



क्षेत्रीय जैवप्रौद्योगिकी केन्द्र
राष्ट्रीय महत्ता की संस्था, संसदीय अधिनियम द्वारा स्थापित।
जैवप्रौद्योगिकी विभाग, भारत सरकार, नूतनपुरा के लखनवाहन में
REGIONAL CENTRE FOR BIOTECHNOLOGY
An Institution of National Importance created through an Act of Parliament
Department of Biotechnology, Govt. of India, under the auspices of UNESCO

NCR-Biotech Science Cluster, 3rdMilestone, Gurgaon-
Faridabad Expressway, Village- Bhankri, Faridabad.
(Haryana) Pin -121001.

TENDER DOCUMENT NO:RCB/OoC/NIT-01/20-21/PACKAGE ESS
(Two Bid system)

TENDER FOR

Supplying, installation, testing and commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR-Biotech Science Cluster at Faridabad (Haryana)

On behalf of Executive Director, RCB

Atin Jaiswal Digitally signed by Atin Jaiswal
Date: 2020.07.13 12:54:59 IST

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PART –A

(NOTICE INVITING TENDER AND PRE-QUALIFICATION CRITERIA)

TenderNo.-RCB/OoC/NIT-01/20-21/PACKAGE ESS

Date:16.06.2020

1.0 TENDER NOTICE

Executive Director, Regional Centre for Biotechnology, NCR Biotech Science Cluster, 3rd Milestone, Faridabad-Gurugram Expressway, Faridabad - 121001, Haryana invites On line tenders under Two Bid System (Technical bid and Financial bid) from reputed Contractors/manufacturers for the work:

“Supplying, installation, testing and Commissioning of Package Type Out Door Electrical Sub-Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana)” as per schedule, specifications and as per the terms and conditions mentioned in this tender document.

Off-line/physical bid shall not be accepted and no request will be entertained on any ground/reason

NOTICE INVITING TENDER

| | |
|----------------------------------|---|
| Website Url : | https://dbt.euniwizarde.com :& https://rcb.res.in |
| Address: | Regional Centre for Biotechnology, NCR Biotech Science Cluster, 3 rd Milestone, Faridabad-Gurugram Expressway, Faridabad - 121001, Haryana |
| Contact Details | Chief Executive Officer, Office of Connectivity, RCB, Phone: 0129-2848535 |
| Name Of Work | Supplying, installation, testing and Commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 in NCR Biotech Science Cluster at Faridabad (Haryana) |
| Earnest Money | Rs. 2,82,800/- needs to be deposited Online through e- tender portal. |
| Tender Processing fees | to be deposited online through e-tender portal. |
| Tender Uploading Date | 13.07.2020 |
| Tender Closing Date & Time | 28.07.2020; 03:00 P.M. |
| Date of Pre Bid Meeting | 21.07.2020; 03:00 P.M. |
| Date of Opening of Technical bid | 28.07.2020; 03:30 P.M. |
| Date of Opening of Financial bid | Will be notified/uploaded on DBT E-Wizard Portal website: https://dbt.euniwizarde.com . |

2.0 ELIGIBILITY CRITERIA

1. The tenderer must be a Goods Service Tax (GST) registered firm / company. Tenderer must be a Manufacturer or Contractor. (sub-authorization/Joint-venture/partnership shall not be accepted).
2. The tenderer should have successfully completed similar works during last seven years ending on the previous day of the last day of submission of tender either of the following: -

One similar work of value not less than **Rs. 113.15 Lakhs**, in the last 7 years
OR

Two similar works each of value not less than **Rs. 84.85 Lakhs**, in the last 7 years
OR

Three similar works of value not less than **Rs. 56.60 Lakhs**, in the last 7 years ending on previous day of last day of submission of tender

Similar work means **Supplying, installation, testing and commissioning of Out**

Door Electrical Sub- Station in any other Govt. Departments / universities / PSU's, Biotech companies, Research institution & pharmaceutical laboratories or in reputed private sectors during last seven years). Self-attested copies of the completion certificates issued by the Executive Engineer/Head of department/ owner are required to be enclosed with the technical bid. The tenderer should also give completed details of the concerned authority such as name with designation, valid address, telephone/ mobile number with STD Code, etc. The completed works will be open to inspection and in case works is not up to the standard, the tender will summarily be rejected & no queries will be entertained in this regard. Refer "Annexure-IV".

3. Average annual financial turnover should be at least Rs. 71.00 Lakhs during the immediate last three consecutive financial years.
4. The bidder shall have minimum solvency of Rs. 56.60 Lakhs. Solvency certificate from the Bidder's Banker shall be submitted.
5. The firm should have not been blacklisted, debarred, declared non performer or expelled from any work of Union Government/ State Governments/ PSUs etc. during the last 5 years. They should also submit a self-declaration on its letter head for the same. The firm should also provide information regarding litigation / arbitration cases for the last five years as per Annexure-V.
- 6 The tenderer may visit / examine the site and its surrounding to assess the accessibility and assess the scope of work before submitting their offer. No claims later on shall be entertained. The tenderer shall arrange & maintain at his own cost all materials, T&P, Water and facility for workers for executing the work. Refer "Annexure-VI".

3.0 Registration Process

1. Biddersto enroll on the e-Procurement module of the portal <https://dbt.eunizarde.com> by clicking on the link “Bidder Enrollment”. Enrolment on the e-wizard Portal is free of charge.
2. The biddersto choose a unique username and assign a password for their accounts. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the e-Wizard Portal.
3. Bidders to register upon enrolment their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.
4. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse. Foreign bidders are advised to refer “DSC details for Foreign Bidders” for Digital Signature requirements on the portal.
5. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

4.0 Tender Documents Search

1. Various built in options are available in the e-Wizard Portal which is further synchronizing with CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters include Tender ID, organization, location, date, value, etc.
2. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the Online Portal.
3. Once the bidders have selected the tenders they are interested in, they may download the required documents/tender schedules. These tenders can be moved to other respective ‘My Tenders’ folder. This would enable the Online Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
4. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification/help from the Helpdesk.

5.0 Bid Preparation

1. Bidders should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid.
3. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
4. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
5. Copy of constitution or legal status of the bidder manufacturer/Sole proprietorship/firm/agency etc.
6. Experience Certificates for two or more similar works in last 07 years.

7. Copy of PAN Card/GST Registration.
8. Annual average Turnover of the agency should be less than Rs. 71.00 Lakhs per annum since last three years.
9. Brochure, original technical catalogue with detailed specification and picture of the product offered, if relevant.
10. Earnest Money Deposit: The bidder will be required to deposit the Earnest Money Deposit (EMD) for an amount of **Rs. 2,82,800/- through Online portal.**
11. EMD Fee are exempted for MSME/ NSIC vendor etc. however Tender **processing fee has to be paid by all the vendors** as this fee is being charged by the Online Portal service provider directly.
12. Specification: The Contractor must confirm in writing that the goods supplied & installed by them shall be as per specification of goods and in case of any variation, the contract shall be liable to cancel immediately.

6.0 Bid Submission

1. Bidder to log into the site well in advance for bid submissions so that he/she uploads the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder to digitally sign and upload the required bid documents as indicated in the tender document.
3. Bidder to select the payment option as "Online" to pay the tender fee/ EMD wherever applicable and enter details of the instrument.
4. A standard BoQ format (proforma of price bid) has been provided with the tender document to be filled by all the bidders. Bidders to note that they should necessarily submit their financial bids in the prescribed format and no other format is acceptable.
5. The tenderers should quote the rates for items tendered by them in figures as well as in words and the amounts in figures only. The amount for each item should be worked out.
6. In the event of discrepancy between rate in figures and words the rate quoted in words shall be treated as correct. In case there is discrepancy between rate and amount worked out, the rate quoted shall be taken as correct and not the amount.
7. Price shall be entered against each item in Bill of Quantities where quantities or LS (lump-sum) has been mentioned. The cost of item against which the Contractor has failed to enter a rate or price shall be deemed to be covered by rates and prices of other items in the Bill of Quantities and no payment shall be made for the quantities executed for items against which rate has not been quoted by Contractor. No rate is to be quoted against items for which no quantity is given. However, the Contractor has to quote rate against "LS" items.
8. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bid etc. The bidders should follow this time during bid submission.
9. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data, which cannot be viewed by unauthorized persons until the time of bid opening.
10. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
11. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
12. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

7.0 Assistance to Bidders

1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to e-Wizard Portal in general may be directed to the 24x7 e-Wizard Helpdesk. The contact number for the helpdesk is 011-49606060, 23710092, 23710091.

8.0 Terms and Conditions

Standard General Conditions of the Contract (GCC) form 7/8 (modified and corrected up to date) of CPWD shall be followed except otherwise stated elsewhere in the tender document.

- a) The Performance Security Deposit amount, 5% of tender value must be deposited by successful bidder within 10 days of award of work in the form of Demand Draft/Bank Guarantee/ FDR, from Nationalized/scheduled bank valid up to 6 Months from issue of work order, drawn in favour of "Executive Director Regional Centre for Biotechnology", Payable at Faridabad.
- b) The Security Deposit @ 5% of work value will be deducted from each R/A bill, which will be released after 12 months subject to the condition that all the defects observed during the Defect liability period have been rectified by the contractor to the full satisfaction of the Engineer-in-charge of the work.
- c) **Completion period of work:** Four (04) months from date of issue of work order.
- d) **Validity of the bids:** The bids shall be valid for a period of 90 days from the receipt of technical bid. This has to be as specified by the tenderer in the commercial bid.
- e) **Warranty / Guarantee:** Bidder must provide one (01) year comprehensive on-site warranty and it will commence from the date of the satisfactory installation/commissioning/handover of goods, against the defect of any manufacturing, workmanship and poor quality of the components. No offer of the vendor will be accepted without warranty/ guarantee of their supplied/ installed goods.
- f) **Installation:** All the works shall be completed within four (04) months from the date of issue of work order. All the aspects of safe installations shall be the exclusive responsibility of the supplier. If the supplier fails to complete the work on or before the stipulated date, then a compensation for delay of work @ 1.5% per month of delay of work to be computed on per day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work.

9.0 Payment Terms:

The pre-receipted paste of 1 revenue stamp on each bill in triplicate may be sent to this office for payment after satisfactory delivery & Installation of the goods. The bill should have full particulars of the items.

- a) No Payment shall be made in advance nor shall the loan from any or financial institutions be recommended on the basis of the order of award of work. The contractor shall submit the bill only after successful Installation and commissioning. The case of issuing sanction and passing of bill for payment will be initiated on receipt of a pre-receipted invoice from the Contractor.

- b) No payment will be made for goods rejected.
- c) The performance guarantee amount/PBG will be released after 3 months from date of satisfactory completion and handing over of work.
- d) Security Deposit will be released after successful expiry of Defect Liability Period (12 months) which will commence from date of completion. EMD can be adjusted (released) against Security Deposit.
- e) The above rates must be inclusive of all applicable Taxes, handling and freight charges etc. & all applicable taxes shall be deducted at source from the passed amount of the contractor bill.
- f) The party shall be deemed to have visited to the site, understood the work prior to quoting of rates.
- g) Kindly mention the tender No. & due date, bidders full address, email address and contract number on the sealed envelope.
- h) **Schedule of Payment:**

Payments shall be released as per General Conditions of contract and the following conditions:
All interim payments shall have deductions towards advances and other contract conditions.

