANDARD SPECIFICATION. | NO | 1 | 3.45 | | |
| 61 | S 9 | PROVIDING AND FIXING IN POSITION OF 15 MM DIA NOMINAL SIZE SCREW DOWN TYPE CHROMIUM PLATED BRASS STOP COCKS OF APPROVED MAKE AND QUALITY (LEADER MAKE OR EQUIVALENT) AS PER STANDARD SPECIFICATION. RATE INCLUDES COST OF JOINTING MATERIALS, SOCKETS, UNION NUT, TESTING, LABOURS FOR CARRYING AND FIXING ETC. COMPLETE | NO | 4 | 1.54 | | |
| 62 | S 10 | PROVIDING AND FIXING IN POSITION OF 100MM X 50MM HCI "NAHANI" TRAP (100 MM INLET & 100 MM OUTLET SAND CAST IRON S&S AS PER IS: 1729) WITH HCI GRATINGS, BENDS, CONNECTING PIECES OF CI PIPE UPTO OUTSIDE FACE OF THE WALL. MAKING GOOD THE DAMAGED SURFACE,TESTING ETC. COMPLETE AS PER STANDARD SPECIFICATIONS. RATE TO BE ALL INCLUSIVES. | NO | 4 | 4.45 | | |
| 63 | S 11 | PROVIDING AND FIXING IN POSITION OF 150 MM SALT GLAZED STONE WARE GULLY TRAP WITH HCI GRATINGS, BRICK MASONRY CHAMBER (WITH COMMON BURNT CLAY FPS BRICKS OF CLASS 7.5) AND WATER TIGHT CI COVER OF SIZE 300X300 MM OF APPROVED MAKE (WEIGHT OF COVER NOT LESS THAN 4.5 KG AND FRAME NOT LESS THAN 2.5 KG) AND QUALITY AS PER STANDARD SPECIFICATIONS. RATE TO BE ALL INCLUSIVE. | NO | 2 | 9.15 | | |
| 64 | S 12 | PROVIDING AND LAYING WITH REQUIRED GRADING & LEVELING IN TRENCHES / ON WALLS, MEDIUM GRADE (TYPE) GALVANISED IRON (GI) PIPE HAVING EMBOSSED ISI MARK ON IT , OF REQUIRED DIAMETER WITH SCREWED, SOCKETS, JOINTS, NECESSARY GALVANISED IRON FITTINGS SUCH AS SOCKETS, BACK NUTS, ELBOWS, BENDS, TEES, REDUCERS, ENLARGERS, PLUGS, CLAMPS ETC. INCLUDING ALL NECESSARY EXCAVATION, BACK FILLING, CUTTING AND MAKING GOOD THE WALLS, FIXING WITH CLAMPS, TESTING ETC. COMPLETE. | | | | | |
| 65 | I | 40 MM DIA | RM | 100 | 1.93 | | |
| 66 | II | 25 MM DIA | RM | 50 | 1.67 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAAR.

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|-------|----------|---|------|------|------------|---|-----------------------------------|
| 67 | III | 20 MM DIA | RM | 25 | 1.31 | | |
| 68 | IV | 15 MM DIA | RM | 20 | 1.075 | | |
| 69 | S 13 | PROVIDING AT WORKING SITE, CARRYING AND LOWERING INTO TRENCHES, LAYING TO PROPER ALIGNMENT, LEVEL AND GRADE, JOINTING WITH CM (1:1) AND TESTING OF JOINTS ETC. OF THE FOLLOWING SIZE OF SALT GLAZED STONEWARE PIPE INCLUSIVE OF ALL NECESSARY SPECIALS TARRED HEMP YARN AND ALL JOINTING MATERIALS COMPLETE AS PER STANDARD SPECIFICATIONS INCLUDING ALL NECESSARY EXCAVATION ,BACKFILLING, DISPOSAL OF SURPLUS EARTH, LEAD AND LIFT AS PER SITE CONDITIONS. RATE SHALL INCLUDE COST OF ALL MATERIALS, LABOUR CHARGES AND INCIDENTAL CHARGES ETC. COMPLETE. | | | - | | |
| 70 | I | 100 MM DIA STONEWARE PIPELINE INCLUDING ALL SPECIALS COMPLETE. | RM | 50 | 1.16 | | |
| 71 | S 14 | PROVIDING AND FIXING IN POSITION OF PVC OVERHEAD WATER TANK OF SYNTEX OR OTHER APPROVED MAKE OF 1000 LITRE CAPACITY WITH PROVISION FOR OVERFLOW ARRANGEMENT VALVES, INLET AND OUTLET ETC. COMPLETE. SUPPORTING STEEL STRUCTURE FOR FIXING THE TANK SHELL BE PAID IN THE RELEVANT ITEM. | NO | 1 | 37.25 | | |
| 72 | S 15 | CONSTRUCTION OF 230MM THICK BURNT CLAY / FLY ASH LIME BRICK CHAMBER (USING PPC (POZZOLANA PORTLAND CEMENT)) OF THE FOLLOWING DIMENSIONS (INNER DIMENSION) WITH 20 MM THICK INTERNAL & EXTERNAL CEMENT PLASTER OF MIX CM 1:5 (1 CEMENT & 5 COARSE SAND) , NEAT CEMENT FINISH , TOP CI - COVER AND CONNECTORS FOR SEWER LINES. RATE SHALL BE INCLUSIVE OF ALL NECESSARY EXCAVATION & FILLING, PCC-100 MM THICK OF 1:3:6 FOR BEDDING ON 100 MM THICK OVER SIZE SOLING WITH 80 MM METAL ETC. COMPLETE. | | | - | | |
| 73 | I | 600X450X450 WITH C.I COVER | NO | 2 | 25.00 | | |
| 74 | II | 900X600X450 WITH C.I. COVER | NO | 3 | 32.35 | | |
| 75 | S16 | PROVIDING AND FIXING OF PRECAST 80 MM THICK RCC COVER OF MIX 1:1.5:3 FOR MAN HOLES OF VARIOUS SIZES WITH REINFORCEMENT OF 10 MM DIA BOTH WAY TIED WITH TACK WELDING @ 150 MM C/C WITH 2 HOOKS OF 12 MM DIA BARS ETC.COMPLETE. | | | - | | |
| 76 | I | 750MM x 600MM | Nos. | 2 | 5.97 | | |
| 77 | II | 1050MM x 750MM | Nos. | 3 | 6.80 | | |
| 78 | S17 | PROVIDING AND FIXING PTMT TOWEL RAIL COMPLETE WITH BRACKETS FIXED TO WOODEN CLEATS WITH CP BRASS SCREWS WITH CONCEALED FITTINGS ARRANGEMENT OF APPROVED QUALITY AND COLOUR. | | | - | | |
| 79 | I | 600 MM LONG TOWEL RAIL WITH TOTAL LENGTH OF 645 MM, WIDTH 78 MM AND EFFECTIVE HEIGHT OF 88 MM, WEIGHING NOT LESS THAN 190 GMS | NO. | 1 | 2.65 | | |
| 80 | S18 | PROVIDING & FIXING OF PTMT LIQUID SOAP DISPENSER AT ALL WASH BASIN LOCATION. | NO. | 1 | 1.07 | | |
| 81 | S19 | PROVIDING & FIXING OF WOODEN FRAME OF BEST QUALITY COUNTRY WOOD (2.5" THICK & 3.0" WIDE) FOR INSTALLING PORTABLE 1.5T AIR CONDITIONER ON THE WALL OPENING (31"X22") / AS REQUIRED, SO AS TO MAKE A FRAME OF INSIDE CLEAR DIMENSION REQUIRED FOR INSTALLATION OF A.C. WITH COMPLETE FINISHING, PAINTING, HOLD FAST ETC. RATE TO INCLUDE ALL NECESSARY FITTING & FIXTURE, LABOUR, MAKING GOOD THE DAMAGED SURFACE ETC. COMPLETE. AS DIRECTED BY BHEL ENGINEER. | NOS. | 6 | 16.67 | | |
| 82 | S20 | PROVIDING & FIXING IN POSITION OF CI VENT PIPE OF DIA. 100 MM (APPROX. HT. 3 M) IN SEPTIC TANK. RATE TO INCLUDE ALL NECESSARY FITTING & FIXTURE, LABOUR ETC. | RM | 4 | 6.35 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

