



JHARKHAND GOVERNMENT MSME TOOL ROOM, RANCHI

CONSTRUCTION OF BOYS HOSTEL

VOLUME – I (BID SPECIFICATION – COMMERCIAL)

**JIIDCO
RANCHI - 834001**

FEBRUARY 2019



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SECTION – I

INVITATION TO TENDER

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SALIENT FEATURES OF THE BID

A.	BID ENQUIRY NO.	JGMTRTC/045 Dated 07-02-2019
B.	ITEM DESCRIPTION	Construction of Hostel of Jharkhand Govt. Tool Room, at Tatisilwai, Ranchi
C.	DUE DATE & TIME OF SUBMISSION	28-02-2019 by 13.00 Hrs “Indian Standard Time (IST)”.
D.	PLACE OF SUBMISSION OF BID	JHARKHAND GOVERNMENT TOOL ROOM, RANCHI Plot No-38, Phase –I, Tatisilwai Industrial Area, Tatisilwai, Ranchi-835103
E.	DATE & TIME OF OPENING OF PART-I: COST OF BID DOCUMENT & EARNEST MONEY DEPOSIT (EMD)/BID SECURITY & PART-II : ELIGIBILITY DOCUMENTS, TECHNICAL PART & COMMERCIAL PART	28-02-2019 by 15.00 Hrs “Indian Standard Time (IST)” at Jharkhand Government Tool Room, Ranchi, Plot No.-38, Tatisilwai Industrial Area, Phase-I, Ranchi Muri Road, Tatisilwai Ranchi-835103.
F.	EARNEST MONEY DEPOSIT (BID SECURITY)	Rs. 4,47,758/- (Indian Rupees Four lakh Forty Seven thousand Seven Hundred Fifty Eight only)
G.	COMPLETION SCHEDULE	12 Months from the Effective date of the Contract.
H.	VALIDITY OF BID	180 days from the date of opening of PART-I.
I.	COST OF BIDDING DOCUMENT (Non Refundable and Not Exempted)	Rs 1,000/- (Indian Rupees One Thousand only)
J.	SALE OF TENDER DOCUMENTS	Start (Web Site): 11.02.2019 Start (By Hand): 11.02.2019 Close (By Hand): 11.02.2019 12.00 Noon “Indian Standard Time (IST)” Close (Downloading from Web-Site) : 11.02.2019 12.00 Hrs “ Indian Standard Time (IST)”

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1.0 Jharkhand Government Tool Room (JGTR), Ranchi hereinafter referred to as "**Employer**", invites sealed bids from eligible Domestic Bidders for "Construction of Boys hostel" on **Unit Rate basis**.

2.0 ELIGIBILITY CRITERIA

2.1 Technical Eligibility

Bidders should have experience in execution of civil works of **Residential / Industrial** units involving RCC, Masonry and finishing works on Item rate / turnkey basis. Bidders should have successfully executed / completed similar projects of the following magnitude during last 7 years ending on last day of the preceding month in which this tender is floated.

At least one completed similar work having value of the work not less than INR 250 Lakhs.

OR

At least two completed similar works having value of each work not less than INR 125 Lakhs.

OR

At least three completed similar works having value of each work not less than INR 100 Lakhs.

In case bidder has successfully executed work of larger cost in a longer duration, portion of the work executed during the last seven years shall be considered. In case the work is in progress, cost of work done during the qualifying period shall be considered.

Similar work

Similar work shall mean execution of civil works related to any Residential / Industrial projects involving RCC, Masonry and finishing works etc.

Documents to be submitted

- a) The bidder shall submit **notarized** copy of the following:
 - i) Letter of award / Work Order.
 - ii) Completion / execution certificate indicating BOQ/volume of work/cost of work executed during the qualifying period.
 - iii) In case the completed / executed cost of work is not indicated in the certificate, the bidder shall submit documentary evidence of the quantity/cost executed / completed during the qualifying period in the form of bills, duly certified by the client.
- b) The bidder shall give undertaking on their letter head regarding non-receipt of adverse remarks from any client during last 7 years.



2.2 Financial Eligibility

Average annual turn-over of the Bidder shall be equal to or more than Rs. 2,50,00,000/-(Rupees Two crore Fifty lakhs only) during last three (03) consecutive financial years, i.e. during financial years 2015-16, 2016-17 & 2017-18.

The Bidder shall submit copy of Audited Annual Reports including Profit & Loss Account statement for last 3 (three) consecutive financial years in support of their meeting above stipulated financial criterion.

The bidder may also submit certificate(s) from a practicing Chartered Accountant, showing turn over for last three (03) consecutive financial years, duly notarized, in support of fulfilment of their financial credentials.

3. Consortium of Bidders are not allowed for this package.

4. Interested Bidders may obtain further information from the office of the:-

Contact person: Mr. M. K. Gupta, Principal, JGTR, Ranchi.

Phone no. 0651-2265966, Fax No :0651-2265578

**Email: principal@jgmsmetr.com, info@jgmsmetr.com,
jg-msmetr@gov.in**

5. a) A complete set of bidding documents may be purchased by any prospective bidder(s) from the places listed below on submission of a written application (in duplicate) giving complete details of Mailing Address, Telephone & Fax Nos., E-mail Address & name of Contact Person along with cost of Tender Document. The cost of Tender Document is **Rs.1000/- (Indian Rupees One thousand only)**, payable by Demand Draft/ Cash in favour of Jharkhand Government Tool Room & Training Centre and payable at Ranchi.

Tender Documents will be available on all working days from 10.00 Hrs (IST) to 13.00 Hrs (IST) against Cash payment, otherwise 10.00 Hrs (IST) to 16.00 Hrs (IST).

Place from where Bid Documents can be purchased: -

Office of the Jharkhand Government Tool Room (JGTR),Tatisilwai, Ranchi.

Contact person: Mr. M. K. Gupta, Principal, JGTR, Ranchi.



- b) Entire tender documents along with detailed NIT are available in the Employer's website i.e. www.jgmsmetr.com. The prospective Bidders can download the documents for the purpose of preparation & submission of their Bids.

It will be presumed that the Bidder has gone through the entire Bid Document available in the website, which shall be binding on the Bidder.

In case a bidder downloads Bid document from Employer's web site (-www.jgmsmetr.com), bidder shall submit non-refundable fee towards cost of the Bidding Document as mentioned above along with their bid, as per details given in Bidding Document. For bidders downloading from employer's website, the instrument for cost of Bidding document shall be Demand Draft payable at Par from a Scheduled or Nationalised Bank, drawn in favour of "Jharkhand Government Tool Room (JGTR)" payable at Ranchi.

6. The bid will consist of three parts:

Part-I: Cost of Tender Document & EMD/ Bid Security

Part-II: "Technical Part & Commercial Part" containing documents for Eligibility Criteria fulfilment and techno commercial bid shall not contain any price at all. However, bidder shall submit un-priced copy of price bid (Part-III) with marks "XX" wherever prices have been quoted along with Part-II.

Part-III: Price Bid

On the tender opening date Part-I shall be opened. The offer received without EMD/Bid Security shall be rejected and Part-II of such bidder shall not be opened.

Bidders are expected to submit all necessary documents in support of fulfilment of Eligibility Criteria. However, in case any further document is found necessary for proper assessment, the Bidder shall have to furnish the same, failing which the Bid will be considered as non-responsive & in-eligible and their offer will not be processed any further.

7. Bids must be accompanied by a **Bid Security (Earnest Money Deposit) of Rs. 4,47,758/-** (Indian Rupees Four lakh Forty Seven thousand Seven Hundred Fifty Eight only) and **Cost of Bid Document** amounting to **Rs.1000/- (Rupees One thousand only)** in the following forms:-

- (a) a Demand Draft/ Cash towards Cost of Bid Documents.
- (b) a Bank Guarantee/ crossed Demand draft in the form provided in the bidding documents towards cost of EMD/Bid Security.

The instruments mentioned above, shall be submitted from an Indian Scheduled Commercial or Nationalised Bank. The DD/BG has to be drawn in

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favour of “**Jharkhand Government Mini Tool Room & Training Centre (JGTR)**” payable at Ranchi.

8. It shall be the responsibility of the prospective bidders to ensure that the Bids have been submitted in the formats and as per the terms and conditions prescribed in the website and no change is made therein. The documents placed in website along with this detailed Notice Inviting Tender (NIT) forms the complete tender document. All the documents along with detailed NIT as placed in the website is final including clarification, drawings, corrigendum, addendum, pre-bid meetings, if any. On verification, at any time, whether the Bidder is successful or not, if any of the documents submitted by the Bidder including the documents downloaded from Employer’s above mentioned website / issued are found tampered/ altered / incomplete, they are liable for rejection, cancellation & termination of the Contract, debarring, etc. as per the rules of the JGTR.

The Bidder is required to carefully examine the Bidding Documents, terms & conditions, drawings and other details relating to work given in the Bidding Documents and fully acquaint himself as to all conditions and matters which may in any way affect the work or the cost thereof. Bidder is deemed to have known the scope, nature and magnitude of the work and the requirements of materials, labour involved, etc.

The Bidder shall be deemed to have visited and examined the site where the Construction of Dormitory, Drawing hall, Refractory lab etc. are to be carried out and its surroundings and obtained for itself on its own responsibility all information, the nature & details of existing structures, if any, and means of transport & communications, whether by land, water or air and as to possible interruptions thereto and access and egress from the site, to have made independent enquiries, examined and fully satisfied itself as to the sources for obtaining sand, stones, bricks and all other construction materials, underground existing services, sub-soil conditions, subsoil water conditions, storms, prevailing winds, climatic conditions and all other similar matters which may affect the work, that may be necessary for preparing the bid for Construction of Dormitory, Drawing hall, Refractory lab etc. The costs of visiting the site shall be at the Bidder’s own expense.

The bidder shall be deemed to have acquainted itself of Government taxes, duties, laws, statute, regulations, levies and other charges relating to supplies to be made, services to be rendered and works to be done at site.

Any neglect or omission or failure on the part of the Bidder in obtaining necessary and reliable information as stated above or on any other matter affecting the Bidder, shall not relieve the Bidder from any risk or liability or the entire responsibility for completion of the work in accordance with the Bidding Documents.

It will be presumed that the Bidder have gone through the entire bidding documents available in the website which shall be binding on them.

9. **JGTR** reserves the right to accept or reject any bid or to annul the Bidding process and reject all bids at any time prior to award of the Contract without



assigning any reason whatsoever and without thereby incurring any liability whatsoever to the affected Bidder(s). Mere purchase and submission of tender document shall not mean fulfilment of requirements of eligibility of the Bidder(s).

10. Central Public Sector Enterprises (CPSEs) under Government of India are exempted from submission of EMD/Bid Security.
11. There shall be no post Tender Price Negotiation except with L-1 (i.e. the lowest evaluated Tender) if required.
12. **JGTR** takes no responsibility for delay, loss or non-receipt of documents sent by post/ courier at any time. No financial obligation shall accrue to **JGTR/** in such an event.
13. The **Total Price** shall mean total price including all taxes & duties, cess, levies, insurance etc.
14. "**Employer**" shall mean and include **Jharkhand Government Tool Room (JGTR), Ranchi** and its different functionaries entrusted with the responsibilities in relation to this contract in respect of the area of responsibilities of such functionaries.

15.0 INTRODUCTION

- 15.1 The instructions / information contained in the bid documents is for guidance and compliance of the intending bidder. Bidder is advised to obtain, in writing, clarifications from the JGTR, if any, prior to submission of their Bid, failing which it will be deemed that the stipulation made in the bid documents have been read, understood and are acceptable to the Bidder.
- 15.2 Bidder shall bear all costs associated with preparation and submission of the bid and subsequent bidding process till award of the order to successful Bidder and the JGTR shall, in no case, be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

16.0 QUALIFICATION AND EXPERIENCE

- 16.1 Offers are requested from Bidders meeting the Eligibility Criteria stipulated in Invitations to Tender. At anytime now or in future, if any of the information or document submitted by the bidder is found to be false, the bid shall be liable to be rejected. Also, JGTR may ask for any further information or documents or may ask for original to any copy of the document that the bidder might have submitted and the bidder shall comply the same immediately, failing which the bid may not be evaluated further.

17.0 BID DOCUMENTS

- 17.1 Bid document comprises of Volume –I (Bid specification – Commercial) which consists of Invitation To Tender (Section- I), Special Conditions of Contract (Section- II), General Conditions of Contract (Section- III), Bank guarantee

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proformae for EMD (Annexure I), Bank guarantee proformae for Performance (Annexure II), Price Schedule (Section IV) and Volume-II (Bid Specification – Technical). In addition, any other document / instruction/ amendments / revisions issued by the JGTR to the Bidder till due date of submission of the offers, shall also be deemed to be integral part of the tender. Bidder will have to furnish all the information as required in the bidding documents.

18.0 COST OF TENDER DOCUMENT

Bidder shall submit non-refundable amount of **Rs. 2,000/- (Rupees Two Thousand only)** as mentioned in the “Salient Features of the Bid”, in the form of Cash or Demand Draft from any Indian Schedule Commercial Bank towards Cost of Tender Documents. The instrument (DD) must be in favour of “Jharkhand Government Mini Tool Room & Training Centre (JGTR)” payable at Ranchi. Payment by any other means will not be accepted.

19.0 EARNEST MONEY DEPOSIT (EMD)

- 19.1 Bidder shall submit Earnest Money as mentioned in Sl. No. 7.0 of the “Invitation To Tender” (ITT), in the form of Demand Draft or Bank Guarantee (BG) from any Indian Schedule Commercial Bank. The crossed Demand Draft or Bank Guarantee (BG) has to be drawn in favour of “Jharkhand Government Mini Tool Room & Training Centre” payable at Ranchi. In case of BG, it should be submitted as per format enclosed in Annexure-I. Submission of EMD by any other means is not acceptable.
- 19.2 Bank Guarantee against Earnest Money shall remain valid for a period of Two (2) months beyond the original validity period of the Bid or any subsequent extension thereof as mentioned at Clause 26.0 of ITT.
- 19.3 Both the Demand Draft (DD) or Bank Guarantee (BG) for the EMD and the DD for the Cost of the Tender Document shall together be submitted in a sealed envelope (PART-I) duly superscripted with the Bid Enquiry reference, Bidder’s own name, full address and titled ‘Earnest Money & Cost of Tender’.
- 19.4 Small Scale Units, Public Sector Undertakings, Government Undertakings and co-operative sectors shall be exempted from submitting EMD to the extent of their approved monetary limit as mentioned in their valid NSIC certificate. However, Bidders seeking exemption from submission of Earnest Money, shall submit a copy of relevant Govt. notification along with their own valid Registration Certificate in the envelope titled “Earnest Money” failing which the Bid will be treated as if “submitted without Earnest Money”, and will be rejected. However, exemption to such Bidder shall be granted for execution of only such work and item and value for which they are found to be registered and exempted as per the relevant certificate / Govt. Notification. SSI units shall submit notarised copies of Govt. Notification and Registration Certificate.
- 19.5 For getting exemption from submission of Earnest Money, an SSI unit is required to submit a notarized copy of valid registration certificate indicating clearly the item for which they are registered and validity of the same. The SSI units will be exempted from submission of Earnest Money up to the monetary



limit mentioned in their valid Registration Certificate. If the EMD value is more than the monetary limit, SSI unit shall submit DD/BG for differential value.

- 19.6 No request for adjustment of earlier dues in place of Earnest Money shall be entertained.
- 19.7 The Earnest Money submitted by the Bidder along with the Bid will be returned to the successful Bidder, after receipt of Performance Bank Guarantee as per terms of the LOI/LOA/Order from the successful Bidder. However, the Earnest Money shall be returned to all the unsuccessful Bidders, within sixty (60) days from the date of placement of LOI/LOA/Order, whichever is earlier on successful bidder.
- 19.8 In the event the Bid of any party is rejected during the course of Techno-Commercial Scrutiny and Evaluation, the Earnest Money will be returned to such Bidder within seven days from the date of rejection of his offer.
- 19.9 Earnest Money shall be forfeited / en-cashed if :-
- a) Any Bidder withdraws his Bid or resiles from his offer during the validity period.
 - b) The successful Bidder fails within specified time to furnish his Acceptance of the Order and fails to submit the Performance Bank Guarantee as per terms of the LOI/LOA/Order as detailed in Clause No. 8.0 of GCC.

20.0 SITE VISIT

- 20.1 Any failure on the part of the successful bidder in obtaining necessary and reliable information as required for proper understanding of Employer's requirement shall not absolve the bidder from any risk or liability or the entire responsibility for completion of the work in accordance with the relevant bid document enclosed herewith.
- 20.2 Bidders are free to visit the site of proposed work any time prior to bid due date and obtain for its self on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of work. However, intimation in this regard would have to be sent by them to JGTR, in advance. The cost of visiting the site shall be at the bidder's own expense.
- 20.3 The bidder and any of its personnel or agents will be granted permission by the JGTR to enter upon its premises and lands for the purpose of such visits, but only upon they express condition that the bidder, its personnel, and agents will release and indemnify the JGTR and personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damages to property, and any other loss, damage, cost, and expenses incurred as a result of the inspection. Photography is prohibited inside JGTR.



20.4 Any instructions, amendments, minutes of meeting, revisions or documents issued by the Employer at any time till finalisation of order shall also form an integral and binding part of the bid document and subsequent order.

21.0 SUBMISSION & OPENING OF BID

21.1 The Bid shall be prepared and submitted by typing or printing in English with indelible black ink on white paper in consecutively numbered pages, each page signed along with duly filled in format(s) as per bid document. The bidding document shall comprise the documents as stated in the bid and to specify/confirm the same in the check-list enclosed in the bid document.

21.2 All original and amendments / revisions to bid documents, including minutes of Pre-Bid Conference, issued by the Employer, if any, shall be signed and submitted along with the Bid. The Bid submitted by the Bidder shall take into account all such amendments / revisions and minutes of meeting, if any.

21.3 Bidders are advised to submit their Bids strictly based on the specification, terms and conditions contained in the bid documents and subsequent revisions / amendments, if any. If acceptance of the terms and conditions given in the bid documents and subsequent revisions / amendments, have any price implications, the same shall be considered and included in the 'Price Bid'.

22.0 MODE OF SUBMISSION

22.1 The Bid shall be submitted in sealed envelope enclosing three (3) separate sealed covers duly superscripted with the Bid Enquiry reference, Bidder's full Name & address and marked Part-I, II & III as follows –

- a) Part-I - Earnest Money and Cost of Bid: To submit original only.
- b) Part-II - Technical Part & Commercial Part" containing documents for Eligibility Criteria fulfilment and techno commercial bid shall not contain any price at all.: To submit original plus **2** copies.
- c) Part-III - Price: To submit original hard copy only plus **2** copies.

22.2 Part-I - EARNEST MONEY & COST OF TENDER

This cover should be sealed and superscripted "PART – I: Earnest Money & Cost of Tender Document". Only one original with a covering letter shall be submitted. The amount of Earnest Money for the job shall be as indicated in the "Invitation To Tender". Earnest Money as per clause 19.0 above shall be enclosed. The bidders seeking exemption from submission of EMD should submit the necessary documentary evidence as per clause 19.0 of "Invitation To Tender" along with their bid failing which their bids will be summarily rejected.

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22.3 Part-II - TECHNICAL & COMMERCIAL

This cover should be sealed and superscribed “TECHNICAL AND COMMERCIAL BID” followed by the title of work and enquiry reference. This Part will comprise (i) Technical Part of the Bid and (ii) Commercial Part of the Bid, which shall be distinctly annexed. Each set shall contain the following :

- a) Invitation To Tender (Section- I), Special Conditions of Contract (Section- II), General Conditions of Contract (Section- III), Scope of Work and Technical Specification (Vol-II), and an un-priced copy of Price Bid.

All the pages of above mentioned Documents duly signed and stamped as a token of having been read, understood and accepted all the terms and conditions mentioned therein shall be submitted. Each cell of the Un-priced Price Format shall be filled with word ‘Quoted’ or ‘Not Quoted’, as the case may be.

- b) Bidders are required to quote strictly as per bidding documents without any deviations. However, if they feel that some minor deviation will improve their bid, such deviations, if any, from the Commercial terms & conditions or Technical specifications shall be listed in **Attachment – I** to their Bid and nowhere else.

However, attention of the bidders is drawn to the provisions of ITT clause No. 28 regarding the Rejection of bids that are not substantially responsive to the requirements of the Bidding documents.

- c) Documents mentioned under Clause 27.0 herein below.

22.4 Part-III – PRICE

22.5 This cover should be sealed and super scribed “PART-III-PRICE BID” to be filled up exactly as per Format given in “Section IV” of “Volume I”. This shall be filled up in both figures and words and signed on each page with stamp by Authorised Representative of the Bidder. Prices shall be mentioned in Words and Figures both. In case of any contradictions between the Prices mentioned in Figures and Words, the Prices mentioned in Words shall be considered final. Arithmetic errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, or between sub totals and the total price, the unit or subtotal price shall prevail and the total price shall be corrected. If the Bidder does not accept the correction of errors, its bid will be rejected. Price Offer should not contain any technical or commercial offer. Likewise, technical or commercial offer should not contain price of any item. Price mentioned anywhere other than Price Bid shall not be taken cognizance of.

22.6 The above three sealed envelopes shall, in turn, be placed in a bigger envelope duly sealed and superscribed with the Description of work, Bid Enquiry reference, Due Date and Time of Opening, full name and postal / telephone /



fax / email address of the Bidder at the bottom left and to be submitted under a covering letter at the address and date / time mentioned in the “Salient Features of the Bid”.

- 22.7 Insertions, postscript, addition and alteration shall not be recognized unless confirmed by the signature of Authorised Representative of Bidder.
- 22.8 Bids submitted without details / documents as asked for above / elsewhere in the Bid Enquiry, shall be treated as “incomplete” and may not be considered.
- 22.9 Telegraphic / FAX / e-mail quotations will not be considered.
- 22.10 For the purpose of opening, Bids shall be classified into following categories :
- i) Regular Bid – Received within the due time and date prescribed in the Bid notice issued by the company.
 - ii) Late / delayed Bid – Bids received after the due date and time of receipt prescribed in the Bid notice issued by the Company.
- 22.11 Regular Bids shall be opened on the appointed date and time of bid opening as mentioned in ITT in the presence of such duly authorised representatives of the Bidder who may wish to be present as follows-
- a) Part-I containing “Earnest Money and Cost of Bid Document” shall be first opened. Bids received without Cost of Bid, Earnest Money or documents related to exemptions, as mentioned above, will not be considered and Part-II and III of the Bid will stand summarily rejected and not opened.
 - b) Part – II containing the Technical and Commercial bids along with a complete set of supporting documents. Offer of those bidders who meet the requirement of Clause no. 22.11 (a) above, shall be opened thereafter on the same date in presence of authorized representatives of those bidders who wish to be present.
 - c) Part – III “Price Bid” shall not be opened and the same shall be kept by the JGTR unopened. The same will be opened subsequently as per stipulations of Clause No. 23.1 herein below.
- 22.12 Late / delayed Bids will not be opened.
- 22.13 In the event of a three-part Bid received in only one part and not meeting the requirement of separate sealed covers, the Bids shall not be considered.
- 22.14 Any modification to the original bid after due date of bid opening shall also be treated as unsolicited and rejected.
- 22.15 During opening of the bids received against the Open Bid Enquiries, signatures of the Authorized Representatives (carrying authorization letter) of the firms present during bid opening shall be obtained. The following

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information depending upon the part of bid opened shall only be given to the Bidder present during the opening.

- i) Names of all the Bidders.
- ii) Prices, including discount, if any, and other elements as and when Price Bids are opened.

- 22.16 Same person shall not be allowed to represent more than one bidder while witnessing the bid opening.
- 22.17 If the outer envelope is not sealed and marked properly, JGTR will assume no responsibility for the bid misplacement and pre-mature opening.
- 22.18 Each bidder shall submit only one bid. A bidder who submits more than one bid will be rejected.
- 22.19 Bids shall not contain any material deviations like non submission of earnest money deposit or cost of tender document, submission of bid in any manner other than in three parts, acceptance of Liquidated Damage clause, etc.

23.0 BID EVALUATION

- 23.1 Evaluation of bids will be done by taking into consideration of following factors.
- a) Overall completeness and compliance with the Technical Specifications and Drawings, deviations from the Technical Specifications, suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site, quality, function and operation of any process control concept included in the Bid.
 - b) Compliance with the time schedule as specified in Bid Enquiry.
 - c) Any other relevant technical factors, if any, as specified in the Bid Enquiry that the JGTR deems necessary or prudent to take into consideration.
 - d) Rectification of defect during maintenance period
 - e) Overall completeness and compliance with the Commercial Terms & Conditions, without any material deviation.
 - f) Deviation in Terms of Payment, Guarantee/Defect liability period, Completion Schedule, Liquidated damages, Performance bank guarantee clauses are NOT desired.
 - g) Price will be evaluated considering all taxes & duties, levies, cess, insurance etc quoted by the bidder. Price evaluation shall be done for the complete scope as per Technical specification.

During bid evaluation, the Employer may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing. While responding no change in the price or substance of the bid shall be sought, offered or permitted unless asked by Employer after completion of evaluation of bids.

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Price bid of those bidders who will be determined as Techno commercially eligible & whose bids will be in conformity to the bid document shall be opened.

- 23.2 In case any new factor emerges during Techno-Commercial clarification meetings with the Bidder, the same will be intimated to all the eligible Bidders for their confirmation.
- 23.3 The factors and the methods that have been prescribed in the Bid documents will be used while working the overall price. If any additional factor emerges during the Techno-commercial clarification meetings, the same will also be adopted for the evaluation of the Bids. However, an opportunity will be given to all the Bidders to confirm their acceptance of such an additional factor to be considered for evaluation of Bids.
- 23.4 If offered Price undergoes any revision, the JGTR reserves the right to open the original Price Bids also so as to judge if cartel has been formed by the Bids after techno-commercial negotiation.
- 23.5 In case any specific adverse report is received against any Bidder, as information or upon enquiry made by the JGTR, in respect of antecedents, capabilities and performance of the Bidder, after receipt of Bid but before placement of order, quotation / bid submitted by such Bidder may be rejected.

24.0 FINALISATION OF ORDER

While JGTR will endeavour to finalize the tender at the earliest, it reserves the right to delay finalization of the tender, if necessary, without assigning any reasons for the same. During finalization of the tender, JGTR is not bound to accept lowest or any tender or to assign reasons whatsoever for non-acceptance.

JGTR reserves the right to cancel the tender without assigning any reasons for the same. However, in such an eventuality, JGTR shall return the Earnest Money deposit and Cost of tender document to all the bidders after cancellation of the tender.

25.0 PRICE NEGOTIATION

- 25.1 There shall be no post Tender Price Negotiation except with L-1 (i.e. the lowest evaluated responsive Bid) if required.
- 25.2 In case more than one technically and commercially suitable parties have quoted same price and all are L-1, then the negotiations would be held with all the L-1 parties for reduction in their prices. Based on the reductions / rebates given during negotiations, the ranking of the Bidder would be revised. However, no Bidder would be allowed to increase the price upward under any condition during such negotiations.



25.3 During negotiations, the Bidder(s) will be asked to explain the basis of their Quoted Price and submit necessary details / break-ups as deemed necessary by the JGTR for evaluation.

26.0 VALIDITY OF BID

The Bid and Price(s) quoted shall remain valid for a period of 180 days from the date of opening of Techno-Commercial Bid. However, extension of the validity of offer may be asked by the JGTR, if required. In such case, if the Bidder extends the validity of the offer, validity of the EMD bank guarantee shall also be extended (on a non judicial stamp paper of appropriate value) for a period two months beyond the validity of offer, else extension of validity of offer shall not be taken into account.

27.0 DOCUMENTS TO BE SUBMITTED

27.1 The following documents, should necessarily accompany the offer submitted by the Bidders:

- a) Duly notarized copy of Power of Attorney in favour of signatory of the bid.
- b) Company Registration Certificate / Partnership Deed / Affidavit in case of Proprietorship Firms
- c) GST Registration Certificate.
- d) Copy of the PAN Card.
- e) Bank Details (Name of the Bank, Account no., Branch, etc.)
- f) Documents supporting exemption from EMD, if claiming exemption.

28.0 REJECTION

The bid shall be rejected on failure of the following conditions:

- 28.1 If Cost of Bid Documents as stipulated in enquiry as per Clause No. 18 & 22.11 (a) of ITT is not submitted.
- 28.2 If submission of Earnest Money or a request for waiver of the same with appropriate document as per Clause No. 19 of ITT is not submitted.
- 28.3 Submission of Bids in three parts as per ITT is not followed.
- 28.4 Acceptance of Imposition of L.D. against delay in completion & deficiency in performance of the job as per clause no. 22 of SCC.

29.0 Accommodation for Contractor's Employees / Labours

The successful Bidder shall have to make his own arrangements for the residential accommodation for its employees / labours at place where work site is situated.

30.0 GENERAL

30.1 The JGTR reserves the right to reject all or any bid without assigning any reason.

(Principal)
JGTR, Ranchi



SECTION – II

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract [**SCC**] shall supplement the General Conditions of Contract [**GCC**]. Whenever there is a conflict, the provisions herein shall prevail over those in the **GCC**. The corresponding clause number of the **GCC** is indicated in parentheses

1.0 Goods & Service Tax Payments

Service Tax shall be given on production of Goods & Service Tax invoice issued by the Contractor and not against submission of Goods & Service Tax Challans submitted to the Tax authorities. Contractor has to submit proof of submission of Goods & Service Tax to the Employer on subsequent invoices failing which payment of service tax will be recovered. However, payment of service tax to Government/Statutory Authorities will be the responsibility of the service provider.