- 45 % of the value indicated against each item of work shall be made after delivery at site in good condition on pro-rata basis subject to deductions to be made against advances and security deposit.
- 25 % of the value indicated against each item of the work shall be made after installation of the equipment and accessories at site in good condition and on giving successful trial run at site.
- 15 % on completion of testing & commissioning.
- 10 % on handing over to RCB
- 5% (security deposit) shall be released upon completion of the Defect Liability Period (DLP)

Technical Bid

CheckList of Certificates/Documents required to besubmitted in theTechnical Bid

If these documents are not submitted /conditions not met, the quotation shall be summarily rejected and no further correspondence, in this regard, shall beentertained.

| S. No | Description | Technical Compliance (Yes/No) |
|-------|--|-------------------------------|
| 1 | Undertakingforadherence of Two-Bid System. (Non-violation of Two-Bid System) | |
| 2 | Clarification with regard to manufacturer or their accredited agent. | |
| 3 | Undertakingforthesubmission EMD/bidamountalongwiththe bid. | |
| 4 | GST registration certificate | |
| 6 | Non-black listing declaration | |
| 7 | Declaration reg. Proprietorship/partnership/ Pvt. Limited firm | |
| 8 | Samples and their test reports, wherever, applicable | |
| 9 | StatementoffinancialstandingfromC.A.orBankwithaddress& proofofaverage turnoverofthefirmminimum71lakhs forthelast3years | |
| 10 | Different quality samples, if submitted, for one item, that particular item will not be considered for evaluation. | |
| 11 | Undertakingforadherence&acceptancetoallTenderTermsasper Schedule – ‘A’ (No Deviation of TenderTerms) | |

(To be submitted on Company LetterHead).

AUTHORIZATION LETTER

We _____ (name of the bidder) hereby authorize Shri/Smt. _____
(name of the authorized person) to sign and submit the bid to RCB, Faridabad against their
tender No.: _____ Date: _____

Shri/Smt. _____ (name) is also authorized to negotiate the terms and
conditions pertaining to the said tender on behalf of M/s _____ (name of bidder). The
specimen signature of Shri/Smt. _____ (name) is appended below.

Specimen Signature:
Name: _____

The undersigned is authorized to delegate the authority on behalf of M/s _____ (name of bidder),

For _____ (name of bidder)

TENDER ACCEPTANCE LETTER

(To be submitted on Company Letter Head).

Date:

The Executive Director
Regional Centre for Biotechnology NCR
Biotech Science Cluster,
3rd Milestone, Faridabad–
Gurugram Expressway, Faridabad– 121001

SUB: Acceptance of Terms & Conditions of

Tender. Tender Reference No :-----

Name of Tender / Work: “Supplying, installation, testing and Commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana)”.

Dear Sir,

- I. I / We have downloaded / obtained the tender document(s) for the abovementioned ‘Tender/Work’ from the website(s) namely: www.rcb.res.in, <https://dbt.euniwizarde.com> as per your NIT/advertisement, given in the abovementioned website(s).
- II. I / We hereby certify that I / We have read the entire terms and conditions of the tender documents (including all documents like annexure(s), schedules(s), etc.), which form part of the contract agreement and I / We shall abide hereby by the terms / conditions/ clauses contained therein.
- III. The corrigendum(s) issued from time to time by your department/organization too has also been taken into consideration, while submitting this acceptance letter.
- IV. I / We hereby unconditionally accept the tender conditions of abovementioned tender document(s)/ corrigendum(s) in its totality/ entirety.
- V. I / We do hereby declare that our Firm has not been blacklisted/debarred by any Govt. Department/Public sector undertaking.
- VI. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject the bidder terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the fully said earnest money deposit absolutely.

Yours Faithfully,
Authorized
Signatory.
(Signature of the Bidder, with Official Seal)

NON-BLACK LISTING DECLARATION

FORMAT OF UNDERTAKING, TO BE FURNISHED ON COMPANY LETTER HEAD WITH REGARD TO
BLACKLISTING/ NON- DEBARMENT, BY ORGANISATION

UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT

To,
Executive Director
Regional Centre for Biotechnology NCR
Biotech Science Cluster,
3rdMilestone, Faridabad-Gurgaon Expressway, Faridabad

We hereby confirm and declare that we, M/s -----, is not blacklisted/
De-registered/ debarred by any Government department/ Public Sector Undertaking/ Private Sector/
or any other agency for which we have Executed/ Undertaken the works/ Services during the last 5
years.

For

Authorized Signatory

Date:

PART – B

INSTRUCTIONS TO BIDDERS

- I. The Tenderers should sign and stamp each page of the tender documents.
- II. The Tenderer may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is however, advised not to furnish superfluous information. No information shall be entertained after submission of tender documents unless it is called for by the RCB.
- III. Any information furnished by the tenderer found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering/taking up of work in RCB.
- IV. Any variation in the terms and conditions of the general/special conditions for payment, tender fees, security deposit, etc. is not acceptable to RCB and such tenders will be rejected straightaway.
- V. RCB reserves the right to award the contract in full or in part as per the decision of the competent authority
- VI. RCB is not responsible for any delay in receipt of the application/receipt of tender documents etc. It is the responsibility of tenderer to make sure that the tender is uploaded in time.
- VII. The contractor has to mention contact no. and the person to be contacted in case of any query.
- VIII. The tenderers shall attach the copy of PAN Card, Goods and Services Tax Registration.
- IX. Acceptance of tender shall rest with the RCB, which shall not be bound to accept the lowest tender and reserves to itself the right to reject any or all tenders received without assigning any reason therefore.
- X. Incomplete tenders are liable to be rejected.
- XI. Any bid received after the deadline for submission of bids, will be rejected.

Engineer in-charge

Signature of tenderer with seal & date

PART – C

GENERAL CONDITIONS OF CONTRACT

1.0 CONTRACT DOCUMENT

- a. The terms ‘Contract document’ means the Notice Inviting Tender, Tender form, Instructions to bidders, Special Conditions, General Conditions of Contract, Specifications, Price Schedule and Drawings and Articles of Agreement.
- b. “RCB” shall mean Regional Centre for Biotechnology with its present office at 3rd mile stone Faridabad - Gurgaon Expressway Haryana 121001.
- c. The Contractor shall mean the sole proprietor, or firm or company whether incorporated or not, undertaking the works and shall include the legal representative or such individual successors, heirs, administrators or assignees of such sole proprietor, firm or company, as the case may be or the persons composing such firm or company of the successors of such firm or company and the permitted assignees of such individual or firm or company.
- d. Client shall mean the officer designated by the Executive Director, RCB who shall supervise and shall be in charge of the work, and issue necessary instructions at site, on behalf of RCB.
- e. Contractor shall strictly conform to the specification, price schedule, general and special terms and conditions, if any, and other matter contained in the tender documents issued by the RCB.
- f. Failure of the successful contractor to lodge the required performance guarantee shall constitute sufficient grounds for the annulment of the Award and forfeiture of the Bid Security, in which event the RCB may make the Award to the next lowest evaluated tenderer, if there are no other tenderer, call for new bids.
- g. In the event of breach of contract by the contractor, the performance guarantee will be liable to be forfeited by RCB.
- h. The contractor whose tender is accepted will also be required to furnish by way of **Security Deposit** for the fulfilment of his contract, an amount equal to **5% of the actual work done value**. The Security deposit will be collected by deductions from each running bill as well as final bill of the contractor at the rates mentioned above.
- i. The Security Deposit will be released after the expiry of the Defects Liability Period of work (i.e. 12 Months) subject to satisfactory fulfilment of its obligations by the contractor under the work.
- j. The Contract Document and the General Conditions of the Contract (GCC) shall be executed as per the GCC for Construction Works 2020 notified by CPWD vide circular no. DG/CON/308 dated 05.12.2019.

2.0 DRAWINGS

- 2.1. On the award of work order under this work, the contractor shall immediately proceed with the preparation of drawing according to the work order to be carried out. Two sets of such working drawings including make of all items shall be submitted to RCB for its approval to ensure that work will be carried out in accordance with specification and proposed drawing including such changes as may have been mutually agreed upon. All the drawing shall be received by the Client for his approval within 07 days of award of work. Also, the contractor must furnish detailed bar chart showing the various activity w.r.t. time and must organize co-ordination meeting at the site to review the progress of work.

3.0 TIME FOR COMPLETION OF CONTRACT

- 3.1. Time for completion of total work shall be 04 months from the date of award of work or approval of drawing.

4.0 TIME AND EXTENSION FOR DELAY

4.1 If in the opinion of the Client the work is delayed by:

- a. Force majeure.
- b. Reasons of civil commotion, location combination of workers on strike or lock-out affecting any of the building trades.
- c. In consequence of the contractor for not having received in due time necessary instructions from the Client for which he shall have specifically applied in writing.
- d. Reasons of Client instruction:

The Client shall make a fair and reasonable extension of time for completion of the contract works. Then upon the happenings of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-charge but shall nevertheless use constantly his best endeavor to stop or prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Client to proceed with the works.

4.2 Request for rescheduling of date of completion and extension of time, to be eligible for consideration, shall be made by the Contractor in writing immediately after the happenings of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

4.3 In such case, the Client may give a fair and reasonable extension of time and reschedule the completion date. Such extensions shall be communicated to the Contractor by the Client in writing within 1 month of the date of receipt of such a request. Non-application by the Contractor for extension of time shall not be a bar for giving a fair and reasonable extension by Client and this shall be binding on the Contractor.

5.0 COMPENSATION FOR DELAY

5.1 Time is the essence of the contract. The time allowed for the work shall be strictly followed. If the supplier fails to complete the work on or before the stipulated date, then a compensation for delay of work @ 1.5% per month of delay of work to be computed on per day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work. The decision of Client about the delay shall be final and binding.

5.2 If the contractor after award of work fails to deliver any item / part of the work within the time period allowed, RCB reserves the right to remove that particular component from the scope of main contractor and get it done through some alternative resources at the cost of main contractor.

6.0 ESCALATION / PRICE VARIATION

No claim on account of any Price Variation / Escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ)/Price-Bid quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation/price variation clause shall be applicable on this contract.

7.0 INCOME TAX DEDUCTION

Income tax deductions shall be made from all payments made to the Contractor including advances against work done, in accordance with the Income Tax act prevailing from time to time.

8.0 TECHNICAL STAFF FOR WORK

The Contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose, the numbers to be deployed, their qualification, experience as decided by RCB shall be final and binding on Contractor. The Contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at Site, whenever required by RCB to take instructions.

Within 15 days from the date of letter of intent, the Contractor shall submit a site organizational chart and Resume including details of experience of the Project-in- Charge and other staff proposed by him and shall depute them on the Project after getting approval from Engineer-In-Charge. If desired by the Contractor at later date, the Project-in-Charge and other staff whose resume is approved by RCB can be replaced with prior written approval of RCB and replacement shall be with equivalent or superior candidate only. Decision of Engineer-In-Charge shall be final and binding on the Contractor.

Even after approving the site organizational chart, the Engineer-In-Charge due to nature and exigency of work can direct the Contractor to depute such additional staff as in view of Engineer-In-Charge is necessary and having qualification and staff from the Site shall only be with the prior written approval of Engineer-In- Charge. The Contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-In- Charge shall be final and binding on the Contractor.

In case the Contractor fails to employ the staff as aforesaid, he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 25,000 (Rupees Twenty-Five Thousand only) for each month of default in the case of each person. The decision of the Engineer-In-Charge as to number of Technical Staff to be adequate for the project and the period for which the required technical staff was not employed by the Contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the Contractor.