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|-------|----------|---|-----------|------|------------|---|-----------------------------------|
| 83 | S21 | PROVIDING AND FIXING 18 MM THICK, 150 MM WIDE PELMET OF FLAT PRESSED 3 LAYER OR GRADED WOOD PARTICLE BOARD MEDIUM DENSITY GRADE I, IS : 3087 MARKED, INCLUDING TOP COVER OF 6 MM COMMERCIAL PLY WOOD CONFORMING TO IS: 303 BWR GRADE, NICKEL PLATED M.S. PIPE 20 MM DIA (HEAVY TYPE) CURTAIN ROD WITH NICKEL PLATED BRACKETS, INCLUDING FIXING WITH 25X3 MM M.S. FLAT 10 CM LONG FIXED TO PELMET WITH HOLLOCK WOOD CLEATS OF SIZE 100 MM X 40 MM X 40 MM ON BOTH INNER SIDE OF PELMET AND RAWL PLUGS 75 MM LONG ETC. LABOUR, MATERIALS ALL COMPLETE. | RM | 12 | 1.97 | | |
| 84 | S22 | PROVIDING AND FIXING OF AQUA-GUARD OR EQUIVALENT WATER PURIFIER (15 Litre), ALONG WITH ALL FITTINGS. RATE TO INCLUDE ALL NECESSARY FITTINGS & FIXTURES, LABOUR ETC.AS APPROVED & DIRECTED BY BHEL ENGINEER. | NOS. | 1 | 81.90 | | |
| 85 | S23 | PROVIDING AND FIXING OF 1 No. 18"X24" SIZE STAINLESS STEEL A ISI 304 (18/8) KITCHEN SINK AS PER IS : 13983 WITH ALL FITTINGS LIKE DRAIN PIPE, STOP VALVE ETC. RATE TO INCLUDE ALL NECESSARY FITTING & FIXTURE, LABOUR ETC. AS APPROVED & DIRECTED BY BHEL ENGINEER. | NOS. | 1 | 26.24 | | |
| | | SUB TOTAL- SECTION S | | | - | | |
| | | TOTAL (SECTION C + SECTION S) | | | - | | |
| | E | INTERNAL ELECTRIFICATION FOR CLOSED STORAGE SHEDS, INCLUDING PROVIDING ALL MATERIALS, LABOURS, T&Ps (AS REQUIRED), COMPLYING WITH THE STATUTORY AND LOCAL AUTHORITIES REQUIREMENTS AS APPLICABLE TO MEET THE FUNCTIONAL REQUIREMENTS AND TO FULL SATISFACTION OF BHEL ENGINEER. PRIOR APPROVAL OF MATERIALS SAMPLE AND BRAND OF MATERIAL BY BHEL ENGINEER IS NECESSARY BEFORE USE. | | | - | | |
| 86 | E1 | SUPPLYING & INSTALLING & COMMISSIONING OF 415 V POWER DISTRIBUTION BOARD COMPLETE WITH: 1) INCOMING MCB TPH 100 AMPS. - 1 NO. 2) OUTGOING MCB TPH 32 AMPS. -3NOS. 3) RCCB DP 25/20 AMPS. - 2NOS. 4) OUTGOING MCB SP 6 AMPS - 6NOS. All RCCBs, MCBs SHALL BE MDS/INDO KOPP MAKE. DISTRIBUTION BOARDS SHALL BE SIEMENS / MDS / INDO KOPP MAKE WITH INTERNAL BUSBARS, INTERNAL WIRING, 2 NOS. EARTHING TERMINALS, EARTH CONNECTIONS, INCLUDING GLANDS, LUGS. | Set | 3 | 180.80 | | |
| 87 | E2 | PROVIDING SUITABLE FOUNDATION FOR MOUNTING 415 VOLT AC POWERDISTRIBUTION BOARD AS SPECIFIED ABOVE, INSTALLATION & COMMISSIONING OF PANEL. | NO | 3 | 37.22 | | |
| 88 | E3 | PROVIDING AND INSTALLING WIRING USING 2.5 SQ.MM FRLS PVC INSULATED COPPER CONDUCTOR THROUGH PVC CONDUIT OF REQUIRED SIZE WITH ACCESSORIES AND FIXTURES. WIRING SHALL BE CONCEALED TYPE FOR COMPUTER ROOM, OFFICE SHED & FOR REST OF SHEDS OPEN AND WHREVER REQUIRED IN PVC CONDUIT OF REQUIRED SIZE. | PER POINT | 30 | 4.97 | | |
| 89 | E4 | PROVIDING AND INSTALLING WIRING USING 4.0 SQ.MM FRLS PVC INSULATED COPPER CONDUCTOR THROUGH PVC CONDUIT OF REQUIRED SIZE WITH ACCESSORIES AND FIXTURES. WIRING SHALL BE CONCEALED TYPE FOR COMPUTER ROOM, OFFICE SHED & FOR REST OF SHEDS OPEN AND WHREVER REQUIRED IN PVC CONDUIT OF REQUIRED SIZE. | PER POINT | 16 | 6.07 | | |
| 90 | E5 | PROVIDING AND INSTALLING WIRING FOR MAINS USING 6.00 SQ.MM FRLS PVC INSULATED COPPER CONDUCTOR OF ISI MAKE. USING CONCEALED TYPE WIRING/PVC CONDUIT OF REQUIRED SIZE. | PER POINT | 14 | 7.67 | | |
| 91 | E6 | PROVIDING AND INSTALLING WIRING FOR MAINS USING 16.00 SQ.MM FRLS PVC INSULATED COPPER CONDUCTOR OF ISI MAKE USING CONCEALED TYPE WIRING/PVC CONDUIT OF REQUIRED SIZE. | PER POINT | 11 | 15.64 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|---|-----------|------|------------|---|-----------------------------------|
| 92 | E7 | PROVING AND INSTALLATION OF WIRING FOR FANS/COOLERS USING 2.5 SQ.MM FRLS PVC INSULATED COPPER CONDUCTOR OF ISI MARK THROUGH PVC CONDUITS WITH ACCESSORIES AND FIXTURES. THIS INCLUDES LIGHT FITTINGS ETC. COMPLETE. | PER POINT | 6 | 3.025 | | |
| 93 | E8 | SUPPLYING AND FIXING SUITABLE SIZE GI BOX WITH MODULAR PLATE AND COVER IN FRONT ON SURFACE OR IN RECESS, INCLUDING PROVIDING AND FIXING 3 PIN 5/6 AMPS MODULAR SOCKET OUTLET AND 5/6 AMPS MODULAR SWITCH (ANCHOR OR EQUIVALENT) , INCLUDING TERMINATION, CONNECTION, ALL FITTINGS ETC. AS REQUIRED AND AS DEIRECTED BY BHEL ENGINEER. | NO | 21 | 1.89 | | |
| 94 | E9 | SUPPLYING AND FIXING SUITABLE SIZE GI BOX WITH MODULAR PLATE AND COVER IN FRONT ON SURFACE OR IN RECESS, INCLUDING PROVIDING AND FIXING 6 PIN 5/6 & 15/16 AMPS MODULAR SOCKET OUTLET AND 15/16 AMPS MODULAR SWITCH , (ANCHOR OR EQUIVALENT), INCLUDING TERMINATION, CONNECTION, ALL FITINGS ETC. AS REQUIRED AS DEIRECTED BY BHEL ENGINEER. | NO | 13 | 2.425 | | |
| 95 | E10 | PROVIDING AND FIXING ORDINARY TUBELIGHT WITH FRAME OF STANDARD MANUFACTURER LIKE PHILIPS/BAJAJ OR EQUIVALENT AS APPROVED BY BHEL. THIS INCLUDES TUBE LIGHT FITTINGS ETC. COMPLETE. | NO. | 80 | 1.93 | | |
| 96 | E11 | PROVIDING AND FIXING EXHAUST FANS 12" DIAMETER WITH FRAME OF STANDARD MANUFACTURER LIKE CROMPTON GREEVES OR EQUIVALENT AS APPROVED BY BHEL. | NO. | 3 | 10.27 | | |
| 97 | E12 | PROVIDING AND FIXING HEAVY DUTY PLUG POINT 15 AMPS (ANCHOR MAKE OR EQUIV.) WITH ONE SWITCH FOR COMPUTER ,ONE FOR AC CONNECTION WITH BOARD ETC COMPLETE. | NO. | 6 | 2.43 | | |
| 98 | E13 | PROVIDING AND FIXING METAL CLAD PLUG AND MCB OF 30AMPS. (CROMPTON/MDS MAKE) FOR AIR CONDITIONER WITH BOARD ETC COMPLETE. | NO. | 4 | 5.03 | | |
| 99 | E14 | PROVIDING AND FIXING CEILING FAN 48" DIAMETER OF APPROVED COMPANY SUCH AS CROMPTON GREEVES OR EQUIVALENT AS APPROVED BY BHEL. THIS INCLUDES LIGHT FITTINGS ETC. COMPLETE. | NO | 6 | 7.69 | | |
| 100 | E15 | PROVIDING AND FIXING CALLING BELLS (WITH INDICATOR LIGHT), BELL PUSH OF APPROVED MAKE SUCH AS PHILLIPS/ ANCHOR OR EQUIVALENT ICLUDING WIRING, CONDUTING ETC. COMPLETE. | NO | 2 | 0.345 | | |
| 101 | E16 | PROVIDING EARTHING PITS WITH 2 " DIA , 4 M LONG GI PIPES WITH FLANGE & GI WIRES WITH CHARCOAL, SALT AND AS PER THE STANDARD PRACTICE FOR ELECTRICAL CONNECTION.RATE SHALL BE INCLUSIVE OF ALL MATERIALS, LABOURS, ETC COMPLETE. | NO | 5 | 22.19 | | |
| 102 | E17 | PROVIDING & FIXING ALUMINIUM DISPERSIVE LUMINAIRE ENAMELED GREEN AND WHITE WITH CAST ALUMINIUM FLANGE AND NIPPLE SUITABLE FOR USE WITH GLS LAMP, DOME 12" DIAMETER, WITH HANGING BRACKET AND 200W GLS LAMP OF CROMPTON OR EQUIVALENT BAJAJ/PHILIPS MAKE, COMPLETE. | NOS. | 105 | 2.59 | | |
| 103 | E18 | WIRING WITH 2.5 SQ MM ISI MARK COPPER WIRE FOR ABOVE IN PVC CONDUIT ALONG WITH GI EARTH WIRE INCLUSIVE OF ALL MATERIAL, LABOUR ETC. COMPLETE | PER POINT | 115 | 4.38 | | |
| 104 | E19 | SUPPLYING & FIXING WALL MOUNTING TYPE LIGHTING PANELS, EACH WITH. (1) INCOMING MCB TPN -32 AMPS - 1NO. (2) RCCB DP 32 AMPS - 3NOS (3) MCB SP 6AMPS - 30 NOS. ALL MCBS AND RCCBS SHALL BE OF MDS / INDO KOPP MAKE. LIGHTING PANEL SHALL BE SIEMENS/MDS/INDO KOPP MAKE WITH INTERNAL BUSBARS, 2 NOS. EARTHING TERMINALS, EARTH CONNECTIONS, INCLUDING GLANDS, LUGS & WIRING FROM MAIN DB. | Sets. | 3 | 103.825 | | |
| 105 | E20 | SUPPLY OF CABLES 3 -1/2 CORE X 185 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 (PART -I) | RM | 150 | 3.37 | | |

BOQ CUM RATE SCHEDULE

SCOPE OF WORK: CONSTRUCTION & DEVELOPMENT OF 01 NOS. CLOSED STORAGE SHED (SIZE: 900 SQM) WITH C&I ROOM, IN-CHARGE ROOM, COMMON HALL, COMPUTER ROOM, SIDE RACKS, PANTRY & TOILET AND 02 NOS. CLOSED STORAGE SHEDS (SIZE: 900 SQM EACH) WITH SIDE RACKS ONLY FOR STORAGE PURPOSE INCLUDING INTERNAL / EXTERNAL ELECTRIFICATION WORK COMPLETE AT 1X500 MW FGUTPP (STAGE-IV) UNCHAHAHAR.