2.0 BG Extension Charges, Additional Insurance Premium

The charges on account of extensions of Bank Guarantees and Insurance premium shall be payable by the Contractor in case delay in completion of project is not attributable to the Employer.

3.0 Contractor shall be responsible for implementation of all statutory rule and regulations including **Building and Other Construction Worker's Welfare Cess Act 1996**, if applicable.

4.0. BIDDER'S OBLIGATIONS

The bidder shall be deemed to have visited the site and surroundings of the proposed work at his own Cost and satisfied himself with all aspects, nature and extent of work and / or any other factor, (e.g. availability of Labour, water, power, ground and sub-soil conditions, uncertainties of weather, general and local conditions etc.) which might influence his tender and shall be deemed to have verified and / or checked the data furnished by the EMPLOYER, if any.

The bidder shall have deemed to have satisfied himself as to the accessibility to site by roads and feasibility of taking materials and Equipment to the site of work, erection of their Equipment and suitability of site for the proposed work. All the services shall be in conformity with accepted norms and best available engineering standards including Indian Standards.

Clearance / Approval, if any, required from the Statutory Authorities for execution of the work shall be obtained by the Successful Bidder within the Quoted Price. However, formalities required to be fulfilled by EMPLOYER in this respect, if any, shall be met.



5.0 AVAILABLE SITE:

Bidders are advised to visit the proposed site of construction & collect all details as required from the EMPLOYER. Any plea on the ground of ignorance of site conditions will not be entertained.

6.0 MATERIAL SUPPLY

- 6.1 All materials required for execution of the job in the Contract shall be supplied by the Contractor at his own Cost.
- 6.2 The Contractor shall procure and supply all materials, consumables e.g. Stone chips, good quality river sand, first class quality red bricks, binding wire, shuttering materials, steel scaffolding, Wooden materials, Plywood, Oxygen, D.A., welding & gas cutting accessories, all welding electrodes, all shop and site fasteners, bolts, nuts, washers including paints, Tiles as required for execution of the job from approved suppliers, strictly as per the specifications provided or as per the specifications approved by the EMPLOYER.
- 6.3 All loading, unloading and carrying, transportation of materials in Contractor's own transport and with all leads & lifts shall be Contractor's responsibility and to be done at his own Cost.
- 6.4 The Contractor shall neatly stack all job materials at one specified place near construction site (in a protective manner so that materials are not affected from discharging their output or services) from where materials required for different jobs / location shall be drawn and transported by the Contractor, as and when required, at his own Cost. No extra payment will be admissible for handling and shifting of materials at site.
- 6.5 The Contractor shall maintain his own watch and ward at his own Cost for security of materials & Equipment against theft, fire and any other hazards at site. EMPLOYER shall in no way be responsible for any loss/damage to the materials on any account.
- 6.6 On completion of the job, the Contractor shall furnish a reconciliation statement for any material issued by the company before submission of final bill, showing Item-wise receipt, consumption etc. considering consumption limits and wastage allowances. The Contractor must plan to keep the wastage in cut pieces / scrap to the minimum.

7.0 TERMS OF PAYMENT

- 7.1 90% (ninety) of the Total price with 100% taxes & duties as per Unit rates specified at Price schedule and actual quantities of work executed as per joint measurement sheet and upon certification of work by Employer's authorities



site Engineer shall be released on monthly prorata basis on submission of necessary documents in 4 copies as listed below:

- a) Pre receipted Tax Invoice.
- b) Measurement sheet duly signed by CONTRACTOR and EMPLOYER's site Engineer. A soft copy in excel format of measurement sheet is also to be submitted.
- c) Abstract of measurement sheet and work done till previous bill, the running and cumulative quantities and amount certified by EMPLOYER's site Engineer and accepted by EMPLOYER.
- d) Declaration and documentary evidence towards payment of ESI/ EPF/ EPS/ Minimum wages etc. as per statute.

7.2 5% (five) of the Total price excluding taxes & duties based on unit rates as per Price schedule and quantities executed as per joint measurement sheet and upon certification of work by EMPLOYER (i.e. PAC) shall be released after Completion of job and on submission of documents as listed below:

- a) Pre receipted signed invoice
- b) Completion certificate issued by EMPLOYER
- c) No Claim certificate by the CONTRACTOR

7.3 5% (five) of the Total price excluding taxes & duties based on unit rates as per Bill of Quantities/Price Schedule and quantities executed as per joint measurement sheet and upon certification of work by EMPLOYER (i.e. FAC) shall be released after expiry of defect liability period and against submission of "As built drawings" and details prepared by the Contractor and Certificate by Employer that all defects indicated during defect liability period has been satisfactorily rectified and on submission of the followings:

- a) Pre receipted signed invoice
- b) A copy of the working drawings showing thereon additions or alterations (to be shown in RED) made during the execution of the work
- c) Recovery statement, if any
- d) Statement for reconciliation of all the payments and recoveries made in the progressive bills
- e) Copies of deviations statement and order of extension of time, if granted
- f) Original guarantees furnished by CONTRACTOR's suppliers for applicable items



- g) All drawings/documents issued to the CONTRACTOR for the construction work.
- h) Test certificate as applicable
- i) CLC Clearance based on final certification and documentary evidence regarding payment of ESI/ EPF/ EPS & any other statutory labour payment.
- j) Acceptance certificate from inspection agency, regarding acceptance of work.

8.0 MODE OF PAYMENT

- 8.1 The Employer shall pay the Contractor for the Scope of Technical Specifications, on the basis of the item rate price in the Bill of Quantities cum Price Schedule.

All progress payments made shall be regarded as payment by way of advance against final payments only and not as payment for the work completed. The progress payment made shall not exonerate the CONTRACTOR from liability to finally complete the work strictly in accordance with the specification and drawings, if required, by reconstructing or re-erecting faulty work.

While claiming progress payment, CONTRACTOR shall submit documentary evidence to the effect that he has deposited ESI/ EPF/ EPS for his workers along with certificate indicating payment of minimum wages to the workmen at prevailing rates at Project site as per statute prevailing at Ranchi. CONTRACTOR shall also submit an undertaking that they have complied with all statutory requirement as per Contract.

In case any or one of these documents is a not submitted along-with progress bill, payment against these bills may be kept in abeyance. In such an event contractor shall ensure payment of due wages to his workmen as well as payment to statutory authorities keeping employer completely indemnified.

On completion of the work, CONTRACTOR shall give notice of such completion to EMPLOYER for inspection of works. EMPLOYER shall inspect the work and after satisfying himself with tests that may be prescribed in the contract, if there is no defect, imperfection or shortfall in the work, EMPLOYER shall issue a Completion certificate to the CONTRACTOR.

- 8.2 EMPLOYER shall make no Advance Payment to Contractor on any account.
- 8.3 Payment shall only be made for the actual Work executed at site against Contractor verified Bills as per the Schedule of Item Rates of the Order. The Quantities of Work indicated in the Schedule of Rates are approximate only.



The Payment shall be made on the basis of actual Quantities of Work done duly approved by the EMPLOYER.

- 8.4 All other Statutory Deductions viz. Income Tax, Workmen's Compensation, Sales Tax on Works Contracts etc. shall be made from Contractor Bills as per Rules/Regulations/ Acts in force.
- 8.5 Monthly bills are to be prepared in the name of Jharkhand Govt. Mini Tool Room & Training Centre, Ranchi and shall be submitted in quadruplicate to the M/s JIIDCO, Ranchi along with submission of joint measurement sheets, P.F Deposit Certificate, Safety Induction/Clearance Certificate, E.S.I. Clearance Certificate.
- 8.6 Payment Schedule shall be as indicated below:
- a) 30 days after receipt of each Running Bill along with requisite Documents.
 - b) 60 days for Payment of Final Bill, after Completion of all the Tests and other formalities as per the Terms and Conditions of the Contract.

9.0 SECURITY OF CONTRATOR'S PLANT, EQUIPMENT / MATERIALS.

Contractor shall arrange for necessary Security and Safety of their materials, Plants & Equipment etc. till the project is taken over by EMPLOYER. No assistance shall be available from the EMPLOYER in this aspect. Other stipulations on safety mentioned in the General Conditions of Contract shall be adhered to.

10.0 TESTING

All Raw Materials e.g. Steel, Bricks, Coarse Aggregates, Fine Aggregates, Concrete cubes etc have to be Tested and test result submitted to EMPLOYER before use. Tests for equipment and material shall be conducted to the satisfaction of the EMPLOYER as per standard testing procedures of relevant disciplines/codes. Frequency and necessity of the Tests will be guided by B.I.S. and cost to be borne by Contractor.



11.0 TOOLS, TACKLES & EQUIPMENT

All necessary Tools, Tackles and Equipment required for execution of the Work including Welding Machines, Gas Cutting sets, Jack Hammers, Lifting Devices, Pan Mixers, pneumatic rammer, Concrete Mixers, Concrete Vibrators, Pneumatic Portable Air Compressors, Chisels, Hammers, Weigh-Batching Machines, Transit Mixers, Trailers, tipper trucks, Lorries etc. for executing the contractual work shall have to be arranged by the contractor at his Own Cost including the Cost of Fuel & consumables. Contractor shall prepare templates, jigs for fabrication of structures/positioning of bolts, sleeves, inserts etc. wherever necessary, at no extra Cost to the EMPLOYER.

12.0 DRAWINGS

It may be noted that the Work shall be generally carried out as per relevant drawings, sketches submitted and approved by EMPLOYER or as per the direction of the Engineer.

13.0 SCHEDULED TIME OF COMPLETION

The “Time of completion” for the whole work is **08 (Eight) months** from the effective date of Contract. **Effective date of contract shall be the date of issue of LOI/LOA/Fax Order.**

14.0 INCOME TAX RECOVERY

Any Indian Income Tax which Employer may be required to deduct by law or statute, shall be deducted at the source under Chapter XVII B and the same shall be paid to Income Tax Authorities on account of the Contractor. Employer shall provide the Contractor a certificate for such deduction of Tax. The Contractor shall indicate their Permanent Account Number with the relevant Income Tax Authority to Employer. Contractors shall maintain books of account and shall get the account audited as per Section 44DA of Income Tax Act.

15.0 VAT TDS

VAT TDS, which the Employer may be required to deduct by law or statute, shall be deducted at source as applicable.

16.0 CONTRACTOR’S LICENCE

Contractor shall have to submit valid Contractor’s License before commencement of Work.



17.0 LABOUR LICENCE

Contractor shall have to submit valid Labour License before commencement of Work.

18.0 BASIS OF QUOTATION:

18.1 The bidder shall quote their all inclusive Rates including all types of taxes, duties, levies, transport, freight, insurance etc. as applicable and as may be made applicable till completion. No extra payment shall be made on any account whatsoever.

18.2 The Base Date of the Total Price is 31-12-2018 [for the purpose of statutory variations in taxes & duties as per provision of contract shall be the date seven(7) days before last date of submission of price bid/ updated price bid.

19.0 TOTAL PRICE

The Contract is an item rate/unit rate Contract. The item rates under schedule of items shall remain firm, fixed and binding on the Contractor during the period of Contract. The unit rate/item rate shall remain firm, fixed and binding on the Contractor irrespective of any variation of quantities stated under schedule of items.

The payment to the Contractor will be made as per actual quantities executed against each item and as per firm unit rate of the item at price schedule

Contractor's rate for any item of work in the schedule shall be deemed to include cost of all materials including wastage, loading, transportation and handling, unloading, labour, tools and plant, fuel consumable, erecting and removal of scaffolding and other temporary works, all incidentals such as setting out, site drainage, offering samples for approval, cost of all tests including soil test for establishing Bearing Capacity etc., rectification of all defects, replacement of defective material and work, removal of debris etc., interruption of work required to accommodate the work of other agencies working in that area, site clearance before, during and after completion of work and maintenance of completed works during period of maintenance, providing facilities for inspection etc.

The rates for all items shall include working at all locations and levels and for all necessary leads and lifts.

General site cleaning of work site shall be required at regular intervals of time including VIP visits. These site clearances shall be done by the contractor at no extra cost to Employer as per the instructions of Employer



RATE FOR EXTRA ITEM

It is compulsory on the part of the contractor to execute any number of Items which are not mentioned in the schedule of items but are necessary to execute in connection with the facilities.

In case it is found necessary to execute any item of work which is not included in the schedule of items, the rates for such extra item shall be fixed as per the following procedure.

- a) Where the extra works are of similar character and/or executed under similar conditions as any of work appearing in the schedule of quantities, then the rates for such extra item shall be derived from the contract rates of similar/closest item of work provided.
- b) Where the nature of extra item is such that the rate for the same cannot be derived as per procedure(a) above, then the rate shall be mutually agreed in line with CPWD norms or by following CPWD guide lines.

This being a **Item Rate Contract**, the contract price is estimated only and is subject to variation based on quantities of work as per final bill of quantities & construction drawings issued by Employer and as duly certified by Employer's site Engineer. Final Total Price shall be arrived at considering the firm unit rates indicated at bill of quantities/Price schedule and final quantities of work as certified by Employer's site Engineer

20.0 TAXES & DUTIES

The Total Price is inclusive of all taxes, duties, levies, royalties including Excise Duty, Sales Tax on Works Contract/VAT, Service Tax & Educational Cess, Income Tax etc as per prevailing rates applicable on base date.

Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Sub-Contractors or their employees by Municipal, State or Central Government Authorities.

VARIATION IN TAXES AND DUTIES

For the purpose of the Contract, it is agreed that the 'Total Price' specified in the Contract document is based on the taxes, duties, levies etc. and charges prevailing on Base date. If any rate of tax is increased or decreased, a new tax is introduced applicable for the Works under the Contract, an existing tax is abolished, or any change in interpretation or application of any tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor in connection with performance of the Contract, an adjustment of the Total Price shall be made by addition to the Total Price or deduction



therefrom as the case may be, as appropriate in accordance with provisions of the Contract .

The adjustment in the Contract Price towards statutory variations in taxes due to increase in tax rates or enactment of new tax shall be applicable for the variations in the taxes enacted within the scheduled date of the “Time for Completion” provided the Works are completed within the scheduled date of the “Time for Completion” of the Contract.

For any upward variations in taxes enacted after the scheduled date of the “Time for Completion” the adjustment in the Total Price shall not apply in case the reasons for delay are not attributable to the Employer notwithstanding extension to the “Time for Completion” is granted. However, if the completion of the Works is delayed due to reasons attributable to the Employer and extension to the “Time for Completion” is granted, variations in taxes enacted after the scheduled date of the “Time for Completion”, the adjustment in the Total Price shall be allowed within the extended “Time for Completion” of the Contract.

However, if the completion of Works is delayed beyond scheduled date of the “Time for Completion” due to reasons attributable to both the parties, then the period for delay attributable to the Employer will be considered as initial delay and the price adjustment shall be applicable during this period as well.

It is further provided that, in case of abrogation of any existing tax or any downward statutory variation in any tax, the Contract Price shall be adjusted downwards irrespective of actual date of completion of Works.

The adjustment in the Total Price towards variation in the taxes shall be made by the Employer on production of the documentary evidences by the Contractor.

No adjustment in Total price shall be made towards statutory variations in taxes either due to increase in rates of taxes or enactment of new taxes in respect of raw materials and/or input materials/bought out items etc. used and/or incorporated by the Contractor in the executed works under the Contract. No claim, whatsoever, shall be entertained by the Employer in this respect.

For the purpose of adjustment in the Total Price towards variation in taxes, the Total Price shall be the price including price adjustment due to variation in price indices, as payable in accordance with the Contract.

21.0 MODE OF MEASUREMENT:

Measurement of Work for all work shall be done in accordance with the relevant IS code & other engineering Standards, unless otherwise stated in the Contract.



22.0 LIQUIDATED DAMAGES:

a) **Liquidated Damages due to Delay in Completion**

In case Contractor fail to complete the work within the stipulated time period indicated in the contract, unless such failure is due to force majeure or due to Employer's default, the Contractor shall pay to Employer by way of compensation for delay and not as penalty, a sum at the rate of half percent (0.5%) per week or part there of the value of the incomplete work as on scheduled completion date (or extended completion date in case the Employer's default for the delay) and up to maximum 5% of the Total price.

This is agreed that this is a pre-estimate of the loss/damage which will be suffered on account of delay/breach on Contractor part and said amount will be payable on demand without there being any proof of the actual loss or damages caused by such delay/breach. The decisions of Engineer/Designated officer-in-charge in regard to the actual delay will be final and binding on the Contractor.

LD shall be recovered from PAC, FAC payment and Performance BG only and not from RA Bills.

b) **Liquidated Damages for deficiency in performance**

For work which in the opinion of the Employer is deemed to be defective but cannot be repaired within a permitted time frame, an amount as assessed by the Employer shall be kept under 'HOLD'. The total of such 'HOLD' amount shall not exceed 7.5% of the Total price at any point of time.

Should such defective work be made good and accepted by the Employer within defect liability period, the hold amount against such defective work shall be released.

For any defective work not made good within the aforesaid period, such hold amounts shall be considered as liquidated damages for performance deficiency subject to a maximum 7.5% of the Total price.

The Liquidated Damages for performance deficiency shall be regularised as permanent deduction.

The Total Liquidated Damages for non achievement of performance, penalty for delay and to fulfil his obligation under the contract shall however be limited to 10% of the Total Price.

23. EMPLOYEE'S STATE INSURANCE:

ESI Act shall be applicable and contractor should include all such provision in his quoted rate.

In view of the above, the Contractor must register the names of the persons employed by him with the Employee's State Insurance Corporation and fulfill all the obligations as provided under the provisions of the E.S.I. Act. 1948. It is to be ensured that each Contractor, before termination of the Contract in



JGTR has to be cleared all the liabilities under the E.S.I. Act without which Final Payment shall not be released.

24. ON-GOING LITIGATION

The bidder should clearly specify any on-going Arbitration/ Litigation cases with **JGTR** and the status thereof.

25. INSPECTION, TESTING & TAKING OVER

25.1 Inspection & Testing during Site Work

- a) EMPLOYER or its duly authorised representative shall have at all reasonable times access to the Contractor's premises or Works, sites and shall have the power at all reasonable times to examine, inspect and call for Tests of the materials and workmanship during the execution, manufacture and assembly in the Contractor's premises or works, site and if a part of the plant is being manufactured not at Contractor's premises but at other premises, the Contractor shall obtain from EMPLOYER or its duly authorised representatives, permission to examine, inspect or Test as if the plant or Equipment were being manufactured at Contractor's own premises. The Cost of all the above said Tests and any other Tests shall be borne by the Contractor.
- b) The Contractor on being requested by EMPLOYER or its duly authorised representatives shall present sufficient documentary evidence that the materials used in the manufacture of the plant or Equipment will meet the specification requirements. With respect to materials used for construction of the plant and Equipment & other or special materials etc. the Contractor shall produce requisite Test certification along with specimen and Test pieces on which Tests were carried out by the manufacturer at the time of examination. With respect to different execution materials the Contractor shall arrange for necessary Tests to be carried out at his own Cost. Such Test shall be carried out free of Cost to the Employer and should the Contractor himself be not in a position to carry out the Test, he shall arrange to get these Tests done by Government approved Test house and the Cost for such Tests shall be to Contractor's account.
- c) EMPLOYER or its duly authorised representatives shall have the right to be present at all Tests carried out and arranged by the Contractor, if called for; samples and specimens shall become the EMPLOYER property.
- d) The Contractor shall in writing notify the Engineer in an appropriate manner as to the progress of the Contract particularly before any



assembly in order that the inspections or Tests can be carried out as may be required to ascertain without in any way affecting the Contractor's liability whether the materials and or services are in conformity with the requirement of the Contract.

- e) The Contractor shall give reasonable notice in writing together with his own inspection report as may be acceptable to the Engineer but not less than fifteen (15) days in advance of any material being ready for Testing or inspection specifying the period likely to be required for such Testing and the Engineer or his authorised representative shall (unless the inspection or the Test in writing is voluntarily waived by the Engineer), on giving 24 hours previous notice in writing to the Contractor to attend at the Contractor's or sub-Contractor's works as the case may be attend the witness the Testing as soon as possible from the date on which the materials are notified as being ready for Testing or inspection, failing which visit the Contractor shall proceed with the Tests and shall forthwith forward to the Engineer duly certified copies of the reports.
- f) In all cases, where examination, inspection and Testing are to be carried out whether at the premises of Contractor or sub-Contractor, the Contractor except where otherwise specified shall provide, free of charges to the Engineer, such Labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably required to carry out efficiently such Tests of the plant, in accordance with the Contract and shall give facilities to the Engineer or his authorised representative to accomplish witness such Testing.
- g) When the Tests have been satisfactorily completed at the Contractor's or sub-Contractor's works, the Engineer shall forth with issue a Certificate to that effect. if a final Certificate cannot be issued, a preliminary or Provisional Certificate shall be issued, if the Tests were not witnessed by the Engineer or his representative, the Certificate shall be issued on receipt and scrutiny of the Test report from the Contractor but not later than fifteen (15) days after the receipt of the Test report by the Engineer. No plant shall be assembled or painted with prime coat or dispatched before such Certificates have been issued. The satisfactory completion of these Tests or the issue of the Certificates shall not bind the Engineer to accept the plant should it on further Tests, after erection be found not to comply with the Contract.

26.0 Preliminary Acceptance Certificate (PAC) - Completion of Job

- a) PAC clause (Completion of Job) shall be same as mentioned in Technical Specification



- b) The various units shall be deemed to be taken over by EMPLOYER after issue of a **provisional job completion certificate**. Taking over in no way relieve the Contractor of his obligation under the contract. 'Taking over' means only physical custody.

27.0 Final Acceptance Certificate (FAC):

- 27.1 FAC clause shall be same as mentioned in Technical Specification.
- 27.2 At any time after the events set out in Sub-Clause 27.1 hereof, have occurred, the Contractor may give a notice to the Engineer requesting for the issue of Final Acceptance Certificate (FAC) in respect of the Facilities specified in such notice as at the date of such notice.
- 27.3 The Engineer shall, after consultation with the Employer and within seven (7) days after receipt of the Contractor's notice, issue a Final Acceptance Certificate.

28.0 GUARANTEE/WARRANTY/DEFECT LIABILITY PERIOD

The Contractor shall guarantee the work/materials supplied (including bought-outs) for a period of 12 months from the date of issue of PAC against inadequacy in design, defective materials, and error in detailing work, faulty workmanship etc.

In the event of any inadequacy, defect, error, fault occurring during the Guarantee Period, it shall be the responsibility of the Contractor to rectify the same with no extra Cost to the Employer.

29.0 REPAIR / REPLACEMENT OF DEFECTIVE WORK

- a) The Contractor shall be responsible for repair/for replacement at no extra Cost to the Employer with all possible speed and to the entire satisfaction of the Engineer of any inadequacies, defects, errors, faults in respect of design, detailing material workmanship and or any act or omission of the Contractor that may develop in the work plant (including bought-out Equipment) supplied by the Contractor against the Contract at any point of time before the expiry of the Guarantee Period, irrespective of whether the work/ plant has been taken over by the Employer and regardless of whether the work/ plant was earlier inspected/ accepted by the Employer.
- b) In case such repair/replacement becomes necessary at site, the following additional responsibilities shall rest on the Contractor without any Cost, what-so-ever to the Employer: –



- i) On being informed by the Engineer about any defect in the work / plant supplied by the Contractor, the Contractor shall immediately go to the site to inspect and identify the location and cause of defect.
 - ii) In case the defect is found to be of such nature or extent that the site repair within a short period of time is not likely or that the defective component or combination of components is required to be taken out of the Employer's premises for repair, then the Contractor on being so asked by the Engineer shall bring to site by road/rail/air the replacement of such defective component or combination of components as early as possible and install the same at site with all possible speed before the defective components or combination of components is taken up for site repair or removed from the Employer's premises, as the case may be. The replacement Item or Items provided as above on interim basis can be taken out of Employer's premises when the original component or combination of components duly repaired has been installed at site and has been found to be satisfactory in service by the Engineer.
 - iii) In case a defective work or component or combination of components is required to be replaced, the Contractor shall arrange for supply and installation of the replacement as expeditiously as possible and within the period approved by the Engineer. The condemned component or combination of components can be taken out of Employer's premises when so permitted by the Engineer.
- c) If the Contractor fails or refuses to carry out the repair/replacement of defective plant/work in accordance with clauses 29 (a), 29(b) in the foregoing within a reasonable period of time, the concerned plant/work/portion, thereof, shall be rejected by the Employer who shall place order elsewhere at the sole risk and Cost of the Contractor.
 - d) If the repair/replacement is of such a character as may affect the efficiency of the plant/work or any portion thereof, the Employer may ask the Contractor to repeat the Test on completion in which case such Test shall be carried out by the Contractor as provided in clause 'Test on Completion'.
 - e) If the Test on completion as stipulated in clause 29 (d) does not show satisfactory results, the Liquidated Damages for shortfall in Performance or 'Rejection' clause herein below shall apply.
 - f) The defect liability Period of 12 months shall stand extended by the period during which the plant/work is not capable of being



operated/used as a result of such repair/replacement. Further, the repaired/new components shall also be guaranteed for 12 months from the date of Acceptance of the component.

30.0 REJECTION

- a) If the erected/ supplied plant Equipment, materials or completed work fail to meet the specified Tests standards or are found to be defective or otherwise fail to fulfil the terms of the Contract, the Employer shall give written notice to the Contractor setting forth the particulars of such defects or failures. The Contractor shall immediately rectify/repair such defects/failures or after the rejected Items to bring them into compliance with the Contractual terms and specification.
- b) Should the Contractor fail to do so within the time stipulated by the Employer, the Employer may reject the same and place order at the Contractor's sole risk, cost and responsibility the whole or any portion of the erected / supplied plant, equipment, materials and completed works.
- c) The Contractor's liability under this clause shall be satisfied by repayment to the Employer of all moneys previously paid by the Employer to the Contractor and also by paying to the Employer the ascertained difference, if any, between the replacement Cost of the rectified Items (including the Cost of dismantling and removal of the rejected Items and the erection and commissioning of the replacement Items) and the Contract Price of the rejected Items.
- d) In the event of such rejection the Employer shall be entitled to use the rejected Items in a reasonable and proper manner for a time reasonably sufficient to enable the Employer to obtain the replacement Items. Thereafter, the Contractor shall at his own expense immediately remove the rejected Items from the Employer's premises after making necessary payments to the Employer as stipulated above.

31.0 DEVIATIONS

EMPLOYER will not accept any major deviation from the specification and other Terms & Conditions stipulated in the Tender Documents. However, minor deviations as requested, if any, shall be clearly mentioned by the bidder separately but those will not be deemed to have been accepted by the Employer unless specifically agreed to by the EMPLOYER in writing before award of LOI/LOA/ Work Order.



32.0 PROTECTION WORK / DIVERSION WORKS:

- 32.1 The Contractor shall be responsible for relocation and realigning of the facilities which are a part of the existing installations but which come in the way of the proposed construction even if the same are not mentioned in the specification at his own Cost. Prior permission in writing shall be taken from the Employer before actually starting such work. Time period for such work shall be assessed properly & to be discussed with the Employer before commencement to ensure that operation of other units is not adversely affected.
- 32.2 The Contractor shall carry out the work in such a way that it does not affect the operation and maintenance of the existing facilities as far as possible.
- 32.3 Necessary arrangements to safeguard the existing man, materials, Equipment, structures and to enable operation of the existing Equipment during construction shall be the responsibilities of the Contractor.
- 32.4 During erection work, the Contractor at his own Cost shall replace any damage or loss to the existing plant and Equipment due to negligence/unsuitable treatment and handling in a reasonable time to be specified by the Employer.
- 32.5 The Contractor shall take all precautions during execution, especially excavation, to avoid interference with or damage to underground work, such as cables, drains, etc. whether shown in the drawing or not. He shall provide all possible protection to these works and in case they are damaged, rebuild at his own Cost.
- 32.6 It is the responsibility of the Contractor to make detail studies before preparing the protection, stabilization of the existing structures/process lines etc.

33.0 BANK PARTICULARS & OTHER DOCUMENTS:

Contractor are advised to indicate their PAN number, Name of the Bank, Branch & Account No., MICR No. in which they would like the receivables to be credited

34.0 STATE INSURANCE ACT

The ESI Act as applicable in the State of Jharkhand shall be complied with for the labours employed at site by the contractor.

In view of the above, the Successful Bidder shall have to register the names of the persons employed by him at the works site with the Employee's State Insurance Corporation and fulfil all the obligations as provided under the provisions of the ESI Act, by filling up the necessary declaration forms and



submit the same in the **Office of Manager, E.S.I. Corporation situated at Namkom, Ranchi.** It is to be ensured that the Successful Bidder, before termination of the Contract, has cleared all the liabilities under the ESI Act before release of final payment to the Successful Bidder.

35.0 NON – NEGOTIABLE TERMS & CONDITIONS

Following Terms & Conditions as stipulated in the respective Documents shall be treated as Non-Negotiable: -

- 35.1 Submission of Cost of Tender Documents as stipulated in ITT.
- 35.2 Submission of Bid Security Money as stipulated in ITT.
- 35.3 Fulfilment of “Eligibility Criteria “as stipulated in ITT.
- 35.4 Submission of Bids in 3 (three) parts as stipulated in ITT.
- 35.5 Submission of “Performance Bank Guarantee” by the successful bidder as stipulated in the GCC.
- 35.6 Imposition of LD/Penalty for delay in completion of the job and deficiency in performance as stipulated in this Document.
- 35.7 Scheduled Completion Time as stipulated in this Document.

36.0 SAFETY:

In addition to all provisions of Safety at GCC the Contractor shall use only pipes and clamps for scaffolding for all kind of construction work. They shall arrange for sufficient quantity of steel pipes and clamps at their own Cost. Scaffolding using bamboos will not be allowed as scaffolding material.