9.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION

The Contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up of labour camp and cost of same is deemed to be included in the rates quoted by the Contractor for the works. The Contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by Contractor after completion of the work. The Retention Money of the Contractor shall be released only after Contractor demolishes all structures including foundations and gives back clear vacant possession of this land. In the event the Contractor has to shift his labour camp at any time during execution of the work on the Instructions of local authorities or as per the requirement of the work progress or as may be required by RCB, he shall comply with such instructions at his cost and no claim whatsoever shall be entertained on this account.

10.0 WATCH & WARD AND LIGHTING

The Contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-In-Charge.

11.0 HEALTH & SANITARY ARRANGEMENTS

In case of all labour directly or indirectly employed in work for the performance on the Contractor's part of this contract, the Contractor shall comply with all rules and regulations framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

12.0 ORDER OF PRECEDENCE OF DOCUMENTS

In case of difference, contradiction, discrepancy, dispute with regard to Conditions of Contract, Specifications, Drawings, Bill of Quantities and Rates quoted by the Contractor and other documents forming part of the contract, the following shall prevail in order of precedence:-

- Contract Agreement
- Letter of Intent, detailed letter of Work Order along with statement of agreed variations and its enclosures.
- Description in Bill of Quantity / Schedule of Quantities
- Additional Conditions of Contract.
- Technical specifications (General / Special Technical Specification) as given in the Tender Documents.
- General Conditions of Contract.
- Drawings
- CPWD specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of Tenders.

- Relevant B.I.S. Codes.

If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer-In-Charge shall be the deciding authority with regard to the intention of the document which shall be final and binding on the Contractor.

Any error in description, quantity or rate in the Schedule of Quantities/items or Bill of Quantities or any omission there from shall not vitiate the contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to the Drawings and Specifications or from any of his obligations under the contract.

13.0 TECHNICAL SPECIFICATIONS AND STANDARDS

13.0

The materials & services to be provided by the tenderer under this contract shall conform to the technical specifications as laid down under this tender document and should be carried out to the complete satisfaction of the Client.

14.0 WORK OPEN TO INSPECTION

- (i) All works under or in course of execution or being executed in pursuance of the contract shall at all times be open to inspection and supervision by the Client and/or his authorized subordinates, and the Contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Client or his subordinate to visit the works shall have been given to the contractor, either himself be present to receive order and instructions, or have a responsible agent duly accredited in writing, present for that purpose. Order given to the contractor's agents shall be considered to have the same force as if the same had been given to the Contractor himself.
- (ii) All works shall be executed subject to the approval in all respect of the Client who shall be entitled to direct at what point or points and in what manner these are to be commenced, and carried out from time to time.

15.0 TIME SCHEDULE & PROGRESS

Time allowed for carrying out all the works as entered in the Tender shall be reckoned from the 10th day from the date on which the letter of Intent is issued to the Contractor. Time shall be the essence of the contract and Contractor shall ensure the completion of the entire work within the stipulated time of completion. The Contractor shall also furnish within 10 days from the date of letter of Intent, a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time. This

will be duly got approved from RCB. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/Network. No additional payment will be made to the Contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-In-Charge.

During the currency of the work the Contractor is expected to adhere to the time schedule on miles stone and total completion and this adherence will be a part of Contractor's performance under the contract. During the execution of the work Contractor is expected to participate in the review and updating of the Network/ BAR CHART undertaken by RCB. These reviews may be undertaken at the discretion of RCB either as a periodical appraisal measure or when the quantum of work order on the Contractor is substantially changed through deviation orders or amendments. The review shall be held at Site or any of the offices of RCB at the sole discretion of RCB.

If at any time, it appears to the Engineer-In-Charge that the actual progress of work does not conform to the approved programme referred above, the Contractor shall produce a revised programme showing the modifications to the approved programme by additional inputs to ensure completion of the work within the stipulated time. The Contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the Contractor.

Contractor shall submit fortnightly/ Monthly (as directed by Engineer-In-Charge) progress reports (5 copies) on a computer based program (program and software to be approved by Engineer-In-Charge) highlighting status of various activities and physical completion of work

16.0 NO COMPENSATION FOR FORECLOSURE/CANCELLATION/REDUCTION OF WORKS

If at any time after the commencement of the work RCB shall for any reason whatsoever is required to abandon the work or does not require the whole work thereof as specified in the Tender to be carried out, the Engineer-In-Charge shall give notice in writing of the fact to the Contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out or on foreclosure, neither shall he have any claim for compensation by reason of any alterations having been made in the original Specifications, Drawings, Designs and Instructions which shall involve any curtailment of the work as originally contemplated.

Provided that the Contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the Site of the work by the Contractor and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof and then taken back by the Contractor, provided however, that the Engineer-In-Charge shall have in all such cases the option of taking over all or any such materials at their purchase price or at local current rates whichever may be less. In the case of such stores having been issued by RCB and returned by the Contractor to RCB, credit will be given to him by the Engineer- In-Charge at rates not exceeding those at which they were originally issued to him after taking into consideration any deduction for claims on account of any deterioration or damage while in the custody of the Contractor and in this respect the decision of the Engineer-In-Charge shall be final.

17.0 RESTRICTION ON SUBLETTING

The Contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract and even then only with the prior written consent of RCB and such consent if given shall not relieve the Contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults or neglects of any sub-Contractor, his agents, servants or workmen as

full as if they were the acts, defaults or neglects of the Contractor, his agent, servants or workmen provided always that the provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

The Contractor may entrust specialist items of works to the agencies specialized in the specific trade. The Contractor shall give the names and details of such firm whom he is going to employ for approval of RCB. These details shall include the expertise, financial status, technical manpower, equipment, resources and list of works executed and on hand of the specialist agency. Specialist agency shall be engaged only after obtaining written approval of the Engineer-In-Charge.

18.0 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, structures should be put up by the Contractor anywhere on the project Site, neither any building built by him shall be un- authorized occupied by him or his staff.

19.0 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies operating at the Site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute the decision of RCB shall be final and binding on the Contractor. No claim whatsoever shall be admissible on this account.

20.0 SETTING OUT OF THE WORKS

The Contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works. If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the Contractor shall at his own expenses rectify such error to the satisfaction of Engineer-in- charge. The checking of any setting out or of any line or level by the engineers of RCB shall not in any way relieve the Contractor of his responsibility for the correctness. Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural, Plumbing and other services Drawings

21.0 NOTICE BEFORE COVERING UP THE WORK

The Contractor shall give not less than seven days' notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer- In-Charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of Inspection/ measurement without such notice to the Engineer-In-Charge or his consent being obtained, the same shall be uncovered at the Contractors expenses and he shall have to make it good at his own expenses.

22.0 SITE CLEARANCE

The Contractor shall ensure that the working Site is kept clean and free of obstructions for easy access to job Site and also from safety point of view. Before handing over the work to RCB the Contractor shall remove all temporary structures like the site offices, cement godown, stores, labour hutments etc., scaffolding rubbish, left over materials tools and plants, equipment's etc., clean and grade the Site to the entire satisfaction of the Engineer-In-Charge. If this is not done the same will be got done by RCB at his risk and cost.

The Contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter's works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the rates quoted by the Contractor shall be deemed to have included the same.

23.0 VALUABLE ARTICLES FOUND AT SITE

All materials like stone, boulders and other valuable materials of any description, antiques and all other similar things which shall be found in, under or upon the Site, obtained in the work of dismantling, excavation etc. will be considered government property and may be issued to the Contractor by the RCB, if required for use in this work at rates approved by RCB or the Contractor may be asked to dispose off these items at his cost.

24.0 SET-OFF OF CONTRACTOR'S LIABILITIES

RCB shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the Contractor under this agreement including Retention Money and proceeds of Security Deposit cum Performance Guarantee and from any other contract being executed by the Contractor for RCB.

25.0 ALTERATION IN SPECIFICATION, DESIGN & DRAWING

The Engineer-In-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original Specifications, Drawings, Designs and Instructions that may appear to him to be necessary during the progress of the work, and the Contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-In-Charge and such alterations, omissions, additions, or substitutions shall not invalidate the contract and any altered, additional or substituted work which the Contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the mainwork.

The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work price bears to the original contract work price, and the certificate of the Engineer-In-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extent of 25 percent of such extension shall be allowed to the Contractor.

The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order.

If the rates for the additional, altered or substituted work are specified in the contract for the work, the Contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a nearest similar item of work as are specified in the contract for the work. In case of composite tenders where two or more schedule of quantities/ Bill of Quantities form part of the contract, the rates shall be derived from the nearest similar item in the schedule of quantities/Bill of Quantities of the particular part of work in which the deviation is involved failing that from the lowest of the nearest similar item in other schedule of quantity. The opinion of the Engineer-In-Charge as to whether or not the rate can be reasonably so derived from the item in this contract will be final and binding on the Contractor.

If the altered, additional or substituted work includes any work for which no rate is specified in the contract for the work and which cannot be derived in the manner specified in sub para (i) and (ii) above from the similar class of work in the contract then such work shall be carried out at the rates entered in the Schedule of Rates (as mentioned in "Memorandum" to the "Form of Tender" for Civil/ Sanitary Works) minus/plus the percentage which the tendered amount of scheduled items bears with the estimated amount of schedule items based on the Schedule of Rates (as mentioned in "Memorandum" to the "Form of Tender" for Civil/ Sanitary Works). The scheduled items mean the items appearing in the Schedule of Rates (as mentioned in "Memorandum" to the "Form of Tender" for Civil/ Sanitary Works), which shall be applicable in this clause. This clause will apply mutatis mutandis to electrical work except that Electrical Schedule of Rates as mentioned in "Memorandum" to the "Form of Tender" will be considered in place of Civil/ Sanitary works Schedule of rates as mentioned in "Memorandum" to the "Form of Tender".

If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the Contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-In-Charge the rates which he intends to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-In-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 10% (Ten percent) to cover the Contractor's supervision, overheads and profit and pay the Contractor accordingly. The opinion of the Engineer-In-Charge as to the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the Contractor.

However, the Engineer-In-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner, as he may consider advisable. But under no circumstances, the Contractor shall suspend the work on the plea of non- settlement of rates of items falling under the clause.

26.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BADWORK

If it shall appear to the Engineer-In-Charge or his authorized subordinate in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the Contractor shall on demand in writing which shall be made within six months of the completion of the work from the ENGINEER-IN-CHARGE specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-In-Charge in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent of the estimated amount put to tender for every day not exceeding ten days, while his failure to do so shall continue and in the case of any such failure, the Engineer-In-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the Contractor.

27.0 CONTRACT AGREEMENT

The Contractor shall enter into a Contract Agreement with RCB within 10 days of the date of Letter of Intent or within such extended time, as may be granted by RCB. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the Contractor does not sign the agreement as above or does not start the work within 10 days of the issue of letter/telegram of intent, his earnest money is liable to be forfeited and letter of intent consequently will stand withdraw.

28.0 MANNER OF EXECUTION OF AGREEMENT

The agreement as per prescribed Performa as enclosed to the Additional Conditions of Contract shall be signed at the office of RCB within 10 days from the date of issue of Letter of Intent. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney in favour of the authorized representative duly attested by notary Public and the requisite documents/materials. Till a formal contract is prepared and executed, the Letter of Intent read in conjunction with the Bidding Documents will constitute a binding contract.

The agreement will be signed in two originals and three more copies, RCB shall retain the 'Original', the Contractor shall be provided with the other signed original and the remaining three copies will be retained by RCB. In case of a dispute of any kind whatsoever, the 'Original' retained by RCB alone shall be treated as the 'Original Agreement'.