| SL.NO | CODE NO. | DESCRIPTION OF WORK | UNIT | QTY. | FACTOR (F) | RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two places after decimal) | AMOUNT (Rs.) = RATE * QUANTITY |
|-------|----------|---|------|------|------------|---|-----------------------------------|
| 106 | E21 | INSTALLATION OF CABLES 3 -1/2 COREX 185 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE CONFIRMING TO IS 1554 (PART -I) INCLUDING LAYING OF CABLE BELOW GROUND , EXCAVATION OF TRENCH OF 600 MM DEPTH (MIN.) IN ALL KIND OF SOIL, TERMINATION OF CABLES CORES WITH CRIMP TYPE LUGS, PROVIDING SAND LAYER BELOW& ABOVE THE CABLE, BRICK LAYING BOTH SIDE & ABOVE THE CABLE AND BACK FILLING ETC. CABLES ARE TO BE LAID FROM TRANSFORMER SUB STATION TO 415 VOLT AC DISTRIBUTION BOARD. | RM | 150 | 1.15 | | |
| 107 | E22 | SUPPLY OF CABLES 3 -1/2 CORE X 95 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 (PART -I) | RM | 120 | 2.635 | | |
| 108 | E23 | INSTALLATION OF CABLES 3 -1/2 CORE X 95 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE CONFIRMING TO IS 1554 (PART -I) INCLUDING LAYING OF CABLE BELOW GROUND, EXCAVATION OF TRENCH OF 600 MM DEPTH (MIN.) 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. COMPLETE. CABLES ARE TO BE LAID FROM 415 VOLT AC DISTRIBUTION BOARD TO WALL MOUNTING PANELS AS DIRECTED BY BHEL ENGINEER. | RM | 120 | 1.11 | | |
| 109 | E24 | SUPPLY OF CABLES 3 -1/2 COREX 35 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE (THREE AND HALF CORE) CONFIRMING TO IS 1554 (PART -I) | RM | 180 | 1.02 | | |
| 110 | E25 | INSTALLATION OF CABLES 3 -1/2 COREX 35 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE CONFIRMING TO IS 1554 (PART -I) INCLUDING LAYING OF CABLE BELOW GROUND, EXCAVATION OF TRENCH OF 600 MM DEPTH (MIN.) 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 AS DIRECTED BY BHEL ENGINEER. | RM | 180 | 1.075 | | |
| 111 | E26 | SUPPLY OF CABLES 2 CORE X 10 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE CONFIRMING TO IS 1554 (PART -I) | RM | 300 | 0.42 | | |
| 112 | E27 | INSTALLATION OF CABLES 2 CORE X 10 SQMM ALUMINIUM ARMoured PVC INSULATED CABLE CONFIRMING TO IS 1554 (PART -I) INCLUDING LAYING OF CABLE BELOW GROUND, EXCAVATION OF TRENCH OF 600 MM DEPTH (MIN.) 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 COMPLETE. CABLES ARE TO BE LAID AS DIRECTED BY BHEL ENGINEER | RM | 300 | 1.075 | | |
| | | TOTAL VALUE OF SECTION-E | | | | | |
| | | GRAND TOTAL (SECTION C + SECTION S + SECTION E) | "A" | | | | |

NOTES:

- 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.

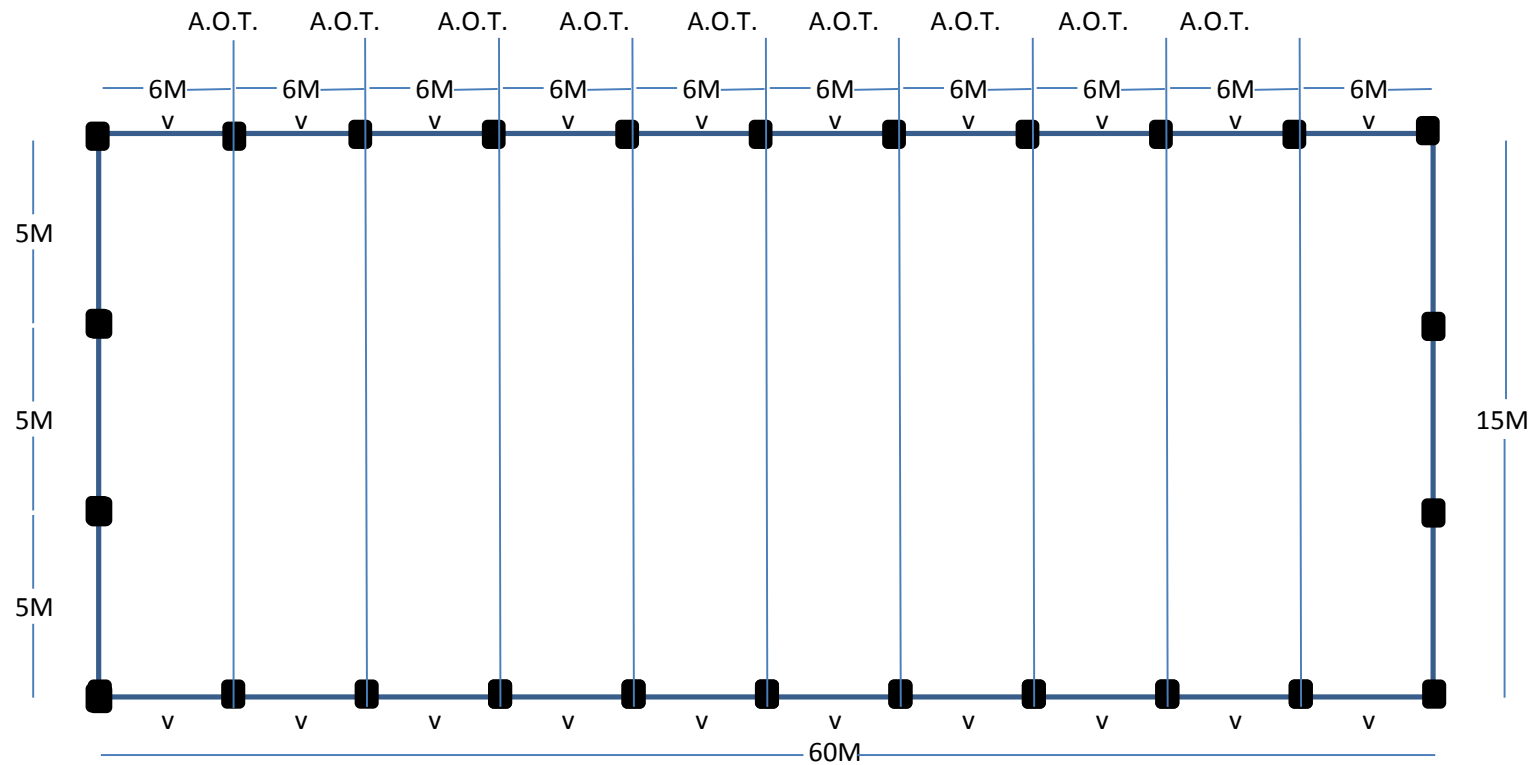
TECHNICAL CONDITIONS OF CONTRACT (TCC)

Drawings

Following Drawings are attached for reference purpose only.

| SL. NO. | DRAWING NO. | DESCRIPTION |
|---------|-------------------------------------|--|
| 1. | BHE/PW/CS/01 | PLAN AT PLINTH LEVEL FOR CLOSED STORAGE SHED (15M x 60M) |
| 2. | BHE/PW/CS-02 | SECTIONAL DETAILS OF RCC FOOTING & ISMB COLUMNS FOR CLOSED STORAGE SHEDS |
| 3. | BHE/PW/CS-03 | PLAN & RCC DETAILS FOR CLOSED SHED |
| 4. | BHE/PW/CS-04 | SECTION OF PLINTH BEAM (400MM X 500MM) |
| 5. | BHE/PW/CS-05 | SECTION OF BEAM (230MM X 300MM) |
| 6. | BHE/PW/ST-SP-01 (SHEET 01 OF 02) | DETAILS OF SEPTIC TANK AND SECTION |
| 7. | BHE/PW/ST-SP-01 (SHEET 02 OF 02) | SECTION A-A |
| 8. | BHE/PW/ST-SP-03 | DETAILS OF SOAK PIT |
| 9. | BHE/PW/COS-01 | PLAN FOR CLOSED SHED WITH OFFICE (60M x 15M) |
| 10. | BHE/PW/COS-02 | SECTION OF LINTEL & SUNSHED PROJECTION FOR CLOSED SHED |
| 11. | BHE/PW/COS-03 | INTERNAL WALL FOUNDATION DETAILS AND PARTITION WALL FOUNDATION DETAILS |
| 12. | BHE/PW/SS-08 | DETAILS OF 15.0 M SPAN TUBULAR TRUSS FOR CLOSED/ SEMI CLOSED SHED |
| 13. | BHE/PW/STAG-01 | STAGING OF OVER HEAD WATER TANK |