37.0 GENERAL

- 37.1 Contractor shall establish all reference survey pillars required for the job and shall maintain the same till the Completion of the entire job.
- 37.2 Contractor staff and Workers will be authorised by the Employer to enter JGTR as required through specified gates only for their Work in connection with Contract. Necessary passes etc. will be issued to the required staff and Workers on Completion of formalities as per the Rules of the Employer in force. Particulars of the employees shall have to be furnished in advance to the Employer as directed. The Cost of necessary formalities to be done and photograph etc. required for issue of gate passes shall be Contractor's responsibility at Contractor's Own Cost.



- 37.3 The machinery/Equipment etc. and other vehicles belonging to and used for the execution of the Contract or for other purposes shall have to follow routes inside Works and Entry/Exit through Works Gates etc. as per rules in force at JGTR. Authorization for such plying and/or Gate Passes as may be necessary shall be arranged for by Executing Deptt., in collaboration with other concerned Departments of the Employer.
- 37.4 In bringing the materials belonging to Contractor for such construction all gate pass formalities must be followed so that clear ownership can be established by Contractor if and when taking out the salvaged materials after final site Clearance, dismantling of such structures etc. Failure to establish clear ownership status may lead to withholding of permission to take out the salvaged materials and their forfeiture by Employer. Contractor shall have to dismantle, at Contractor's Own Cost, such site office, stores etc. constructed by Contractor, on expiry of the Contract and/or as may be directed by Employer for any other reason. In case of failure to comply, the Employer reserves the right to get the dismantling done by its agencies and realize the Cost from Contractor's dues.
- 37.5 Contractor shall have to deploy at their Own Cost, competent licensed Workmen (as may be required under relevant Rules/Act) to undertake installation and maintenance of power lines etc. as per stipulations indicated earlier.
- 37.6 All category Workers brought in by Contractor from Contractor's permanent establishment or outside for specialized jobs have to be taken back by Contractor on Completion of the job and on Termination of Contract and no responsibility whatsoever, will be borne by Management of JGTR in respect of any of the Workers.

38.0 HOUSE KEEPING

Contractor shall be responsible for regular removal and cleaning of spillages/fallouts etc., if any, from the roads, operational areas etc. consequent to and arising out of contract Work and maintain ground level, slopes, drainages etc. in and around the dumps and operational areas throughout the operation Period of the Contract by removing and disposing spillages/accumulation as may be necessary and/or directed by the Employer at their Own Cost & arrangement, to dumping sites for refuse etc. Contractor will have to make and maintain new approach roads etc. as may be deemed necessary for proper execution of the Work at their Own Cost but with permission of/intimation to the executing deptt. EMPLOYER shall supply no earth moving facility like dozer etc. for this purpose and contractor will have to arrange for the same at their own Cost.



39.0 HANDING OVER SITE

On completion of the work, all rubbish, debris, temporary supports, enabling structures etc. shall be removed from the site and the site (Including the storage site) shall be handed over to the Employer in a tidy manner. All usable bricks will be stacked and removed to a place as shown by the Engineer. Brick bats will also be stored at a place near the pits. All scrap, slag rubbish & muck etc. shall be dumped suitably at a specified place by truck to a dumping yard as directed by the Employer. If the successful bidder fails to cleanup the site within a reasonable period of completion of Erection, the Employer may do so at the expense of the successful bidder.

40.0 Despatch Documents for Transportation of Structures and all supplies by Wagon & Road.

40.1 The Contractor shall arrange to despatch the following documents to the Employer's **address at Tatisilwai, Ranchi**

- 40.2
- a) Three (3) photo copies of the clean rail / lorry receipt.
 - b) Three (3) copies of Contractor's signed invoice.
 - c) Three (3) copies of Challan and Packing List.
 - d) Three(3)copies of Inspection Certificate, if any issued by the Employer.
 - e) Three (3) copies of manufacturer's test certificate.

40.3 The Contractor shall be responsible for obtaining Way Bill, if necessary, and approvals from the authorities for transportation of the Plant and Equipment. The Employer shall use its best endeavours in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the Plant and Equipment to the Site.



SECTION - III

GCC

GENERAL CONDITIONS OF CONTRACT

FOR

Jharkhand Government Tool Room, Ranchi



1. Definitions

1.1

The following words and expressions shall have the meanings hereby assigned to them :

“**Contract**” means the Contract Agreement entered into between the Employer and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.

“**Contract Documents**” means the documents of the Contract Agreement (including any amendments thereto).

“**GCC**” means the General Conditions of Contract hereof.

“**SCC**” means the Special Conditions of Contract.

“**Technical Specifications**” mean the technical specifications, schedules, detailed designs, statements of technical data, performance characteristics value and all other particulars of the Contract.

“**GTS**” means the General Technical Specifications.

“**Day**” means calendar day of the Gregorian Calendar.

“**Month**” means calendar month of the Gregorian Calendar.

“**Employer**” means **Jharkhand Government Tool Room & Training Centre (JGTR), Ranchi** and includes the legal successors or permitted assigns of the Employer.

“**Engineer**” means the person appointed by the Employer in the manner and to perform the duties delegated by the Employer.

“**Consultant**” means the person(s) named to perform the duties delegated by the Employer.

“**Contractor**” means the person(s) whose bid to perform the Contract has been accepted by the Employer and is named as such in the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor.

“**Contractor’s Representative**” means any person nominated by the Contractor and approved by the Employer in the manner provided in hereof to perform the duties delegated by the Contractor. For site work Contractor’s Representative shall also mean the representative of Sub-Contractors and Sub-Contractor’s Sub-Contractors.



“**Sub-Contractor**”, including vendors, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant and Equipment, is sub-Contracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns.

“**Contract Price**” means the sum specified in **Price schedule** subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.

“**Base Date**” shall be the date seven (7) days before last date of submission of price bid/ updated price bid.

“**Facilities**” mean the work specified in, Technical Specification & and include the Civil, Architecture & Electrical works to be carried out by the Contractor under the Contract.

“**Site**” means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site.

“**Effective Date**” means the **date of issue of LOI/LOA/Fax Order**.

“**Time for Completion**” means the time specified for Completion of the Work.

“**Inspector**” / “**Inspecting Engineer**” shall mean any person or firm nominated by or on behalf of the Employer or his duly authorised agent to inspect equipment, materials, supplies or work under the Contract.

“**Defect Liability Period**” means the period of validity of the warranties given by the Contractor commencing from the date of issue of Completion Certificate (PAC) of Work Facilities, during which the Contractor is responsible for defects with respect to the Work provided in Defect Liability period.

2. Contract Documents

2.1

All documents forming part of the Contract (and parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.



3.Scope of Work	3.1	<u>CIVIL, ARCHITECTURAL & ELECTRICAL WORKS</u>
	3.1.1	The Contractor shall be responsible for the Construction of Boys hostel including Architectural & Electrical works and all other connected civil construction works included in the scope of work.
	3.1.2	It is presumed that the Contractor has already inspected the site and satisfied itself about the actual site conditions and has collected any other information which may be required by the Contractor. All necessary soil tests over and above those carried out by the Employer are to be undertaken by the Contractor and no extra claim on this account shall be admitted.
	3.1.3	The Contractor shall be held responsible for proper performance for buildings and structures including all other civil work for a period of 12 months after issue of completion Certificate (PAC). Any defect found during this period will be made good by the Contractor at its own cost failing which the Employer reserves the right to take remedial measures at the Contractor's risk and cost.
	3.1.4	All excavated materials shall remain the property of the Employer. In case the Contractor wishes to utilise the boulders excavated by the Contractor during the excavation work at the site, the same may be issued to the Contractor at prevailing rates on cost recovery basis. Percentage of voids on stack measurement shall be mutually agreed. Contractor shall have to account for all excavated hard rock.
	3.1.4.1	“All fossils, coins, articles of value of antiquity and structure and other remains or things of geological and archaeological interest discovered on the site of works shall be the absolute property of the Employer and the Contractor shall take all precautions to prevent his workmen or any other person removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal inform the Employer of such discovery and carry out the removal under the supervision of the Employer of the same and hand it over to the Employer”.
4.Time for Completion	4.1	The Contractor shall attain Completion of the Work within the time stated in the ITT or within such extended time allowed by Employer.
5.Employer's Responsibilities	5.1	The Employer shall ensure the accuracy of important information and / or data to be supplied by the Employer, except when otherwise expressly stated in the Contract.



- 5.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way. The Employer shall give full possession of and accord all rights of access thereto on or before the mutually agreed date(s).
- 5.3 If requested by the Contractor, the Employer shall use its best endeavours to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and / or licenses necessary for the execution of the Contract from State or Central Government, Authorities.
- 6.Contract Price** 6.1 The Contract Price/Total Price shall be as specified in Price schedule.
- 7. Terms of Payment**
- 7.1 **General**
- 7.1.1 No initial mobilisation advance will be provided to the Contractor and the payments will be linked with the progress.
- 7.1.2 All payments shall be made as specified in **Special Condition of Contract** (Terms of Payment), directly by the Employer to the Contractor unless otherwise provided in the Contract or agreed between the Parties.
- 7.1.3 If as per provisions of Contract any payment is made directly by the Employer to the Sub-Contractors, such payments shall constitute a proper discharge of Employer's obligations for such payments to the Contractor.
- 8.Securities**
- 8.1 **Issuance of Securities (Bank Guarantees)**
- 8.1.1 The Contractor shall provide the Securities in the form of Bank Guarantees specified below in favour of the Employer at the times, and in the amount, manner and form specified below.
- 8.1.2 The Bank Guarantee shall be in the form provided in the Agreement.
- 8.1.3 The Bank Guarantee for Indian Rupee payments shall be issued and be payable by State Bank of India (SBI) or an Scheduled Indian Bank at place where site is situated and Facilities will be erected.
- 8.2 **Performance Bank Guarantee (as per Annexure-II)**



- 8.2.1 The Contractor shall, within thirty (30) days of receipt of LOI/Order/Fax order, provide a Bank Guarantee (as per **Annexure- II**) for the due performance of the Contract in amount equivalent to 5% of the Total Price including taxes & duties in Indian rupees.
- 8.2.1.1 If the Contractor fails to provide the Performance Bank Guarantee within the specified period, the Employer shall take risk purchase action including forfeiting the bid security, and get the Facilities executed by any other party at the risk and cost of the Contractor, after expiry of the notice for terminating the Contract for such default by the Contractor.
- 8.2.2 The Bank Guarantee shall automatically become null and void after twelve (12) months from the issue of PAC, provided, however, that if the Defects Liability Period has been extended on any part of the Facilities, the Contractor shall issue an additional Bank Guarantee in an amount proportionate to the Price of that part. The Bank Guarantee shall be returned to the Contractor immediately after its expiration, provided, however, that if the Contractor, is liable for an extended warranty obligation, the performance Bank Guarantee shall be extended for the period of 12 months from date of its restoration.
- 8.2.3 The Bank Guarantee shall be returned to the Contractor after expiry of defect liability period on demand from Contractor.
- 8.3 **Claims under Security (Bank Guarantee)**
- If the Employer considers itself entitled to any claim under any Bank Guarantee, it shall so notify the Contractor by registered airmail post, specifying the default of the Contractor upon which it bases its claim, and it shall require the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen days of receipt of such notice, then the Employer shall be entitled to call Security.

9.Taxes & Duties 9.1

Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Sub-Contractors or their employees by Municipal, State or Central Government Authorities.

All taxes & duties payable outside India in respect of performance of the Contract, shall be borne & paid by the Contractor.



- 9.1.1 The Contractor shall place the Contract before GST Authorities for their examination, identification and apportionment of the Contract for applicability of Works Contract Tax and get the apportionment done in terms of the provisions made under respective GST Acts / Rules failing which the Contractor will be liable for deduction of Tax at source (TDS) to be made by the Employer on full value of the Contract.
- 9.1.2 The Contractor shall bear and pay all the liabilities in respect of non-observance of all legal formalities as per various statutory provisions.
- 10. Copyright**
- 10.1 The technical information, drawings, specifications and other related documents forming part of tender or contract are the property of EMPLOYER and shall not be used for any other purposes, except for execution of the contract. All rights, including rights in the event of grant of patent and registration of designs are reserved. The technical information drawings, specification, records and other documents shall not be copied transcribed, traced or reproduced in any other form or otherwise in whole and/or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without EMPLOYER consent in writing except to the extent required for the execution of this Contract. These technical information, drawings, specifications and other related documents shall be returned to EMPLOYER with all approved copies and duplicates, if any, immediately after they have been used for the agreed purpose. Required numbering and codification method need to be implemented by the CONTRACTOR to trace such documentation.
- 11. Confidential Information**
- 11.1 The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any document, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Sub-Contractor(s) such documents, data & other information it receives from the Employer to the extent required for Sub-Contractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Sub-Contractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this clause.



- 11.2 The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the work.
- 12. Representatives**
- 12.1 **Engineer**
- 12.1.1 If the Engineer is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall notify the Contractor in writing of the name of the Engineer. The Employer may from time to time appoint some other person as the Engineer in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of work on the Facilities. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Engineer shall represent and act for the Employer at all times during the currency of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Engineer, except as herein otherwise provided.
- 12.2 **Contractor's Representative**
- 12.2.1 If the Contractor's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14) days of such objection.
- 12.2.2 The Contractor shall not revoke the appointment of the Contractor's Representative without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Contractor's Representative,
- 12.2.3 The Contractor's Representative shall represent and act for the Contractor at all times during the currency of the Contract and shall give to the Engineer all the Contractor's notices, instructions, information and all other communications under the Contract. All notices, instructions, information and all other communications given by the Employer or the Engineer to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided.



- 12.2.4 All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Engineer, except as herein otherwise provided.
- 12.2.5 The Contractor's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Engineer. Any act or exercise by any person of powers, functions and authorities so delegated to him, shall be deemed to be an act or exercise by the Contractor's Representative.
- 12.2.6 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under **Sub-Clause 22.3** hereof. The Contractor on receipt of such notice, shall remove such person from the Facilities. If any representative or person employed by the Contractor is removed the Contractor shall promptly appoint a replacement.
- 12.3 **Co-operation with Other Contractors**
- 12.3.1 The Contractor shall, upon written request from the Engineer, provide all relevant technical information to the other Contractors employed by the Employer on or near the Site for any associated Plant & Equipment to enable the Employer to obtain the efficient & economical design of the associated Plant & Equipment.
- 12.3.2 The Contractor shall, upon written request from the Engineer, give all reasonable opportunities for carrying out the work to any other Contractors employed by the Employer on or near the Site and shall co-ordinate with the other Contractors for any interface activity under its Scope of Facilities.
- 12.3.3 The Contractor shall also so arrange to perform its work as to minimise, to the extent possible, interference with the work of other Contractors. The Engineer shall determine the resolution of any difference or conflict that may arise between the Contractor & other Contractors in regard to their work.



- 12.3.4 The Contractor shall notify the Engineer promptly of any defects in the other Contractors' work that come to its notice, and that could affect the Contractor's work. The Engineer shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Engineer shall be binding on the Contractor.
- 13. Work Program**
- 13.1 **Contractor's Organisation**
- The Contractor shall supply to the Employer a chart showing the proposed organisation to be established by the Contractor for carrying out work on the Facilities. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be deployed within twenty-one (21) days of the Effective Date of the Contract. The Contractor shall promptly inform the Employer in writing of any revision or alteration of such an organisation chart.
- 13.1.1 The Contractor shall submit the detailed Assignment Schedule for Overseas Experts / Specialists for rendering technical services, within six (6) months from the Effective Date of the Contract which shall be mutually agreed upon between the Employer and the Contractor.
- 13.2 **Program of Performance**
- 13.2.1 Within three (3) weeks after the receipt of Order/Fax Order, the Contractor shall prepare and submit to the Engineer the Master PERT Network for the performance of the Contract, showing the sequence in which it proposes to perform the work.
- 13.2.2 The Master PERT Network so submitted by the Contractor shall accord with the Time Schedule and any other dates and periods specified in the Contract.
- 13.2.3 The Consultant/Employer shall approve the Master PERT Network after scrutiny and discussions with the Contractor within two (2) weeks of submission of Master PERT Network. The Contractor shall submit finalised Master PERT Network in number of copies as required by the Employer.
- 13.2.4 Based on the finalised Master PERT Network as per **Clause 13.2.3** hereof, the Contractor shall submit L-1 Network which shall be approved by the Employer within three (3) weeks of the submission.



13.2.5 The Contractor shall update and revise the finalised Master PERT Network as and when appropriate or when required by the Employer, but without modification in the Times for Completion given in the **ITT** and any extension granted by Employer

13.3 Progress Report

13.3.1 The Contractor shall monitor progress of all the activities specified in the program and submit to the Engineer a progress report along with Computerised Network Analysis Report every month.

13.3.2 The progress report shall be in a form acceptable to the Engineer and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.

13.4 Progress of Performance

13.4.1 If at any time the Contractor's actual progress falls behind the program or it becomes apparent that it will so fall behind, the

Contractor shall, at the request of the Engineer, prepare and submit to the Engineer a revised program, taking into account the prevailing circumstances, and shall notify the Engineer of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion any extension thereof entitled may otherwise be agreed upon between the Employer and the Contractor.

13.5 Work Procedures

13.5.1 The Contract shall be executed in accordance with the Contract Documents.

13.5.2 The Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with provisions contained in the Contract.

13.6 Civil, Architectural & Electrical Work

13.6.1 The Contractor shall carryout Civil, Architectural & Electrical Work as per the Technical Specification in accordance with conditions given below:



- 13.6.1.1 The Contractor shall make its own arrangement for all labour, construction, tools & tackles & construction materials. All temporary approach roads to the site for carrying out construction work shall be constructed and maintained by the Contractor at its own cost.
- 13.6.1.2 The Contractor shall make arrangement at its own cost for drawing and distributing water and power from a single point each, where water and power will be provided by the Employer. The Contractor should have adequate water storage capacity to meet its requirements.
- 13.6.1.3 The Contractor shall take all necessary precautions to avoid damage to any property of the Employer or any third party. The Contractor shall also ensure that the progress of work of other Contractors in the adjoining areas is not hindered.
- 13.6.1.4 The Contractor shall take all precautions during execution, especially while excavating to avoid interference with or damage to underground works, such as cables, pipe lines, drains, etc. and provide all possible protection to these works and in case they are damaged, rebuild / divert them at its own cost.
- 13.6.1.5 The Contractor shall carry out, at its own cost, necessary precision survey to set out and check the setting of all works including foundation & anchor bolts, etc., to the required tolerances using the grid reference points available in the plant site.
- 13.6.1.6 Materials brought to the site shall not be removed from the site without the written consent of the Employer. The Contractor shall submit well in advance for approval of all samples, specimens as the Employer may demand from time to time. Any material brought to site and rejected by the Employer shall be removed by the Contractor from the site of work immediately.
- 13.6.1.7 The Employer may during the progress of work, order the removal of part or whole of the work executed, found not in accordance with the approved drawings / specifications / written instructions. No extra claims shall be entertained for removal & re-execution of such work.



- 13.6.1.8 No work shall be covered up or put out of view without the approval of the Employer. In the event of failing to do so, the Contractor shall uncover any part of the work or make openings in or through the works as the Employer may direct and they shall be made good with materials approved by the Employer and should match with workmanship of the surrounding work.
- 13.6.1.9 The Contractor shall provide sufficient strong and stable stagings so as to ensure safety of the labour & structures.
- 13.6.1.10 The Contractor shall provide all necessary storage at the site in specified areas for all materials such as timber, cement, lime and such other materials which are likely to deteriorate by the action of sun, winds, rain or other natural cause due to exposure in the open in such manner that all such materials shall be duly protected from damage by weather or any other cause. All such stores shall be cleared away and the whole site left in good order on completion of the Contract. All materials, shall be stacked in such a manner as to facilitate rapid and easy checking of such materials. The Contractor will not be permitted to store any of his material in the buildings under construction or already constructed by him without prior approval of the Employer.
- 13.6.1.11 The Contractor shall dismantle and remove the staging and other temporary facilities like stores, offices, labour camp, etc., on completion of work, clear and clean the site where such temporary facilities were built and restore the same to original condition.
- 13.6.1.12 After completion of work, the Contractor shall carry out micro levelling of the site within battery limit ensuring proper grades and slopes to achieve efficient drainage of the site. The Contractor shall remove all debris, surplus earth, etc., and dump the same at place(s) as directed by the Employer within a distance of 10 km from the site.
- 13.6.1.13 a) The cost of testing of concrete and any other material, shall be borne by the Contractor.
- b) The Contractor shall install its own construction laboratory equipment at site for testing of construction materials like cement, aggregates, concrete cubes, soil etc.



- c) Testing shall be carried out by the Contractor in the presence of Employer's representative. However, the Contractor shall arrange for such testing, in case of exigencies on the Employer's instructions, at any other testing laboratory as approved by the Employer without any extra cost to the Employer. All test results shall be submitted by the Contractor to the Employer for his approval.
- d) Any special measures or techniques which may be necessary for construction of structures, e.g., dewatering, sheet piling, diaphragm walls, well sinking, well point system, continuous pouring of concrete, etc., shall be deemed to have been taken into account by the Contractor and no extra claim, whatsoever, shall be entertained.
- 13.6.1.14 All lap lengths in reinforcement rods have to be approved by the Employer.
- 13.6.1.15 In respect of any portion of works which is to be embedded or covered up by other works, the Contractor shall submit them to Employer for technical inspection and have the necessary clearance certificates duly signed by the Employer and Contractor before letting such portion to be embedded or covered.
- 13.6.1.16 Wherever works are to be carried out in proximity or within existing facilities, Contractor may have to adopt special methodology of construction suited to prevailing conditions. The Contractor shall make necessary schemes in advance and finalise the same with the approval of the Engineer / Consultant.
- 13.6.1.17 On progressive completion of work, the Contractor shall submit to the Employer the following documents for the passing of the work:
- Certificate on control checking.
 - A copy of each of the concerned working drawings showing thereon all approved additions and alternations, if any, in the process of execution.
 - Clearance certificates for embedded / covered up works.
 - Manufacturer's certificates, guarantees and test certificates, as relevant.



- 13.6.1.18 CONTRACTOR shall maintain up-to-date copies of all drawings, specifications, other Contract Documents and any other supplementary data complete with all the latest revisions thereto at his 'Site' Office. CONTRACTOR shall also maintain a continuous record of all changes to the above Contract Documents, drawings, specifications, supplementary data, etc., effected at the field. These updated records/ drawings/ documents shall be submitted to EMPLOYER at any point of time on demand. On completion of his total assignment under the 'Contract', CONTRACTOR shall return all drawings issued by EMPLOYER.
- 13.6.1.19 CONTRACTOR is responsible for protecting his "Work" till it is finally accepted by EMPLOYER. No claim will be entertained by EMPLOYER for any damage or loss to the CONTRACTOR 'S 'Work'. CONTRACTOR is also responsible for complete restoration of the damaged 'Work' to its original condition to comply with the specifications and drawings keeping EMPLOYER completely indemnified.
- 13.7 **Construction Water and Power.**
- 13.7.1 Construction & Drinking water shall be supplied free of cost by the Employer to the Contractor at a single point within a distance of 300 m from the battery limit. The Contractor shall make its own arrangements to lay and maintain necessary distribution lines, valves, etc., from this point at its own cost.
- 13.7.2 The Contractor shall be responsible to store water in sufficient quantities to meet its requirements for at least 2 days in well built water storage tanks with covered tops to prevent entry of foreign matter. Quantum of supply will depend on availability and no claim for shortfall shall be allowed by the Employer.
- 13.7.3 The Contractor shall ensure that there is no wastage of water. The Contractor will also be responsible for maintaining the taps, pipe lines, etc., in proper condition. The Contractor shall obtain prior approval of the Employer of Contractor's distribution scheme before laying the pipelines.
- 13.7.4 **Construction Power**
- 13.7.4.1 The Employer will supply 415V, 3-Phase four wire AC power in bulk at one point within 300 meters of battery limit, for construction & erection free of charge. The Contractor shall make its own arrangements to lay and maintain necessary distribution lines and wiring at its own cost. Electrical power for fabrication work, if any, envisaged at site shall be supplied, metered and charged at the rate prevailing from time to time.



- 13.7.4.2 The Contractor shall ensure that the electrical equipment employed by the Contractor will be such that the aggregate power factor does not fall below 0.8 at the Employer's terminal point.
- 13.7.4.3 The Contractor shall obtain Employer's prior approval of the locations of Contractor's fixed construction machinery and the points for tapping of electric supply, laying of distribution lines and wiring.
- 13.7.4.4 The Contractor will supply and install switches, fuse units of suitable rated capacity separately for power and lighting on a frame preferably of steel and provide rain water protection cover on the switches. The Contractor will supply and install all distribution cables, wires and switches, etc., of rated capacity for the work starting from the source of power at its own cost. The installation will be made as per relevant rules and site locations which are to be finalised in consultation with the Employer.
- 13.7.4.5 Display of danger board signs in Hindi and English languages near switches is to be ensured by the Contractor.
- 13.7.4.6 The electrical installations for construction power shall conform to Indian Electricity Rules. The Contractor will get its installation inspected by the Assistant Electrical Inspector of State Government and obtain a certificate for energisation of the installation.
- 13.7.4.7 The Contractor will employ Electricians having valid Electrical Licence for carrying out the installations as well as for maintenance.
- 13.7.4.8 The Contractor will provide proper facilities to the Employer or his authorised representative for inspecting his temporary electrical installation as and when required. The Contractor will immediately attend to the defects so pointed out during this inspection including replacement of faulty cables, switches etc.
- 13.7.4.9 The Contractor shall not effect any change in the temporary installation unless permission is obtained from the Employer or his authorised representative.
- 13.7.4.10 The Contractor shall be responsible for all damages, losses, etc., due to fire or otherwise if it is due to the Contractors negligence, improper installation, operation and / or maintenance of Contractors part of installations.
- 13.7.5 **Structural Load Test**



The Contractor shall carry out structural load test on any part of the building / structure at its own cost if such structural load test is warranted due to unsatisfactory test results of concrete cubes and if so directed by the Employer.

13.7.6 **Royalties for the Construction Materials**

13.7.6.1 Royalties for the construction materials, e.g., sand, stone aggregates, boulders, moorum etc. as prescribed from time to time by the State Government shall be recovered from the bills of the Contractor and paid to the State Government by the Employer if there is a demand from statutory authorities in this regard. All Mining regulations have to be strictly adhered to by the Contractor when Quarries are allotted to the Contractor. However, the Contractor shall submit necessary documentary evidence that the Contractor has paid the royalties directly to the statutory authorities at source.

13.7.6.2 The Contractor shall submit to the Employer a monthly statement indicating the various materials stated above extracted from Quarries, river beds and other sources.

13.7.7 **Explosives**

13.7.7.1 In case explosives are required for blasting of hard rock, the same shall be arranged by the Contractor at its own cost. Fulfilment of statutory obligations shall be the responsibility of the Contractor. The Contractor shall transport the same to the site in an Explosive Van as per the statutory regulations, at its own cost.

13.7.7.2 The Contractor shall engage only the licensed blasters and comply with all Statutory regulations.

14. Installation

14.1 **Setting out**

14.1.1 **Bench Mark** : The Contractor shall be responsible for the true and proper setting-out of the Facilities periodically in relation to bench marks, reference marks, check lines and levels provided to it in writing by or on behalf of the Employer.

14.1.2 If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Contractor shall forthwith notify the Engineer of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Engineer.



14.2 **Contractor's Supervision:** The Contractor shall give or provide all necessary superintendence during the installation of the Facilities, and the Contractor's Representative or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective discipline and supervisory staff who are competent to adequately supervise the work at hand.

14.3 **Labour**

14.3.1 The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the Contract.

14.3.2 The Contractor shall at all times during the progress of the Contract use its best endeavours to prevent any unlawful, riotous or disorderly conduct or behaviour by or amongst its employees & labour and labour of its Sub-Contractors / Vendors.

14.3.3 The Contractor shall, in all dealings with its labour and the labour of its Subcontractors employed on or connected with the Contract, pay due regard to the laws and regulations pertaining to the employment of labour.

14.3.3.1 **Labour Rules**

14.3.3.1.1 In respect of all labour directly or indirectly employed on the works by the Contractor, the Contractor shall comply with and implement all the Provisions of the Contract Labour (Regulation and Abolition) Act 1970, or any amendment thereof, and all legislations and Rules of the State and / or Central Government or other local authority formed from time to time governing the protection of health, sanitary arrangements, wages, welfare and safety of labour employed on the works and the Contractor shall be deemed to the Principal Employer for this purpose. The rules and other statutory obligations with regard to fair wages, welfare and safety measures, maintenance of register, etc., will be deemed to be part of the Contract. The Contractor will get itself registered with the concerned statutory authorities as provided in the Act and shall be directly responsible of the authorities thereunder for compliance with the provisions thereof.