The Contractor shall provide free of cost to RCB all the Engineering data, drawings and descriptive materials submitted along with the bid, in at least five (5) copies to form an integral part of the Agreement within seven (7) days after issuing of Letter of Intent.

Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to RCB with at least five (5) true hard bound copies of Agreement along with all the enclosures viz. letter of intent, Tender Documents etc. within thirty (30) days of its signing.

29.0 INSPECTION, TESTING AND QUALITY CONTROL

29.1. RCB and/or its nominated representative(s) will, inspect and/or test the work / material to confirm their conformity to the tender specification at no extra cost to the RCB. The Inspection Authority to be designated by the RCB shall specify what inspections and tests are required and where they are to be conducted. The RCB shall notify the contractor in writing in a timely manner of the identity of any representatives retained for these purposes. All work/materials shall be tested as stipulated in the latest specification of, Govt./institutes.

29.2. The inspections and tests may be conducted on the premises of the tenderer or its subcontractor(s) or at the point of delivery. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the Inspectors at no charge to the RCB.

- 29.3. The representative of Centre shall inspect or test the items, which fail to conform to the specifications. The RCB may reject such items and the tenderer shall replace the rejected items, at no cost to the RCB, within a stipulated time period.
- 29.4. The RCB's right to inspect, test and where necessary, reject the items after its arrival at the final destination shall in no way be limited or waived by reason of the items having previously been inspected, tested and passed by RCB or its representatives.
- 29.5. Nothing shall in any way release the tenderer from Guaranty or other obligations under the contract.
- 29.6. The RCB shall be the final authority to reject full or any part of the item which is not conforming to the specifications and other terms & conditions.
- 29.7. No payments shall be made for rejected items. Rejected items must be removed by the contractor within one week of the date of rejection at their own cost and replaced immediately. In case these are not removed, these will be auctioned at the risk and responsibility of the contractor without any further notice.

30.0 PACKING AND MARKING

- 30.1. The packing of items to be supplied directly at site, should be strong and durable enough to withstand, without limitation, the entire journey during transit including trans-shipment (if any), rough handling, open storage etc. without any damage, deterioration etc. As and if necessary, the size, weights and volumes of the packing cases shall also take into consideration, the remoteness of the final destination of the supplied items and availability or otherwise of transport and handling facilities at all points during transit up to final destination as per the contract.
- 30.2. The quality of packing, the manner of marking within & outside the packages and provision of accompanying documentation shall strictly comply with the requirements as per site condition. In case the packing requirements are amended due to issue of any amendment to the contract, the same shall also be taken care of by the tenderer accordingly.

30.3. Packing instructions:

The tenderer shall make separate packages for each consignee (in case there is more than one consignee mentioned in the work order) and mark each package on three sides with the following with indelible paint of proper quality:

- a. Contract number and date
- b. Brief description of items including quantity
- c. Packing list reference number
- d. Country of origin of supplied items
- e. Consignee's name and full address
- f. Tenderer's name and address

31.0 WATER AND POWER FOR FABRICATION

The contractor shall make his own arrangement of water required for execution of work at own cost. However, RCB shall provide power at one point for the proper execution of the work under normal circumstances, if available at site. Contractor shall be liable to pay for power charges for the actual consumption at the rates notified by RCB/THSTI from time to time. In case RCB is not in a position to supply the power, the contractor shall make his own arrangement so that the work does not suffer. However, no claim of the contractor whatsoever shall be entertained by RCB on this account.

32.0 CO-ORDINATION

Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the contractor. Proper co-ordination with other agencies will be contractor's responsibility. In case of any dispute the decision of RCB shall be final & binding on the contractor.

33.0 CLEARANCE OF SITE

The contractor shall have to remove all waste (Malba) and other unwanted material from site of work before handing over the installation to the RCB. The work shall not be treated as complete in all respects unless these requirements are fulfilled by him. In the event of contractor failing to do so, the RCB shall have right to get the site cleared at the cost of contractor.

34.0 COMPLIANCE WITH LABOUR LAWS AND OTHER LAWS

The Contractor shall abide by the Contract Labour, (Regulation and Abolition) Act 1970, and Contract Labour (Abolition and Regulation) Central rules 1971. The Contractor shall comply with the provisions of Payment of Wages Act 1936, Minimum Wages Act 1948, Employees Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act and other applicable regulations and other labour laws. Contract Labour as mentioned below is applicable amended up to date:

- 1) Industrial Disputes Act.
- 2) Industrial Establishment (Standing orders) Act.
- 3) Trade Unions Act.
- 4) The Factors Act.
- 5) Employees Provident Fund & Miscellaneous Provision Act.
- 6) Employees State Insurance Act.
- 7) Workmen's Compensation Act.
- 8) Payment of Gratuity Act.
- 9) Minimum Wages Act.
- 10) Payment of Wages Act.
- 11) Equal Remuneration Act.
- 12) Payment of Bonus Act.
- 13) National / Weekly Holiday Act.
- 14) Inter-state Migrant Workmen (Regulation of Employment and of service conditions) Act.

In case, RCB is made liable to pay any amount to any third party due to non-observance of any of the statutes/laws mentioned above, the same will be adjusted from any future payment due payable to the contractor or from performance guarantee available with RCB.

35.0 ENVIRONMENT, HEALTH AND SAFETY

The Contractor shall follow the Safety Code and Model Rules for the Protection of health and Sanitary arrangement for Workers as prescribed by the CPWD as regard to safety code and first aid facilities. In case, the Contractor fails to make the aforesaid arrangement, the Executive Director RCB shall be entitled to do so at the risk, responsibility and cost of the Contractor. Determent panel and legal action shall be taken in the event of any failure on the part of the contractor to discharge the safety obligations which are laid down in the contract.

36.0 PAYMENT OF WAGES BY THE CONTRACTOR

The Contractor shall directly pay to labour employed by him and shall be solely responsible for following all Government rules and regulations applicable for employment.

37.0 REMOVAL OF PERSON

The Client may require the Contractor to remove from the site of the work any person or persons in the Contractor's employment who may found to be incompetent or due to misconduct and the Contractor shall forthwith comply with such requirement /instructions.

38.0 WATCH AND WARD

The contractor shall be responsible for watch and ward of all the works and various materials till complete handing over the works to the RCB.

39.0 GUARANTEE CLAUSE

- 39.1 The contractor shall guarantee that all the material and components supplied and installed by him shall be free from defects due to faulty, material or workmanship.
- 39.2 The charge and any shortcomings found in the materials as specified shall be removed at no extra cost. The contractor shall provide the necessary personnel and tools for fulfilling the above guarantee. Period of the guarantee shall be (12) twelve months from the date of handing over the complete installations to RCB. During this period any or all components found to be defective shall be replaced or repaired free of cost.
- 39.3 If the defects are not removed within a reasonable time the RCB may arrange to do at the contractor's risk and cost, without prejudice to any other rights.
- 39.4 After Sales Service: After sales service should be made available on 24 (hrs) X 7 (days) X 365 (days) basis. Complaints should be attended promptly and properly within 24 hrs. The service should be provided directly by the tenderer or his authorized agent whose details shall be provided to the RCB/consignee within one month from the date of award of contract.

40.0 PRICE FALL CLAUSE

If at any time during the validity of the work the tenderer supplies such equipment's/stores as are under this tender enquiry, to any other organization at a price lower than the price quoted under this contract, he shall forthwith reduce the price payable under this tender for the equipment's/ stores being supplied from the date of coming into force of such reduction, the price of equipment's/stores shall stand correspondingly reduced.

In case of increase in market prevailing prices of the materials if claimed by the supplier, no price escalation will be payable.

41.0 OTHER CONDITIONS TO BE ADHERED BY TENDERER

14.1 The work is to be carried out as per the specifications in the tender and relevant standards of CPWD and BEAUREAU OF INDIAN STANDARDS (BIS).

41.2 The materials should be got approved before start of work and open to site inspection

41.3 The contractor shall clear the site after completion of work in all respects.

41.4 All the material used shall be one of the stipulated makes as per approved list of material.

41.5 The contractor shall comply with safety codes for Fire precaution, health requirement, scaffolds & ladders etc.

41.6 No T & P shall be issued by RCB.

41.7 All dismantled material for which credit is not being given in the tenders shall be handed over to the site engineer stored at proper place.

41.8 Contractor shall be fully responsible for safety of his workers and in case of any accident / mishap the entire responsibility shall be on the contractor.

41.9 The work shall be executed without any loss/damage to the RCB's properties.

41.10 The picture provided in the specification is for illustration purposes only and not to scale.

42.0 INTERPRETATION

42.1 In interpretation of specifications, the following orders shall be as followed:-

- a) Drawings
- b) Technical Specification
- c) Special Conditions of contracts
- d) General condition of contract

42.2 Matters not covered by the specification given in this contract as a whole shall be covered by relevant and latest Indian Standard codes/C.P.W.D code. If such codes on a particular subject have not been framed, the decision of the owner/ owner's representative shall be final and binding.

43.0 TERMINATION

43.1 Being a standing offer, the work can be terminated from either side by serving one month's notice to the other party. However, all the orders placed before the date of serving of such notice will be valid and binding on both the parties. Further, the orders placed under the work can also be terminated individually and the same will not lead to automatic termination of work unless so specified.

43.2 Termination of work order.

43.3 Notwithstanding anything elsewhere provided herein and in addition to any other right or remedy available to RCB under the work or otherwise including right of RCB to claim compensation for delay, RCB may, without prejudice to his right against contractor in respect of any delay, bad workmanship or otherwise or to any claims for damage in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this work or otherwise and whether the date for completion has or has not elapsed by intimation in writing, absolutely determine and terminate the Contract.

Default or failure by the contractor in any of the under mentioned cases, including but not limited to the following shall be the basis of taking action under this clause of the

contract.

- 1) Failure to provide at the jobsite, sufficient labor, material, equipment, machinery, and/or facilities, required for the proper and / or due execution of the work or any part thereof:
- 2) Failure to execute the works or any of them in accordance with the contract.
- 3) Disobedience of any order or instruction of the Site Engineer and /or Engineer-in-charge.
- 4) Negligence in carrying out the work or carrying out of work found to be unsatisfactory by the Client.
- 5) Abandonment of the works or any part thereof.
- 6) If the Contractor misconduct in any manner.
- 7) Delay in execution of work, which in opinion of Client shall delay the completion of work beyond the stipulated date of completion.
- 8) Distress, execution, or other legal process being levied on or upon any of the Contractor's goods and /or assets.
- 9) Death of Contractor (if an individual)
- 10) If the Contractor or any person employed by him shall make or offer for any purpose connected with the contract any gift, gratuity, royalty, commission, gratification or other inducement (whether money or in any other form) to any employee or agent to RCB.

The decision of the Executive Director, RCB as to whether any of the events/ contingencies mentioned in aforesaid clauses entitling RCB to terminate the contract has occurred shall be final and binding upon the Contractor. The jobs left however by the Contractor shall be got done at his risk and cost through the other agencies and the Contract shall be determined accordingly.

44.0 FORCE MAJEURE

44.1 The right of the contractor to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including but not limited to acts of god, or of the public enemy, restraints of a sovereign state, floods, unusual severe weather conditions.

45.0 ARBITRATION

45.1 Any claim, dispute or difference arising out of or in connection with this agreement and which cannot be settled by mutual consultations, shall be referred to sole Arbitration or an Arbitrator to be appointed by mutual consultations. The award of the Arbitrator shall be final and binding between the parties as per the terms and conditions of the Agreement to be executed on award of contract. The Arbitration proceedings shall be governed by the Arbitration and Conciliation Ordinance dated 26th March, 1996 and its amendments and shall be conducted in Haryana.