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



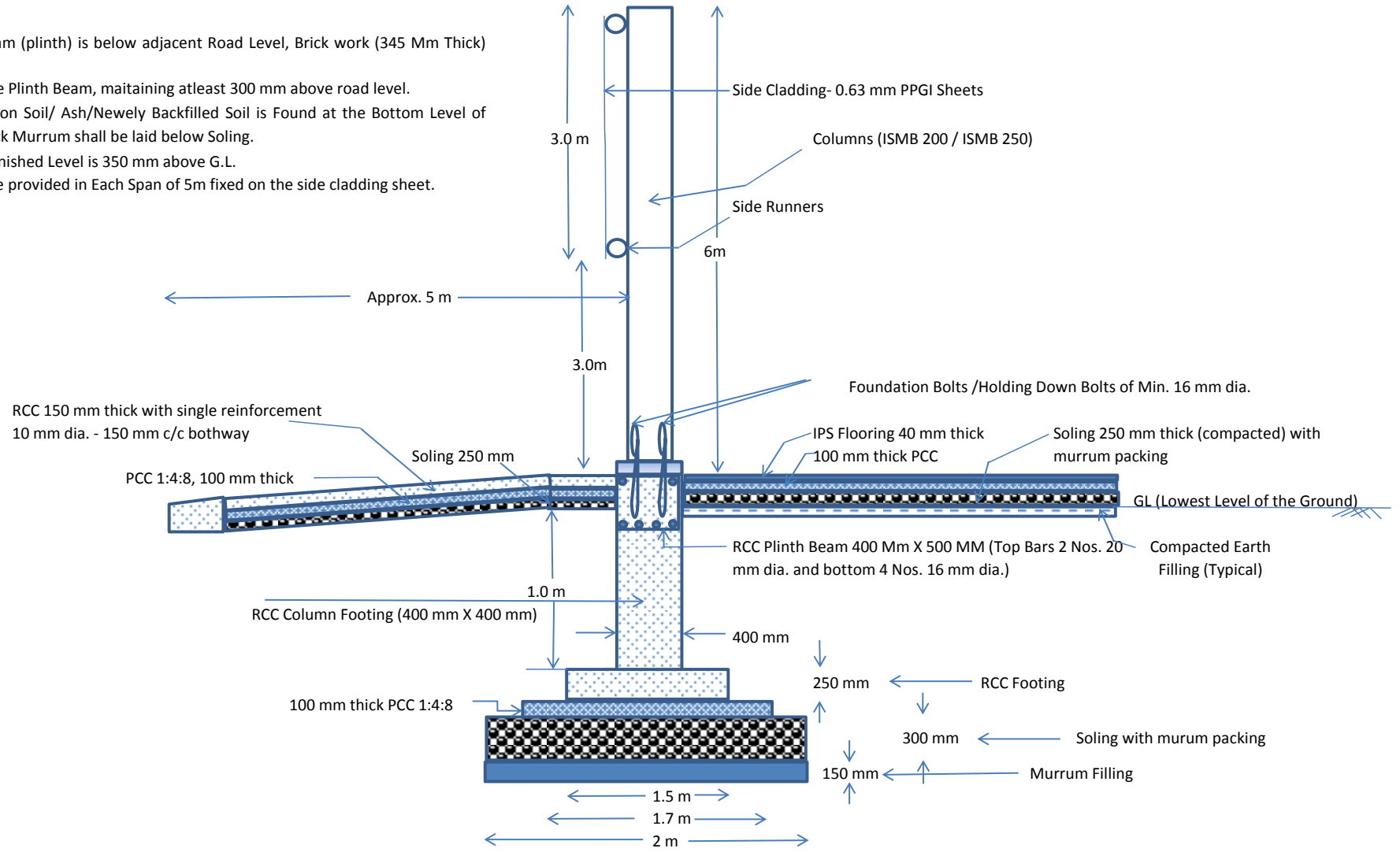
- COLUMN ISMB- 250 /200
- v STEEL LOUVERED VENTILATORS OF SIZE 600 MM X 450 MM
- A.O.T. AXIS OF TRUSS
- * TOTAL NO. OF COMPLETE TRUSS- 11 NOS.

DRG. NO. BHE/PW/CS/01

PLAN AT PLINTH LEVEL FOR CLOSED STAORAGE SHED (15M X 60M)

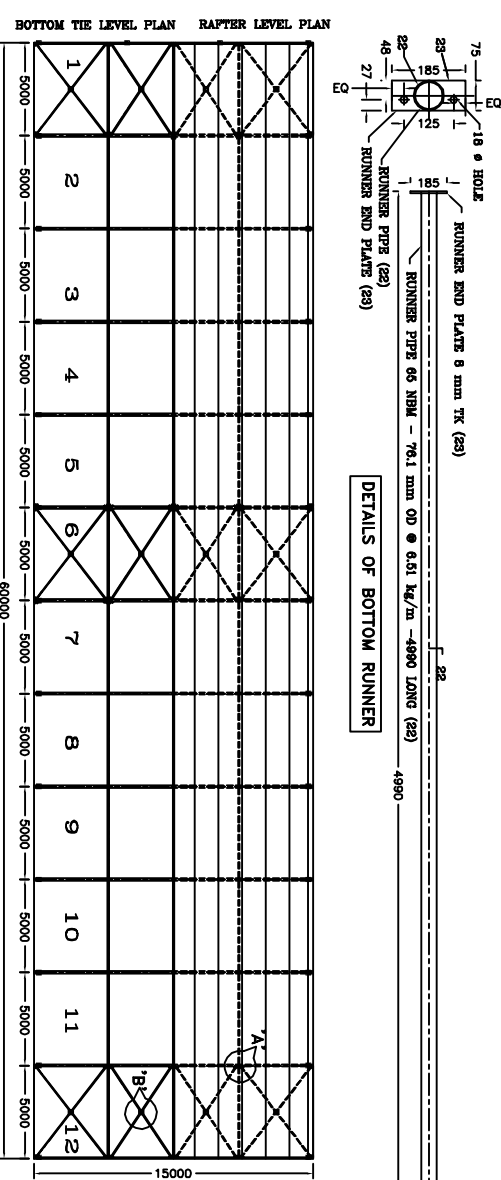
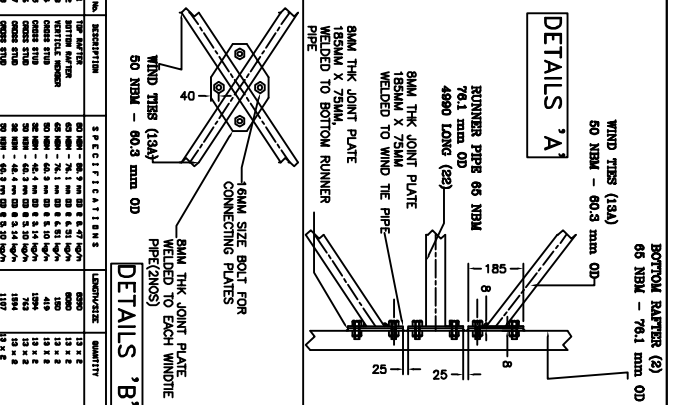
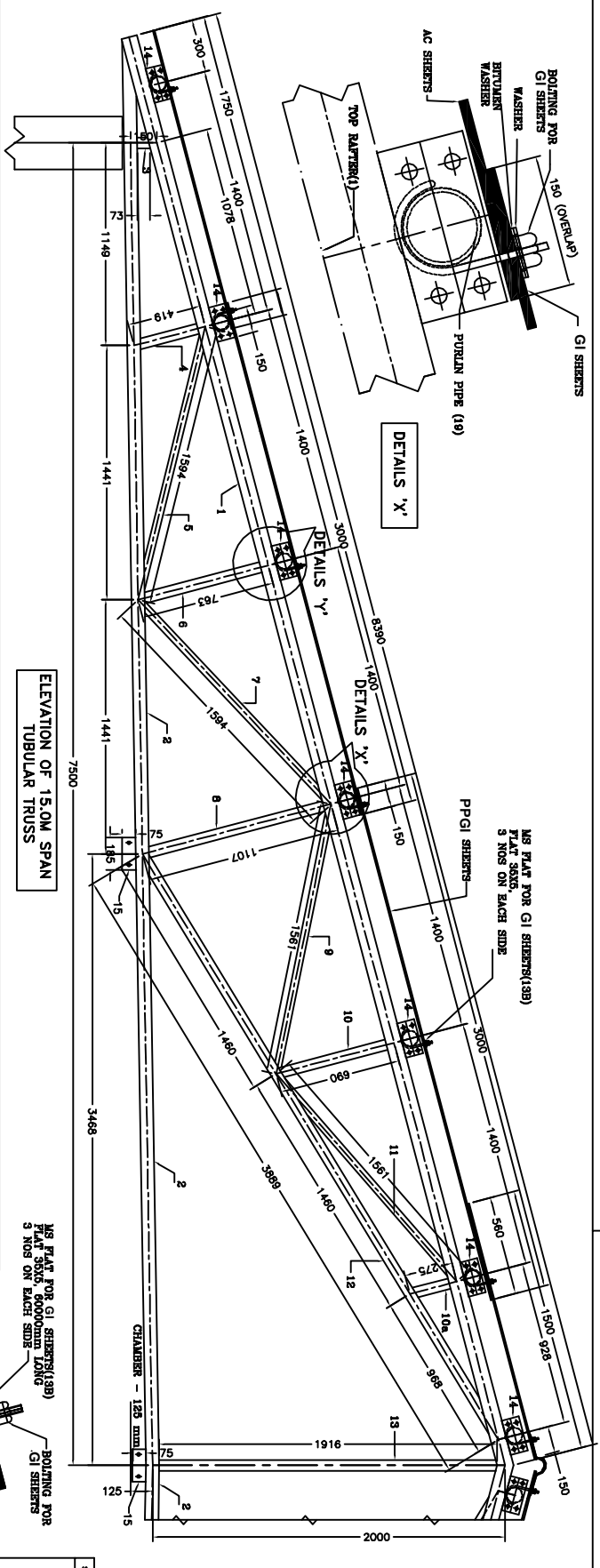
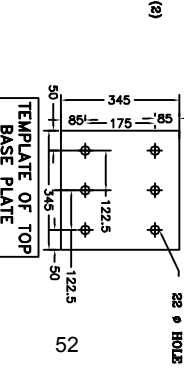
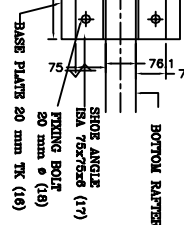
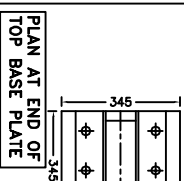
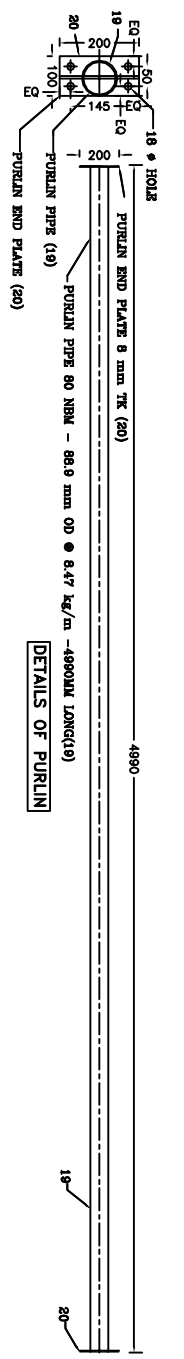
Note:

1. In case Top of Beam (plinth) is below adjacent Road Level, Brick work (345 Mm Thick) should be raise above Plinth Beam, maintaining atleast 300 mm above road level.
- 2) In case Black Cotton Soil/ Ash/Newely Backfilled Soil is Found at the Bottom Level of Soling, a 150 mm thick Murrum shall be laid below Soling.
- 3) In General Floor Finished Level is 350 mm above G.L.
- 4) Ventilators shall be provided in Each Span of 5m fixed on the side cladding sheet.