- 14.3.3.2 Provision of Minimum Wages Act and Payment of Wages**
- 14.3.3.2.1 The Contractor shall comply with the provisions and procedures of State Government's minimum wages Act 1948 & State Government's Minimum Wages Fixation Act. 1962 and rules made there under in respect of all employees employed by the Contractor or its Sub-Contractor(s) directly or indirectly for the purpose of carrying out the works. The Contractor shall pay employees wages not less than the minimum rates of wages, if any, fixed by the State Government from time to time.
- 14.3.3.2.2 In respect of labour employed by the Contractor or its Sub-Contractor on the works the Contractor shall provide at its own cost reasonable amenities for securing proper working and living condition such as water supply, lavatories, bathing place, cleanliness, etc. Where a women labour is employed urinals, lavatories will be provided separately by the Contractor for female workers as well as crèches for the infant children of women labourers. Labourers engaged on hazardous jobs and occupations, will be provided with necessary safety appliances by the Contractor(s) free of charges.
- 14.3.3.2.3 The Contractor's / Sub-Contractor's establishment will be subject to inspection, investigation, etc., by the Employer or its representative for assuring proper and faithful compliance of the provisions of the Contract by the Contractor (so with regard to the implementations of labour laws & other matters anticipated herein. The Contractor / Sub-Contractors shall abide by the decisions and orders of the Employer with regard to any such matter and furnish if required, necessary compliance.
- 14.3.3.2.4 In the event of retrenchment of workers by the Contractor or Sub-Contractors employed by the Contractor during or after the completion of Facilities the retrenchment compensation and other benefits will be paid by the Contractor to the workers as per the Industrial Dispute Act.
- 14.3.3.2.5 If any money shall, as a result of any claim of application made under the said acts, be directed to be paid by the Employer, such money shall be deemed to be money payable to the Employer by the Contractor and / or failure by the Contractor to repay the Employer, and money paid by the Employer as aforesaid, latest within 30 days after the same shall have been demanded from the Contractor, the Employer shall be entitled to recover the same from any money due or accruing to the Contractor under this or any other Contract with the Employer, failing which such amount shall be considered as debt due from the Contractor to the Employer.



14.3.3.2.6 The Contractor shall comply with the provisions of by-partite and tripartite agreement entered into by the Employer from time to time with Labour Union and / or the circulars issued by the Employer regarding payment of minimum wages and benefits applicable.

14.3.3.2.7 The Contractor shall strictly comply the statutory rules and regulations in respect of working hours of female labourers at site.

14.3.3.3 Reporting of Accidents

The Contractor shall be responsible for the safety of its own and its Sub-Contractors' workmen and employees. All accidents at site are to be immediately reported to the required authorities. The Contractor shall be responsible for all such accidents.

14.3.3.4 Provision of Workmen's Compensation Act

14.3.3.4.1 The Contractor shall be liable for in respect of any damages or compensation payable by law in respect of or in consequences of any accident or injury to any workmen or other person in the employment of the Contractor or any of its Sub-Contractors and the Contractor shall save harmless and shall indemnify and keep indemnified the Employer against all such damages and compensation and against all claims, demands, proceedings, costs, charges and expenses, whatsoever, in respect thereof or in relation thereto. The Contractor shall at all times indemnify and keep indemnified the Employer against all claims for compensation under the provisions of the Workmen's Compensation Act 1923 (VIII of 1923) or any other law for the time being in forces by or in respect of any workmen employed by the Contractor or its Sub-Contractors / agencies in carrying out the Contract and against all costs and expenses or penalties incurred by the Employer in connection therewith. In every case in which by virtue of the provisions of Section-12, Sub-Section(1) of the Workmen's Compensation Act 1923, the Employer is obliged to pay compensation to a workmen employed by the Contractor or its Sub-Contractors / agencies, the amount of compensation so paid and without prejudice to the rights of the Employer, the Employer shall be at liberty to recover such amount or any part thereof from the security deposit or from the sums due or to become due to the Contractor (whether under this Contract or any other Contract).



14.3.3.4.2 The Employer shall not be bound to contest any claim made against him of the said Act, except on the written request of the same or his Sub-Contractors / agencies and upon their giving to the Employer full security for all costs for which the Employer might become liable in consequence of contesting such claims.

14.3.3.5 Provisions of Apprentices Act

The Contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If Contractor fails to do so, his failure may be treated as breach of the Contract and the Employer may, in its discretion, terminate the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

14.3.3.6 Labour Returns

The Contractor shall, if required by the Employer, submit periodical statements of labour employed by the Contractor in the proforma prescribed by the Employer from time to time.

Contractor shall maintain all record/ register/ card such as

- a) Register of workmen employed by Contractor
- b) Employment card
- c) Muster Roll
- d) Register of wage cum muster roll
- e) Submission of Return

14.3.3.7 Labour Camps

The Contractor shall, at its own expense, make adequate arrangements for housing, electricity, road, supply of drinking water and provision of lavatories and urinals for its staff and labour, disposal of sewerage and sludge and for temporary crèche (bal mandir) where 50 or more women are employed at a time.



14.3.3.8 Preservation of Peace

The Contractor shall take requisite precautions and use its best endeavour to prevent riotous or unlawful behaviours by, or amongst his workmen and / or others employed on the works, by the Contractor its Sub-Contractors and for the preservation of peace and protection of the inhabitants and security of the property in the neighbourhood of the works / site. In the event of the Employer requiring the maintenance of a special police force at or in the vicinity of the site during the tenure of the Contract in consequence of the riotous or unlawful behaviour by, or amongst the Contractor's or its Sub-Contractor's workmen and / others employed by the Contractor / Sub-Contractors, all expenses thereof and costs of all damages due to such riotous or unlawful behaviour shall be borne by the Contractor and if paid by the Employer, shall be recoverable from the Contractor from any money due or that may become due to the Contractor by the Employer.

14.3.3.9 Payment of Wages

14.3.3.9.1 Contractor shall comply with the provisions of Minimum Wage Act 1948 and Payment of Wage Act 1936. The Contractor shall make regular and prompt payment of wages to the labour engaged in the work and in no case shall the payment be delayed more than seven days following the period for which the wages are due. The Contractor shall send a certificate to the Employer to this effect every month. If it is found that workers are not paid regularly, the Contract is liable to be terminated.

14.3.3.9.2 The Employer shall have the right to enquire into and decide against any complaint alleging that the wages paid by the Contractor to any labour for the work done by such labour is less than the wages paid for similar work in the neighbourhood.

14.3.3.9.3 As a number of Contractors may be working at the same time in the erection of different parts of the Facilities, there is need for pursuance of a co-ordinated policy in regard to employment, wages and other conditions of work. The Contractor shall consult the Employer on all such matters to arrive at mutually agreed settlements.

14.3.3.10 Sanitary Arrangements

The Contractor shall comply with all sanitary rules in force and carry out all sanitary measures and permit inspection of all sanitary arrangements at all reasonable times by the Employer and or Statutory Authorities.



14.3.3.11 Infectious Diseases

The Contractor shall employ such persons as are found to be free of contagious diseases and shall produce if required by the Employer, certificate of fitness of all his employees working at site. The Contractor shall, if required by the Employer, subject all its employees to regular medical check up and produce satisfactory evidence of their being free from any contagious disease.

The Contractor shall remove from its labour camp such labour and their families who refuse protective inoculations and vaccination when called upon to do so by any competent authority.

14.3.3.12 Medical Facilities at Site

The Contractor shall provide medical facilities at the site as per rules in force in relation to the strength of the Contractor's staff and workmen deployed at site.

14.3.3.13 Use of Intoxicants

The use or sale of ardent spirits or other intoxicating beverages, upon the works or in any of the building, boarding houses,

Encampments or other tenements owned, occupied by or within the control of the Contractor or any of its employees or its Sub-Contractor is strictly forbidden and the Contractor shall secure strict compliance.

14.3.3.14 Age Limits of Labour

The Contractor shall not employ for the purpose of the work, any person below the age as its statutorily forbidden. The Employer shall have the right to refuse to allow any labour, whom the Employer considers to be under aged to be employed by the Contractor. The Contractor shall submit periodical statements of labour employed by the Contractor to the Employer.

14.3.3.15 Provident Fund

The Contractor shall be solely responsible for deduction and contributions under the Employees Provident Fund and Family Pension Act, 1952 and the scheme made there under as amended from time to time. The Contractor shall be solely responsible for the maintenance of records for payment of contributions and submission of returns in accordance with the said act and scheme.



In case the Contractor fails to make payments under the above Act and the scheme made there under and as amended from time to time, the Employer reserves the right to make such payment on behalf of the Contractor on demand from the authorities under the Act and recover the same from the payments due to the Contractor. Further, the Contractor shall indemnify and keep indemnified the Employer against any loss or damage whatsoever that may be suffered by the Employer as a result of any claims, damages, penalties for any failure, non-compliance on his part with the provisions of the aforesaid Act and the scheme framed there under.

14.3.3.16 Observance by Sub-Contractors

The Contractor shall also be responsible for the compliance of all the above clauses by his Sub-Contractor(s).

14.4 Contractor's Equipment

14.4.1 The Contractor shall mobilise himself with adequate material handling equipment like mobile & tower cranes, forklifts, trailers etc. in addition to other erection tools & consumables keeping in view the erection schedule. The Contractor shall provide within 60 days from the Effective Date of Contract its scheme for mobilisation with Bar Chart indicating clearly the resources, manpower and machinery proposed to be deployed to ensure timely completion of work and quality of workmanship. On request, the Employer may help the Contractor by providing any special handling / construction equipment needed in the interest of work subject to availability and on payment of hire charges and other conditions of Employer. Debit shall be raised on eight hours shift basis or on four hour slab basis including the marching time from and to the workshop on requisition in the prescribed format. The charges shall be recovered from any bill of the Contractor due immediately thereafter.

14.4.2 All Contractor's Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Engineer's consent.

14.5 Site Regulations and Safety

14.5.1 As the works under the Contract are to be carried out within the Protected area, the Contractor shall abide by all the security regulations promulgated from time to time by the Employer / other concerned authorities.



- 14.5.2 The Contractor shall comply with the Site regulations, during the execution of the Contract at the Site, as given in the document of “Safety Code for the Contractors. Contractor shall also maintain hindrance register which shall be periodically examined by Employer.
- 14.5.2.1 Such Site regulations includes, but not limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention.
- 14.5.3 The employees / labour of the Contractor / Sub-Contractor and Plant & Equipment brought to Site shall be subject to gate pass to be issued by Security Department or the respective Department.
- 14.5.3.1 Preparation of gate pass normally takes around 10 days time. The Contractor / Sub-Contractor shall plan their programme in advance accordingly.
- 14.5.3.2 All representatives and workers of the Contractors / Sub-Contractors shall possess admit pass issued by the Security Department on the recommendation of the Employer. Employer shall have the right to refuse the admit pass to any workers or representatives without assigning any reasons.
- 14.5.3.3 The Contractor shall ensure that gate pass issued to their workers / representatives / Sub-Contractors by the Employer are not misused by unauthorised persons for entry in the plant area or in specified area inside the plant. It shall amount to breach of rules and regulations regarding entry into a prohibited place by the Contractors in case any admit pass issued on their demand is found to be misused by unauthorised person.
- 14.6 **Site Clearance**
- 14.6.1 Site Clearance in Course of Performance: In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor’s Equipment no longer required for execution of the Contract.
- 14.6.2 Clearance of Site after Completion: After Completion of all parts of the Facilities, the Contractor shall clear away and remove all wreckage, rubbish, debris and surplus material of any kind from the Site, and shall leave the Site and Facilities clean and safe.
- 14.7 **Lighting, Fencing and Watching**



The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.

14.8 Work at Night and on Holidays

As and when the Engineer considers it necessary to carry out work on extended hours / three shift basis or on Public Holidays so as to meet the Time for Completion and request the Contractor to carry out work on three shifts or on Public Holidays, the Contractor shall carry out the work accordingly to meet the Time of Completion.

14.9 The Contractor shall carry out final painting of the erected Plant & Equipment and Steel Structures etc., as per the instructions stipulated in the Technical Specification.

15. Defect Liability

15.1 Maintenance period of one year shall start after issuance of Preliminary Acceptance Certificate (PAC). The contractor shall maintain and attend to all defects arising in the structures constructed by them during the maintenance period of one year from PAC.

If any major defects arise during such period, the contractor shall reconstruct/rectify the same in stipulated period mutually discussed with Employer/Consultant. Maintenance period of such area of work shall be extended for a period of one year after rectification of major defects.

CONTRACTOR warrants that within twelve (12) months from the date of issuance of PAC by Employer for the contract work, the contract work so certified shall not show any sign of defects, cracks, under settlements, disfigurations, shrinkage, leakage, dampness or any other faults.

If CONTRACTOR fails to commence rectification of such defects within 14 days from the date of notice by EMPLOYER or does not complete the said rectification with diligence and within mutually agreed time period, EMPLOYER shall be entitled to carryout such work by his own workmen or by other agency at the cost of Contractor.

The issue of EMPLOYER's completion certificate shall in no way exempt the CONTRACTOR from the provisions under this Schedule.



		<p>The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect the defect.</p>
16. Limitation of Liability	16.1	<p>Except in cases of criminal negligence or wilful misconduct,</p> <p>a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligations of the Contractor including payment of Liquidated Damages by the Contractor to the Employer and</p> <p>b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Employer with respect to patent infringement and workman compensation .</p>
17. Statutory law, Loss of or Damage to Property; Accident or Injury to Workers; Indemnification	17.1	<p>The Contractor shall indemnify and hold harmless the Employer and its employees from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property (other than the Facilities whether accepted or not), arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, or agents, except any injury,</p>
	17.2	<p>If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability hereof, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.</p>



17.3

If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf at the risk of the Contractor.

The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all expenses incurred in so doing.

CONTRACTOR shall ensure compliance with all statutes, laws, rules and regulations of the Central or State Government or any other authority prevailing at Ranchi and in the state of Jharkhand.

CONTRACTOR shall give all notices and pay all fees required to be given or paid under any Central or State statute, ordinance or other law or any regulation or by-law of any local or other duly constituted authority in relation to the execution of the Contract Work.

CONTRACTOR shall keep EMPLOYER completely indemnified against all penalties and liabilities of every kind for breach of any such statute, ordinance, law, rule, regulation or by-laws.

CONTRACTOR shall get himself registered with concerned statutory authorities as provided under various applicable Acts and shall be directly responsible to such authorities for compliance with the provisions thereof.

CONTRACTOR shall obtain necessary labour license from labour commissioner and shall indemnify EMPLOYER against any action, claim or proceeding relating to infringement of all or any of the prevailing act. By way of illustration of various Acts as stated in the contract, the following Acts or any amendment thereof shall be complied with by the CONTRACTOR .

- i) Employee Provident fund Act, 1952
- ii) Contract Labour Act (Regulation and abolition Act, 1970)



- iii) Minimum wages Act, 1948
- iv) Payment of wages Act, 1936,
- v) Workmen Compensation Act, 1923
- vi) Factories Act, 1948
- vii) Apprentice shop Act, 1961
- viii) Employee Provident fund and family pension Act, 1952.
- ix) Contract Labour (Regulation and Abolition) Central Rules 1971
- x) Employee liability act. 1938.
- xi) Industrial Dispute act. 1947.
- xii) Employee state Insurance act. 1948.
- xiii) Employee Pension Scheme

CONTRACTOR shall furnish Indemnity Bond, in the prescribed format, for the above prior to commencement of work.

PERMITS AND LICENCES

The Contractor shall at its own expenses obtain all permits and licences from Indian and Foreign Government required for the performance of work under this Contract and the Contractor shall bear any fee paid to the Government or local licensing authority for obtaining permits and licences at their own cost. The Contractor shall perform the work in accordance with the conditions of all applicable permits and licence. The Contractor shall provide evidence of licence granted and any restriction contained therein.

18 Insurance

- 18.1 The Contractor shall take out a composite MCE (Marine-cum-Erection) Insurance Policy with a Nationalised Indian Insurance Company which shall cover total erected value of the Facilities (115% of Contract price) and all risks specifically inclusive of the following:
 - 18.1.1 All Risk Insurance: The policy shall cover all risks and escalations, and revisions without ceiling. Marine & Transit Insurance Policies shall also cover
 - Institute Cargo Clause 'A'
 - Institute War Clauses
 - Institute Strike Clauses



18.1.2 Third Party Liability Insurance:

The policy shall cover third party liability. The third party liability shall cover the loss / disablement of human life (persons not belonging to the Contractor) and also cover the risk of damages to others' materials / equipment / properties during construction, erection and commissioning at site. The value of third party liability for compensation for loss of human life or partial / full disablement shall be of required statutory value but not less than Rs. 2 lakh per death, Rs. 1.5 lakh per full disablement and Rs. 1 lakh per partial disablement and shall nevertheless cover such compensation as may be awarded by a Court of Law in India or abroad and cover for damage to others' equipment / property as approved by the Employer.

18.1.3 Automobile Liability Insurance:

Covering use of vehicles / mobile equipment used by the Contractor or its Sub-Contractors (whether or not owned by them) in connection with the execution of the Contract.

18.1.4 Contractor shall ensure that where applicable, its Sub-Contractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Sub-Contractors are covered by the policies taken out by the Contractor.

18.1.5 The Employer shall be the principal holder of the policy along with the Contractor. Sub-Contractors of the Contractor shall not be holders or beneficiaries in the policy nor shall they be named in the policy. Employer reserves the exclusive right to assign the policy.

18.1.6 While the payment of premium may be phased in agreement with the insurance company, at no time shall goods and services required to be provided by the Contractor shall remain uninsured.

18.1.7 A copy of the 'Marine-cum-Erection' Insurance policy shall be made available to the Employer within 60 days of signing of the Contract and policy shall be kept alive and valid at all times up to the stage of Commissioning Certificate hereof.

18.1.8 The Employer reserves the right to take out whatever policy that is deemed necessary by him if the Contractor fails to keep the said policy alive and valid at all times and / or causes lapses in payment of premium thereby jeopardising the said policy. The cost of such policy(s) shall be recovered / deducted from the amount payable to the Contractor.



- 18.1.9 The Contractor while taking out such 'Marine-cum- Erection' policy shall avail the best premium rates with the maximum discounts available.
- 18.1.10 In cases where the erection, modification etc., are to be carried out in the existing shop of the Employer the 'surrounding value' shall be intimated by the Employer to the Contractor, who shall ensure that this value is included in the policy.
- 18.1.11 The policy shall ensure that the Employer's decision regarding replacement of goods damaged, lost or rendered unusable shall be final.
- 18.2 Upon arrival of materials at site the Contractor shall assume custody thereof and remain responsible thereafter for safe custody until the whole plant is successfully commissioned.
- 18.3 In order to adequately cover the works under such composite and comprehensive insurance, the Contractor shall fulfil the necessary requirements / obligations which will inter-alia include the following:
- 18.3.1 Adequate fire-fighting equipment and extinguishing agents of sufficient capacity and quantity must always be available at site and kept ready for immediate use.
- 18.3.2 Sufficient number of workmen must be fully trained in the use of such equipment and must be available for immediate intervention at all times.
- 18.3.3 For storage of materials and equipment for the construction and erection work, storage must be subdivided into storage units and the distance between such storage units shall be as acceptable to the Insurance Company. All inflammable materials and especially all inflammable liquids and gases must be stored at a sufficient large distance from the property under construction or erection and from any hot work.
- 18.3.4 Welding, soldering or the use of an open flame in the vicinity of combustible material is only permitted if at least one workman suitably equipped with extinguishers and well trained in fire-fighting is present.
- 18.3.5 At the beginning of preliminary acceptance test & pre-commissioning of Plant & Equipment all fire-fighting facilities must be rechecked thoroughly.
- 18.3.6 Observation of all safety rules and regulations.



**19
Negligence**

- 19.1 If the Contractor does not execute the Work in accordance with the time schedule and shall neglect to execute the Work with due diligence or expedition or shall refuse or neglect to comply with any reasonable order given to the Contractor in writing by the Employer in connection with the Work or shall contravene the provisions of Contract, the Employer may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of within such time as may be deemed reasonable by the Employer and in default of compliance with the said notice, the Employer without prejudice to its rights hereof, may rescind or cancel the Contract holding the Contractor fully liable for the damages that the Employer may sustain including all amounts paid to the Contractor by the Employer for all such Facilities which may become in fructuous due to such cancellation.
- 19.2 Should the Contractor fail to comply with such notice within the period as mentioned in the notice or any other period considered reasonable by the Employer for such compliance, from the date of serving thereof, then and in such case, without prejudice to the Employer's right hereof, the Employer shall have at its option the right to take the affected Work wholly or in part out of the Contractor's hands and may complete the Work, as envisaged in the Contract either departmentally or by awarding fresh Contract(s) to any other person or firm or company to execute the same, at the risk and cost of the Contractor.
- 19.3 In such event the Employer shall, without being responsible to the Contractor for wear and tear to the same, be entitled to seize and take possession and use all materials, construction equipment, tools, tackles and other things of the Contractor which may be at the site for use at any time in connection with the Facilities to the exclusion of any right of the Contractor over the same and the Employer shall be entitled to retain and apply any sum which may otherwise be then due as per the Contract or any other Contract from the Employer to the Contractor as may be necessary for the payment of the cost of execution of such Facilities as aforesaid.



- 19.4 If the cost of executing the Work as aforesaid shall exceed the sum due to the Contractor and the Contractor fails to make good the deficit within the specified period, the Employer shall have the right to lien over the said materials, tools, tackles, construction plant or other things and properties of the Contractor as may not have been used up in the completion of the Work, and may be sold by the Employer after serving due notice to the Contractor and such proceeds applied towards the adjustment of such difference and the cost of incidentals to such sale. Any outstanding balance existing after crediting the proceeds of such sale shall be paid by the Contractor on the demand of the Employer, but when all expenses, cost and charges incurred in the completion of the Facilities are paid by the Contractor, all such materials, tools, tackles, construction plant or other things not used in the completion of the Facilities and remaining unsold shall be removed by the Contractor with the written permission of the Employer.
- 20. Force Majeure**
- 20.1 “Force Majeure” shall mean any event beyond the control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- a) war, hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war.
 - b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts.
 - c) strike, sabotage, unlawful lockout, epidemics, quarantine and plague.
 - d) earthquake, fire, flood or cyclone, or other natural or physical disaster.
- 20.2 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 14 days after the occurrence of such event.



- 20.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed, the time for Completion shall be extended in accordance with **Clause 23** (Extension of Time for Completion) hereof.
- 20.4 The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfil its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract .
- 20.5 Any delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not
- a) constitute a default or breach of the Contract
 - b) give rise to any claim for damages or additional cost or expense occasioned thereby
- if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.
- 20.6 If the performance of the Contract is substantially prevented, hindered or delayed for a period of more than ninety (90) days on account of Force Majeure during the currency of the Contract, the parties will develop a mutually satisfactory solution.
- 21.INSPECTION** 21.1 No Structure/material shall be dispatched without inspection as per approved quality assurance plan (QAP) unless waived by the Employer. Inspection may be carried out by Employer's authorized representative/third party agency (to be appointed by Employer). At least two (2) weeks prior notice shall be given by the Contractor for carrying out inspection at manufacturer's / supplier's premises. All costs / expenses incurred in carrying out inspection and tests at manufacturer's / supplier's premises shall be borne and paid by the Contractor. All inspection facilities, gadgets, instruments, testing equipment, utilities and man-power, etc. for carrying out inspection at manufacturer's/supplier's premises shall be provided by the Contractor at no extra cost to the Employer. Employer shall only bear the cost of his personnel / representative towards travelling, lodging & boarding.



22.Change in the Facilities

- 22.1 The Employer shall have the right to propose, and subsequently order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Work (hereinafter called "Change"), provided that such Change falls within the general scope of the Work and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of Change envisaged with the nature of the Work as specified in the Contract.
- 22.2 Notwithstanding **Sub-Clauses mentioned above** hereof, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.
- 22.3 If the Employer proposes a Change it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Engineer as soon as reasonably practicable a "Change Proposal," which shall include the following:
- (a) brief description of the Change
 - (b) effect on the Time for Completion
 - (c) estimated cost of the Change
 - (d) effect on Functional Guarantees (if any)
 - (e) effect on any other provisions of the Contract.
- 22.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates for the valuation of the Change.
- 22.5 Upon receipt of the Change Proposal (any major change not within the general scope of facilities), the Employer and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order with the approval of competent authority.



- 22.5.1 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a “Pending Agreement Change Order.”
- Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.
- If the parties cannot reach agreement within one hundred & twenty (120) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to for the Conciliation / Arbitration as per **Clause 28** hereof.
- 22.5.2 If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly.
- 23.Extension of Time for Completion**
- 23.1 The Time for Completion specified in ITT shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:
- any Change in the scope of work
 - any occurrence of Force Majeure .
 - any suspension order given by the Employer .
 - The default by the Employer.
- by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.
- 23.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Engineer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer’s estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter for Conciliation / Arbitration.



- 23.3 The Contractor shall at all times use its reasonable efforts to minimise any delay in the performance of its obligations under the Contract.
- 24.Suspension**
- 24.1 The Employer may, by notice to the Contractor, order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the Effective Date of the suspension and the reasons therefore. The Contractor shall thereupon suspend performance of such obligation (except those obligations necessary for the care or preservation of the Facilities) until ordered in writing to resume such performance by the Engineer.
- If, by virtue of a suspension order given by the Engineer, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Engineer requiring that the Employer shall, within thirty(30) days of receipt of the notice, order the resumption of such performance.
- If the Employer fails to do so within such period, the Contractor may, by a further notice to the Engineer, elect to treat the suspension as termination of the Contract.
- 24.2 If the Contractor's performance of its obligations is suspended, then the Time for Completion shall be extended and any and all additional costs or expenses incurred by the Contractor as a result of such suspension shall be paid by the Employer to the Contractor in addition to Contract Price on mutually agreed basis.
- 24.3 During the period of suspension, the Contractor shall not remove from Site any plant & equipment, any part of the Facilities or any Contractor's equipment, without the prior written consent of the Employer.
- 25.Termination**
- 25.1 **Termination for Employer's Convenience**
- 25.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination.
- 25.1.2 Upon receipt of the notice of termination hereof, the Contractor shall either immediately or upon the date specified in the notice of termination



- a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition
- b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below
- c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition
- d) In addition, the Contractor, shall
 - (i) deliver to the Employer the parts of the Work executed by the Contractor up to the date of termination
 - (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Work as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
 - (iii) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.

25.1.3 In the event of the termination of the Contract, the Employer shall pay to the Contractor the Price, the properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination. However, no consequential damages shall be payable by the Employer to the Contractor in the event of termination.

25.2 **Termination for Contractor's Default**

25.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons to the Contractor.



- a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt.
- b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of Contract.

25.2.2 If the Contractor

- a) has abandoned or repudiated the Contract
- b) has without valid reason failed to commence work on the Facilities promptly or has suspended the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed
- c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause
- d) refuses or is unable to provide sufficient materials, services or labour (adequate resources) to execute and complete the Facilities in the manner specified by EMPLOYER.

Then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor.

25.2.3 Upon receipt of the notice of termination the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

- a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean & safe condition



- b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) below
- c) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination
- d) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities and to the Plant and Equipment as at the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
- e) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.

25.2.4 The Employer may enter upon the Site, expel the Contractor, and complete the Facilities itself or by employing any third party at the risk and cost of the Contractor. The Employer may, to the exclusion of any right of the Contractor over the same, take over and use any Contractor's Equipment owned by the Contractor and on the Site in connection with the Facilities for such reasonable period as the

Employer considers expedient for the supply and installation of the Work

Upon completion of the Work or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.

25.2.5 The Contractor shall be entitled to be paid the Price attributable to the Part of Work executed as at the date of termination, and the costs, if any, incurred in protecting Work and in leaving the Site in a clean and safe condition. Any sums due to the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

25.2.6 If the Employer completes the Work the cost of completing the Work by the Employer shall be determined.



If the sum that the Contractor is entitled to be paid, the reasonable costs incurred by the Employer in completing the Work, exceeds the Contract Price, the Contractor shall be liable for such excess.

If such excess is greater than the sums due to the Contractor under, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due the Contractor the Employer shall pay the balance to the Contractor.

The Employer and Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

26. Assignment 26.1

The Contractor shall not, without the express prior written consent of the Employer assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign under the Contract.

26.2

Should loan / financial agreement(s) require the Contractor to assign, by way of charge, any money due or to become due to it, to a bank / credit agency for the benefit of receiving payment by the Contractor under this Contract from such bank / credit agency, or if any partial assignment is necessary to be made to any insurer in terms of Insurance Policy approved by the Employer, the Employer may give consent in such cases.

**27. Surplus
Materials** 27.1

For the purpose of removing surplus materials in its original form only, the Contractor shall submit the documents / records evidencing the entry of materials inside the JGTR premises by producing the Gate Entry Permits and RRs or LRs and consumption statements based on approved drawings after allowing for wastages, maximum 8% cutting allowance, and irrecoverable / unaccountable losses (wastages including loss factors being minimum 2% on Steel and reinforcement rods, minimum 5% on cement and minimum 3% on cables, pipes etc.) to establish the surplus quantity of the materials belonging to the Contractor. The Employer shall allow the Contractor to remove such materials from the Employer's premises after being satisfied regarding the evidence produced for such removal. Such removal shall only be permitted after completion of the entire work.

28.0 ARBITRATION

28.1

All disputes or differences, whatsoever, arising between the parties out of or in relation to the construction, meaning and operation or effect of this contract or breach thereof shall be settled amicably. If, however, the parties are not able to resolve

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them amicably, the same shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration and the Conciliation & Arbitration Act 1996 and the award in pursuance thereof shall be binding on the parties.

- 28.2 The venue of arbitration proceeding shall be Ranchi.
- 28.3 Work under this Contract shall be continued by the Contractor during the arbitration proceedings, unless otherwise directed in writing by JGTR or unless matter is such that the work can not possibly be continued until the decision of the arbitrator is obtained.



BANK GUARANTEE PROFORMAE

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ANNEXURE- I

EMD/BID SECURITY BANK GUARANTEE
(On Non-Judicial Stamp Paper of appropriate value)

..... (Name of the
Bank)

Address

Guarantee No.

A/c Messrs (Name of
Bidder)

Date of Expiry

Limit to liability (**currency & amount**)

Invitation For Bid No. dated

For (Name of Facilities)

Subject : Bid Security Bank Guarantee.

Date 2014

To

.....
.....
.....