APPLICATION FORM

[NOTE: On the letterhead of the applicant including full postal address, email address, telephono. and faxno.]

Date: _____

The Executive Director
Regional Centre for Biotechnology
NCR Biotech Science Cluster
3rd Milestone Faridabad-
Gurgaon Expressway
Faridabad 121001.

Sirs,

1. Being duly authorized to represent and act on behalf of.....
(hereinafter referred to as “the Applicant”) and having reviewed and fully understood all the pre- qualification information provided, the undersigned hereby applies to be pre- qualified by yourselves as a tenderer for award of work(s) for Supplying, installation, testing and Commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana).
2. Attached to this letter are copies or original documents defining:
 - (a) the applicant’s legal status
 - (b) the principal place of business
 - (c) the place of incorporation (for applicants who are corporations) or the place of registration and the nationality of the owners (for applicants who are partnerships or individually owned firms)
 - (d) Annexure no. II to IX.
3. Your agency and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this application, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This letter of application will also serve as authorization to any individual or authorized representative or any institution referred _____ to _____ in the supporting information, to provide such information deemed necessary and requested by you to verify statements and information provided in this application, or with regard to the resources, experience, and competence of the Applicant.
4. Your agency and its authorized representatives may contact the following persons for further information on general, personnel, technical and financial enquiries.

Contact 1: Name, email and

Phone no.

Contact 2: Name,

email and phone no.

5. This application is made with the full understanding that:
- (a) Bids submitted by applicants will be subject to verification of all information submitted at the time of bidding
 - (b) Your agency reserves the right to:
 - amend the scope and value of the contract/bid under this project; in such event, bids will only be called from pre-qualified bidders who meet the revised requirements; and
 - reject or accept any application, cancel the pre-qualification process, and reject all applications without assigning reasons or incurring any liability thereof; and
 - (c) Your agency shall not be liable for any such actions and shall be under no obligation to inform the applicant.
6. The undersigned declares that statements made and the information provided in the duly completed application are true and correct in every detail.

Signed and sealed, Name

For and on behalf of.....

GENERAL INFORMATION

| | |
|--|---|
| Name of Firm | |
| Head office address | |
| Telephone | Contact No |
| | |
| Fax. No. | Email ID |
| | |
| Place of Incorporation registration | Year of incorporation/registration |
| | |

Signature and seal of the Authorized Signatory of the bidder

FINANCIAL CAPABILITY

| Financial Year | Annual Turn Over in Indian Rupees (or equivalent to Indian Rupees) as per Audited Balance Sheet |
|----------------|---|
| 2016-17 | • |
| 2017-18 | • |
| 2018-19 | • |

NOTE: The above data is to be supported by audited balance sheets

1. Attach copies of audited balance sheets duly certified by the chartered accountant for all three years (**2016-17, 2017-18 & 2018-19**). Audited Balance sheet should mention the membership number of chartered accountant issued by ICAI along with full address.
2. Attach recent solvency certificate from bankers. The certificate should be not more than one-year-old from the date of submission of bid.

Signature and seal of the Authorized Signatory of the bidder

EXPERIENCE OF COMPLETION OF PROJECTS OF SIMILAR NATURE & COMPLEXITY

(During last seven years ending last day of month previous day of last day of submission of tender)

| Sl. No. | Name of work/project and location | Owner or sponsoring organization | Cost of work in Lacs | Date of commencement as per contract | Stipulated date of completion | Actual date of completion | Name and address/ telephone number of officer to whom reference maybe made | Remarks |
|---------|-----------------------------------|----------------------------------|----------------------|--------------------------------------|-------------------------------|---------------------------|--|---------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Pleaseattachsupportingdocuments (completioncertificates alongwithorder copies) for the above information

Signature and seal of the Authorized Signatory of the bidder.

LITIGATION DETAILS (COURT CASES/ARBITRATION)

| Year | Name of the work | Name of the client with address | Title of the court case/ Arbitration | Detail of the Court/ Arbitrator | Status pending/ decided | Dispute Amount (Current Value, the equivalent) in case of court cases/arbitration | Actual awarded amount (Rs.) in decided court case/ arbitration |
|-------------|-------------------------|--|---|--|--------------------------------|--|---|
| | | | | | | | |
| | | | | | | | |

Signature and seal of Authorized Signatory of bidder

CERTIFICATE FOR SITE INSPECTION

Certified that we..... (Name of tenderer) have visited the site on dated.....
and assessed the nature and amount of work involved before submitting our offer. We will be able to complete
the works within the stipulated time and also certified that we will be able to supply the material/ executing
the works as per specification to suit the site conditions.

Address of site: -

Regional Centre for Biotechnology,
NCR-Biotech Science Cluster,
3rd Milestone, Faridabad-Gurugram
Expressway, Faridabad 121001, Haryana.

Signature of Tenderer with Seal & Date

FORM OF AGREEMENT

This Agreement made on the _____ day of _____ 20____ between Regional Centre for Biotechnology (RCB), Faridabad-Haryana for entering into the work(s) for “Supplying, installation, testing and Commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana)” (hereinafter called “The Employer”) who enters into this Agreement of the one part and M/s..... (hereinafter called "The Contractor") of the other part.

Whereas the Employer is desirous that certain works should be executed by the Contractor, viz _____ ("the Works") and has accepted a Bid by the Contractor for the execution and completion of the works and the remedying of any defects therein.

Now this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Award;
 - (b) The said Bid;
 - (c) The General Conditions of Contract;
 - (d) Prequalification document
 - (e) Instructions to Tenderers and Specific Conditions of Contract;
 - (f) The Specification;
 - (g) The Drawings;
 - (h) The Priced Bid
 - (i) Any other relevant documents referred to in this Agreement or in the aforementioned documents
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of this work.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or only such other sums as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, Sealed, and Delivered by the Said

BindingSignatureforandonbehalf
of _____ RCB-
FaridabadBindingSignatureof
Contractor_____

In the presence of:-

Witness(1):

Witness(2):

SCHEDULE OF CONTRACT

| | | |
|-----------|-------------------------------|---|
| 1. | Earnest Money to be deposited | Rs. 2,82,800/- |
| 2. | Time of Completion | 04 months from the date of award of Contract |
| 3. | Compensation for delay | 1.5% per month to be calculated on per day basis. |
| 4. | Defect Liability Period | 12 months from the date of completion and handing over of work. |
| 5. | Terms of Payments | 30 days after submission of bill invoice and required documents, warranty certificate etc. |

1.0 ELIGIBILITY CRITERIA

1.1. The tenderer must be a Goods Service Tax (GST) registered firm / company. Tenderer must be a Manufacturer or Contractor. (sub-authorization/Joint-venture/partnership shall not be accepted).

1.2 The tenderer should have successfully completed similar works during last seven years ending on the previous day of the last day of submission of tender either of the following: -

One similar work of value not less than **Rs. 113.15 Lakhs** in the last 7 years

OR

Two similar works each of value not less than **Rs. 84.85 Lakhs** in the last 7 years

OR

Three similar works of value not less than **Rs. 56.60 Lakhs** in the last 7 years ending on previous day of last day of submission of tender.

Similar work means **Supplying, installation, testing and commissioning of Out**

Door Electrical Sub- Station in any other Govt. Departments / universities / PSU's, Biotech companies, Research institution & pharmaceutical laboratories or in reputed private sectors during last seven years). Self-attested copies of the completion certificates issued by the Executive Engineer/Head of department/ owner are required to be enclosed with the technical bid. The tenderer should also give completed details of the concerned authority such as name with designation, valid address, telephone/ mobile number with STD Code, etc. The completed works will be open to inspection and in case works is not up to the standard, the tender will summarily be rejected & no queries will be entertained in this regard. Refer "Annexure-IV".

1.3 Average annual financial turnover should be at least Rs. 71.00 Lakhs during the immediate last three consecutive financial years.

1.4 The bidder shall have minimum solvency of Rs. 56.60 Lakhs. Solvency certificate from the Bidder's Banker shall be submitted.

1.5 The firm should have not been blacklisted, debarred, declared non performer or expelled from any work of Union Government/ State Governments/ PSUs etc. during the last 5 years. They should also submit a self-declaration on its letter head for the same. The firm should also provide information regarding litigation / arbitration cases for the last five years as per Annexure-V.

2.0 CRITERIA FOR EVALUATION OF THE TECHNICAL AND FINANCIAL BID

This is an item rate contract that includes Supplying, installation, testing and Commissioning of Package Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana). All offers should be submitted in two sealed parts: Technical and Price Bids, separately. The proposal should include details of the technical design based on the proposed layout and bill of quantities (BOQ). Interested contractors should visit the site for physical check and status of the site condition. The technical and financial bids shall be jointly weight age in the proportion of 60:40 i.e. 60% for the technical bid and 40% for the financial bid.

3.0. (i) Criteria for reevaluation of the technical bid: The total marks assigned for Technical bid are 100. The technical bid marked as envelope 1 will be opened first and will be evaluated on the following parameters:

| S.No. | Attributes | Evaluation |
|--------------|--|---|
| 1. | <p>Financial strength</p> <p>(i) Average annual (last three years) turnover of Rs. 71.00 Lakhs per year 16 marks</p> <p>(ii) Solvency Certificate of Rs. 56.60 Lakhs 04 marks</p> | <p>(20 marks)</p> <p>(i) 60% marks for minimum eligibility criteria</p> <p>(ii) 100% marks for twice the minimum eligibility criteria or more</p> <p>In between (i) & (ii) – on pro-rata basis for similar works.</p> |
| 2. | <p>Experience in similar class of work</p> <p>i One similar works contract of Rs. 113.15 Lakhs or more or</p> <p>ii Two similar works contract of Rs. 84.85 Lakhs or more or</p> <p>iii Three similar works contract of Rs. 56.60 Lakhs or more</p> | <p>(20 marks)</p> <p>(i) 60% marks for minimum eligibility criteria of works</p> <p>(ii) 100% marks for twice the minimum eligibility criteria or more</p> <p>In between (i) & (ii) – on pro-rata basis</p> <p>For similar works</p> |
| 3. | <p>Performance on timely completion of works (claimed under S.No. 2 of this table).</p> | <p>(20 marks)</p> <p>(i) 60% marks for minimum eligibility criteria of works</p> <p>(ii) 100% marks for twice or more the eligibility</p> <p>(iii) In between pro-rata</p> |
| 4 | <p>Experience in supply, installation, commissioning and testing of Package Type Outdoor Substation of value not less than 56.60 Lakhs in last seven (7) years</p> <p>if not</p> | <p>(10 marks)</p> <p>nil -</p> |
| 5. | <p>Performance reports (Quality of works) of works referred to in S.No. 2 and 3 of this table</p> | <p>(30 marks)</p> |
| | (i) Outstanding in minimum one work | 30 |
| | (ii) Very Good in minimum one work | 20 |
| | (iii) Good in minimum one work | 10 |
| | (iv) Poor | 0 |

Total = 100 marks

The financial bids of only those successful bidders who obtain minimum 70/100 in Technical evaluation will be opened for further consideration.

- (ii) **Financial bid evaluation: - The total marks assigned for financial bid are 100.** The bidder quoting lowest rates amongst all the eligible bidders will be awarded full 100 marks. Marks to other bidders will be awarded on pro-rata basis.

I. Financial score of the bidders will be determined using the following formula:

$FS = 100 \times (FL/F)$ Where,

‘FS’ is the financial score of an applicant,

‘FL’ is the lowest Financial Proposal among all and

‘F’ is the financial proposal of the particular applicant.