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

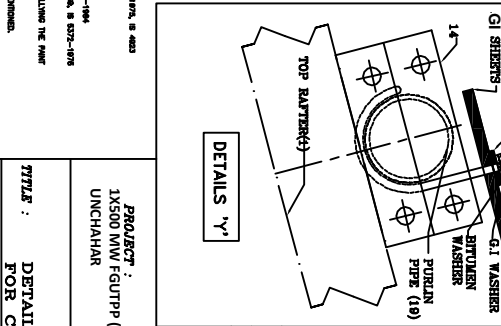
SECTIONAL DETAILS OF RCC FOOTING & ISMB COLUMNS FOR CLOSED STORAGE SHED



DETAILS OF BOTTOM RUNNER

DETAILS OF 15.00 M SPAN TUBULAR TRUSS

KEY PLAN OF SEMI-CLOSED/CLOSED SHED



NOTE:

- ALL PLATES AND ALL GIBBET PLATES ARE 8 mm THICK
- FRAME BOLTS - 20 mm DIA.
- PURLIN CLEAR CONNECTION BOLTS 16 mm DIA.

GENERAL NOTE:

- ALL DIMENSIONS ARE IN MM
- DO NOT SCALE THE DRAWING.
- ALL MATERIAL SHALL CORRECT TO IS 1181-1976, IS 206-1976, IS 4003
- ALL WELDS SHALL CORRECT TO IS 818-1989
- ALL DIMENSIONS SHALL CORRECT TO IS 818-1974
- ALL BLOCK BOLTS AND NUTS SHALL CORRECT TO IS 1343-1984
- WELDS SHALL CORRECT TO IS 818-1974, IS 8374-1984, IS 8374-1978
- ONE COAT OF RED OXIDE SHALL BE APPLIED PRIOR TO PAINTING THE PAINT APPROVED SPECIFICATION.
- ALL WELDS ARE 6 MILL METRIC WELD UNLESS OTHERWISE SPECIFIED.
- CHECK THE EXACT DIMENSIONS AT THE EXACT DIMENSION.
- ANY DIMENSION IN THE DRAWING SHOULD BE SHOWN IN METRIC BEFORE DECISION.

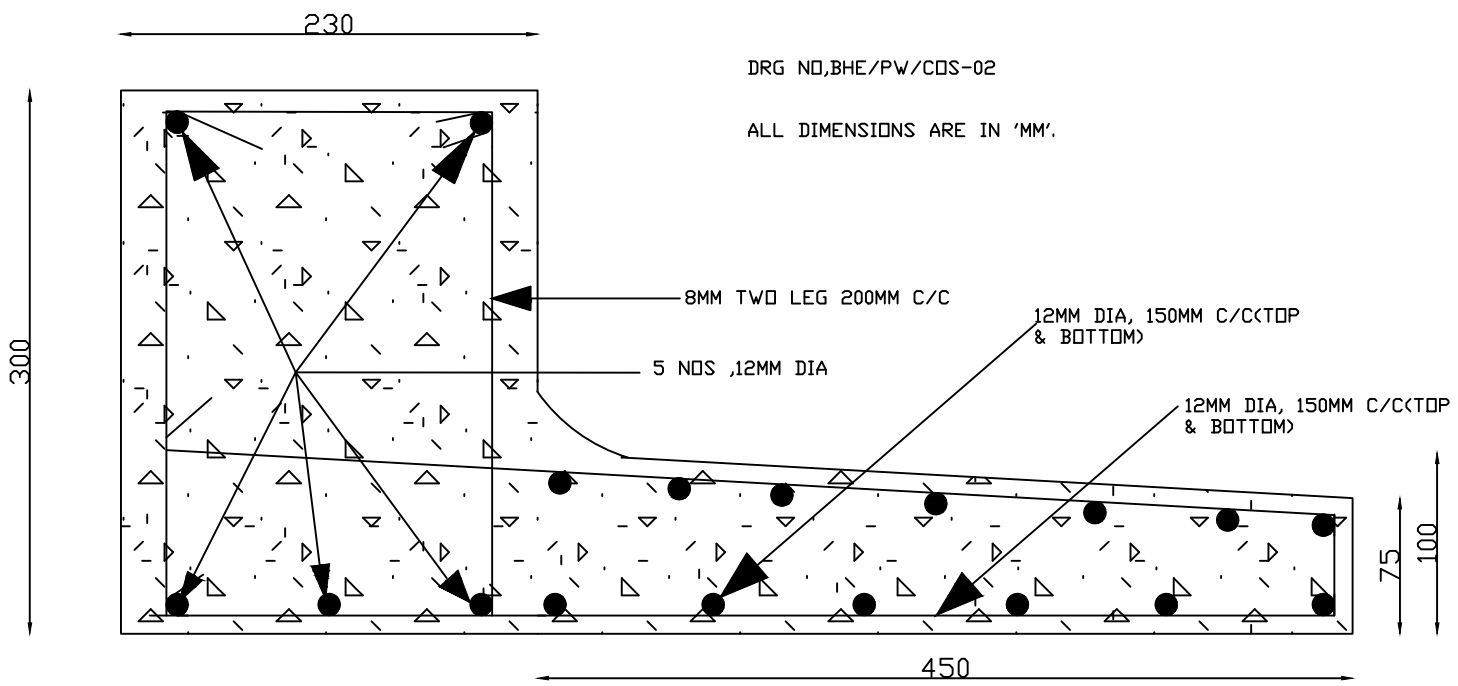
| Sl. No. | DESCRIPTION | QUANTITY | UNIT |
|---------|-----------------|----------|------|
| 1 | VERTICAL MEMBER | 10 | M |
| 2 | VERTICAL MEMBER | 10 | M |
| 3 | VERTICAL MEMBER | 10 | M |
| 4 | VERTICAL MEMBER | 10 | M |
| 5 | VERTICAL MEMBER | 10 | M |
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| 98 | VERTICAL MEMBER | 10 | M |
| 99 | VERTICAL MEMBER | 10 | M |
| 100 | VERTICAL MEMBER | 10 | M |

PROJECT: 1X500 MM FGUTPP (Stage-IV)
UNCHAHAR

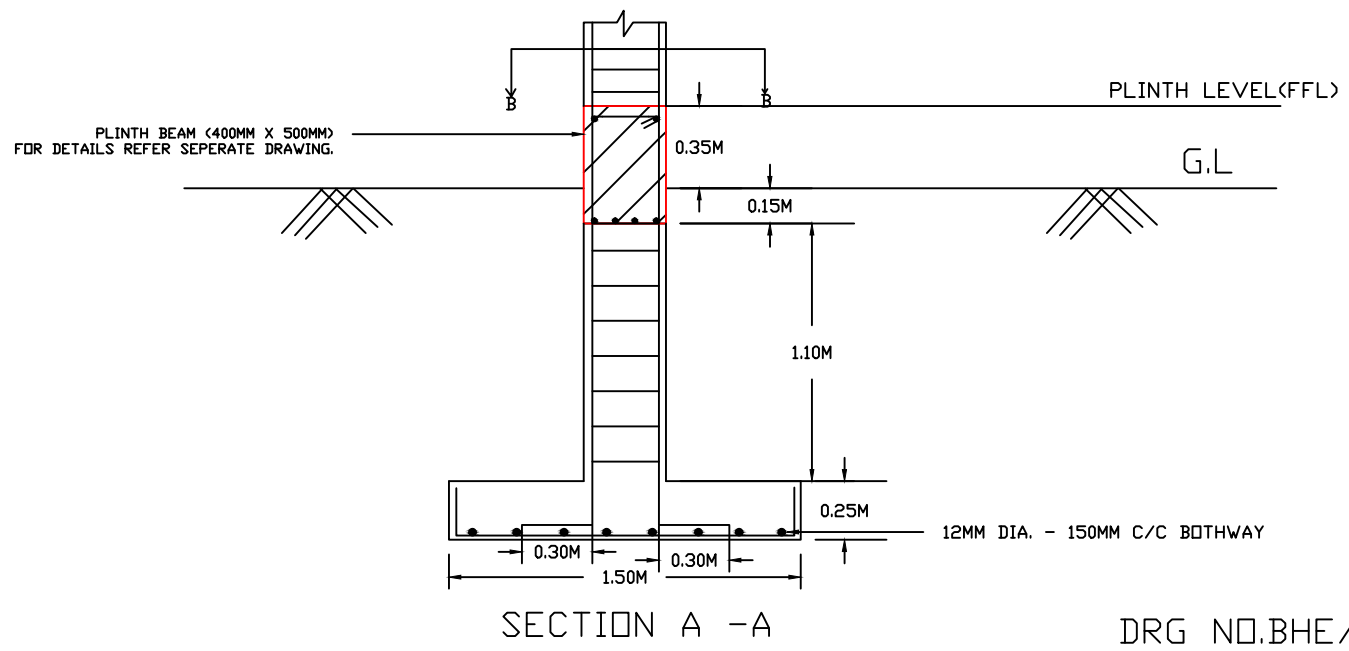
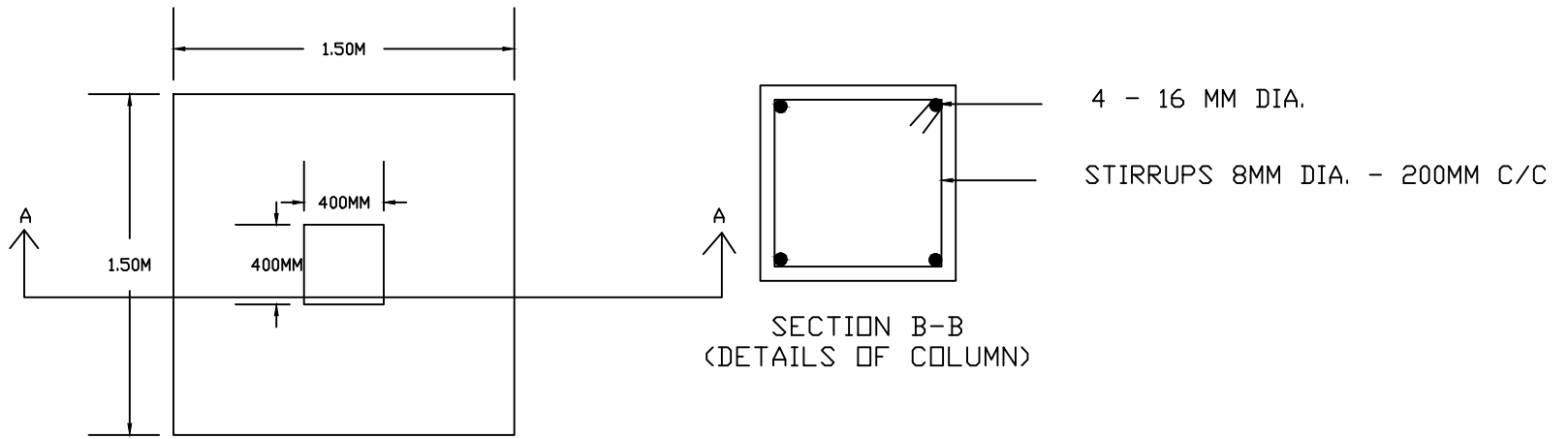
CLIENT: BHARAT HEAVY ELECTRICALS LIMITED