[Name and Address of Employer]

Dear Sir,

In consideration of the _____ (**Name of Employer**)(hereinafter called "**Employer**") which expression shall unless repugnant to the subject or context include his successors and assigns having agreed to exempt M/s _____ (hereinafter called "**Bidder**") from demand under the terms & conditions of "Tender Documents" (hereinafter called the said "Bidding Document") issued by the Employer vide No. _____ for the works _____ (**Name of the Facilities**) from deposit of Bid Security for the due fulfilment by the Bidder of the terms and conditions contained in the said Bidding Document on production of Bank Guarantee for Rs.(_____ only) (**figure in words**).

1. We the _____ Bank Ltd. (**Name of Bank**)(hereinafter referred to as "**Bank**") having our registered office at _____ (**address of Bank**) do hereby undertake and agree to indemnify and keep indemnified the Employer to the extent of Rs.(**figures in words**) against any losses, damage cost, charges and expenses caused to or suffered by or that may be caused or suffered by the Employer by reason of any breach or breaches by the Bidder of any of the terms and conditions contained in the said Bidding Document and unconditionally pay the amount claimed by the Employer on demand and without demur to the extent aforesaid.

2. We _____ Bank Ltd. do hereby undertake to pay the amounts due and payable under the guarantee without any demur merely on a demand by you stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by

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you by reason of any breach by the said Bidder of any of the terms or conditions contained in the said Bidding Document by reason of the Bidder's failure to fulfil the conditions of said Bidding Document. Any such demand on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ .

3. We _____ Bank Ltd. further agree that the Employer shall be the sole judge of and as to whether the Bidder has committed any breach or breaches terms and conditions of the said Bidding Document and the extent of loss, damages, costs charges and expenses caused to or suffered by or that may be caused to or suffered by the Employer on account thereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said document and the decision of the Employer that the Bidder has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges and expenses caused to or suffered by or that may be caused to or suffered decision of the Employer that the Bidder has committed such breach or breaches and to the amount or amounts of loss, damages, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Employer shall be final and binding on us.

4 We _____ Bank Ltd. further agree that guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance on the said Bidding Document and that it shall continue to be enforceable till you certify that terms and conditions of the said Bidding Document have been fully and properly carried out by the said Bidder and accordingly discharge the guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the _____ we shall be discharged from all liability under this guarantee.

5. We _____ Bank Ltd. further agree with you that you shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bidding Document or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bidding Document and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Bidder or for any forbearance act or omission on your part or any indulgence by you to the said Bidder or by any such matter or thing whatsoever under the law relating to sureties would but for this provision have effect of so relieving us.

6. It shall not be necessary for the Employer to proceed against the Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which Employer may have obtained from the Bidder at this time when proceedings are taken against Bank hereunder be outstanding or unrealised.

7. We _____ Bank Ltd. further undertake to unconditionally pay the amount claimed by the Employer merely on demand and without demur to the extent aforesaid.

8. We, the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing and agree that any change in the constitution of the Employer or the Bidder or the said Bank shall not discharge our liability hereunder dated _____ day of _____ 2014 _____ for _____ Bank Ltd.

Your faithfully

For
(Name of the Bank)

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ANNEXURE - II

PERFORMANCE BANK GUARANTEE
(To be executed on Non-Judicial Stamp Paper of appropriate value)

..... (Name of the Bank)

Address

Guarantee No.

A/c Messrs (Name of Contractor)

Date of Expiry

Limit to liability (currency & amount)

Contract No.

For (Name of Facilities)

Subject:..... Performance Bank Guarantee.

Date 2014

To

.....

.....

[Name and Address of Employer]

Dear Sir,

We refer to the Contract Agreement (hereinafter called the "Contract") Reference No. Dated between you and M/s. (**Name of the Contractor**) (hereinafter called the "Contractor") for Construction of Dormitory, Drawing hall, Refractory lab etc.

Whereas the Contractor has undertaken to produce a Bank guarantee under the Contract to secure its obligations to you for the performance of the Contract including the warranty of the work.

1. We (**Name of the Bank**) do hereby expressly irrevocably and unreservedly undertake to pay to you on your written demand and without demur an amount not exceeding (**currency and amount**).



2. We do hereby undertake to pay the amounts due and payable under this Guarantee without any protest or demur, merely on a demand from you stating that the amount claimed is due by reason of breach by the said Contractor of any of the terms or conditions contained in the said Contract or by reason of the Contractor's failure to perform the Contract. Any such demand made on us shall be conclusive as regards the amount due and payable by us under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding
3. Notwithstanding anything to the contrary we agree that your decision as to whether the Contractor has committed any such default or defaults and the amount or amounts to which you are entitled by reason thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims under this Guarantee but shall pay the same forthwith without any objection or excuse.
4. We undertake to pay to you any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / supplier(s) in any suit or proceeding pending before any court or Tribunal or arbitration relating thereto, our liability under these presents being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment there under.

5. This guarantee shall come into force from the date of issue of this Bank Guarantee.
6. This guarantee shall continue and hold good until it is released by you on the application by the Contractor after expiry of the related Defect Liability Period of the said Contract and submitted a copy of your letter for release of this guarantee provided always that unless extended this guarantee shall remain in force till Should it be necessary to extend this Guarantee beyond the said date, we undertake to extend forthwith the period of this guarantee on your request till such time as may be mutually agreed by you and the Contractor.
7. You will have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor or for any forbearance, act or omission on your part or any indulgence shown by you to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.



8. All compensations and payments that may be received by you from the Contractor or any person, firm or company whomsoever for or on account of the Contractor in any way in respect of the said Contract shall be regarded as payments in gross and you will be entitled to proceed against the assets of the Contractor, should the Contractor be wound up or dissolved or declared insolvent in respect of the whole of the Contractor's indebtedness to you without any right on our part to stand in your place in respect of or to claim the benefit of such compensation or payment of any security that may be held by you until you shall have received the full amount of your claims against the Contractor.
9. This guarantee shall not in any way be affected by you taking or varying or giving up any securities from the Contractor or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the Contractor.
10. In order to give full effect to the Guarantee herein contained, you shall be entitled to act as if we were your principal debtors in respect of all your claims against the Contractor, hereby guaranteed by us as aforesaid and we hereby expressly waive all our suretyship and other rights, if any, which are in any way inconsistent with the above or any other provisions of this Guarantee.
11. This guarantee and the powers and provisions herein contained are in addition to and not by way of limitation of or substitution for any other guarantee or guarantees heretofore given to you by us (whether jointly with other or along) and now existing unconcealed and that this Guarantee is not intended to and shall not revoke or limit such guarantee or guarantees.
12. This guarantee shall not be discharged by any change in the constitution of the Contractor or us, nor shall it be affected by any change in your constitution or by any amalgamation or absorption thereof or therewith but will ensure for and be available to and effaceable by the absorbing or amalgamated company or concern.
13. We shall not revoke this guarantee during its being in force except with your previous consent in writing.
14. Notwithstanding anything contained herein before our liability under this guarantee is restricted upto a sum (**currency and amount**) and shall expire on unless a claim or demand is made on us in writing within three months of the expiry date all your rights shall be forfeited and we shall stand relieved and discharged from our liabilities hereunder.
15. We have power to issue this guarantee under the provisions of the (**Name of the Bank**) Act General Regulations made thereunder and the undersigned has full power to sign this guarantee under the

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delegations of powers and notification made under general regulation(Reference No.), of the resolution of the executive committee of the Central Board of the Bank in the Central Government Gazette.

Your faithfully

Dated day of 2014.

For

(Name of the Bank)

Banker's Code No.:



Annexure – IV

Price Schedule

ESTIMATED COST : Rs. 2,23,87,900.00

EARNEST MONEY : Rs. 4,47,758/- (Indian Rupees Four lakh Forty Seven thousand Seven Hundred Fifty Eight only)

COST OF BOQ : Rs. 1,000/-

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		Schedule items			Rs.	Rs.
1	5.1.1	Earthwork in excavation in foundation trenches in ordinary soil (vide classification of soil item-A) and disposal of excavated earth as obtained to a distance upto 50 M. including all lifts, levelling, ramming the foundation trenches, removing roots of trees, shrubs all complete as per approved design, building specification and direction of E/l.	538.779	CUM		
2	5.1.10	Providing coarse clean sand in filling in foundation trenches or in plinth including ramming and watering in layers not exceeding 150mm thick with all leads and lifts including' cost of all materials, labour, royalty and taxes all complete as per building specification and direction of E/l (Mode of measurement compacted volume).	67.443	CUM		
3	5.6.1	Providing designation 75 A one brick flat soling joints filled with local sand including cost of watering taxes royalty all complete as per building specification and direction of E/l.	291.690	SQm		
4	5.6.3	Providing designation 75B one Brick Flat Soling joints with local sand including cost of watering taxes royalty all complete as per building specification & direction of E/l.	48.947	SQM		
5	5.3.3	Providing PCC M-100 with nominal mix of (1:3:6) in filling in plinth & sunken slab of toilet with approved quality of stone metal grade III (53 to 22.4mm size) and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixture, placing in position, vibration, striking, curing taxes and royalty all complete as per building specification & direction of E/l.	2.576	cum		
6	5.3.4	Providing P.C.C. M - 75 with nominal mix of (1:4:8) in foundation with approved quality of stone metal grade-III(50 mm to 25 mm size) graded and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing, taxes and royalty all complete as per building specification and direction of E/l.	15.244	CUM		
7	5.3.2	Providing P.C.C. M - 150 with nominal mix	19.203	CUM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		of (1:2:4) in foundation with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing, taxes and royalty all complete as per building specification and direction of E/l.				
8	5.3.5.1	Providing R.C.C. M - 200 with nominal mix of (1:1½:3) in foundation and plinth with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.	89.006	CUM		
9	5.3.14	Providing R.C.C.M - 200 with nominal mix of (1:1½:3) in columns with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.	55.242	CUM		
10	5.3.11	Providing R.C.C. M - 200 with nominal mix of (1:1½:3) in beam of all types with approved quality of stone chips 20 mm to 6 mm size graded and clean coarse sand of F.M 2.5 to 3 including screening, centering, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.	132.506	CUM		
11	5.3.9.1	Providing R.C.C. M - 200 with nominal mix of (1:1½:3) in roof slab with approved quality of stone chips 20 mm to 6 mm size graded and clean coarse sand of F.M 2.5 to 3 including screening, centering, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes	116.611	CUM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		and royalty all complete as per building specification and direction of E/l.				
12	5.3.8.1	Providing R.C.C. M - 200 with nominal mix of (1:1½:3) in lintel with approved quality of stone chips 20 mm to 6 mm size graded and clean coarse sand of F.M 2.5 to 3 including screening, centering, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.	6.501	CUM		
13	5.3.15.1	Providing av. 63mm thick R.C.C.M-200 with nominal mix (1:1½:3) in chajja with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3 including making drip course in concrete, screening, centering, shuttering and mixing cement concrete in mixer and placing in position, vibrating, striking, 6mm cement plaster (1:4) in ceiling and sides of chajja with sand of F.M. 1.5 curing (but excluding the cost of reinforcement) taxes, and royalty all complete as per building specification and direction of E/l.	54.315	SQm		
14	5.3.7.1	Providing R.C.C. M - 200 with nominal mix of (1:1½:3) in band at lintel level with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F.M. 2.5 to 3 including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.	6.776	CUM		
15	5.3.18.1	Providing R.C.C. M.-200 with nominal mix of (1:1½:3) in stair case with approved quality of stone chips 20 mm to 6mm size graded and clean coarse sand of F M 2.5 to 3 including centering, shuttering, screening, mixing cement concrete in mixer placing in position, vibrating, striking, curing, taxes and royalty all complete as per building specification and direction of E/l	12.310	CUM		
16	5.3.17.1	Providing 35 mm thick precast R.C.C.M -200 with nominal mix of (1:1½:3) in shelves with	102.240	CUM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		approved quality of stone chips 12mm to 6 mm size graded and clean coarse sand of F.M. 2.5 to 3 with 1.5 mm cement punning at top and side and 6mm cement plaster (1:4) at bottom including screening, curing and placing the slab in position (but excluding the cost of reinforcement) taxes and royalty all complete as per building specification and direction of E/l.				
17	5.5.4	Providing Tor steel reinforcement of 8mm. dia. rods as per approved design and drawing excluding carriage of M.S. bars to work site , cutting, bending and binding with annealed wire with cost of wire, removal of rust placing the rods in position all complete as per building specification and direction of E/l. TMT Fe 500 (Only valid for SAIL / TATA steel,JSPL, Electro steel Ltd, and Vizal Steel)	14.726	MT		
18	5.5.5	Providing Tor steel reinforcement of 10mm. ,12mm & 16mm dia. bars as per approved design and drawing excluding carriage of M.S. bars to work site , cutting, bending and binding with annealed wire with cost of wire, removal of rust placing the rods in position all complete as per building specification and direction of E/l.	0.000			
	a	10mm dia (Only valid for SAIL / TATA steel,JSPL, Electro steel Ltd, and Vizal Steel)	13.104	MT		
	b	12mm dia (Only valid for SAIL / TATA steel,JSPL, Electro steel Ltd, and Vizal Steel)	12.330	MT		
	c	16mm dia (Only valid for SAIL / TATA steel,JSPL, Electro steel Ltd, and Vizal Steel)	22.423	MT		
19	5.5.6	Providing Tor steel reinforcement of 20mm. 25mm. 28 mm, 32mm dia. bars as per approved design and drawing excluding carriage of M.S. bars to work site , cutting, bending and binding with annealed wire with cost of wire, removal of rust placing the rods in position all complete as per building specification and direction of E/l. 20 & 25 mm dia (Only valid for SAIL / TATA steel,JSPL, Electro steel Ltd, and Vizal Steel)	12.330	MT		
20	5.3.29	Extra for R.C.C. or P.C.C. work for each consecutive floor above first floor complete as per direction of E/l.	250.025	CUM		
21	5.1.7	Earth filling in foundation trenches and plinth	191.851	CUM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		in layers not exceeding 150 mm. thick well watered, rammed, fully compacted and fine dressed with earth obtained from excavation of foundation trenches within a lead of 50 M. and lift of 1.5 M all complete as per building specification and direction of E/l (Mode of measurement compacted volume).				
22	5.1.8	Earth filling in foundation trenches and plinth in layers not exceeding 150 mm. thick well watered, rammed, fully compacted and fine dressed with earth obtained after cutting within a lead of 50 M. and lift of 1.5 M all complete as per building specification and direction of E/l (Mode of measurement compacted volume).	276.750	CUM		
23	5.2.23	Providing 125mm thick reinforced designation 75A brickwork in C.M. (1:4) in Superstructure with approved quality of clean coarse sand of F.M. 2 to 2.5 including the cost of screening, cost of materials, racking out joints to 15mm depth, carriage, taxes and royalty (but excluding the cost of reinforcement) all complete as per building specification and direction of E/l.	4.950	SQM		
24	5.2.14	Providing designation 75B brick work in CM (1:6) in superstructure with approved quality of clean coarse & of F.M. 2.5 including providing 10mm thick mortar joints cost of screening, racking out joints to 15mm depth, curing, taxes and royalty all complete as per building specification and direction of E/l.	52.469	CUM		
25	5.2.3	Providing designation 75 A brick work in C.M. (1:6) in foundation and plinth with approved quality of clean coarse sand of F.M. 2 to 2.5 including providing 10mm thick mortar joints, cost of screening materials, raking out joints to 15mm depth, curing, taxes and royalty all complete as per building specification and direction of E/l.	22.723	CUM		
26	5.2.6	Providing designation 75B brick work in CM (1:6) in foundation and plinth with approved quality of clean coarse sand of F.M. 2 to 2.5 including providing 10mm thick mortar joints, cost of screening materials. raking out joints yo 15 mm depth, curing, taxes and royalty all complete as per building	8.963	CUM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		specification and direction of E/l.				
27	5.2.11	Providing designation 75 A brick work in C.M. (1:6) in superstructure with approved quality of clean coarse sand of F.M. 2 to2.5 including providing 10 mm thick mortar joints cost of screening materials , scaffolding , raking out joints to 15mm depth curing, taxes and royalty all complete as per building specification and direction of E/l.	225.443	CUM		
28	5.2.23	Providing designation 125 mm thick reinforced designation 75 A brick work in C.M (1:4) in superstructure with approved quality of clean coarse sand of F.M. 2 to 2.5 including the cost of screening, carriage of materials , scaffolding, raking out joints to 15 mm depth, curing, taxes and royalty (but excluding the cost of reinforcement) all complete as per building specification and direction of E/l.	996.300	SQM		
29	5.2.27	Extra for brick work for each consecutive floor above first floor including watering and scaffolding, all complete as per direction of E/l.	331.384	CUM		
30	5.6.10	Providing 12mm cement plaster (1:3) with clean coarse sand of F.M. 1.5 with floating coat of neat cemen in skirting including rounding of junctions with floor, curing , taxes and royalty all complete as per building specification and direction of E/l	10.350	SQM		
31	5.7.1	Providing 12mm thick cement plaster (1:3) with clean coarse sand of F.M. 1.5 and including cost of screening, curing with all leads and lifts of water, scaffolding, taxes and royalty all complete as per building specification and direction of E/l	44.760	SQM		
32	5.7.3	Providing 12mm cement plaster (1:6) with clean coarse sand of F.M. 1.5 including screening, curing with all leads and lifts of water, scaffolding taxes and royalty all complete as per building specification and direction of E/l.	4625.585	SQM		
33	5.7.6	Providing 6mm thick cement plaster (1:4) in ceiling with clean coarse sand of F.M. 1.5 including screening, curing with all leads and lifts of water, scaffolding taxes and royalty all complete as per building	1152.920	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		specification and direction of E/l.				
34	5.7.20	Extra for plaster work over exterior surface for each consecutive floor above first floor including cost of scaffolding etc. all complete as per direction of E/l.	1573.830	SQM		
35	5.7.21	Making 6x6mm grooves in plaster surface over walls truly horizontal or vertical as specified at regular intervals, at all heights including cleaning, finishing scaffolding and curing with all leads and lifts of water all complete as per building specification and direction of E/l.	2220.000	METER		
36	5.7.11	Providing 1.5 mm. cement punning including curing carriage of water with all leads and lifts as per building specification and direction of E/l	44.760	SQM		
37	5.4.32	Supplying, fitting and fixing 35mm thick solid core type decorative single leaf flush door shutter with both sides decorative veneered with black board core bended with high quality phenol formal dehydres synthetic resin of standard make with Aluminium fittings such as hinges, tower bolts, handle, cleats and sand blocks and taxes all complete as per building specification and direction of E/l.	55.045	SQM		
38	5.4.33	Supplying, fitting and fixing 35mm thick solid core type decorative double leaf flush door shutter with both sides decorative veneered with black board core bended with high quality phenol formal dehydres synthetic resin of standard make with Aluminium fittings such as hinges, tower bolts, handle, cleats and sand blocks and taxes all complete as per building specification and direction of E/l.	26.557	SQM		
39	5.5.14	Supplying, fitting and fixing callapsible gate of approved size and make properly fabricated with vertical double channels 20 x 10 x 2 mm at 100mm. centres and braced with M.S. flat diagonals 20 x 3mm with top and bottom rails of T.iron 40x40x6mm with 38mm dia steel pulleys complete with bolts, nuts, locking arrangements, stoppers, handles, including applying a priming coat of red lead paint, carriage , hoisting and taxes	8.280	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		all complete as per building specification and direction of E/l.				
40	5.5.12	Supplying, fitting and fixing M.S. grill made of 20x6mm M.S. flat as per approved design and drawing, properly fabricated with joints continuous fillet welded and finished smooth , carriage of grill to work site, hoisting as per building specification and direction of E/l. (where materials is not supplied by the deptt.)	2833.200	Kg		
41	5.8.24	Providing two coats of snowcem of approved shade and make over a coat of cement primer on new surface including preparing the plastered surface smooth with sand paper, scaffolding, curing and taxes all complete as per building specification and direction of E/l.	391.935	SQm		
42	5.8.37	Providing french spirit polishing over new wooden surface to give desired texture and gloss with approved make and shade of ready mixed french polish including preparing the surface after cleaning, removing dirt, scales, grease and sand papering, including cost of scaffolding and taxes all complete as per building specification and direction of E/l.	163.203	SQM		
43	8.6.2	Supplying and laying gravelfilter (size 5 mm to 15 mm) in filter blanket and in the toe drain (in horizontal portion) of the dam as per design, drawing including the cost of materials royalty and all taxes etc. but excluding the cost of carriage all as per specification and direction of Engineer-in-charge.	4.910	CUM		
44	5.8.41	Providing primer one coat of red lead paint of approved make over new steel surface including preparing the surface after cleaning, removing rust , dirt, , scales , smokes and grease and cleaning the surface thoroughly including cost of scaffolding and taxes all complete as per building specification and direction of E/l. (Mode of measurement Area shall be multiplied by the co-efficient as indicated in building specification)	168.840	SQM		
45	5.8.45	Providing two coats of synthetic enamel	168.840	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		paint of approved shade and make over steel surface including cleaning the surface thoroughly, scaffolding and taxes all complete as per building specification and direction of E/l.				
46	5.7.16	Providing 25 mm thick water proof cement plaster (1:3) with clean coarse sand of F.M. 1.5 with 5% cico or any other approved water proofing compound including screening, curing with all leads and lifts of water, scaffolding taxes and royalty all complete as per building specification and direction of E/l.	284.670	SQM		
47	5.8.18	Providing two coats of oil bound distemper of approved shade and make over a coat of cement primer over new surface including preparing the plastered surface by rubbing smooth with pumice stone or fine sand paper, applying putty wherever required, scaffolding, washing of floors and taxes all complete as per building specification and direction of E/l.	3672.220	SQM		
48	3.3.8/ S.O.R	Supplying and materials with labour for construction inspection chamber of designation class 75b brick deep 600x450 internal dimension having 250mm wall thickness in cement mortar(1:6)including 12mm cement plaster (1:4)with punning on inside and cement plaster (1:6)with 600x450mm G.I. cover with frame (weight not less than 36k.g)in foundation and refilling all complete as per specification and direction of E/l.	17.000	NOS.		
49	1.1.3	Point Wiring in PVC Conduit, with piano type Switch: Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduit, with modular type switch, modular plate, suitable size of GI box etc as required. Group C	290.000	Each		
50	1.31	Supply and Fixing Light Plug Point with Modular Type Accessories: Supply and Fixing 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	55.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		outlet and 5/6 amps modular type switch, connection, painting etc as required.				
51	1.32	Supply and Fixing Power Plug Point with Piano Type Accessories: Supply and Fixing GI box with modular plate and cover in front on surface or in recess including providing and fixing 6 pin, 15/16 amps modular socket outlet and 15/16 amps modular type switch, connection, painting etc as required.	40.000	Each		
52	2.18	Supply & fixing 20A SPN MCB Industrial Socket Outlet: Supply and fixing of 20A, 240V, SPN industrial type socket outlet with 2 poles and earth, metal enclosed plug top along with 20 amps 'C' series, SP MCCB, in sheet steel enclosure, on surface or in recess with chained metal cover for socket outlet and complete with connections, testing and commissioning etc as required.	4.000	Each		
53	1.5	Power Plug Wiring in PVC conduit (2x4 sq. mm): Wiring for light/power plug with 2x4 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduit along with 1 number 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	880.000	Each		
54	1.7	Circuit / Sub-main wiring in PVC Conduit: Wiring for circuit / sub-main wiring along with earth wire with the following sizes of PVC insulated, copper conductor, single core cable in surface/recessed PVC conduit as required.	0.000			
a	1.7.1	2x1.5 Sqmm + 1x1.5 sqmm earth wire	990.000	Mtrs.		
b	1.7.2	2x2.5 Sqmm + 1x2.5 sqmm earth wire	600.000	Mtrs.		
c	1.7.10	4x6 Sqmm + 2x6 sqmm earth wire	100.000	Mtrs.		
d	1.7.11	4x10 Sqmm + 2x10 sqmm earth wire	100.000	Mtrs.		
55	2.9	S/F TP MCB DB: Supplying and fixing of following way, three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required (Without MCB/RCCB/ISOLATOR).	0.000			
f	2.9.6	8 ways (4+24 ways) Double Door	6.000	Set		
e	2.9.5	6 ways (4+18 ways) Double Door	4.000	Set		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
56	2.12	S/F 'C' series, MCB: Supplying and fixing 240 volts, 'C' series, miniature circuit breaker suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc, as required.	0.000			
a	2.12.1	6/32A Single Pole	216.000	Each		
h	2.12.8	32A TPN MCB	6.000	Each		
j	2.12.10	63A TPN MCB	4.000	Each		
57	1.27	S/F Modular Boxes, base & cover plate: Supplying and fixing following size / modules GI box along with modular base & cover plate for modular switches in recess etc as required.	0.000			
a	1.27.1	1 or 2 module (78 mm x 78 mm x 45 mm)	10.000	Each		
b	1.27.2	4/5 module (78 mm x 140 mm x 50 mm)	20.000	Each		
58	1.33	S/F Ceiling Rose: Supplying and fixing 2 pin 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	200.000	Each		
59	1.34	S/F Batten / Angle Holder: Supplying and fixing batten / angle holder including connection etc as required.	40.000	Each		
60	1.35	Erection on incandent Light Fittings: Erection of wall braket/ ceiling fittings of all size and shapes containing upto two GLS amps per fitting, complete with all accessories including connection etc as required.	40.000	Each		
61	1.41	ITC fluorescent fitting directly on surface :- installation testing and commissioning of Pre - wired, fluorescent fitting / compact florescent fitting of all types, complete with all accessories and tube etc, directly on ceiling / wall, including connection with 1.5 Sq. mm. FR PVC insulated, copper cond.	10.000	Each		
62	1.44	ITC Ceiling Fan :- Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (Up to 30 cm) with 1.5 sq. mm. FRPVC insulated,copper conductor,single core cable etc, as required.	61.000	Each		
63	1.25	S/F Modular type electronic fan regulator: Supplying and fixing stepped type fan regulator on the existing modular plate switch box including connections but excluding modular plate etc as required.	61.000	Each		
64	1.48	ITC Exhaust Fan upto 450 mm sweep:	20.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		installation of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to cut the size of the above fan, making good the damage, including connection, testing, commissioning etc as required.				
65	1.21	S/F PVC Conduit: Supplying and fixing of following sizes of PVC conduit alongwith the accessories in surface / recess including cutting the wall and making good the same in case of recessed conduit as required	0.000			
b	1.21.2	25 mm	450.000	Mtrs.		
c	1.21.3	32 mm	150.000	Mtrs.		
66	1.16.2	Telephone Wiring in Existing Conduit: Supplying and drawing, following pair, 0.5 sq.mm FR PVC insulated copper conductor, unarmoured telephone cable in the existing surface / recessed steel / PVC conduit as required. 2 pair	200.000	Mtrs.		
67	1.24.6	S/F Modular type Switch / Socket: Supplying and fixing following modular type switch / socket on the existing modular plate and switch box including connections but excluding modular plate etc as required.(Havells/Crabtree/ Standard) Telephone socket outlet	10.000	Each		
68	3.1	GI Earth Pipe Electrode: Earthing with G.I. earth pipe 4.5 mtr long , 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcol or coke and salt) complete as required.	6.000	Set		
69	3.8	Extra Salt/ coke for plate Earth Electrode: Extra for using salt and charcoal for GI or Copper plate earth electrode as required.	6.000	Set		
70	3.12	Supplying and laying 25mm x 6mm GI Earth Strip in Ground: Supplying and laying of 25mmX 6mm GI Strip at 0.5 metre below ground as strip earth electrode, including soldering etc as required.	40.000	Meter		
71	4.1	Providing and Fixing Copper Lightning Conductor Finial : P/F of lighting conductor finial, made of 25mm dia 300mm long copper tube, having single prong at top, with 85mm dia 3mm thick copper base plate	2.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		including holes etc. complete as required.				
72	3.6	Copper Earth Plate Electrode:- Earthing with copper plate 600mmx 600mmx 3mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.(but without charcoal or cock and salt) complete etc. as required.	2.000	Set		
73	3.13	P/F 25 x 5mm copper strip in pipe:- Providing and fixing 25mmx5mm copper strip in 40mm dia G.I.pipe for earth electrode etc. as required.	15.000	Meter		
74	3.8	Extra Salt & Charcoal for Copper Earth Plate Electrode:- Providing and fixing salt and charcoal or cock for copper earth plate electrode complete etc as required.	2.000	Set		
75	3.17	P/F 25 x 5mm copper earth strip in ground :- Providing and fixing 25mmx5mm copper strip on surface or in recess for connections etc. as required	40.000	Meter		
76	4.5	P/ F Copper Lightning conductor tape in horizontal run :- Providing and fixing copper tape 20mm x 3mm thick on parapet or surface of wall for lightning conductor complete etc. as required (horizontal run).	140.000	Meter		
77	4.6	P/ F Copper Lightning conductor tape in Vertical run :- Providing and fixing copper tape 20mm x 3mm thick on parapet or surface of wall for lightning conductor complete etc. as required (vertical run).	40.000	Meter		
78	JSR (E) Supply 1908	Providing and fixing of FRLS, aluminium armoured cable including termination. Make:- Havells or equivalent 3.5 x 50mm ²	200.000	Meter		
79	5.2	MV Cable Laying up to 120 sq. mm. in Ground :- Laying of one number PVC insulated and PVC Sheathed / XLPE power cable of 1.1 KV grade of size exceeding 25 sq.mm. but not exceeding 120 sq.mm. direct in ground including excavation, sand filling, protective covering and refilling the trench etc as required.	180.000	Meter		
80	4.12/ DSR	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	1923.916	per 50 kg cement		
81	10.18/	Providing and fixing circular/ Hexagonal cast	59.000	NOS		

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CONSTRUCTION OF BOYS HOSTEL**



Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
	DSR	iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing				
82	11.36/ DSR	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	443.840	SQM		
83	4.11/ DSR	Providing and laying damp-proof course 50 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	57.817	SQM		
84	11.26/ DSR	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 11.26.1 25 mm thick	776.147	SQM		
85	11.27/ DSR	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	129.356	SQM		
86	2.35.5/ DSR	Diluting and injecting chemical emulsion for POSTCONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :Treatment at points of contact of wood work by chemical emulsion Chlorpyrifos/ indane (in oil or kerosene	284.670	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.				
87	11.41.2/ DSR	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622, of approved make, in all colours and shades,laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600X600 mm	80.460	SQM		
88	11.40/ DSr	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigments etc., complete.	125.527	SQM		
89	11.47.2/ DSR	Providing and laying Vitrified tiles in different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, in skirting, riser of steps, laid withcement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).Size of Tile 600x600 mm	15.676	SQM		
90	10.14/ DSR	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strikeplate and	208.100	METER		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C: 10.14.2.1 Fixing with adjustable lugs with split end tail to each jamb				
91	10.28/DSR	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	809.550	Kg		
92	22.20.1/DSR	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of	284.670	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		membrane :3 mm thick sqm				
93	22.5/ DSR	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	143.153	SQM		
94	12.41.2/ DSR	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110mm dia	130.000	METER		
95	12.42 DSR	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.	0.000			
b	DSR / 12.42.3.2	Single Tee with door 110 X 110X 110 mm	12.000			
e	DSR / 12.42.5.2	Bend 87.5° 110 mm	20.000			
b	DSR / 12.42.3.1	single Tee with door 75 X 75 X 75 mm	12.000			
e	DSR / 12.42.5.1	Bend 87.5° 75 mm	6.000			
f	DSR / 12.42.6.2	Shoe - 110 mm	8.000	NOS		
96	12.43.2 DSR	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S.	60.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		screws of required length, including cuttingbrick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.110 mm				
97	DSR / 19.18.2	Supplying and fixing C.I. cover without frame for manholes : 560 mm diameter C.I. cover (medium duty) the weight of the cover to be not less than 58 kg	3.000	Each		
98	19.32.1/ DSR	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design. 19.32.1 With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1.000	Each		
99	13.80/ DSR	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	1714.350	SQM		
100	13.45/ DSR	Finishing walls texture surfaced paint with a coat primer of required shade : New work (Two or more coats applied @ 1.43 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	1714.350	SQM		
101	13.26/ DSR	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	3672.220	SQM		
102	8.3.2/DSR	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work	147.450	Meter		
103	9.119/ DSR	Providing and fixing factory made P.V.C. door frame of size 50x47 mm with a wall thickness of 5 mm, made out of extruded 5mm rigid PVC foam sheet, mitred at corners and joined with 2 Nos of 150 mm long brackets of 15x15 mm M.S. square tube, the vertical door frame profiles to be reinforced with 19x19 mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100	138.600	Meter		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		mm size, complete as per manufacturer's specification and direction of Engineer-in-Charge.				
104	9.120. DSR	Providing and fixing factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mm x 19mm for styles and 15x15mm for top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture . M.S. frame covered with 5mm thick heat moulded PVC 'C' channel of size 30mm thickness, 70mm width out of which 50mm shall be flat and 20mm shall be tapered in 45degree angle on either side forming styles; and 5mm thick, 95mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided either side of the panel. 10mm (5mm x 2) thick, 20mm wide cross PVC sheet be provided as gap insert for top rail & bottom rail. paneling of 5mm thick both side PVC sheet to be fitted in the M.S. frame welded/ sealed to the styles & rails with 7mm (5mm+2mm) thick x 15mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-incharge. Manufacturer's specification & drawing (for W.C. and bathroom door shutter).	138.600	Meter		
105	19.6 DSR	P/L NP2 class R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of (1:2):	0.000			
b	19.6.2	150 mm dia R.C.C. Pipe	60.000	M		
c	19.6.3	250 mm dia. R.C.C. pipe	40.000	M		
106	4.17/ DSR	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand . 6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick	63.810	SQM		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.				
107	16.68 DSR	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50mm thick compacted bed of course sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-in-charge.	91.500	SQM		
108	23.4.1 / DSR	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. 100 mm nominal size dia	25.000	Meter		
109	5.10.33	Providing 250mm. wide brick drain in cement mortar (1:6) with av. 250mm. clear depth and 250mm. apron including cost of earthwork involved with 75 mm. cement concrete (1:4:8) over one brick designation 75A flat soling in proper grade and slope at the base, the drain duly plastered in C.M.(1:3) with punning over exposed surface all complete as per building specification and direction of E/l.	83.800	M		
110	23.5 DSR	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	4.910	CUM		
111	17.1.1	Supplying, fitting and fixing vitreous white glazed earthen ware I.W.C. of Parry Hindustan or any other I.S.S. approved make with 100 mm H.C.I., "p" trap 15 litres C.I.. or C. pull and let go flushing cistern of names or other I.S.S. equivalent make, complete with all fittings, C.I. or C.C. brackets 32 mm alkathene/P.V.C. telescopic flush, pipe about 2 M long with one brass coupling and clamps G.I. chain and pull including supplying and	12.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		fixing a pair of vitreous white glazed earthenware where footrest to be fixed in floor 15 mm C.I. body brass spindle stop cock of weight not less than 50 grms. 15 mm P.V.C. connection pipe 450 mm long and the exposed pipe and cistern with two coats of approved paint over a coat of red oxide primer etc. all complete as per specification and direction of E/I.(A) 580 mm long (c) with 12.5 lit. low level P.V.C. cistern				
112	17.1.2	Supplying, fitting and fixing 40 mm high vitreous white glazed earthen ware E.W.C. with "p" trap of Parry Hindustan or any other I.S.S. make including supplying & fixing 15 litres C.I. mosquito proof low down flushing cistern of approved make with complete fittings with C.I. handle and R.S. or bracket with telescopic flush pipe with brass coupling and plumbers joints spindle stop cock of approved quality weight not less than 450 grms. , 15 mm P.V.C. alkathene pipe 45 cm long with brass coupling at both ends and white/ black plastic solid state seal and lead of commander/ cuckoo or other I.S.S. make with hinges or screw etc. painting pipe and cistern etc. with 2 coats of approved paint over a coat of red oxide primer etc. all complete as per specification and direction of E/I. (A) With "P" trap (b)12.5 lit. low level P.V.C. cistern	4.000	Each		
113	DSR / 17.80	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	12.000	Each		
114	DSR / 18.49.1	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms. 15 mm nominal bore	22.000	EACH		
115	DSR / 18.51.1	Providing and fixing C.P.brass long body bib cock of approved quality conforming to standard and weight not less than	12.000	EACH		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		690gms.:15 mm nominal bore.				
116	DSR / 18.65	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	44.000	EACH		
117	DSR / 18.53.1	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 15mm nominal bore	76.000	EACH		
118	DSR / 18.75.1	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour. 15 mm nominal bore, weighing not less than 32 gms	22.000	EACH		
119	DSR / 17.32.1	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing : Circular shape 450 mm dia	31.000	EACH		
120	DSR / 17.7.2.	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	31.000	EACH		
121	DSR / 18.58.1.2	Providing and fixing PTMT grating of approved quality and colour Circular type 125 mm nominal dia with 25 mm waste hole	76.000	EACH		
122	DSR / 18.74.2	Providing and fixing unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour. 15 mm nominal bore with 45 cm length	76.000	EACH		
123	17.28.2.1	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. Flexible pipe 32 mm dia	31.000	EACH		
124	DSR / 18.8	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making	0.000			

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
125	DSR / 18.8.1	15 mm nominal outer dia Pipes	80.000	METER		
126	DSR / 18.8.2	20 mm nominal outer dia Pipes	95.000	METER		
127	DSR / 18.9	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work	0.000			
128	DSR / 18.9.3	25 mm nominal outer dia Pipes	75.000	METER		
129	DSR / 18.9.4	32 mm nominal outer dia Pipes	60.000	METER		
130	DSR / 18.9.5	40 mm nominal outer dia Pipes	10.000	METER		
131	DSR / 18.52.1	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931. 18.52.1 15 mm nominal bore	2.000	METER		
132	DSR / 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. Circular tank	6000.000	pre liter		
133	17.73.1	Supplying, fitting and fixing PTMT towel rail 20mm X 600mm with bracket container as per specification and direction of E/I	30.000	EACH		
134	DSR / 17.72	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms.	16.000	EACH		
135	DSR / 17.10.1.4	Providing and fixing Stainless Steel A Isi 304 (18/8) kitchen sink as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets,	2.000	EACH		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		cutting and making good the walls wherever required : Kitchen sink with drain board 510x1040 mm bowl depth 178 mm				
136	Supply Item Page 45 +15%	Providing and fitting fixing Sink Cock with Swinging casted spout all complete as per specification and direction of E/I	2.000	EACH		
137	DSR / 18.64	Providing and fixing PTMT swivelling shower, 15 mm nominal bore, weighing not less than 40 gms	16.000	EACH		
138	DSR / 12.41.1	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 75 mm diameter	150.000	METER		
139	DSR 24.3.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge. 200 mm nominal size dia	25.000	M		
140	DSR 23.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	2.000	Hours		
141	DSR 23.13.3	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of: 200 mm dia	2.000	Each		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
142	DSR 23.14.3	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete. 200 mm clamp	2.000	Each		
143	16.19/ DSR	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling les upto 10 mm dia. etc. complete.	258.390	Kg		
144	16.53/ DSR	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4 m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	87.000	M		
145	5.5.30	Supplying, fitting and fixing M.S. grill gate with M.S. grills made of 20x6mm M.S. flats or 16mm square bars fitted on 25x25x6mm M.S Angle frame including cost of fabrication , providing necessary locking arrangement with haskal and domny duly fixed in P.C.C. (1:2:4) blocks of required size, applying a priming red lead paint over steel work, taxes all complete as per drawing specification and direction of E/l. (where steel is not supplied by the deptt.)	236.250	Kg		
146	JSR	Carriage of materials from source to site work including loading & unloading all complete job as per specification and direction of E/l	0.000			
	A	Sand (8 km)	480.726	CUM		
	B	Aggregate (22 km)	394.456	CUM		
	C	Brick (8 Km)	119.399	PER		

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Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
				1000		
	D	Cement (5KM)	296.27	MT		
	E	Steel (5KM)	60.18	MT		
Non- Schedule items						
1	MR	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansive hold fasteners including necessary filling up of gaps at junction, at top, bottom, and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading of glazing/ panelling, C.P. brass / stainless steel screws, all complete as per architectural drawing and the direction of Engineer -In-charge. (Glazing and panelling to be paid for separately.) with glass panes of 5.50 mm thickness (weight not less than 13.75 kg/sqm) Powder coated aluminium (Minimum thickness of powder coating 50 micron)	138.100	sqm		
2	MR	Supplying Fitting Fixing Aluminium louvers in ducts and ventilation to stop visual link and to prevent good ventilation with all the powder coated aluminium section to be used as per span in its installation all complete as per detail drawing building specification & direction of the E/I.	57.750	SQM		
3	MR	BATTEN 22W LED: Supply erection and commissioning of surface mounted luminaire with 22W LED and all accessories as required. (make Havells- model no.	20.000	Each		
4	MR	Endura DL 15 W-4000K LED: Supply erection and commissioning of Endura light luminaire with 15W LED lamp and all accessories as required. (make Havells-LHEBGP6IA2W012 OR EQUIVALENT)	130.000	Each		
5	MR	Providing, fitting, fixing & testing of LED 5W	50.000	Each		

**JHARKHAND GOVERNMENT TOOL ROOM, RANCHI
TECHNO –COMMERCIAL VOLUME FOR
CONSTRUCTION OF BOYS HOSTEL**



Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		in existing battan / angle holder. (Make :- Model LHLDAGHEMD8X005 ,Havells)				
6	MR	Flood Light -JETA 150 LED: Supply erection and commissioning of flood light luminaire with 150W high power LED as light source with protection :IP:65 FOR OUTER ROOF TOP OF BUILDING (make Havells, Model LHEPCZU714J150 OR EQUIVALENT)	4.000	Each		
7	MR	Supply of Exhaust Fan: fitting of 9" dia (metal) Turbo LD DLX EXH with metal blades exhaust fan in existing opening and fittings as required.	20.000	Each		
8	MR	Supply of Ceiling Fan: fitting of 48" (1200mm) Sweep ceiling fan , Technix L. BR 5 star with electronic regulator including connection with 1.5 sq mm copper wire, down rod all accessories as required. Make :- Crompton / Havells / GEC.	61.000	Each		
9	MR	Split AC-1.5T(3 star) : Supply, installation , testing and commissioning of 1.5 T ,230 V, 50Hz , Airconditioner 3 star rating	4.000	Each		
10	MR	Voltage Stabilizer-4.0kVA : Supply, installation , testing and commissioning of 4.0kVA stabilizer, operating voltage 130V to 280V, single phase for all 1.5T AC	4.000	Each		
11	MR	Supply and laying of Copper refrigerant piping with insulation	30.000	Mtrs		
12	MR	Copper Pipe : Supply, installation , testing and commissioning of suitable size copper pipe(as per requirement)	50.000	Mtrs		
13	MR	Drain Pipe : Supply, installation , testing and commissioning of suitable size Drain pipe(as per requirement)	50.000	Mtrs		
14	MR	Floor mounted Power Distribution Board(PDB): Supplying, designing, manufacturing, installation, testing and commissioning in correct alignment position, effecting proper connection of all incomer and outgoing of Floor mounted Power Panel of 14 SWG CRCA sheet (2 mm) steel IP – 54 floor mounting cubical type LT Panel suitable for operation on 415V, 50Hz, 3 Ph. AC supply and fault level 50 kA suitable size with front operated construction including separate fabrication arrangement for fixing M.C.C.B.(Havells/Crabtree/ Standard)	1.000	Set		

**JHARKHAND GOVERNMENT TOOL ROOM, RANCHI
TECHNO –COMMERCIAL VOLUME FOR
CONSTRUCTION OF BOYS HOSTEL**



Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		Bill of Material in Lighting Panel :- Incomer: 125A FP / MCCB with Handle (25 kA) - 1 no. Make:-(Havells/Crabtree/ Standard) Outgoings: 63A FP / MCCB with Handle (25 kA) -10 nos Analogue type voltmeter (0-500V) of 96 sq.mm. With selector switches. - 1 no, Make :- Hager / Universal / L&T / Esma. Analogue type Ammetesr (0-100A) of 96 sq.mm. with selector switch.- 1 no, Make :- Hager / Universal / L&T / Esma. CT 100/5VA -5 class one Epoxy resin cast CT 1 Set.- 3 nos Make :- Kappa / Matrix / SG Electricals / EPICAST. Bakalite Fuse base with HRC Fuse 20A. 1 Set. -3 nos LED indicatore (RYB) of 220V. 1 Set. - 3 nos Interconnection wires 2.5 Sq mm and 4 Sq mm etc.- LS				
15	MR	Providing and fixing PVC Pipe fittings with all accessories (Supreme, Prince, Astral or Equivalent)	0.000			
16	MR	110 mm Door Bend (Supreme, Prince, Astral or Equivalent)P.V.C.	12.000	EACH		
17	MR	110 mm 45 degree offset (Supreme, Prince, Astral or Equivalent) P.V.C.	6.000	EACH		
18	MR	110 mm Cowel (Supreme, Prince, Astral or Equivalent) P.V.C.	4.000	EACH		
19	MR	110 mm Plain Trap (Supreme, Prince, Astral or Equivalent) P.V.C.	12.000	EACH		
20	MR	75 mm Door Bend (Supreme, Prince, Astral or Equivalent) P.V.C.	12.000	EACH		
21	MR	75 mm 45 degree offset (Supreme, Prince, Astral or Equivalent) P.V.C.	12.000	EACH		
22	MR	110 mm Plain Trap (Supreme, Prince, Astral or Equivalent) P.V.C.	12.000	EACH		
23	MR	Providing and fixing ball valve (full brass, KEC / APAR/ ZOLLOTO make or equivalent) all complete .32mm nominal bore,	2.000	EACH		
24	MR	Supplying and installation Water Cooler of following specification or Equivalent Make Kent ,livepure or Equivalent :- Application - Suitable for Purification of Brackish / Tap Water Purifying Capacity - Upto 15 LPH* Purified water storage capacity - 20 Liter Body Material- ABS Food Grade Plastic / Stainless Steel Installation - Floor Standing	2.000	EACH		

**JHARKHAND GOVERNMENT TOOL ROOM, RANCHI
TECHNO –COMMERCIAL VOLUME FOR
CONSTRUCTION OF BOYS HOSTEL**



Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		INLET WATER PRESSURE/TEMP (MIN) - 0.3 kg / cm ² or 4.267psi / 10°C INLET WATER PRESSURE/TEMP (MAX) - 3 kg / cm ² or 42.67psi / 35°C FILTER CARTRIDGES - Sediment, Carbon Block Filter, UF UF FILTER - Ultra Filtration Membrane AUTO-FLUSHING SYSTEM - Yes MEMBRANE TYPE - Thin Film Composite RO BOOSTER PUMP VOLTAGE- 24 V DC COOLING CAPACITY (±5%) - 755BTU/hr POWER CONSUMPTION - 220 W COMPRESSOR THK9384TCG, Tecumseh make or equivalent REFRIGERANT-R134a CONDENSER-Forced convection air cooled CONDENSER FAN-Axial Flow Type EXPANSION DEVICE-Capillary Tube EVAPORATOR-Coil Type WEIGHT-38.0 kg MAINS VOLTAGE- 230 V~, 50-60 Hz				
25	MR	Cost of drilling in all kinds of soil and rock for Installation on submersible pump set with DTH Rig machine including supply of all materials, labour, Tools drilling rig, air compressure and equipment as well as fuel lubrication's for doing Boring for the construction of 200mmx150mm dia drilled well etc. doing complete job.	0.000			
	MR	0 to 30.0m below G.L.	30.000	M		
	MR	30 to 60.0m	30.000	M		
	MR	60 to 90.0m	30.000	M		
	MR	90.0 to 120.0m	30.000	M		
	MR	120.0m to 150.0m	30.000	M		
	MR	150.0m to 250m	50.000	M		
26		Providing casing pipe.....do.....	25.000	M		
27	MR	Supplying fitting and fixing of KSB /KIRLOSKAR/CRI make 2.00 HP submersable pump set having head of 135 mtr. Including all taxes ,royalty,etc.all complete job as per direction of E/I	1.000	Each		
28	MR	Supply fitting and fixing of standered make starter pannel Board with arrangement of all necssury protection including all taxes ,royalty etc all complete job as per direction	1.000	Each		

**JHARKHAND GOVERNMENT TOOL ROOM, RANCHI
TECHNO –COMMERCIAL VOLUME FOR
CONSTRUCTION OF BOYS HOSTEL**



Sl. no	Item code	Description of items	Quantity	Unit	Rate	Amount
		of E/I.				
29	MR	Supplying fitting and fixing 3 crore 4 sqmm Flat copper submersible cable FINOLEX / HEVELS make including all taxes ,royalty etc all complete job as per direction of E/I.	130.000	M		
30	MR	Supply fitting and fixing lowering 50 mm dia G.L. column pipe - do - do - all complete job as per direction of E/I.	125.000	M		
31	MR	Transportation of Rig machine including diesel etc. all complete.	1.000	Each		

Total Price (In Word):-



VOLUME – II (BID SPECIFICATION – TECHNICAL)



Technical Specification for Civil Works

For detail specification of work “Specification Building Construction Works in the State of Jharkhand/Bihar” shall be followed. In absence of the same, CPWD specification shall be adopted. If the specification is not available in any of the above stated documents, provision under Cl.No.41 of G.C.C. shall be applicable.



01.01 Special instruction to tenderer

1.0 General

2.1 The tenderer shall satisfy himself by paying a visit to site if necessary, to ascertain the actual site condition / facilities available, approach to the work etc. or any other related aspect that may be useful to the tenderer, for smooth execution of the contract to the complete satisfaction of the owner. Failure to do so will not absolve the tenderer of his responsibilities for proper execution of the job. No claims for extra payment on the plea of unknown site conditions and facilities shall be entertained by the owner.

2.2 Tenderer shall take all precaution during execution specially excavation work to avoid interference with or damage to underground work such as cable, service pipe lines, drains etc. irrespective of shown in the drg. or not and provide all possible protection to these works and in case they are damaged, rebuild them at his own cost.

2.3 The tenderer shall study the details and technical particulars given in this specification and shall satisfy themselves regarding the suitability of the equipment offered by them for the specified duty / application. The tenderer shall stand guarantee for the satisfactory and reliable operation of the equipment offered by them as per the stipulation given in NIT document.

2.4 The tenderer shall bring to the knowledge of the owner / consultant any deviation or exclusion from the specifications in respect of work, technical specifications of different equipment or any other details mentioned in this document. If any such deviation / exclusions are not indicated during tendering stage, then no deviation / exclusions shall be acceptable to the owner. It shall be the responsibility of the tenderer to



get acceptance of any deviation / exclusion from the owner during the tendering stage itself.

- 2.5 The Tenderer shall clearly indicate any assumption made in respect of specification, data or any other details that have not been mentioned in this specification but considered necessary for providing equipment and for sizing and selection of equipment to meet specified duty, safety and other requirements. Any such assumptions, not included during tendering stage, will not be binding on the owner, the contractor, under these conditions shall supply equipment acceptable to the owner / consultant without any extra cost.
- 2.6 The tenderer shall list out in the tender all equipment along with its components indicating make, type, rating and other details. In respect of components of equipment where details are not mentioned during tender stage, the owner reserves the right to specify the particular type and make of such equipment/ items even after award of contract.
- 2.7 During execution of the contract, if it is found that work relating to design, manufacturing, supply, erection, testing and commissioning is not going as per schedule and to the satisfaction of the owner, owner may exercise the option to award part of the job to some other agency. In that event, the cost of the same will have to be born by the contractor.

3.0 Standards and Regulation

The design, manufacture, performance, testing and installation (including safety, earthing and other essential provisions) of equipment and accessories covered under this specification shall in general, comply with the latest issue of BIS/IE act/IE rules as listed else where in the specification. However, the year of publication against various standards, referred in this specification, correspond to the latest standards as on date of preparation of this specification, during use of this specification in future, the latest publication as on date shall be referred to.



All equipment and installation shall comply with the relevant statutory requirements of Government of India and the Government of the State/Union territory in which the installation is situated.

4.0 Safety

4.1 Contractor shall strictly follow the owner's safety rules, regulations and instructions issued by them from time to time. In absence of particular reference by the owner, the contractor shall refer to relevant Indian Standard codes and practices and also the state Government's rule and regulations.

4.2 Before starting of the work, the contractor shall meet the safety engineer and get himself familiar with the safety measures to be taken during execution of the job. The contractor shall personally be responsible for any accident.

5.0 Language & Units

5.1 All name plates and inscriptions of equipment, operating and maintenance manuals, technical catalogues, test certificates, explanatory notes in drawings etc. shall be in English language.

5.2 All danger and caution notice boards shall be both in English and regional language of the state in which the installation is situated.

5.3 Dimensions and weights of all equipment and calibrations of all instruments/apparatus shall be in metric units.

6.0 Make & Interchangeability

6.1 Makes of all equipment and accessories are subject to prior approval by the owner.

6.2 Similar equipment / components shall be of same make, equipment of same type and rating shall be interchangeable.

6.3 The owner has the option of selecting the manufacturers of electrical, instruments and controls and any other specialized items in the interest of standardisation and the contractor shall have to supply equipment of the particular make, if so required.

7.0 Drawings Submission and Approval



7.1 List of Drawings

Within 10 days from the date of the letter of intent, the contractor shall submit ten copies, unless otherwise stipulated in GCC of a list of all drawings and documents he proposes to submit for the contract in the format.

Sl.No	Description	Drawing Nos.	No. of sheet	Size	Proposed date of submission
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The list shall be approved by the owner / consultant and may be revised or extended if necessary for proper execution of work / documentation. Layout drawings showing location of electrical equipments like boards, fittings, fans etc. based on Arch.drawing. Other drawing like Single line diagram, layout of conduits, cables ,equipment earthing, principal cable route diagram etc. to be prepared by the contractor based on these layout drawings, after taking consideration of modifications, if any, in the final Arch. / Civil drawings.

7.2 Submission Schedule

The contractor shall submit drawings / applicable information and data for review and approval of the Owner / his consultant as per agreed schedule:

A. Data / Drawings to be furnished by the contractor for approval :

- i) Single line diagram of boards indicating incomer rating, bus bars rating and sizes, complete detail of feeder components, make, rating, type, cable sizes, technical catalogues / leaflets etc.
- ii) Layout of distribution boards& sub-distribution boards, light fittings, socket outlets etc based on actual dimensions.
- iii) GA drawing (manufacturer's) of each equipment with technical specification, literatures/catalogue including various distribution boards / switch boards other cabinets / boxes like socket outlets, junction / terminal boxes etc. showing their front view, side view,



front view with door removed showing inter-component clearances, bus bar disposition etc. as applicable.

- iv) Bill of materials showing make, type, quantity & catalogue / leaflet of all the equipment / components, for electrics / illumination.
- v) Final cable route in plan and sections with cable details.
- vi) Quality Assurance Plan (QAP)
- vii) Any other drawings / documents as required by the owner.

B. Data / drawings to be furnished by the contractor for information :

- i) Civil assignment drawings showing openings for cables, electrical panels / boards and other services as applicable.
- ii) Handling facilities required.
- iii) External connection diagram / wiring diagram.
- iv) Layout of GI pipes / conduits for cabling.
- v) GA drawings for erection accessories (like cable trays, bends, supporting structure of cable trays, pull boxes, clamps etc.) and mounting details of panels, light fitting, switches, junction boxes, socket outlets etc.
- vi) Final layout of cable with sections along with cable schedule including specifications and quantity / length.
- vii) Earthing scheme & layout
- viii) Test certificates for equipment / component.
- ix) List of tests to be carried out at site during testing and commissioning.
- x) Test report for internal inspection.
- xi) Completion certificate in the enclosed format.
- xii) Any other drawing / details / documents etc as required by the Owner.

All drawings shall generally be in A3 size except for cable layouts and routings and overall earthing.

C. Information to be Furnished with the Technical Package of the offer.

1. General description of the system and equipment offered specifying the important features and materials of construction etc.
2. Specific exclusions, if any, from scope of work specified in enquiry document.
3. List of deviations from technical specifications, if not included under individual equipment.
4. List of commissioning spares and consumables included with the main offer.
5. List of 2 years operation spares (unpriced)
6. Work Schedule / bar chart indicating various activities and their completion schedule.
7. Technical catalogues of equipment offered.
8. Details of organizational set up, tenderer proposes to have for execution of the job.
9. Past experience for successful execution of similar type of job with photocopy of supporting documents including valid electrical contractor's license.

7.3 Approval by Owner / Consultant

- 7.3.1 Owner / his consultant will scrutinize drawings/ data furnished by contractor and comments, if any, will be communicated to the supplier within 4 weeks from the date of receipt.
- 7.3.2 Contractor shall be responsible for correctly incorporating all the points conveyed to him and resubmit the drawings to the owner for final approval.
- 7.3.3 If the contractor is unable to incorporate some of the comments, such non-compliance shall be clearly stated in a forwarding letter with reasons without delay. However, it shall be owner's / his consultant's discretion to accept or reject the non-compliance.



- 7.3.4 Work shall be carried out exactly as indicated on the approved drawings and no alterations shall be made without prior written approval by owner / his consultant.
- 7.3.5 Ten copies, unless otherwise stipulated in GCC, of approved drawings and reproducible of specified quality shall be submitted after the final approval of drawings.
- 7.3.6 Delay in final approval of drawings due to non- compliance with the contract specification and resulting rejection / comments shall be on account of the contractor.
- 7.3.7 Approval of drawings by Owner / his consultant shall not relieve the supplier of his contractual obligations and responsibility for engineering, design, workmanship, materials and performance of the equipment.

7.4 Drawing and document at completion of work :

Upon completion of installation and commissioning, the supplier shall incorporate all the changes and revisions in the reproducible in a neat and accurate manner as well as in DVD. It will be the supplier's responsibility to furnish in requisite nos. as stipulated in GCC all "As Built / Installed drawings" already listed under clause no. 7.2.1 A & B for owner's reference and record.

8.0 Quality Assurance

- 8.1 All major materials, components and equipment covered under the contract documents shall be procured, manufactured, and tested as per comprehensive Quality Assurance Programme (QAP) to be approved by owner. A complete Quality Plan shall be furnished for all the equipment by the Contractor.
- 8.2 Owner reserves the right to witness any of the tests and verify the documents of the Contractor, his sub-contractor and his vendor. No materials / equipment shall be dispatched from the manufacturer's works before the same is duly cleared for dispatch by owner.
- 8.3 All the sub-vendors proposed by the contractor for procurement of major bought-out items shall be subject to owner's approval.



- 8.4 The contractor shall carry out an inspection and testing programme during manufacture in his works and of his sub-contractor / vendor's to ensure accuracy of components, compliance with drawings, functional and performance requirements. He shall carry out all tests / inspections required to establish that the items / equipment conform to requirements of the specification and the relevant codes / standards specified in the specification, in addition to carry out tests as per the approved Quality Plan.
- 8.5 Quality audit / surveillance / approval of the results on the test and inspection, approval of drawings will not, however, prejudice the right of owner to reject the equipment if it does not comply with the specification when erected or does not give complete satisfaction in operation and service and the above shall in no way limit the liabilities and responsibilities of the contractor in ensuring complete performance and conformance of the materials / equipment supplied to relevant specification, standard, data sheets, drawings etc.
- 8.6 Requisite factory and site test reports shall be supplied by the Contractor.