Combined scores of respective bidders shall be obtained by sum of their respective technical bid scores (out of 60) and their respective Price (financial) bid scores (out of 40) i.e. $S = TS \times 0.60 + FS \times 0.40$. The Tenderer who obtains the highest combined score will be awarded the contract.

4.0 General Conditions:

4.1 The bid of any bidder who has not complied with one or more of the conditions will be summarily rejected.

4.2 Conditional bids will also be summarily rejected.

4.3 The technical bids will be evaluated by the expert technical committee of the Institutes on the basis of technical bid and technical specifications. The authority for the acceptance of the tender rests with RCB.

Financial bids of only technically qualified bidders will be opened for evaluation in the presence of qualified bidders.

4.4 However, RCB shall not be bound to accept the lowest or any other tender or to assign any reason for non-acceptance or rejection of a tender. RCB reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender paper.

4.5 Even though any bidder may satisfy the above requirements, he/she would be liable to disqualification if he/she has:

- Made misleading or false representation or deliberately withheld information in the forms, statements and enclosures required in the eligibility criteria document
- Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/ weaknesses etc.

5.0 SCOPE OF WORK

The scope of work includes Supplying, installation, testing and commissioning of Package Type Out Door Electrical Sub- Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR Biotech Science Cluster at Faridabad (Haryana):

5.1 Submission of Technical Data Sheet, Catalogues and Literatures for equipment.

5.2 Submission of any other relevant drawing and technical details considered essential and required for successful completion of the works and asked by the employer.

5.3 The executing agency/contractor shall submit the working drawings, technical literature, brochure, literature, technical specifications and other details, sufficiently in advance for approval of the Employer, giving sufficient time for its review. The work shall be taken up only after approval of the drawings and

specifications.

5.4 Supply and erection of materials, items and equipment/s for execution and completion of internal construction and finishing work, Electrical and associated works and services etc. required as per approved designs and drawings.

5.5 The Employer reserves the right to do minor changes in the given layout plan or change the quantities of items as given in the tender documents. All such changes shall be incorporated and the work shall be executed by the contractor.

5.6 Site preparatory works including dismantling/demolition of existing walls, clearance of malba, making opening in walls and any other ancillary work required to complete the works. The contractor shall take all precautions not to damage any part of the remaining building and the structure. All the opening and dismantling works required for the execution of the works shall be repaired by the contractor in good condition at no extra cost.

5.7 Testing and commissioning of all the equipment/s, items, systems and services supplied and installed in the Laboratory Facility in the presence of representative/s of Employer and submission of compiled report.

5.8 Preparation and submission of 3 sets of AS BUILT DRAWINGS, OPERATION & MAINTENANCE MANUAL AND INSTRUCTION' for the complete installation

5.9 Providing training to the Employer staff on operation, servicing and maintenance of all engineering installations and handling of emergencies due to fire or engineering system failures.

5.10 The Bidder/executing agency shall check and verify the correctness of dimensions and quantities given and indicated in the tender drawings. The work shall be executed as given and detailed in the scope of work, technical specifications and the final design and drawings approved by the Employer.

6.0 STATUTORY APPROVALS:

The required statutory approvals from authorities like and not limited to Fire Authorities, Pollution Control Board,

Electrical Inspectors, etc., if required and applicable, shall be obtained by the Contractor. RCB shall only provide the required assistance in getting such clearance/s, as required. Official Statutory fees, if any, shall be paid to the concerned department/authority directly by RCB.

6.1 TESTING AND COMMISSIONING

After completion of the construction and installation works, all the equipment, systems and services shall be commissioned and tested to check the operation and performance of each of the equipment and system. The Contractor shall provide all the test and measuring instruments, tools, tackles, manpower etc. required for the Testing and Commissioning process.

6.2 DOCUMENTS AND DETAILS TO BE SUBMITTED ON COMPLETION

On Completion of the works, the Contractor shall submit the following documents to RCB in three sets:

- Complete Set of 'AS BUILT DRAWINGS'
- Operation and Maintenance Instructions & Manuals for individual Equipment and Systems
- Recommended List of Spares and Consumables
- Preventive Servicing and Maintenance Schedule
- The Contractor shall submit the Technical Specifications and Data sheet for all the equipment/s and systems supplied and installed.
- The Contractor shall submit a written undertaking that spares and after sales services for all the equipment, systems and services installed in the facility shall be made available for a period of at least five years from the date of handing over the facility. The after sales services may be availed by the Employer from the executing Contractor under a separate Operation and Maintenance Contract.

7.0 SPECIAL CONDITION FOR ELECTRICAL WORKS AND PACKAGE TYPE SUB STATION

CONFORMITY WITH STATUTORY ACTS, RULES, REGULATIONS, STANDARDS AND SAFETY CODES

7.1 Indian Electricity Act and Rules

All electrical works in connection with installation of electric sub-stations shall be carried out in accordance with the provisions of Indian Electricity Act, 2003 and the Indian Electricity Rules, 1956 amended upto date. Wherever I.E. rule numbers have been indicated, they are based on I.E. Rules, 1956 amended upto date

7.2 Specifications

The electrical works shall also conform to CPWD General Specifications for Electrical Works Part I (Internal) 2013 and Part II (External) 1994 as amended upto date wherever relevant and applicable.

7.3 Indian Standards

The sub-station equipment and their installation shall conform to relevant Indian standards.

7.4 Other Acts and Rules

The installation shall also comply with the following:-

- Factories Act wherever applicable.
- Any other Act or Rules in force.

7.5 Safety Codes and Labour Regulations

In respect of all labour employed directly or indirectly on the work, the tenderer, here in after called the contractor, at his own expense will arrange for the safety provision outlined in section of these specifications to comply with the statutory regulations, ISI recommendations and CPWD codes. In case of default, the department shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor.

The contractor shall provide necessary barriers warning signals and other safety measures to avoid accidents. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect.

Nothing in these specifications shall be construed to relieve the contractor of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with applicable statutory regulations and safety codes in force from the safety angle.

7.6 INFORMATIONS AND DRAWINGS TO BE SUPPLIED BY THE DEPTT

The tender specifications shall indicate, for a particular job, the reference drawings to help the contractor to work out the tender. The drawings shall also indicate the schematic of main connections and shall form part of the specifications. All the drawings specified and issued with the tender are for purpose of tendering only and shall be deemed to be specification drawings.

7.7 SCHEDULE OF WORK

The department shall supply a schematic diagram and a schedule of work as per format detailing the equipment; materials required type and anticipated quantity/ numbers in respect of each item.

7.8 SITE CONDITIONS

All the equipment's and their installation shall be suitable for the environmental conditions encountered at the location as indicated in Appendix II.

7.9 INSPECTION OF SITE AND COLLECTION OF DATA

The contractor shall be deemed to have examined the tender documents, detailed specification, data etc. and to have visited the site or ascertained all relevant details for offering suitable equipment/ installation.

7.10 WORKS TO BE DONE BY THE CONTRACTOR

- In addition to supply, installation, testing and commissioning of all equipment's as per schedule of work in accordance with 1.5.2 the following work shall be deemed to be included within the scope of work, to be executed by the contractor.
- All minor building works such as equipment foundation if required cutting and making good holes, grouting of channels belts as required. Cutting and making good damages etc.
- Provision of supports / clamps for equipment, cables etc. wherever required.
- Small wiring, inter-connection etc. inclusive of all materials and accessories, necessary to comply

- with the regulations as well as proper and trouble free operation of the equipment.
- Closing of the cable entry points in sub-station against seepage of water, rodents etc.
- Tools and tackles required for handling and installation.
- Necessary testing equipment for commissioning. Watch and Ward of materials and/or installation and equipment till their handing over to the department.

7.11 INTER CHANGEABILITY

All similar equipment, materials, removable parts of similar equipment etc. shall be inter-changeable with each other.

7.12 INTERFERENCE WITH COMMUNICATION EQUIPMENT

Suppressors or other protection devices shall be provided, if required as per schedule of quantities, wherever the sub-station installation is likely to interfere during the operation with any other electric or electronic equipment.

7.13 EXTENT OF WORK

The scope of work shall consist of cost of all materials, labour i/c supervision, installation, calibration, adjustments as required for commissioning of the sub-station. The term complete installation shall mean, not only, major item of the plant and the equipment's covered by these specifications, but also, incidental sundry components necessary for complete execution and satisfactory performance of installation with all labour charges, whether or not specifically mentioned in the tender documents, which shall be provided by the contractor at no extra cost

7.14 COMPLETENESS OF TENDER

All fittings, unit assemblies' accessories, hardware foundation bolts, terminals blocks for connections, cable glands and miscellaneous materials and accessories of items of work which are useful and necessary for efficient assembly and working of the equipment shall be deemed to have been included within the scope of the work in the tender and within the overall details for complete item whether they have been specifically mentioned or not.

7.15 DATA MANUALS AND DRAWINGS TO BE FURNISHED BY CONTRACTOR

After Award of Work, the contractor shall submit the following drawing within a fortnight of the award of the work or as specified in tender document which shall prevail, for approval by the department.

General arrangement or location drawing of the equipment complete with dimensions and clearances.

General arrangement drawing of H.V. Panel, Transformers, M.V. panels, Earthing, Cable route etc. including details of grouting of channels / bolts of various equipment's.

All panels' schematics & wiring diagram including control wiring.

Bar chart indicating general programme for supply, installation, testing and commissioning and handing over.

Any other drawing or data that may be necessary for the job.

7.16 BEFORE COMMENCEMENT OF INSTALLATION

The contractor shall also furnish 3 copies of detailed installation, operation and maintenance manuals of manufacturers for all items of equipment together with all relevant data sheet, spare parts catalogues, repairs, assembly and adjustment procedure etc., in triplicate.

7.17 QUALITY OF MATERIALS AND WORKMANSHIP

All parts of equipment shall be of such design, size and material so as to function satisfactorily under all rated conditions of loading and operation. All components of the equipment shall have adequate factors of safety. Materials/components which are not conforming to standards laid down by Bureau of Indian Standards (BIS) shall be got approved from the department before use on the work.

The entire work of fabrication, assembly and installation shall conform to sound engineering practice and on the basis of "fail safe" design. The mechanical parts subject to wear and tear shall be of easily replaceable type.

The construction shall be such as to facilitate ease of operation, inspection, maintenance and repairs. All apparatus shall also be designed to ensure satisfactory operation under working conditions as specified.

7.18 INSPECTION, TESTING AT MANUFACTURERS WORKSHOP

The contractor will be required to furnish such facilities as will be necessary for inspection of the equipment before dispatch at the manufacturer's works and also for witnessing such tests, at the works, if so required by the department. The contractor shall furnish information for this purpose and will also give

sufficient notice regarding the dates proposed for such test to Inspection agency.

7.19 TESTCERTIFICATE

Copies of all documents for routine, acceptance and type test certificates of the equipment carried out at the manufacturers premise shall be furnished to the department along with supply of the equipment.

7.20 DISPATCH OF MATERIALS ANDSTORAGE

The contractor shall commence work as soon as the drawings submitted by him are approved. The contractor should dispatch all materials to site in consultation with the department where suitable storage accommodation may be made available to him temporarily .Forth is purpose the programme of dispatches of materials shall be framed RCB in view the building progress so that suitable storage accommodation could be made available to the contractor. Safe custody of all machinery and equipment suppliedbythecontractorshallbehisownresponsibilitytillthefinaltakingoverbythe CPWD.