TITLE: DETAILS OF 16.00 m SPAN TUBULAR TRUSS
FOR CLOSED/SEMI CLOSED SHED

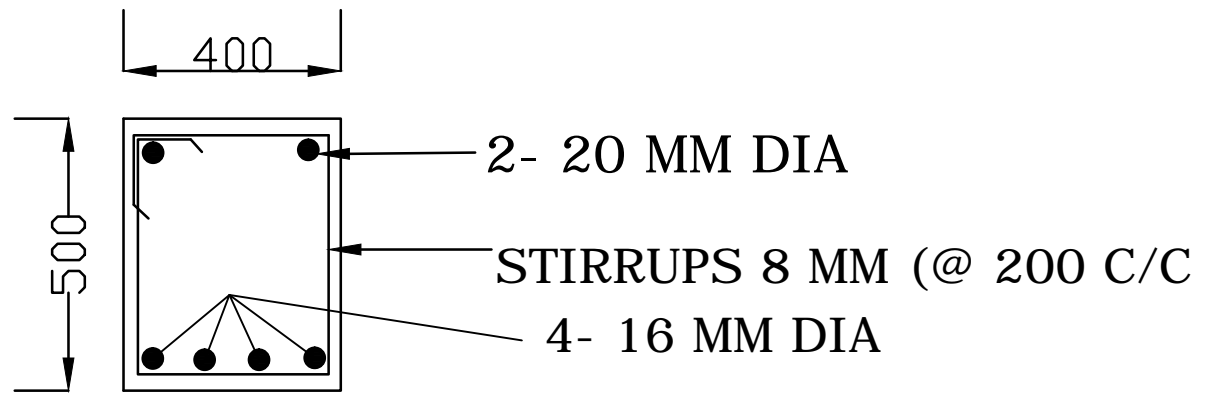
DRG NO: BHE/PW/CS/SS-08



SECTION OF LINTEL & SUN SHED PROJECTION FOR CLOSED SHED

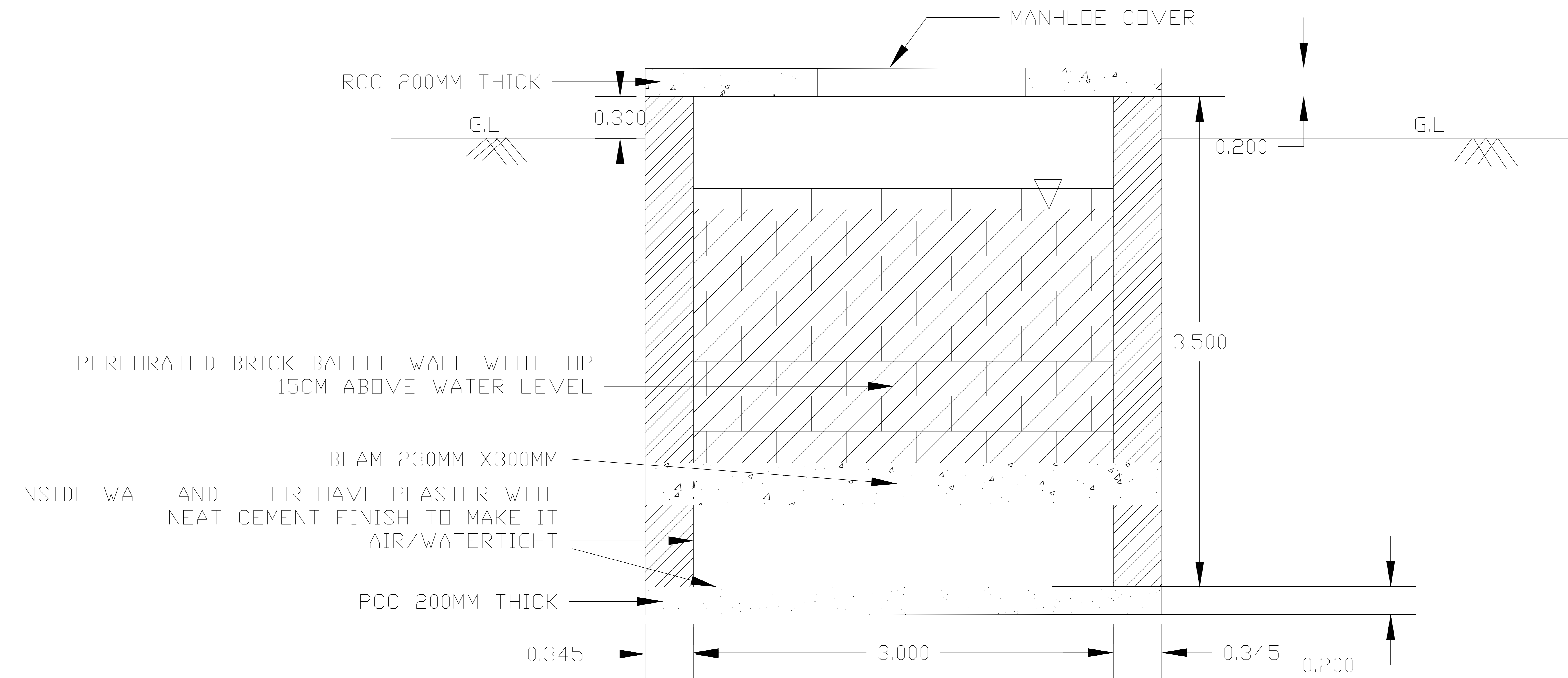


PLAN & RCC DETALIS OF FOOTINGS FOR CLOSED SHED



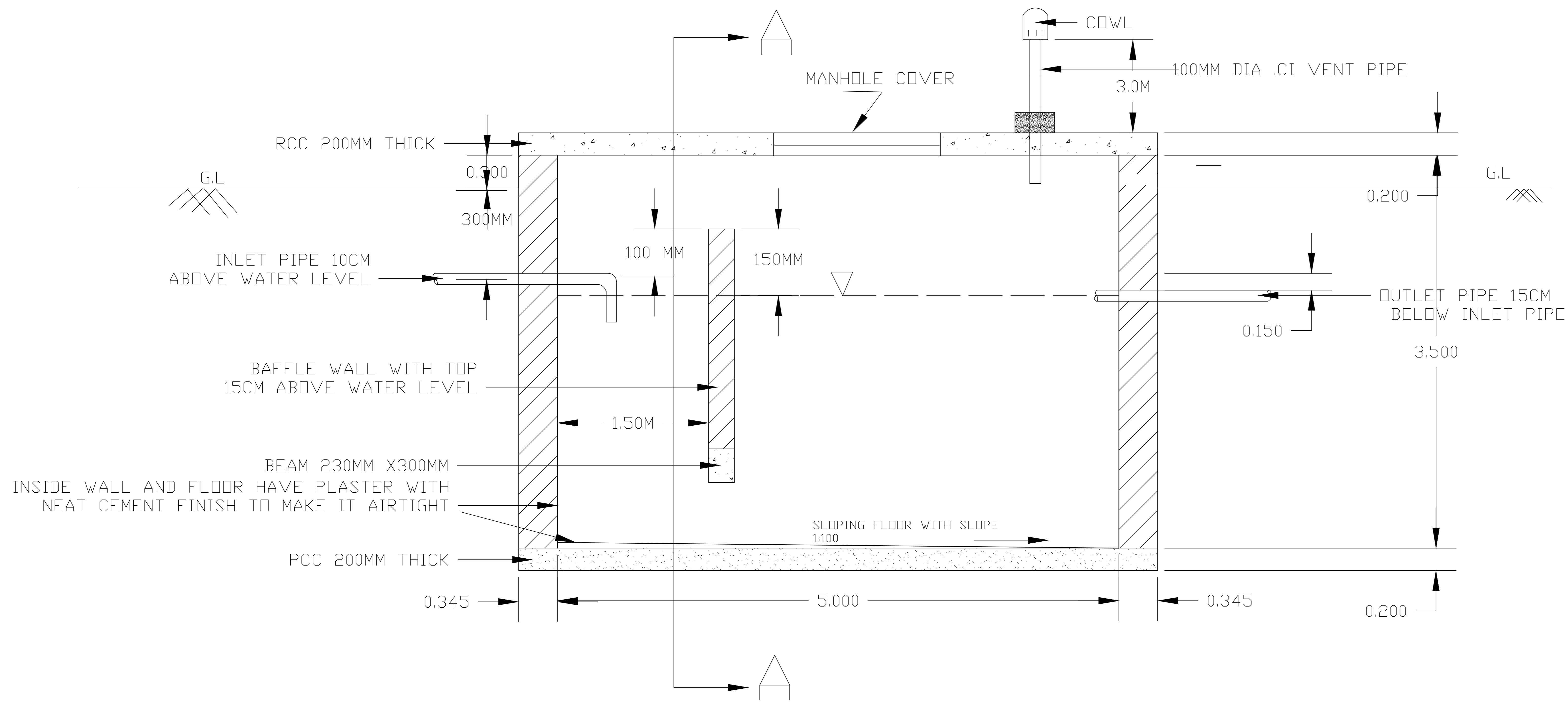
**SECTION OF PLINTH BEAM
(400MMX500MM)**