9.0 Work Schedule

- 9.1 The offer shall be accompanied by a time schedule in the form of a bar chart / network diagram indicating the start and finish of all important activities such as, submission and approval of drawings, manufacture of equipment, inspection and testing at manufacturer's works, receipt of equipment at site, erection, testing and commissioning etc.
- 9.2 The time schedule furnished by the tenderer shall be in conformity with the overall schedule of completion of the Project. The agreed time schedule shall form an integral part of the contract.

10.0 Scope of Work

- 10.01 The scope of work of the contractor shall be generally in conformity with the provisions in various sections of this specification and the Invitation



to tender. The materials, equipment and services to be provided shall include but not limited to the following and to be covered within the Item Rates of items under Bill of Quantities.

- System design as required under the scope of the specification.
- Design, engineering, manufacture, assembly, factory testing, packing, forwarding and delivery at site, handling, storage at site of all equipment and accessories as specified and required for proper functioning of the system, erection, site testing and commissioning etc of individual units and complete system.
- All items listed under schedule of work / drawings mainly consisting of lighting fittings, lighting distribution boards, 15A/5A, 5A switch socket outlet, energy meter, ceiling fans with electronic regulator, exhaust fan, call bell (musical type), danger boards etc as required.
- All cables, terminals, lugs etc. as required.
- All fittings and lamps as required.
- Earthing systems / materials including interconnection with existing nearby earthing ring.
- Supporting structures, pipes as required.
- All materials required for wiring like ceiling rose/connector, back plate, lamp holders, switches, metal blocks, boards ,boxes etc. as required.
- Recommended two years operating spares.
- Junction boxes with required number of terminals including 20% spare terminals.
- Minor civil / structural works for electrical installation works including trenches & shafts.
- Erection accessories and materials including GI pipes, conduits, pull boxes, junction boxes, cable lugs, double compression cable glands and termination accessories etc.
- Commissioning spares.



- Supply of all foundation bolts and special embedment, as required, for installation of all equipment covered under this specification.
- Testing of all equipment and accessories covered under this specification at manufacturer's works and / or recognized independent testing centers before dispatch of the same to site.
- Erection, start up and commissioning including performance tests of all materials, equipment and systems supplied by the contractor, as well as those that may be procured from / fabricated by others based on the contractor's drawings, specification and bill of quantities.
- Preparation and submission of all drawings and documents, proper completion certificate including progress reports etc. as called for under Special Instructions to Tenderers, technical Specification for different equipments, general conditions of contract etc.
- Obtaining necessary approval by statutory Government authorities like electrical inspector, factory inspector, insurance officials etc. of the equipment supplied by the contractor and its installation.

10.02 Constructions power supply through Diesel Generator set .The purchaser may provide construction power at one point located at 100 meter away from the design limit if available. Further distribution, metering etc. to be done by the contractor and the contractor shall pay for the energy consumed by them. However, the contractor shall not depend on the purchaser's construction power.

10.03 All equipment shall be supplied complete in all respects. All accessories not specifically stated in this specification but which are essential for proper installation, operation and maintenance of the items listed out in the bill of quantities / drawings shall be deemed to be included in the specification. All such items shall be specifically listed out in the offer by the tenderer along with reasons for such inclusions



and the unit prices in the absence of which all such items will be treated as already included in the tenderer's scope.

10.04 Any additional material including contractual obligation which are not specifically mentioned here, but are required to make the job complete in all respects and also for trouble free, smooth and safe operation of offered equipment and system as well as smooth execution of contract to the satisfaction of owner shall be tenderer's responsibility.

11.00 Battery Limits

Power supply at 415V shall be provided by the owner at the electrical room. Subsequent distribution of Power for various rooms, drawing hall & Refractory laboratory shall be in the scope of bidder.

The scope shall include supply, laying (in cable trenches, tunnels, shafts, structure, conduit etc. as required) and termination of all cables at both ends including, distribution boards, interconnecting cables between DB / SDB, Power points, Light points, Fan points, Switch socket outlets etc. and supply shall also include complete illumination system, Earthing, all materials and accessories as required to complete the job in all respect.

03.2 SECTION – II

01.0 ELECTRICAL SYSTEM

01.01 Design information and project data

001 Climatic conditions

1. Ambient temperature for selection of electrical equipment

Maximum : 50 deg.C. | Both peak
not together

Relative humidity (max.) : 95 % |

Altitude above sea level : Below 1000m.

002 Electrical data



1. LT AC power supply
 - . Voltage wire, : 415V, 3-phase, 50Hz, 4-wire, solidly earthed neutral
 - . Frequency : 50 Hz
2. AC control voltage : 240V AC through a 415/240V transformer. through control
3. Voltage for illumination ckt. : 240V AC
- Hand tool sockets : 240V, 15/5A, 2 pin plus earth With plug interlocked switch.
- Hand lamp sockets : 24V, 50Hz, AC

003 Symmetrical short circuit ratings:

415V : 50 kA, for 1 second

004 Permissible variations :

	<u>Voltage</u>	<u>Frequency</u>	<u>Combined voltage and frequency</u>
	<u>variation</u>		<u>frequency</u>

1. For LT system	± 10%	± 3%	± 10%
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03.3 SECTION: III

ILLUMINATION SYSTEM AND SPECIFICATION FOR ELECTRICAL EQUIPMENT / COMPONENT.

A) TECHNICAL SPECIFICATION FOR ILLUMINATION SYSTEM FOR INTERNAL LIGHTING:



A1) ILLUMINATION SYSTEM FOR INTERNAL

1.00 Definitions :

- 1.01 i) The definition of terms shall be in accordance with Indian Standard `Code of Practice for Electrical Wiring Installations' IS-732-1989 except for the definition of a "point".
- ii) Point wiring shall include cost of all labour and materials necessary in complete wiring of a switch circuit from the tapping point on the distribution circuit to the following via the switch :
- a) Ceiling rose or connector (in case of ceiling fan / exhaust fan points).
 - c) Back plate (in case of fluorescent fittings with down rod etc.)
 - e) Lamp holder (in the case of wall brackets, fittings).
- iii) The cost of the following shall be deemed to be included in the rate for the point wiring:
- a) Required switch, specified socket outlet and plug top.
 - b) Ceiling rose or connector as required.
 - c) Any special and suitable block for neatly housing the connector and covering the fan hook in case of fan point.
 - d) Bushed conduit or porcelain tubing where cables pass through walls / floors etc.
 - e) Conduit or metal covering as required
 - g) All fixing accessories such as nuts-bolts, check-nuts, bushes, clips, nails, screws, phil-plug, rawl plug, and fasteners etc. as required.
 - h) In case of joint box system of wiring, if specified joint boxes with necessary connections as required.
 - i) Connection to ceiling rose, connectors, socket outlet, lamp holder, switch, fan regulator etc.



- j) Looping, inter-connections, and end-terminations with socket / ferrules etc. as required.
- m) Fish wire in case of concealed wiring (to be taken back by the contractor after wiring).
- n) Painting / varnishing as required.
- o) Cables as specified.

1.02 Measurement of Point Wiring:

The following procedures shall be followed for measurement of the point wiring :

- i) In the case of points with more than one light point controlled by the same switch, such points shall be measured in parts i.e. from the switch to the first nearest point as one point and for the subsequent points, the distance from fitting to fitting shall be measured along with run of wiring and treated as one point.
- ii) A light point controlled by two numbers of two way switches shall be measured as one point. Any extra light point in the same switch shall be measured first as one point from switch on either side to the nearest fitting. The extra light point is then measured from fitting to fitting and treated as one point.

1.03 Circuit, Sub-main & other Wirings.

- i) Circuit wiring shall mean the length of wiring from the distribution board to the nearest first switch board measured along the run of the wiring. Such wiring shall be measured on linear basis.
- ii) Sub-main wiring shall mean the length of wiring from the main / distribution switchgear to switchgear along the run of wiring. Such wiring shall be measured on linear basis.
- iii) The length of sub main / circuit wiring or any other type of wiring shall include all lengths from end to end of conduit or batten exclusive of interconnection inside the switch board etc. The increase in cable length on account of diversion or slackness shall not be included in the measurement.



- iv) Wiring shall include the cost of material and installation charges for complete wiring length as detailed below :
- a) MS / PVC conduit as required.
 - b) Cables as specified.
 - c) Earth wire.
 - d) All fixing accessories such as clips, nails, screws, plugs etc.
 - e) All joints, elbows, bends, joint boxes, pull boxes, inspection covers etc. as required.
 - f) Inter-connections with switch / switch boards or any electrical item.
 - g) Fish wire in case of concealed conduit wiring. (to be taken by the contractor after drawing of cables).

1.04 Cost of Installation.

Cost of installation of various items under BOQ shall be inclusive of :

- All labour.
- All erection accessories.
- Mounting bracket for light fittings.
- All fasteners (dowell's type) or as approved by the purchaser.
- Pull boxes, sockets and accessories required for installation of conduits / GI pipes and cables.
- All screws, washers etc. made of brass required for switch boards, bifurcating boxes, pull boxes etc.
- Earthing wires and accessories of suitable sizes approved by the purchaser.
- Copper conductor flexible cable for interconnection and earthing of light fittings, fans etc.
- All materials not considered under supply item but required for proper installation of the work to the satisfaction of the purchaser.



2.00 System wiring

2.01 Distribution

- i) A) The wiring shall be carried out on each system as may be specified in the tender schedules / drawings / data sheet “Power and Heating” wiring shall be kept separate and distinct from ‘ Lighting ’ / ‘ Fan ’ wiring. All conductors shall be run as far as possible along the walls and ceiling.
- B) Light and fans may be wired on a common circuit. Such circuit shall not have more than 10 points of light / fan. 5A socket outlets or a load of 800 watts, whichever is less.
- ii) The balancing of circuits in the poly-phase installations shall be arranged before hand to the satisfaction of the Site Engineer. Circuits on different phases shall be kept apart to a minimum distance of 1.8 meters. In large rooms, light and socket outlet points shall be distributed over more than one circuit.

2.02 Joints & Looping

Cables for circuit wiring and point wiring shall not be taken in the same conduit. Neutral conductors for each point wiring shall be taken separately from the switch board. Looping of Neutrals between point wiring shall be avoided.

No joints in conductors shall be made at intermediate points in the through run of cables unless the length of a final sub-circuit, sub main or main is more than the length of the Standard Coil.

2.03 Positions of Wiring Runs and Points

All runs of wiring and the exact positions of all points and switch boxes shall be first marked on the building and approved by the site Engineer before actual commencement of the work.

2.04 Wiring Terminations

Wiring shall be terminated in ceiling rose where no fitting is mentioned.

2.05 Fixing to Walls and Ceilings.



Anchor bolts, expansion type, as required, shall be used for fixing conduit saddles, switch-board, light fittings etc.

2.06 Damage to wall / floor

Wherever required, the wall / floor etc. shall be cut to accommodate switch boards, conduit etc. and made good to original finish at no extra cost.

2.07 Switch Boards

- i) The switch board shall be of such size as to accommodate the switches, regulators, incoming and outgoing circuit wirings, any other additional wiring or any equipment required for the installations.
- ii) The terminal strips / link / bus bars etc. as required shall be used in switch boards for inter-connections of switches, sockets etc. for phase and neutral conductors both.
- iii) The minimum size of any switch board shall satisfy the following conditions :
 - a) Clearance among switches and sockets shall be not less than 10 mm.
 - b) Clearance between switch / socket and regulator shall be not less than 10 mm.
 - c) All round clearance between switch board and any electrical equipment / accessories shall be not less than 30 mm.

2.08 Mounting of Fittings :

Pendant lamps & fans unless otherwise specified shall be hung at height of 2.5 meters and 2.75 meters respectively from the floor level or as directed by Site Engineer. Bottom of the switch board on which switches and sockets are fixed shall invariably be at a height of 1.35 meters from floor level. The heights of lamp and, fans shall be so kept as to avoid any shadow. For installation of fan, concealed type fan hook box (Mild Steel) of minimum 100mm. dia. and 75mm. depth with provision of conduit entry (25mm. dia.) at four points and centrally welded a hook of dia. 10mm. (min.) MS rod to be used.

3.00 Accessories



3.01 Switches :

Switches shall be all insulated, single pole, concealed mounting type with quick make and quick break mechanism and rated at 5 Amps for light, fan and 5A socket point wiring.

Where the supply is derived from a three phase four wire source, the distribution will be done on the two wire system. All branch switches shall be placed in the line conductor of the circuit and no single pole switch or fuse shall be inserted in the neutral conductor of the circuit. Every light fitting shall be controlled by a piano switch unless mentioned otherwise.

3.02 Socket outlet and Plugs :

Socket outlet shall be 5A, 5pin or 15A/5A, 6 pin as required unless other-wise specified. This shall be all insulated, surface or concealed mounting type (as specified) and shall be controlled by a switch. Plug tops as required shall be supplied with each socket outlet. The switch controlling the socket outlet will be on the “Live” side of the line. The third pin shall be connected to the earth.

3.03 Lamp Holders:

Lamp holders for the use of bracket etc. shall be of brass and shall have not less than 12 mm dia nipple, and all those for use with flexible pendants shall be provided with cord-grips. All lamp holders shall be provided with shade carriers.

3.04 Ceiling Roses:

- a) A ceiling rose shall not be used on a circuit the voltage of which normally exceeds 250 volts.
- b) The ceiling rose shall be 3 plate type. Normally only one flexible cord shall be attached to a ceiling rose. Specially designed ceiling rose shall be used for multiple pendants.

3.05 Fans, Regulators and Clamps:

- a) A ceiling fan shall be wired to a ceiling rose and suspended from a hook (recess mounted) in shackle and insulated from the same. All joints in the suspended rod shall be screwed and all joints or bolts in connection there with shall in addition be secured by means of split pin.
- b) The canopy at the top of the suspension rod shall effectively hide the suspension.
- c) The lead in wires shall not be smaller than 240V PVC insulated 24/0.2mm, flexible copper conductor cable and shall be protected from abrasion.
- d) Unless otherwise stated all ceiling fans shall be hung at 300 mm below the ceiling or as directed by the Engineer-In-Charge.
- e) Fan regulator shall be electronic type with built in ON/OFF.

3.06 Lighting Fixtures :



Fixtures HPMV / HPSV shall be complete with ballast, starters and capacitors as required. Unless otherwise specified, all fixtures shall be supplied with lamps. Ballast for fixtures shall be copper wound.

4.00 Conduit wiring

4.01 General

The conduit wiring shall be done strictly in accordance with the specification laid down in the following paragraphs.

At all the switch and socket positions or where the conduit terminates at ceiling or wall points, a metal box must be provided.

Provision must be made to enable cables to be withdrawn and new ones drawn-in without interfering with the conduit system throughout the life of the installation. Therefore, all inspection boxes and drawn-in boxes must be installed in position where they will remain accessible during the life of the installation, and subsequently nothing should be fixed over or in front of them so as to render them inaccessible in case of concealed wiring.

It is necessary for the contractor to prepare a plan of the lights, fans and switches etc. on large scale drawing (1:50) and to make the exact conduit run showing the size of conduits. The plan will be got approved by the site Engineer before starting the laying of conduit.

Cable shall not be drawn into the conduit earlier than necessary. It shall be done only when the site Engineer has given his consent and has satisfied himself that the conduit work has been properly carried out and the building is sufficiently dry. Suitable means shall be taken to prevent entry of insects inside conduit.

A draw-wire (fish-wire) shall be used for drawing cables from one inspection box to another. When, drawing-in a number of cables, they must be fed-in very carefully at the delivery end.

As much slack cable as possible shall be left in all draw-in and inspection boxes, switch boxes and distribution boards to facilitate alternations or repairs when necessary.

Cables shall be bunched in such a manner that the outgoing and return cables are not drawn into the same conduit. For each point separate conduit shall be laid from the switchboard, unless otherwise specified or directed by engineer.

4.02 Conduit size & material

Conduits for electrical installations shall conform to IS: 9537. Type of conduit (steel / GI /PVC) shall be as specified in drawing / data sheet / BOQ .

MS Conduit shall be as per IS:1653 /1972 (appendix B) of Mild Steel, rigid, screwed type and should be stove enameled. The internal bore of all conduits must be smooth and the ends free from burrs. The wall



thickness of conduits upto 32 mm dia shall be 16 SWG (1.6 mm).
Conduits above 32 mm dia shall be of 14 SWG, (2.0 mm) thickness.

The length of the conduit will also include all accessories like joints, bends etc. continuous G.I. wire for earthing and fish wire for drawing-in cables.

PVC conduit shall be heavy duty type & shall conform to IS: 9537.

4.03 Fixing of Conduit

All conduits must be securely fixed & recess in wall

All conduits must be kept clear of water pipes either by spacing or insulation.

4.04 Radius of Conduit Bends :

Draw-in-boxes must be provided so that the cables are not drawn round more than one right angle bend. The radius of bends must not be less than the standard normal bend. The standard radius of normal bends is tabulated below :

Normal Radius of Conduit Bends

<u>Outside dia. of conduit</u>	<u>Radius of normal bends</u>
20 mm	50 mm
25 mm	60 mm
32 mm	80 mm
40 mm	95 mm
50 mm	125 mm

Radius measured from enter of curvature to axis.

Cable must not be drawn round tees or elbows except those of the inspection type.

The radius of the conduit bends shall also be determined by the size of wire/cables which will be drawn into the conduit. Cables must be so bent that the radius at the inside of the conduit is within the prescribed limit for the particular cable.

4.05 Removal of Burrs from ends of conduit



The burrs caused by cutting the conduits shall be removed with a round “rat-tail” file, or with a reamer, and under no circumstances must any conduit be installed until the burr at the end of the conduit has been removed.

4.06 Continuity of Conduit System

A screwed conduit system must be mechanically and electrically continuous across all joints so that the electrical resistance of the conduit, together with the resistance of earthing lead, measured from the earth electrode to any other position on conduit does not exceed $\frac{1}{2}$ ohm. It is necessary that a continuous earth wire should also be provided. The continuous earth wire drawn along with the conduits of the system shall be interconnected among the various sections and the same shall be connected to the main earthing system of the installation.

4.07 Entry into switches, main boards

Wherever a conduit enters Main Switch, distribution board or any other appliance, it shall be securely fixed by means of two check nuts one on the either side of the apparatus. Conduit entries into accessories or terminations shall invariably be protected with adequate sized wooden or bakelite bushes of suitable strength.

4.08 Concealed conduit system

The conduits will be installed during building construction and must be buried in floors and walls in such a manner that the cables can be drawn-in any time after the completion of the building.

When the conduit is run to switch and other positions in wall, it will be run in a chase cut into the wall. The chases must be deep enough to allow at least 10 mm of cement and plaster covering. Conduit buried in plaster will be given a coat of protective paint.

At ceiling point, the conduit boxes will be flush with the finish of concrete ceiling.

At the termination points, metal box will be provided. Suitable connectors / ceiling rose will be fixed to the box for connecting light / fan fittings etc.

In general, pipe hooks at an interval of less than one meter will be used in wall for receiving conduits in the concealed system.

For any other technical particular specification for surface conduit system shall also be referred to. To facilitate drawing of wires in the



conduit, a G.I. Fish wire of 16 SWG shall be laid and kept inside the conduit. The fish wire shall be taken back by the contractor after drawing in of cables.

4.09 Number of cables allowed

The maximum number of PVC insulated, 650/1100V gr. Copper conductor wire/cables allowed to be drawn in one conduit is indicated below :

(The cables are as per IS: 694/1990)

Cable size (sq.mm) 40mm	Nominal cores sectional area (sq.mm)	Size of		
		20mm (3/4")	25mm (1")	32mm (1 1/4")

7/0.52 or 1/1/38	1.5	6	8	-
-				
7/0.67 or 1/1/78	2.5	4	6	-
-				
7/0.85 or 1/2.24	4.0	-	4	6
-				
7/1.04 or 1/2.76	6.0	-	2	4
-				
7/1.35 or 1/3.35	10.0	-	2	4
-				

Cable size (sq.mm) 40mm	Nominal cores sectional area (sq.mm)	Size of		
		20mm (3/4")	25mm (1")	32mm (1 1/4")

7/1.70	16.0	-	-	2
4				
7/1.14	25.0	-	-	2
4				



4.10 Outlets

The switch or regulator board will be made of sheet steel including steel supports for switch sockets, regulator etc. but excluding cover which will be of bakelite / hylam sheet of approved quality, design and colour. The outlet will be mounted flush with the wall in case of concealed wiring. Clear depth of the box will be not less than 60 mm and this will be increased suitably to accommodate mounting of fan regulators in flush pattern. All fittings will be fitted in flush pattern. The metal box will be efficiently earthed with conduit by an approved means of earth attachment. Necessary cutouts will be provided in the cover for operating knobs of switches/ regulators. The thickness of covers will not be less than 3 mm and brass screws will be used for fixing them on the board.

4.11 Earthing

A G.I earth-wire of suitable section shall invariably be clipped by means of G.I clips of adequate strength to the body of the metallic conduit, so as to tender it electrically continuous with the earth wire, wherever conduit or accessories are jointed. Extra-jumpering shall be made to ensure that all conduit connections are tight, and that the enamel is removed from adaptable boxes and other fittings where screwed entries are not provided.

Bare copper conductor (single strand) of minimum size 2.5 sq.mm or equal to the size of power conductor, unless other wise stipulated, shall be used for earthing.

The conduit must always be taken direct into distribution fuse-boards, switch- fuse, switches, isolators, starters, equipment terminal boxes etc. and must be electrically and mechanically continuous throughout.

4.12 Painting

The conduit pipes, fittings boxes and switch board etc. shall be painted with two coats of approved enamel paint over a coat of red oxide. Switchboard and boxes shall be painted on their inside surfaces also.

During installation, no bare threaded portion of the conduit pipe shall be allowed unless such bare threaded portion is treated with anticorrosive preservative.

A1-1) JOB SPECIFICATION FOR INTERNAL ELECTRIFICATION :

1. Cable

1.1 Applicable standard : As per IS694/77

1.2 Wire conductor : Copper



1.3 Minimum conductor size : 1.5 / 2.5 / 4.0 sq.mm for illumination ckt.
& 2.5 / 4.0 / 6.0 sq.mm for power ckt.

2. Laying of wire/cable through PVC : Single core wire
Conduit in recess

4.0 Conduit

4.1 Type : PVC

4.2 Laying of conduit : Conceal type

(B) TECHNICAL SPECIFICATION FOR ELECTRICAL EQUIPMENTS

a) SPECIFICATION FOR SUB- LIGHTING DISTRIBUTION BOARD-SLDB

b) TECHNICAL SPECIFICATION FOR CABLES.

1.0 Scope

1.01 This specification covers the requirements of design, manufacturing testing, packing of distribution board required for receipt, control and distribution of power to various illumination loads of the project.

1.02 SLDB shall receive power from Purchaser's existing LDB.

2.0 Applicable Codes and Standards

2.01 The equipment, accessories, component and work covered by this specification shall be designed, manufactured and tested in accordance with the latest standards and codes of practice published by the Bureau of Indian standards (BIS) including all applicable official amendments and revisions as published up to date of finalization of bids even through year of publication against various standards are given here in.



2.02 In case where the Indian Standards and codes of practice are not available, the same shall conform to the latest standards and codes of practice published by any other recognised National Standards Institutions or latest publications of International Electro technical Commission (IEC).

2.03 In case of conflict between this specification and those (IS codes, standards etc.) referred to herein the former shall prevail

B (a1) JOB SPECIFICATION FOR LIGHTING DISTRIBUTION BOARD.

1. **Site Condition & Elect. Project data** : As given under Design information & project data.

2. Mechanical Data.

2.1 **Execution** : Wall mounted,

2.1.1. **Incomer accessories.** : 1 No ELCB and related

Outgoing. : 6 no. of 20A SP MCB

2.1.2. **Single front** : Single front.

2.2. Supply Configuration.

2.2.1. **Single Incomer** : YES.

2.3. **Incomer Power Entry arrangement.** :

2.3.1. **Cables.** : Cable.

2.4. **Cable Entry.** :

2.4.1. **Incomer (Top / Bottom)** : Bottom.

2.4.2. **Outgoing (Top / Bottom)** : Top

2.5. **Type & Details of Incomer & outgoing.** : As per BOM.

2.6. **Power Busbar material.** :

2.6.1. **Aluminium / Copper.** : Aluminium Alloy.



- 2.7. Enclosure Class (IP) : IP 54.
- 2.8. Colour shades : As per IS 631, shade –
5.
- 2.8.1. Paint. : Epoxy coated.
- 2.9. Cable gland type. : Single compression.
- 2.10. Spares. : Minimum 20% spare (1
minimum
No. of each type & rating).
- 2.11 Other requirement, if any : MCB`s protruding out side
the cover plate.

- Adequate space shall be provided inside the board to facilitate termination of incoming and outgoing wires. Suitable terminal connectors of adequate rating / size shall be provided for termination of cable to incoming isolating switch & MCB`s from different phases. The neutral bar shall have sufficient terminals for full number of outgoing circuit.
- Phase separation barriers made of arc- resistant material shall be provided between adjacent MCB`s connected to different phases.
- Each circuit shall be numbered from left to right corresponding to wiring plans. Anodised aluminium identification levels and inscription plates to be provided for each board.
- Minimum 20% spare terminals to be provided.



B(b) STANDARD TECHNICAL SPECIFICATION FOR CABLES :

1.0 (TO BE READ ALONG WITH JOB SPECIFICATION FOR CABLE)

0.1 This specification covers requirements for Power and Control Cables.

0.2

Codes and Standards

0.3 All items & components to be as per latest (on the date of submission of bids) standards including all official amendments & revisions published by Bureau of Indian Standards (BIS) and codes of practice issued by statutory authorities.

.01 LT Power Cables :

.02 1100V grade, heavy duty type, stranded aluminium conductor, PVC (type A) or HR PVC (type C) or XLPE insulated, extruded PVC (type ST1) or extruded PVC (type ST2) inner sheathed, extruded PVC (type ST1) or extruded PVC (type ST2) with heat resisting insulation outer sheath of black colour. All the cores shall be laid up with filler below distinctly extruded inner sheath.

Continuous temperature withstand :

- .03
- i) 90 deg.C. for XLPE insulated
 - ii) 85 deg.C. for HR PVC (type C) insulated.
 - iii) 70 deg.C. for GP PVC (type A) insulated

Short circuit temperature withstand :

- .04
- i) 250 deg.C. for XLPE insulated
 - ii) 250 deg.C. for HR PVC insulated
 - iii) 160 deg.C. for GP PVC insulated

Armour :



- .05. Aluminium wire for single core cable and GS wire / flat for multicore cables as per relevant IS. Minimum coverage of 90 percent. Breaking load of joint to be 95 percent of normal armour.

Colour / Identification :

- i) 1 core : Red, Black, Yellow or Blue
 - ii) 2 cores : Red & Black
 - iii) 3.5/4 cores : Red, Yellow, Blue & Black
 - iv) 5 cores : Red, Yellow, Blue, Black & Grey
- .06 v) More than 5 cores : Hindu Arabic numerals on grey insulation about 50 mm spacing, contrast with the colour of insulation.

Marking :

- .07 Cable size, voltage grade & make at every 5 meter, and sequential marking of length at every meter on outer sheath. Cables with HR PVC to be identified by letters `HR 05' embossed on the outer sheath. This shall be applicable for all sizes and types of cables.

Termite & Rodent Protection :

- .04 Suitable chemicals to be added to PVC compound of outer sheath to protect the cables against rodent and termite attack. Vendors to furnish the test details to analyze the property by chemical method.

.01

LT Control Cables :

.02

The control cables shall be similar to LT power cables as specified in clause No. 6.3 above with multicore stranded plain annealed copper conductor.

Spare Cores :

Following spare cores shall be provided in each run of cable :

- .03 i) Upto 7 cores cables : one spare core
- ii) 10 core cables : two spare cores



iii) Above 10 core cables : three spare cores.

0.5 Core Size :

.01 Size of each core to be 1.5 sq.mm. or 2.5 sq.mm. However, size of core for CT/PT connection and other as required shall always be 2.5 sq.mm.

.02 **Cable for House Wiring :**

.03 Unless otherwise specified cables for the wiring shall consist of high conductivity copper wires, PVC insulated as required. Cable shall conform to IS: 694.

.04 No conductor shall be less than 2.5 sq.mm. in section for power circuits and 1.5 sq.mm. in section for lighting circuits. Flexible cables shall be of copper and minimum size of conductor shall be 24/0.2 mm.

.05 All cables shall be of from list of preferred make and each coil shall be accompanied by the Maker's test certificate stating the 'Class' and giving the result of insulation tests.

The cables shall be of 650 /1100 volts grade. Single core cable shall be used for wiring inside conduit.

The cores of cable shall be coloured with correct distinctive colours as detailed below :

Two-wire system

- 1) Red, yellow, blue for phase
- 2) Black for Neutral
- 3) Green for earth

Four wire system

- 1) Red, yellow, blue for phase
- 2) Black for Neutral
- 3) Green for earth

-

CABLE DATA SHEET

SPECIFICATION FOR CABLES (POWER ,CONTROL & HOUSE WIRING) :

Sl. No.	Description	
(A)	POWER & CONTROL CABLE	



1.	Project Data	
1.1	Project title :	Mini Tools Room and Training centre
1.2	Location & client :	Ranchi
1.3	Design ambient temperature :	50 deg. C.
2.	Applicable standard :	IS:1554 (Part-I)-1988
3.	Main insulation material :	
	a) PVC (Type A) :	YES
	b) HR PVC (Type C) :	NA
	c) XLPE (Indicate size of LT cables for the XLPE insulation) :	NA
4.	Inner sheath material	
	a) PVC type ST1 :	NA
	b) PVC type ST2 :	YES
5.	Outer sheath material	
	a) PVC type ST1 :	NA
	b) PVC type ST2 :	YES
6.	Armouring required Yes/No :	YES
7.	FRLS PVC (HT & LT)	
	a) For Inner sheath :	NA
	b) For Outer sheath :	
8.	Grade of Aluminium conductor (H2/H4) for power cables	
9	Size of copper conductor for control cables :	



10.	Min. Size of power conductor :	2.5 sq.mm
11.	Number of cores in the cables for motor feeder. :	As per design requirement/ As given under BOQ.
12.	A pair of communication wires in special cables. Yes/No :	3 ½ / 4
13.	Any other special requirements :	NA
B)	<u>CABLE FOR HOUSE WIRING</u> :	
1.	Applicable standard :	IS: 694
2.	Type of conductor :	Copper
3.	Type of insulation :	PVC
4.	Minimum conductor size	
	a) for power circuit :	2.5 sq.mm.
	b) illumination circuit :	1.5 sq.mm
	c) flexible cable conductor :	24/.2 mm.
5.	Voltage grade	650/1100 volts

03.4 SECTION : IV

**TECHNICAL SPECIFICATION FOR ERECTION & GUIDE LINE FOR
ERECTION OF ELECTRICAL EQUIPMENTS :**

**A) Guidelines for Design of System and Engineering The
Layout of Electrical Equipment**

01 General



The tenderer shall prepare the layout drawings for civil assignment taking into consideration the requirement listed below. In case of total turnkey contract the civil aspects mentioned in the following specification shall be adhered to while planning / executing civil work.