7.21 COORDINATION WITH OTHERAGENCIES

The contractor shall coordinate his work and cooperate with other agencies by exchange of all technical information like details of foundation if required, weight, over all dimensions, clearance and other technical data required for successful and proper completion of his portion of the work in relation of the work of others without any reservation. No remuneration should be claimed from the department for such technical cooperation. Care shall be taken not to damage the water proofing done in the case of substations constructed below ground level. If any unreasonable hindrance is caused to other agencies and any completed portion of the works has to be dismantled and redone for want of the cooperation and coordination by the contractor during the course of work, such expenditure incurred will be recovered from the contractor during the course of work, if the restoration work to the original condition of specification of the dismantled portion of the work was not undertaken by the contractor.

7.22 CARE OF BUILDINGS

Care shall be taken, while handling/ installing the equipment to avoid damage to the building. On completion of the installation, the contractor shall arrange to repair all damages to the building caused during plant installation so as to bring to the original condition. He shall also arrange to remove all unwanted waste materials from substation room and other areas used by him.

7.23 PAINTING ANDPROTECTION

All damages to painting during transport and installation shall be set right to the satisfaction of the department before handing over. All structural frame work for support of various items of equipment shall be given the final coat of paint of approved shade at site after erection is complete.

Additional protection measures against corrosion shall be provided when installed in special environment

7.24 TRAINING OF DEPARTMENTALPERSONNEL

The operation and maintenance staff of the THSTI shall be associated with the contractor's personnel during the installation, testing and commissioning of the equipment.

7.25 COMPLETION DRAWING

Three sets of completion drawings comprising the following shall be submitted by the contractor while handing over the installation:

- Equipment layout drawing(s) giving complete details of the entire equipment's.
- Electrical drawings for the entire electrical equipment showing cable sizes,
- Equipment capacities, switch-gear's ratings, control components, control wiring etc.
- Schematic diagram of the entire sub-station installation

7.26 FINAL INSPECTION AND TESTING

When the installation is complete, the contractor shall arrange for inspection and testing of the installation. Test results obtained shall be recorded. The installation shall not be accepted until it complies with the requirement of these Specifications. The Sub Station installation shall be got inspected by the contractor from local licensee and/or CEA/local govt. authority and their clearance taken before energizing the Sub Station. All the observations/ deficiencies pointed out by the inspecting authorities shall be complied with by the contractor on priority.

The department shall render all help and pay mandatory charges to CEA and local licensee, if any, in this regard.

7.27 DATE OF ACCEPTANCE

The contractor shall operate the substation for a period of fifteen days after it is energized. The date of taking over of the substation shall be reckoned after its trouble free operation during the running in period.

7.28 AFTER SALES SERVICES

The contractor shall ensure adequate and prompt after sales services in the form of maintenance personnel and spares as and when required with a view to minimizing the breakdown period. Particular attention shall be given to ensure that all spares are easily available during the normal life of installation.

8.0 TECHNICAL SPECIFICATIONS OF THE COMPACT SUB-STATION

8.1 CODE & STANDARDS:

All equipment and material shall be designed manufactured and tested in accordance with the latest applicable IEC standards. The 11KV Package Substation Design including high voltage transformer, HT & LT switch gear panels must be as per latest IEC standard including amendment

DEFINITIONS

The definitions of terms are in accordance with relevant Indian standards.

Extra Low Voltage (ELV) : Not exceeding 50 Volts

Low Voltage (LV) : Normally exceeding 50 Volts but not exceeding 250 Volts

Medium Voltage (MV) : Normally exceeding 250 V but not exceeding 650 V.

High Voltage (HV) : Normally exceeding 650 V but not exceeding 33 KV

Extra High Voltage (EHV) : Normally exceeding 33KV.

(Source: NBC, 2005, Part-8, Section 2.1.75 to 2.1.79)

8.2 DESIGN CRITERIA

Compact Sub-station shall consist of **11 KV SF6 Insulated compact switchgear with VCB as protection to Transformer, Transformer and L.T. Switchgear** with all connection accessories, fitting & auxiliary equipment in a pre-fabricated enclosure to supply Low-voltage energy from high-voltage system as detailed in this specification. The complete unit shall be installed on a sub-station plinth (base) as **Outdoor sub- station** 11 KV Load Break Cable Switches control incoming – outgoing feeder cables of the 11KV ring/radial distribution system. The Vacuum Circuit Breakers shall be used to control and isolate the Distribution transformer. The transformer's L.T. side shall be connected to L.T. Switchgear. The connection cables to consumer shall be taken out from the L.T. switchgear(s).

The pre-fabricated compact sub-station shall be designed for

- (a) Compactness,
- (b) Fast installation,
- (c) Maintenance free operation,
- (d) Safety for worker/ operator & public.

8.3 OUTDOOR ENCLOSURE

8.3.1 The enclosure shall be made of Galvanized Sheet Steel or such other material tropicalized to meet Indian weather condition.

8.3.2 The base of the enclosure shall ensure rigidity for easy transport & installation.

8.3.3 The structure of the substation shall be capable of supporting the gross weight of all the equipment & the roof of the sub-station compartments shall be designed to support adequate loads. There shall be proper / adequate ventilation inside the enclosure so that hot air inside enclosure is directed

out by help of duct. Louvers apertures shall be provided so that there is circulation of natural air inside the enclosure.

8.3.4 The complete design shall be modular in design i.e. small sheets shall be joined together to make a big sheet. This helps in avoiding skewing, bending, bending of the single sheets on doors and sides due to its own load under service. The doors shall be provided with proper interlocking arrangement for safety of operator.

8.4 Public Nuisance Protection

There shall be no bolting arrangement on the doors and sides (periphery) so that there is no access of water, dust inside. This also ensures that unit is well protected from outside from public nuisance owing to its being located in a crowded and compact places. Hinges and locks on the door shall be so designed that they are either not accessible to public from outside or cannot be tampered with.

8.5 Interconnection

The connection of HT switchgear to Transformers shall be with the help of suitable size of cables, from Transformer to LT switchgear with the help of suitable size of Copper/ Aluminum bus bars. The interconnection inside the unit shall be the responsibility of the supplier.

8.6 Internal fault

Failure within the unitized sub-station due either to a defect, an exceptional service condition or normal operation may initiate an internal arc. Such event may lead to the risk of injury, if persons are present. It is desirable that the unit shall be tested for Internal Arc fault test as per latest IEC 61330.

8.7 Covers & Door

Covers & doors are part of the enclosure. When they are closed, they shall provide the degree of protection specified for the enclosure. Additional wire mesh may be used with proper Danger board for safety of the operator. All covers, doors or roof shall be provided with locking facility or it shall not be possible to open or remove them before doors used for normal operation have been opened. The doors shall open outward at an angle of at least 90° & be equipped with a device able to maintain them in an open position. The top cover shall be slightly inclined so that there is no accumulation of water during rainy season or otherwise. Proper padlocking facility shall be provided for doors of each compartment.

8.8 Earthing

All metallic components shall be earthed to a common earthing point. It shall be terminated by an adequate terminal intended for connection to the earth system of the installation, by way of flexible jumpers/strips & lug arrangement. The continuity of the earth system shall be ensured taking into account the thermal & mechanical stresses caused by the current it may have to carry. The components to be connected to the earth system shall include:

- (a) The enclosure of sub-station,
- (b) The enclosure of high voltage switchgear & control gear from the terminal provided for the purpose,
- (c) The metal screen & the high voltage cable earth conductor,
- (d) The transformer tank or metal frame of transformer,
- (e) The frame &/ or enclosure of low voltage switchgear.

8.9 Internal Illumination

There shall be arrangement for internal lighting activated by associated switch on doors for HV, Transformer & LV compartments separately.

8.10 Labels

Labels for warning, manufacturer's operating instructions etc. & those according to local standards & regulations shall be pasted/ provided inside and shall be durable & clearly legible.

8.11 Painting and Fabrication Process

- (f) The paints shall be carefully selected to withstand tropical heat & rain. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling. For this purpose poly-urethane (or such other suitable) paint shall be used.
- (g) Special care shall be taken by the manufacturer to ensure against rusting of nuts, bolts and fittings during operation. All bushings and current carrying parts shall be cleaned properly after final painting.
- (h) The fabrication process shall ensure that there are no sharp edges on the GI sheets used. For modular structure the two smaller units shall be joined together by Clinching Technology so that there is no piercing of the material being joined. This type of joint shall ensure robust mechanical strength to the complete structure so made.

8.12 11 KV SWITCHGEAR (Gas Insulated Compact Switchgear)

Extensible SF6 Insulated Compact Switchgear as required shall consist of following items:

a) Load Break Cable Switch

Load Break Cable Switch with integral earth switch both having full making capacity shall be used for Incoming and Outgoing cables if used in a ring. Suitable arc proof tested cable covers shall be provided for each cable switch. The cable covers accessible from front shall be mechanically interlocked to its corresponding earth switch shall be mechanically interlocked to its corresponding cable switch for safety of the operator.

b) Vacuum Circuit Breaker

Vacuum Circuit Breakers shall be used for distribution network of HT switchgear. Vacuum Circuit Breaker complete with operating mechanism, self-powered microprocessor based protection relay with associated Current Transformers shall be used for control and protection of Transformer. The VCB being fixed type shall be provided with an Isolator in series for isolation purpose for maintenance. An integral cable earthing switch with full making capacity shall be provided. The arc proof cable covers accessible from front shall be mechanically interlocked to the earthing switch, which in turn shall be interlocked to the isolator for safety of the operator.

The above Load Break Cable Switches, vacuum circuit breakers, Bus bars should be mounted inside a robotically welded sealed for life, stainless steel tank of 3 mm thick sheet metal. The operating mechanism of the switches and breakers shall be outside the SF6 tank and accessible from front. The tank should be filled with SF6 gas at adequate pressure. The degree of protection for gas tank should be IP67. There shall be provision for filling the SF6 gas at site. Moreover, the Stainless Steel Gas Tank shall confirm to the sealed pressure system as per IEC and ensure the gas leakage upto 0.1% per year as per IEC.