DRG. NO. BHE/PW/CS-04



SECTION A-A

DRG. NO. BHE/PW/ST-SP-01
 SHEET 02 OF 02



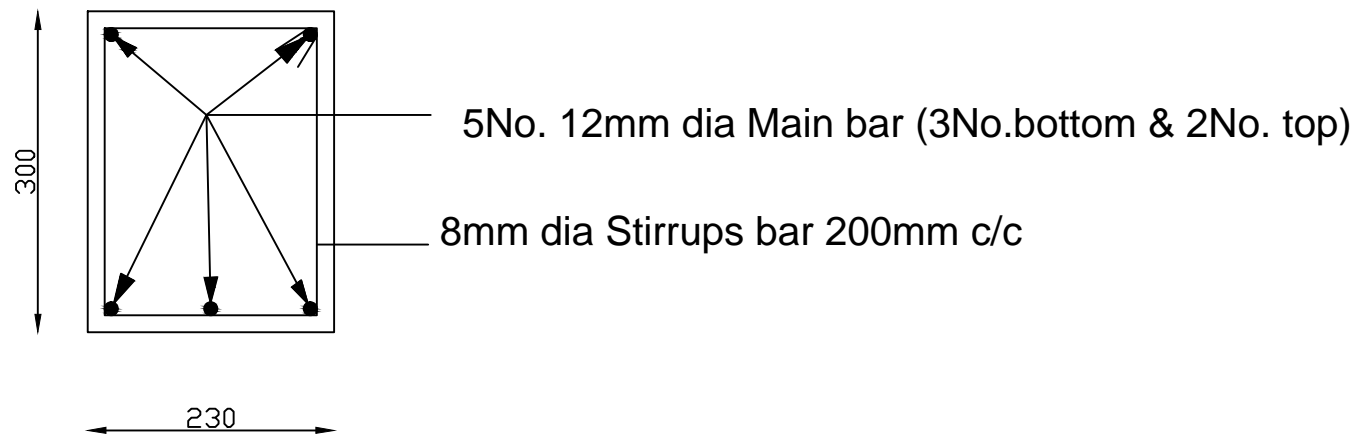
SEPTIC TANK(5.0M X 3.0M X3.5M)

DRG NO. BHE/PW/ST-SP-01

SHEET 01 OF 02

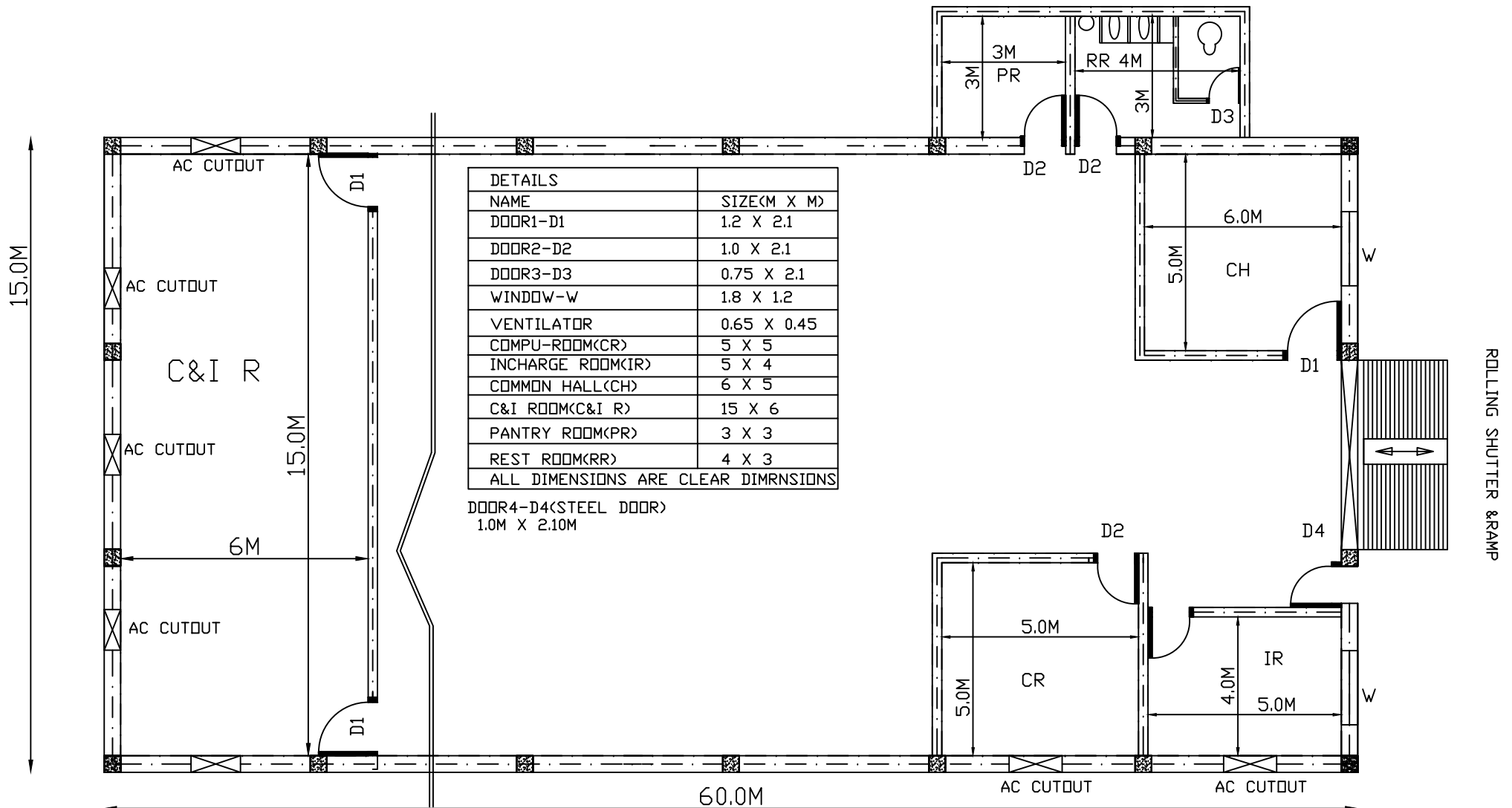
NOTE : F.B 30-50CM ABOVE LIQUID LEVEL

DETAILS OF SEPTIC TANK & SECTION



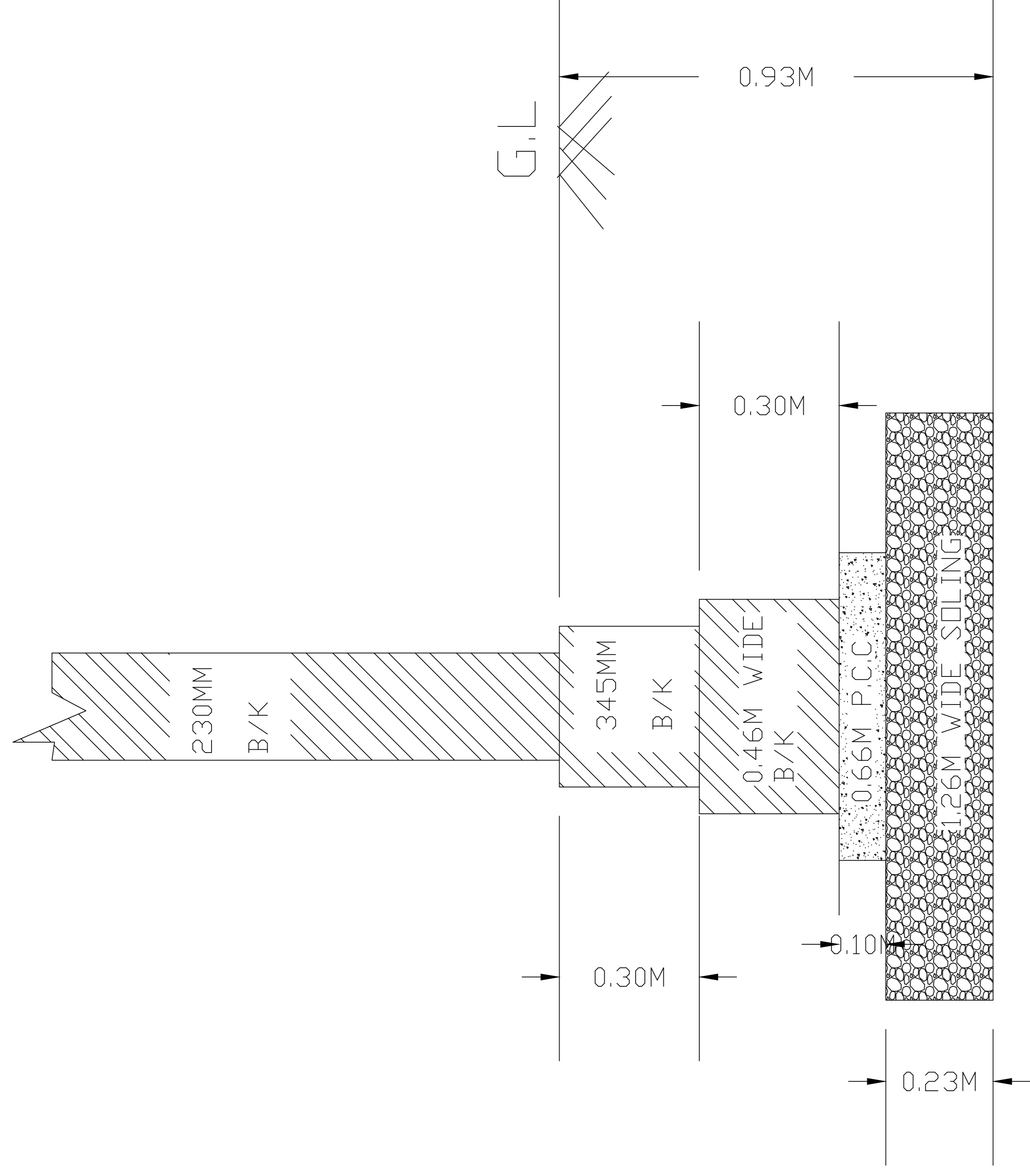
SECTION OF BEAM (230mm x 300mm)