02 Cable Installation

Cables will have to be run partly in underground trenches and / or ducts in the pump house and electrical room and partly along the structures and columns of the buildings.

Cables laid directly in underground, trenches shall be in one layer only, more than one layer is not permissible. For multi – layer installation, concrete surface ducts or walkable tunnels shall be used depending upon the number of cables to be laid.

Installation of cables directly buried in ground shall generally conform to the requirements given in IS : 255.

For crossing the road , cables shall be laid in G.I pipe.

Cables in trenches shall be laid on 8 cm of riddled sand and covered with 8 cm of riddled sand. RCC slabs shall be provided for covering these trenches. The trench depth shall normally be 1.0 m while width shall be 300mm, 600mm & 900mm and thickness of top cover of 75 mm. If the trench is to cross roads or any load bearing area the cables shall be taken through suitable GI conduits / pipes / ducts.

03 Laying in Tunnels / Surface Ducts / on Structures

Cable racks for cable trays shall be fixed at a maximum interval of 1.5 m.

Cables leaving the ground / floor shall be protected upto 2 m height by conduits / metallic guards.

Ladder type cable racks and trays shall be provided to lay cables in tunnels / shafts / cable basements. Cables shall be laid in separate racks according to the voltage / application classification. Fireproof partitions such as asbestos sheets shall be provided between trays carrying LT and HT power cables, instrumentation cables and telecommunication cables. The cables shall be laid from top to bottom in order of HT on top rack followed by LT cables and other cables on lower racks.

All necessary frame works and fixings for the support of cables and accessories shall be supplied.

04 Structures for Cable Laying.



Cables shall be laid on ladder type cable trays. Ladder type cable trays shall be selected from sizes 200 mm, 400 mm, 600 mm & 750 mm and shall be fabricated from 40 x 40 x 3.1 mm MS slotted angles for longitudinal members and 25 x 5 mm perforated flats for cross members placed at an interval of 250 mm along the length of cable tray.

Supporting vertical racks and horizontal hooks shall be of 50 x 50 x 6 mm MS angles. Cable racks and hooks shall be of welded construction.

To avoid damage during cable laying, cable structures shall have no scales, abrasive or rough surfaces or cutting edges.

Cable racks, brackets, trays and all accessories shall be hot dip galvanized.

05

Earthing

Entire system shall be earthed in accordance with the provisions of the relevant IEC recommendations / IS code of practice IS 3043 – 1987 and Indian Electricity Rules, so that the values of the step and contact potentials in case of faults are kept within safe permissible limits.

Parts of all electrical equipment and machinery not intended to be alive shall have two separate and distinct earth connections each to conform to the stipulation of the Indian Electricity Rules and apparatus rated 240 V and below may have single earth connections.

All shops and buildings as well as the electrical rooms shall be provided with a ring main earthing system each. Individual ring main earthing system shall again be interconnected as a network.

All electrical equipments of 415V and above shall have double earth connections while equipments of 230V and below shall have single earth connection.

The ring earthing system around each building shall be laid at a distance of approximately 1.5 m from the building and at a depth of approximately 0.8 m. The ring shall be bonded at intervals to the building steel structures, reinforcement of building columns and also to pipes, wherever they are crossing. The earth ring shall further be connected at intervals to deep earthing electrodes to achieve a combined earth resistance of less than one ohm. For the purpose of dimensioning the earthing lines / conductors, the duration of the earth fault current shall be taken as 0.3 seconds.

For protective earthing separate conductor shall be used for flow of earth fault current as elaborated below.

The fourth core and armour of cables and all conduits for cables shall also be connected to the earthing mains. A



continuous earth strip shall be run in each side of cable tunnel and in cable ducts and trenches.

The power supply cables (LT) from the sub – station and the distribution cables to individual 415 V consumers shall have 4 / 3.5 cores.

LT power supply cables shall have four cores and the fourth core shall have cross – sectional area of 50% of the other cores generally. The fourth core of the main supply lines shall be connected to the solidly earthed neutral bar in the substation switchgear as well as at the earth bars in MCC / Distribution Boards.

Conductor sizes for ground connections :

For equipment ground connections, the minimum conductor sizes used should be as follows :

LT system where the voltage does not exceed 650 V normally :

Bare copper conductor (single strand) minimum 2.5 sq.mm or equal to size of the power conductor for :

- Internal electrification of various buildings.

6 Sq.mm Stranded GI wire for :

- Motors and starters upto and including 2.2 kW, shunt limit switches, push buttons and master controllers, light fittings, JB's, PB's etc.
- Instruments and miscellaneous small items protected by fuses of ratings not exceeding 15A.

16 Sq.mm Stranded wire for :

- Motors and starters above 3.7 kW and upto and including 15 kW.

25 x 3 mm GI Flat for :

- Motors and starters above 15 kW and upto and including 45 kW.
- Control desk, cabinets, LCB, socket outlet isolators, SLDBs / DBs.

50 x 6 mm GI Flats for :

- Motors and starters over 45 kW and HT motors.
- Switchboards, MCC, PDB, PCC, MLDB.
- Main earthing ring in plant buildings.
- Bonds to crane gantries
- LT Switchboards and other equipment protected by circuit breakers.



Earthing Electrodes

The earthing electrodes shall be of GI pipes 65 mm dia, 3000 mm long GI pipe (medium grade) and in one piece provided with water holes and other filling devices.



(B) **GUIDE – LINE FOR ERECTION OF ELECTRICAL EQUIPMENT AND ACCESSORIES**

01 General

All the electrical equipment shall be installed with proper care and as per layout drawings. Minor modifications required at site shall be made by the contractor with approval of owner representative / Consultant for installation of the equipment. Care shall be taken for proper handling of equipment and undue vibrations shall be avoided particularly in case of sensitive (instrument mounted on panels) equipment.

The contractor shall have valid electrical contractors license valid for State of Jharkhand and as well supervisory license. He shall have in his employment sufficient number of electricians and supervisors holding valid license for LV installations. It will be the responsibility of the contractor to get the installation cleared and relevant drawings certified / approved by Electrical Inspectors, Factory inspectors, Insurance agencies and other statutory authorities. The Govt. fees and necessary commercial aspects will be taken care by the contractor.

02 Sheet metal enclosed panels, open control panels, control desks and boxes.

The base frames of all panels, desks, posts etc., shall be welded to structures or to the civil inserts provided on the floor / walls. Fabrication of supports / frames, wherever required, shall be done by the contractor.

The shipping section shall be placed in position before removing the protective covering to eliminate scratch / damage. The shipping section shall be moved by using rollers under the shipping skids wherever lifting cranes are not available. The contractor shall do the assembly at site as per manufacture's general arrangement drawings and installation instruction. While assembling a complete board comprising several unit type cubicles, the boards as a whole shall be aligned. The panels shall be properly leveled prior to grouting the holding down bolts or welding the panels to the inserts. All interconnection of busbars and wiring between the panels shall be done as per manufacturer's instructions and drawings. Welding work on the panels shall only be carried out after consultation with the owner. Damage to the paint due to welding shall be rectified by the contractor.

After mechanical installation of the board is completed, loose instruments shall be installed, wherever required, and wires shall be connected to the instrument. The wiring of



intermediate terminal strips between two panels, wherever disconnected for transport, shall also be connected.

03 Earthing

Earthing connection to equipment subject to movement, vibration and shocks, shall be through flexible stranded conductors.

The termination of strips to the equipment shall be done by bolting and the wires shall be terminated by compression lugs. Bolt connected contact surfaces shall be tinned. Jointing of strips shall be done by welding for proper continuity. All contact surfaces shall be thoroughly cleaned of dust and oil and after jointing, the joints shall be given bitumin paints.

Earthing conductors laid directly in ground, shall be coated with one coat of bituminised paints, be wrapped with one layer of bitumaetic tape laid on half lapped and shall have a final coat of bituminised paint to prevent corrosion.

Earthing conductors run on walls / floors / cable and equipment structures etc. shall be supported at suitable intervals and painted with black oxide paint.

All joints in the branch connections except at earthing electrode shall be welded and painted black.

At road / rail crossings earthing strips shall be laid through conduits / concrete ducts.

Special earthing shall be provided for all electronic equipment as per manufacturer's recommendations / practice.

04 Test

Test of all equipment shall be conducted as per latest BIS. All routine tests shall be carried out at manufacturer's works in presence of owner or his representative.

All the equipment shall be tested at site to know their condition and to prove suitability for required performance. The site tests and acceptance tests to be performed by contractor are detailed below.

The contractor shall be responsible for satisfactorily working of complete integrated system and guaranteed performance.

01 Site Tests and Checks

i) General

All the equipments shall be tested at site to know their condition and to prove suitability for required performance.

The test indicated in following pages shall be conducted after installation. All tools, accessories and required instruments shall have to be arranged by contractor. All other test which is considered necessary by the manufacturer of the equipment, contractor or mentioned in commissioning manual has to be conducted at site.

In addition to tests on individual equipments some tests / checks are to be conducted / observed from overall system point of view. Such checks are highlighted under miscellaneous tests but these shall not be limited to as indicated and shall be finalised with consultation of client before changing of the system.

The contractor shall be responsible for satisfactory working of complete integrated system and guaranteed performance.

All checks and tests shall be conducted in the presence of client's representative and test results shall be submitted in three copies to client and one copy to Electrical Inspection. Test results shall be filled in proper proforma.

After clearance from electrical Inspector system equipments shall be charged in step by step method.

Based on the test results, clear cut observation shall be indicated by testing engineer with regard to suitability for charging of the equipment or reasons for not charging, are to be brought by the contractor.

ii) **Trial Run Test**

After the successful test of each equipment as per standard test procedure the entire control system shall be put on trial run test on actual site conditions operation of the system.

iii) **Acceptance Test**

The acceptance test on the system shall be carried out by the supplier as per mutually agreed test procedures to establish satisfactorily functioning of the system as a whole and each equipment as part of the system.

iv) **Site Tests**



The tests to be carried out on the equipment at pre – commissioning stage shall include following but not limited to the following :

ACDB

1. IR test before and after HT test
2. Checking for functions of components for each module.
3. Checking for interchangeability of similar components.
4. Checking of tightness of earth connection.
5. Testing and calibration of all indicating meters.
6. Checking output of each feeder after energisation.

CABLES

1. Visual check.
2. Checking of continuity and IR values for all the cables before and after HV test.
3. HV test and measurement of leakage current after termination of cable kits (for HT cables).
4. Checking of earth continuity for armour and fourth core (If applicable).
5. Check for mechanical protection of cables.
6. Check for identification (tag number system) placement of cable marker, cable joint etc. as per the cable layout drawing.
7. Check earthing of cable structures.
8. Check safe head room in tunnel and basement area.
9. Check clearances from ventilation duct and light fittings for cable structures.
10. Check proper fixing of cable structures.
11. Check for proper drainage and removal of water (if any).

EARTHING

1. Check tightness of all earth connections.
2. Check earthing of all metallic equipments, cable trays, busbar supporting structures, yard fencing steel structures of yard, rails, gates, building column (if steel) all electrical equipments, gas / oil / water pipe lines etc. as per the drawing / specification.
3. Measurement of earth resistance for each electrode.
4. Measurement of total earth resistance.



5. Measurement of earth loop resistance for E / F path of biggest LT drive.

MISCELLANEOUS

1. Checking of continuity of the system.
2. Checking of phase sequence from overhead line to consumer end.
3. Checking safe accessibility of all operating points.
4. Check availability of control / aux. Supply.
5. Check proper covering of cable channels.
6. Check proper dressing of cables, mechanical protection of cables, placement of cable markers.
7. Check sealing of all cable openings including conduit opening with fire resistance material.
8. Check sealing of all openings at bottom of electrical panel.

3.5 SECTION - V

LIST OF PREFERRED MAKE (ELECTRICAL) :

1. LT POWER AND CONTROL : UNIVERSAL / FORT
/POLYCAB/TORRENT
CABLE /GOLSTER / CCI / ASIAN
/ NICCO /
HAVELL'S / SKYTONE
ELECTRICALS
2. HOUSE WIRING CABLE : FINOLEX / RAJNIGANDHA /
RR KABLES /
HAVELL'S / CAPITAL / RR KABLES.

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3. LT HEAVY DUTY SWITCH : GE / L & T / SIEMENS / STANDARD
/
HAVELL'S / SCHNEIDERFUSE
SWITCH UNITS / ISOLATOR
- 4.FUSES : GE / L & T / SIEMENS / STANDARD
/
HAVELL'S / TELEMECANIQUE .
- 5.CONTROL SWITCHES / SELECTOR : GE / L & T / SIEMENS /
BHARTIASWITCHES. INDUSTRIES /
KAYCEE / AE / HOTLINE
SWITCHGEAR
- 6.PUSH BUTTON : GE / L & T / SIEMENS /
TELEMECANIQUE.
- 7.TIMER : L & T / GE / SIEMENS / BHARTIA
INDUSTRIES / TELEMECANIQUE.
- 8.CONTROL TRANSFORMERS : AE / NEC / KAPPA / BHARTIA
INDUSTRIES / GYRO
LABORATORIES / INDCOIL
MANUFACTURING.
- 9.AMMETER / VOLTMETER : AE / IMP / MECO / GE / HOTLINE.
- 10.CLUSTER LEDs : GE / L&T / SIEMENS /
BHARTIA
INDUSTIRES / BINAY / HOTLINE.
- 11.TERMINAL BLOCKS : ELMEX / CONNECTWELL/WAGO.
- 12.CABLE JOINT / TERMINATION:
KITS
- A) LT : M-SEAL / RAYCHEM RPG /
DENSON

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- B) TELECOM : CABLE CORPORATION / RAYCHEM / M-SEAL.
13. HOOTERS / BELLS : BEMCO / KHERAJ / E & PCC (KAKOO).
14. CABLES LUGS : DOWELLS.
15. CABLE GLANDS : COMET.
16. SYNCHRONOUS TIMER : L & T / LEGRAND / SIEMENS
17. LT AC MOTORS : BHARAT BIJLEE / CGL / KEC / SIEMENS (above 160M frame) / ABB. NGEF / GEC-ALSTOM /
18. LT AC MOTORS (GEARED) : ALSTOM / KEC / NEW ALLEN WERRAY/ NGEF.
19. MCC (non drawout)/ MLDB / PDB / PECON / KEY : SIEMENS / L&T/BCH / DB// CONTROL CABINET / ELECT. / MEDITRON / PCE PROJ. / DESK/ PB STATIONS PYROTECH / TELCON / TECHNOCOMMERCE.
20. HOUSE DB & SUB –DBs : STANDARD / LEGRAND / HAVELL'S / INDO ASIAN.
21. MOULDED CASE CIRCUIT : SCHNEIDER / L&T / SIEMENS / LEGRAND / BREAKER INDO ASIAN.
22. EARTH LEAKAGE CIRCUIT : LEGRAND / SCHNEIDER / L&T / SIEMENS. BREAKERS (ELCBs)
23. CONTACTORS – AC POWER : SIEMENS / L&T / SCHNEIDER / BCH.
24. THERMAL OVER LOAD RELALYS, : SIEMENS / L&T / TELEMECANIQUE. AUX RELAYS



- | | | | |
|-----|---|---|---|
| 25. | MINIATURE CIRCUIT BREAKER
SIEMENS / | : | LEGRAND / HAVELL'S /

(MCB)(9 KA) INDO ASIAN /
SCHNEIDER / VERSA TRIP. |
| 26. | PHOTOCELL (LIGHTING) | : | ADVANCE ELECTRONICS. |
| 27. | WELDING SOCKET
CROMPTON. | : | BCH / EE / BEST & |
| 28. | LIGHTING FIXTURES | : | BAJAJ / CGL / PHILIPS / GE. |
| 29. | PORTABLE HAND LAMP | : | NETCO. |
| 30. | 5/15A SWITCHES / SWITCH | : | ANCHOR / KINJIL. |
| 31. | SWITCHES / SWITCH SOCKET :
OUTLETS (INDUSTRIAL)
CROMPTON. | : | BCH / CGL / GEC – ALSTHOM/
LEGRAND / BEST & |
| 32. | TRANSFORMER FOR HAND LAMP
INDCOIL. | : | POWELK / CHABBI / |
| 33. | CEILING / EXHAUST / PEDSTAL:
ORIENT /
FANS & CIRCULATORS
BAJAJ

KHAITAN. | : | GEC-ALSTHOM / USHA /

CROMPTON GREAVES /

ELECTRICALS / |
| 34. | PORTABLE EMERGENCY
BPL
LIGHTING SET | : | KHERAJ ELECTRICAL / |
| 35. | CABLE TRAY | : | PANTY/ PILCO. |
| 36. | PANEL MOUNTED CTs & PTs | : | ATOEELEC / KAPPA / PRAGTI /
SILKANS. |
| 37. | FAN REGULATOR
(ELECTRONIC TYPE) | : | ANCHOR / CROMPTON
GREAVES / USHA / KLICK |
| 38. | STEEL TUBULAR POLES
STEEL / | : | STEEL POLE CORP. / KWALITY |

JINDAL STEEL / CALCUTTA STEEL /

BMW.

NOTE : For make of items not covered herein, prior approval of JIIDCO / OWNER is Mandatory.

**SECTION :VI
 COMPLETION CERTIFICATE**

3.6 SECTION - VI

ANNEXURE – A

FORM OF COMPLETION CERTIFICATE

I / We certify that the installation detailed below has been installed by me / us and tested and that to the best of my / our knowledge and belief, it complies with I.E. rules 1956, as well as Technical Specifications for Electrical Works.

Electrical installation at

.....

Voltage and system of supply

.....

Particular of

Instruments used	1)	Insulation tester	
------------------	----	-------------------	--

Voltage	
---------	--

Make

.....

Type

.....



Sl. No.

.....

2) Earth tester

Make

.....

Type

.....

Sl. No.

.....

3) Any other instruments

Make

.....

Type

.....

Sl. No.

.....

I. Particulars of works

a) Internal Electrical Installation

No. Total Load System of wiring

i) Light point

ii) Fan point

iii) Plug point

a) 5 amp.

b) 15 amp.

b) Others



- | a) Motors starting | Description | HP / kW | type of |
|---------------------------|---|------------------|----------------|
| i) | | | |
| ii) | | | |
| iii) | | | |
| b) Other plants | | | |
| c) Cables | | | |
| 1. | Total length of underground cable & its size. | | |
| | i) No. of joints | End joints | |
| | | Tee joints | |
| | | Straight | |
| | through | | joint |
| d) Earthing | | | |
| a) | Description of earth electrode | | |
| b) | No. of earth electrode | | |
| c) | Size of main earthing lead | | |

II. Test – Result

a) Insulation – Resistance

- i) Insulation resistance of the whole system of conductors to earth
..... meg-Ohms.
- ii) Insulation – resistance between the phase conductor and neutral.
- Between phase R&N
- Meg-ohms
- Between phase Y&N
- Meg-ohms



Between phase B&N
Meg-ohms

iii) Insulation resistance between Phase conductors in case
of three phase only.

Between phase R&Y
Meg-ohms

Between phase Y&B
Meg-ohms

Between phase B&R
Meg-ohms

b) Polarity test

Polarity of all single pole branch switches and cut outs.

1. Cutout

2. Switch No. 1.
2.
3.

c) Earth-continuity Test

Maximum resistance between any point in the earth continuity
conductor including metal conduits and main earthing – lead
..... ohms.

d) Earth – Electrode – Resistance

No. 1) ohms

2) ohms

3) Ohms

4) Ohms

e) Earth – resistance (combined) at the main switch board
..... ohm.

Signature of supervisor
Contractor

Signature of

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.....	YN	YN
.....	BN	BN
Between conductor & earth		
.....	RE	RE
.....	YE	YE
.....	BE	BE
.....	NE	NE
.....		

Signature of Supervisor
Lincence No.

Signature of Contractor
Licence No.

**ANNEXURE –
C.**

Date -----

CABLE – TESTING (BEFORE COMMISSIONING)

- i) Whether high pressure test conducted – Yes / No.
- ii) If conducted – System of supply test pressure
.....
kV for minutes result of test
.....
satisfactory / unsatisfactory.
- iii) If not conducted

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Serial no.,make ,type & Voltage of Megger used	-
Result of Megger testing	-
Between R & Y	-
Y & B	-
B & R	-
Between R & N	-
Y & N	-
B & N	-
Between R & E	-
Y & E	-
B & E	-

Signature of Supervisor
Contractor
Licence No.

Signature of
Licence No.



GENERAL RULES

- 2.1 Bidders have to fill in all such information as required in the tender documents.
- 2.2 The rates quoted by the tenderer shall be inclusive of Income Tax, Sales Tax Royalty or any other Provincial and Central Taxes applicable at that time. Provisional or conditional tender shall not be accepted.
- 2.3 The tenderer shall be presumed to have carefully examined the conditions of the contract and specifications of the work. The tenderer will also be deemed to have inspected the work site and to have satisfied himself/herself/themselves independently as to the nature, extent and practicality of all works and required road approaches & other means of communication & access to the site, lands, buildings, available for accommodation that may be required for temporary purpose in connection with the contract of work, as also availability of construction materials, location of work site including its climate & other geological characteristic, availability of skilled, semiskilled & un-skilled labourers. The consequences of the lack of necessary knowledge will be borne entirely by tenderer.
- 2.4 The tenderer shall submit a work programme of the execution of the work along with the tender to complete in stipulated time as mentioned in NIT.
- 2.5 All labourers engaged in the work are to be paid wages as per Minimum Wages Act in force at the time of execution of this work.
- 2.6 The tenderer will provide to the labourers, huts for shelter, drinking water and medical facilities at site and keep the site clean at his own cost.
- 2.7 Extension of time may be granted on valid ground by the competent authorities as per Government rules and circulars in force and as revised from time to time.
- 28 On receipt of the written order from the Principal, JGMSME, TOOL ROOM, Tatisilwai, Ranchi. the successful tenderer will first deposit the balance amount of initial security deposit (ISD) within the specified period of ten days and then enter into an agreement with Executive Engineer on the basis of the stipulation in the approved tender documents before the issue of work order.
- 2.9 If the tenderer quotes the rate below the BOQ rate and the competent officer approves it, then the reduction over the BOQ rate shall be applicable on all items of work.

Principal,
MSME, Tool Room,
Ranchi



SPECIAL CONDITIONS FOR F2 CONTRACT

- 3.1 The successful tenderer (hereinafter called the Contractor) must maintain a site order book at each work site which will be produced when asked for by the departmental officers for needful. This book must at all times be available at the site and should be produced before any inspecting or supervising officer without fail. The instructions given in the site order book shall be complied by the contractor. A copy of the same should be kept by the J.E. The site order book may be submitted to E.E with running account bills, if required, but must be submitted with final bill.
- 3.2 The contractor should always remain available at the work site, but where it is not so possible for him to do so, he must appoint a representative for the purpose who would be duly authorized by the contractor to receive instructions and carry out instruction of departmental officers, and also to receive letters. He may also delegate to him any other power as he thinks fit, but in every case he will inform immediately the concerned A.E and E.E regarding appointment of such representative along with his name and identity in writing by Regd. Post with A/D.
- 3.3 If the Royalty clearance certificate for mines/minerals used in the work is not produced with the bill, Royalty will be deducted from the concerned running bill, as per the instruction of the Department of Mines. Production of royalty clearance certificate along with the final bill is a must, failing which final bill will neither be passed nor paid, and for such non-payment or delay in payment, the whole and sole responsibility will be of the contractor alone.
- 3.4 No Material will be supplied by JGMSME TOOL ROOM, Ranchi.
- 3.5 The contractor shall provide sufficient plant, equipments and labour and shall work such hours and shifts as may be necessary to maintain the progress schedule. The working and shift hours shall comply with all Govt, rules and regulations in force from time to time during the entire period of execution of the contract work.
- 3.6 The contractor should get the sample of all the materials approved by the E/I, before collecting the same for use at work site. The sample in sealed glass jars shall be kept in the custody of the E/I.



- 3.7 The contractor shall make adequate arrangement for the safety to the labourers during execution of the work. He will be responsible for any compensation for the same & will have to be paid by him as decided by the competent authority.
- 3.8 The contractor shall have to get tested the strength of materials used in the work as and when advised by Executive Engineer as well as of cement concrete (both plain & reinforced). Achievement of the prescribed cube strength is a must. The cost of concrete cubes moulds, curing, carriage of cubes to and from the testing laboratory, BIT, SINDRI and all other incidental charges incurred in this regard shall be borne by the contractor.
- 3.9 The contractor shall, if required by the E/I, arrange to test of other materials has to do at his own cost if after testing quality of material appears to be inferior or the portion of the work is found to be defective or unsound the contractor may be asked to remove & or pull down and re-execute the same at his own cost and in case such defect is found out of by departmental to the soundness of the structure shall bear the all cost of in this regard.
- 3.10 All rejected materials will have to removed from the site by the contractor, after their rejection, within seven days from the date of written order of E.E, failing which the E.E will get these removed in whatsoever manner he thinks fit and will recover the cost involved for such removal from the contractor after lapse of seven days time.
- 3.11 If the actual lead of materials like stone metal, stone chips, boulder, bricks, sand, moorum etc., is found to be less than the lead provided in the BOQ, then its payment will be made proportionately on reduced rate. (Reduction in rate will be made in the ratio of approved rate and rate provided in the BOQ remaining the same).
- 3.12 After completion of work the contractor will remove all debris, fill up vats etc. as desired by E/I and leave the site clear and tide at his own cost.
- 3.13 The department reserves the right of omitting or suspending the construction or changing site etc., if considered necessary at any stage.
- 3.14 The work incidental to items included in the BOQ shall not be paid extra and the tendered rates are deemed to include these:-



(i) Site clearance such as clearing of shrubs, bush, wood-undergrowth & small trees not exceeding 12” in girth measured at 3’ above the ground.(ii) Setting out works, profile, lay-out etc. (iii) Benching or excavation of foundation trenches. (iv) Excavation for insertion of planking and shuttering. (v) Forming (or leaving) stop in sides of deep excavation & their removal after measurement.(vi) Bailing out rain water/and or surface water in case the excavated foundation trenches were filled up by these during entire period of construction.(vii) Removing slips or fells in excavation. (viii) Making vats, platform, channel etc.

3.15 The contractor may use his own machinery for completion of the work within the time stipulated in the contract, the carriage of machinery to different sites under this contract from one place to another for this work will be the responsibility of the contractor and all expenses in this regard will be borne by him.

3.16 CLAIM SHALL NOT BE ADMISSIBLE under following circumstances:-

- a) Extra items of work done without written order of competent departmental officer.
- b) In case of sudden fluctuation and / or increase in rates of labour, materials, royalty, various taxes, railway freight, fuel, lubricants, carriage cost etc. at any stage of the work
- c) Non-availability of labour of any category required for the work.
- d) Labour sitting idle due to any reason / cases.
- e) Delay in communication regarding any changes or modification in design, drawing, specification, alteration & addition etc.
- f) Loss sustained due to:-
 - 1) Acts of enemies including agitation by Public and Riot.
 - 2) Transportation and Procurement difficulties.
 - 3) Natural Calamities.
 - 4) Any other circumstances beyond human control.
 - 5) Iron materials not issued in required lengths.
 - 6) Non availability of man,machine& construction materials.

3.17 Extension of time, if justified, may be granted by the different competent officers for different periods of time, for different types and values of works as per rules / circulars / guidelines in force. Otherwise penalty for non-fulfillment



of the contract may be imposed, after giving due consideration for poor progress at different stages of works without valid and satisfactory reasons. The Officer granting such extension of time has the full liberty to weigh & examine the circumstances which led to such requirement for fulfillment of contract, and use his own discretion for passing final orders, which shall be treated as final and shall be binding and conclusive on the contractor.

- 3.18 The contractor shall, if required by the E/I arrange to test materials at site or get them tested in recognised departmental testing laboratories at his own cost in order to prove their soundness and sufficiency as per specifications laid down. The number of tests required for different items will be specified by the E/I.
- 3.19 The tenderer will have to enclose an affidavit as per format annexed.

Principal,
MSME, Tool Room, Ranchi



AFFIDAVIT

1. I,the undersigned, swear that I own the plants and machineries required for construction.
2. I,the undersigned swear that, I will employ two nos. diploma holder engineers with at least 5 year's experience for the above work.
3. I,do authorise the Principal,JGMSME TOOL ROOM, Ranchi to cancel the award and also forfeit the security money already deposited with the department in case the Para 1 & 2 as mentioned above is not fulfilled.

.....

(Signed by an authorized officer of the Firm)

.....

Title of officer

.....

Name of Firm

.....

DATE