DRG NO. BHE/PW/CS-05

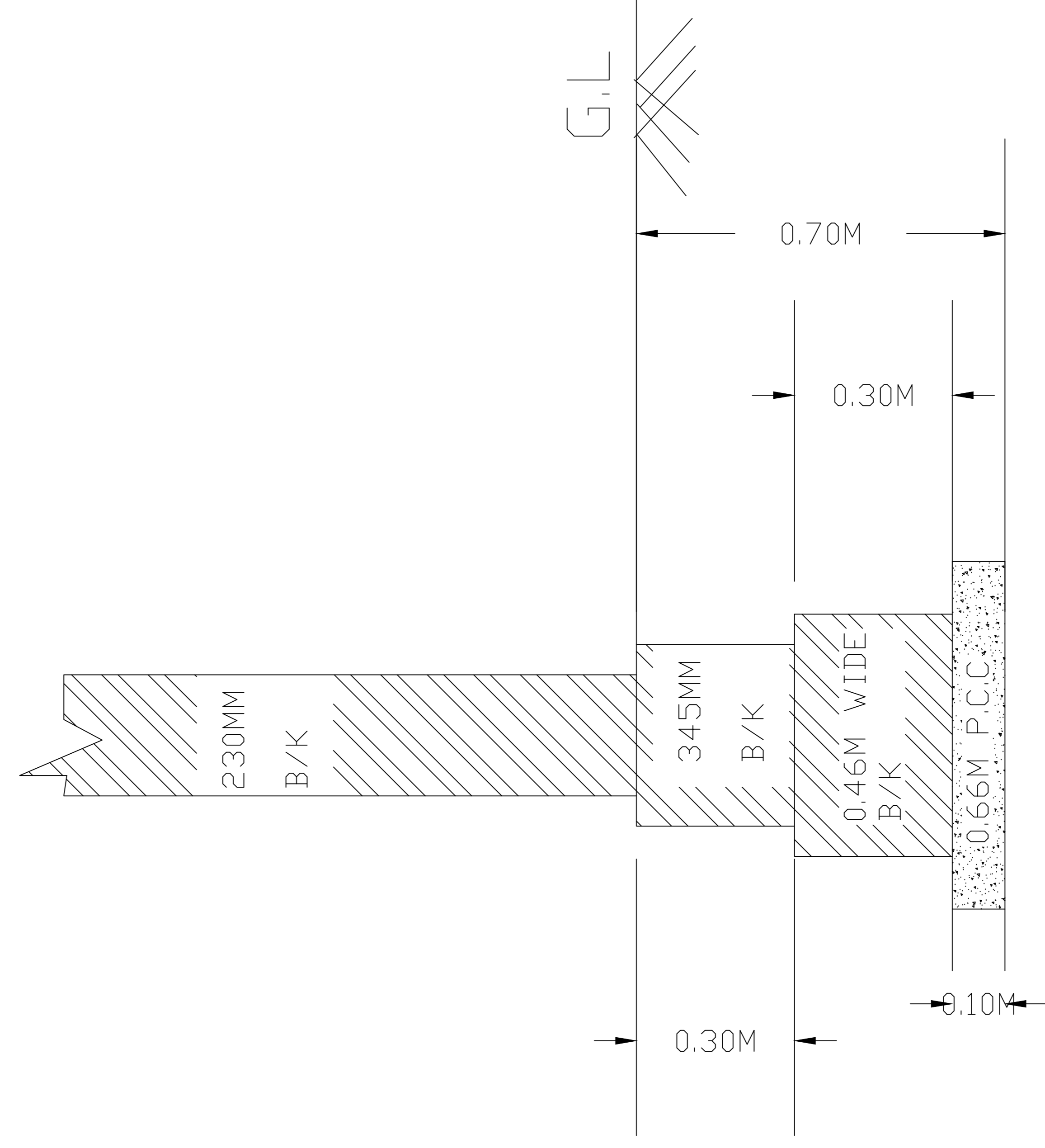


PLAN FOR CLOSED SHED WITH OFFICE (60M X 15M)

DRG NO -BHE/PW/COS-01

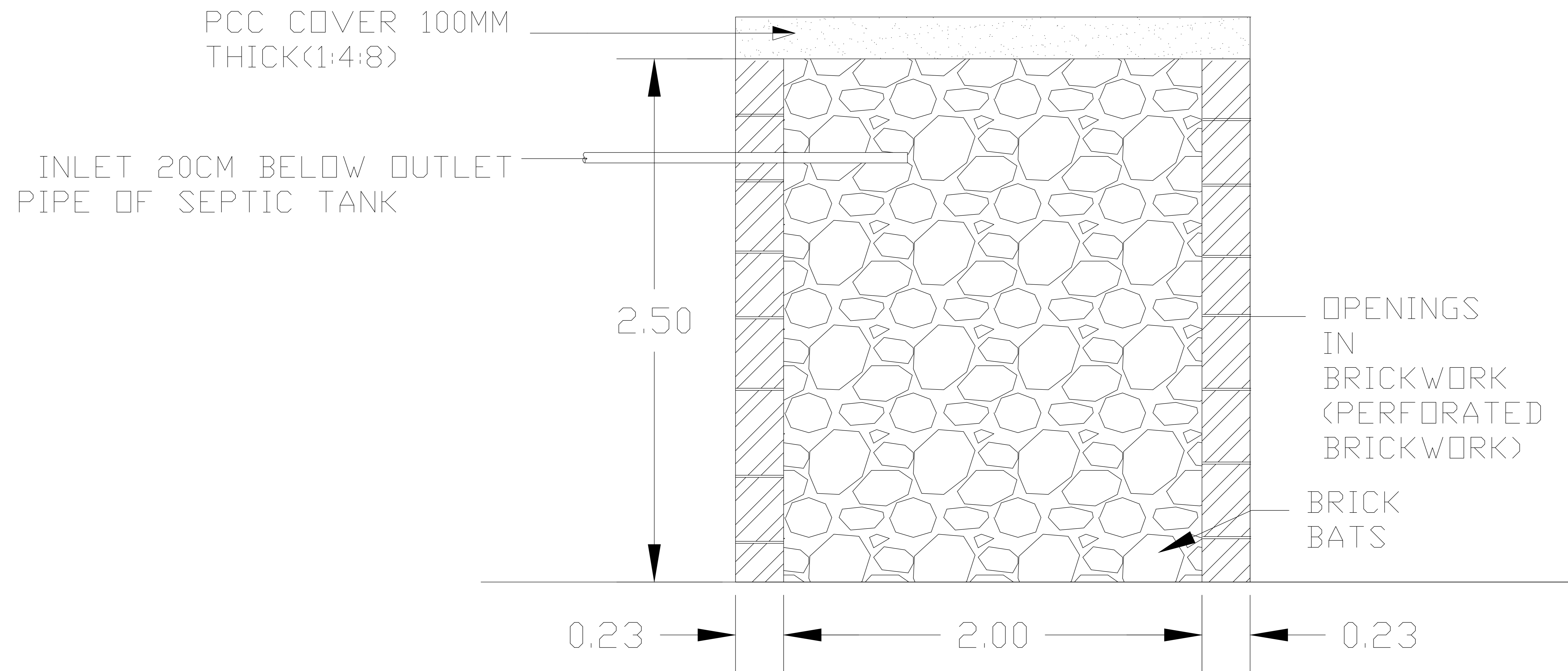


Internal wall Foundation details



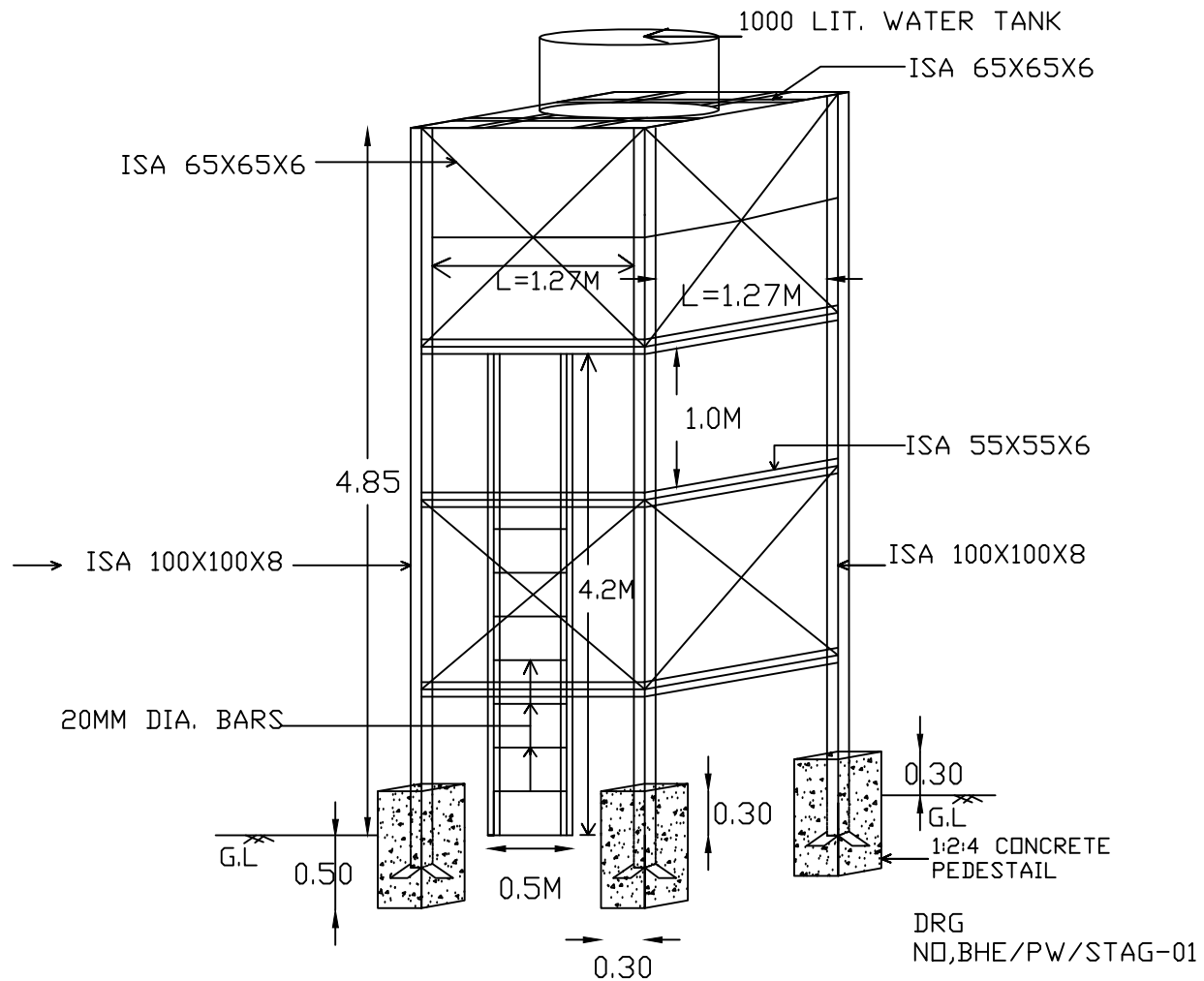
Partition wall Foundation details

Dr.g.No. BHE/PW/CDS-03



DETAILS OF SOAK PIT

DRG. NO. BHE/PW/ST-SP-03



STAGING OF OVER HEAD WATER TANK

NOTE:

*CONCRETE 1:2:4 SHALL BE PAID UNDER RELAVENT ITEM IN BOQ