The VCB is required to control distribution Transformer and relay settings and Current Transformers shall be

selected accordingly.

c) General Finish

Totally enclosed, metal enclosed, vermin and dust proof suitable for tropical climate use as detailed in the specification.

d) Ratings

The bus bars shall have continuous rating as per BOQ/design requirement. The isolator shall have a continuous rating of 630 Amps. VCB breaker shall have a continuous rating of 200 Amps in accordance with relevant IS/IEC standard.

e) Breaking & Making Capacity

The Load Break Cable Switches shall be capable for breaking rated full load current. The same along with its earthing switch shall also be suitable for full making capacity of the system as specified. The complete switchgear shall be suitable for breaking capacity of 21 KA symmetrical at 11000 volts three phase.

f) Busbar

Switchgear shall be complete with all connection bus bars etc. Copper bus bars continuous rating shall be as per BOQ. The bus bars should be fully encapsulated by SF6 gas inside the steel tank.

g) Protection

The Circuit Breaker shall be fitted with microprocessor based self-powered relay inside the front cover to avoid any tampering. The same shall be used in conjunction with suitable Current Transformer and Tripping Coil for fault tripping of the Circuit Breakers.

h) Cable Termination

Each Cable compartment shall be provided with three bushings of adequate sizes to terminate the incoming and outgoing 11 KV 3 Core cables. There shall be enough height (Minimum 450 mm) from the base to the mounted switchgear so that the cables can be bent and taken vertically up to the bushings. The Cable termination shall be done by Heat Shrinkable Termination method so that adequate clearances shall be maintained between phases for Termination. Access to all the cables should be possible from the front of panel. Cable Termination boots shall be supplied by the switchgear manufacturer.

i) Locking Arrangement

Suitable padlocking arrangements shall be provided as stated below:

- CB manual operating handle in the "OFF" position
- Each feeder panel operation handles in 'Closed', 'Open' or 'Earth' position.
- Each isolator operating handle in 'Closed', 'Open' or 'Earth' position

j) Technical data of the equipment

The main components of a prefabricated- package substation are Transformer, High-voltage switchgear-control gear, Low-voltage switchgear-control gear and corresponding interconnections (cable, flexible, busbars) & auxiliary equipment. The components shall be enclosed, by either common enclosure or by an assembly of enclosure. All the components shall comply with their relevant IEC standards.

| | | |
|------|--------------------------------|--|
| I. | HT Section Compartment | <p>Extensible radial compact switchgear with VCB 1 No. 630A Vacuum circuit breaker and with O/C + E/F relay type VIP35 (for Local transformer control) with SF6 gas pressure Indicator. (Sealed unit), separate CTs for protection of class 5 P-10, 2.5 VA and class 1.0 for Metering, IDMT RELAY for circuit Breakers - Self powered, Merlin Gerin type VIP35, Neon cable indicator for circuit breaker, Integral earthing facility for ring switches, Shunt trip coil rated for 230V AC, 11 KV Isolators units - 2 No., Trip push button for circuit breaker/Isolator, SF6 gas Pressure Indicator, Padlocking facility.</p> |
| II. | Transformer Compartment | <p>1No. 11KV/433V, 3Phase 50Hz 1250KVA, DYN11, cast Resin Dry type with copper conductor dry type distribution transformer with corrugated tank arrangement having a no load voltage ratio of 11 KV/433V. Tappings +5% to - 7.5% in steps shall be provided on HV winding. Changing of taps shall be carried out by means of ON load tap changer. The transformer shall be manufactured as per IS 11171, Other specifications like Impedance, losses & Temperature size as per ECBC Norms.</p> |
| III. | LT System Compartment | <p>LT System Compartment shall have the following switchgear on LT side of transformer: 1 nos. 2000A manually operated spring charged four poles MDO ACB fixed type suitable for bus bar connection on incoming side and bus-trucking on outgoing side. The ACB's shall be complete with Microprocessor based Release (SR-18G) for overload, short circuit, Inst. Earth Fault Protection complete as required. and meters etc. as required as per specifications/drawings Al PVC sleeved Bus bar from Transformer Secondary to LT section 2000 Amp Capacity. Metering for Incomer:- 0-500V Voltmeter with VSS, 0-2000A Ammeter with ASS & CT's, Digital Multifunction meter with protection MCB etc. Indicating lamps (LED Type) for incomer:- 3 numbers phase indicating lamps suitable for 230 V AC fittings with back up MCB, 1 No. ON/OFF indicating lamp on each incomer feeder for indicating the status of feeder with back up MCB, 1 No. T-N-C breaker control switch (Trip/Neutral/Close), Protective devices for incomers:- The incoming ACB shall be provided with the following protective devices- Shunt trip coil, Under voltage and over voltage relay with inbuilt timer for transformer incomers, Separate CT's shall be provided for protective system and measuring system. CT's shall be suitable for APFCR of capacitor bank of suitable VA (for Transformer In comer) Outdoor Structure:- Outdoor type enclosure having modular</p> |

| | | |
|--|--|--|
| | | <p>construction of 2mm Galvanized Sheet Steel for better heat dissipation and providing robust construction. The Enclosure shall have IP54 degree of protection for HT & LT switchgear compartment & IP23 degree of protection for Transformer compartment. The enclosure exterior shall be painted with epoxy based powder paint (of approved shade). Each compartment will be provided with the door and pad locking arrangement. Doors of transformer compartment are fitted with Arc reflectors from the inside for providing better safety. The Compartment illumination lamp with door operated switch shall be provided for each compartment.</p> |
|--|--|--|

8.13 TYPE / ROUTINE TEST ON PACKAGE SUBSTATION:

The Package Substations offered must be type tested as per IEC 61330. The copy of type test summary should be submitted along with the tender.

1. Routine Tests: The routine tests shall be made on each complete prefabricated Substation.

- a. Voltage tests on auxiliary circuit.
- b. Functional test.
- c. Verification of complete wiring.

2. Test Witness

: Routine test shall be performed in presence of Owner's representative if so desired by the Owner at factory before dispatch. The cost for inspection shall be borne by the contractor. The Contractor shall give at least fifteen (15) days advance notice of the date when the tests are to be carried out.

• Test Certificates:

Certified reports of all the tests carried out at the works shall be furnished in three (3) copies for approval of the engineer in charge.

ACCEPTABLE MAKES

| S.No | Item | Makes |
|-------------|---|--|
| 1. | Transformer | ABB/C&S/Schneider / Kriloskar |
| 2. | H.T.VCB Panel | ABB/C&S/Schneider / Kriloskar |
| 3. | Microprocessor Relay | Shall be of same make as of HT VCB |
| 4. | Main L.T Panel | ABB / L&T / Schneider / TRICOLITE |
| 5. | Sandwich type Bus Duct / Rising Main | L&T / C & S / G.E / ABB / Schneider . |
| 6. | Air Circuit Breaker | L&T /Schneider/ Siemens / ABB / C&S |
| 7. | MCCB | L&T /Schneider /Siemens/ ABB / C&S |
| 8. | MCB | L&T /Schneider / Siemens / ABB / C&S |
| 9. | Capacitor Panel | Schneider / ABB / L&T |
| 10. | Intelligent APFC Relay | L&T /Siemens/ EPCOS/ /Trinity / BCH |
| 11. | Thyristor Switch | Schneider/Siemens/ ABB/ /Trinity / BCH |
| 12. | Selector Switches | Kaycee / L&T / AE / GE / C&S |
| 13. | Voltmeter / Ammeter | AE / L&T / IMP / MECO . |
| 14. | Multi Function meter | L&T / Schneider Enercon / /Secure / Trinity. |
| 15. | L.E.D. | L&T /BCH / GE / C&S |
| 16. | Push Buttons | L&T / Siemens /C&S |
| 17. | 11 KV End Joints | Raychem / Denson / M-Seal / Safe Kit / 3M |

| | | |
|-----|-------------------------------|---|
| 18. | LT current transformer | AE / KAPPA/ Schneider / Siemens / L&T |
| 19. | Power Capacitors – ISI marked | Pristine / Schneider /Asian /C&S / L&T / ABB . |
| 20. | 11 KV XLPE cables ISI Marked. | Havells / Universal/ KEI / Polycab |
| 21. | LT Cable | Havells / Universal / KEI / Polycab |
| 22. | LT Current Transformers | AE /Kappa / Siemens / Crompton/MECO |
| 23. | Cable Lugs | Dowells / Johnsons / Lotus / Wago/Action |
| 24. | Cable Glands | Commet / Gripwel / Dowells / Metro |
| 25. | Control fuses | L&T / Siemens / ABB / C&S / GE |
| 26. | Fire Extinguisher | Any ISI marked. |
| 27. | Rubber Mat | Any ISI marked. |
| 28. | First Aid Box | St. Johan Ambulance Brigade/Indian Red Cross society. |
| 29. | Compact Sub Station | Compton Greaves /Kriloskar / ABB . |
| 30. | Cement (43 Grade OPC) | Ultratech / ACC / Birla / JK |
| 31. | TMT Reinforcement Steel | SAIL / TISCO / VIZAG or approved equivalent |
| 32. | Structural Steel | SAIL / TISCO / VIZAG or approved equivalent |
| 33. | Admixture for Concrete | FOSROC, SIKA, CICO, BASF |
| 34. | Course Aggregate | As per approved sample |

| | | |
|-----|---------------------------------|--|
| 35. | Fine Aggregate | As per approved sample |
| 36. | Ready Mixed Concrete (RMC) | ACC, L&T, AHLCON, JK CEMENT, UNITECH, GRASIM |
| 37. | Drain Covers | K.K. MANHOLES, MOONLITE, S.K. PRECAST |
| 38. | Synthetic Enamel Paint & Primer | Asian Paint/Nerolac/Burger |

Any item not included above shall conform to the relevant BIS specifications, wherever applicable

ANNEXURE – IX

PROFORMA OF PRICE BID

The rates to be quoted for each item of the Price Bid/BOQ in Indian Rupees, both in figures and words for the execution of work on 'item rate Basis' including all the required material, labour, accessories, tools & tackles etc., taxes, duties & levies for the complete work, as per Scope of Work, Specifications and approved design & drawings.

BOQ

-----ATTACHED SEPARTELY-----

| Schedule of Quantities | | | | | |
|---|---|------|------|------|--------|
| NAME OF WORK-Supplying, installation, testing and commissioning of Package Type Out Door Electrical Sub-Station including allied civil work and External Electrical Installations for BSL-3 Building in NCR-Biotech Science Cluster at Faridabad(Haryana) | | | | | |
| S.No | Description of item | Qty | Unit | Rate | Amount |
| 1 | Earth work in excavation by mechanical means (Hydraulic excavator) /manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan)including getting out and disposal of surplus excavated earth with in campus up to 2 km lead and lift up to 1.5 m, as directed by Engineer-in-Charge. | | | | |
| | All kinds of soil | 40 | cum | | |
| 2 | Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil with in campus up to 2 km lead, as directed, within campus. | | | | |
| | All kinds of soil | 70 | cum | | |
| 3 | Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: | | | | |
| | 1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size). | 18 | cum | | |
| 4 | Centering and shuttering including strutting, propping etc.and removal of form for : | | | | |
| (A) | Foundations, footings, bases of columns, etc. for mass Concrete. | 102 | sqm | | |
| (B) | Walls (any thickness) including attached pilasters, buttresses,plinth and string courses etc. | 155 | sqm | | |
| 5 | Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. | | | | |
| | Thermo-Mechanically Treated bars of grade Fe-500D or more. | 1725 | kg | | |
| 6 | Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. | | | | |
| | NOTE- (1) Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of RMC. | | | | |
| | All works upto plinth level. | 60 | cum | | |
| 7 | Add or deduct for using less/extra cement in the items of design mix over and above the specified cement content therein. | 30 | Qtl | | |
| 8 | Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains | | | | |

| | | | | | |
|-----|--|-----|-----|--|--|
| | of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100mm c/c on both ways , neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick , 100 mm wide MS sheet duly painted over priming coat , reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc i/c cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge. | 59 | sqm | | |
| 9 | Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50mm including strengthening with 2mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. | | | | |
| | Made of G.I. wire of dia 4mm. | 160 | sqm | | |
| 10 | Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete | 500 | kg | | |
| 11. | Painting with synthetic enamel paint of two or more coats on new work of approved brand and manufacture to give an even shade : | 24 | sqm | | |

| | | | | | |
|-----|--|-----|-------|--|--|
| | Electrical Works | | | | |
| | HT CABLES | | | | |
| 12 | Supply of 11 KV grade, 3 core, stranded, Aluminum conductor, XLPE insulated, PVC sheathed, galvanized flat steel/strip armoured and PVC overall sheathed, screened cables, confirming to IS : 7098 part II (with latest amendments) suitable for earthed system. The cable shall bear ISI certification mark. 3 C X 240 Sq.mm | 300 | meter | | |
| | LAYING OF HT CABLE | | | | |
| 13 | Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing masonry duct as required. | | | | |
| A | Above 120 sq. mm and upto 400 sq. mm | 300 | meter | | |
| | END TERMINATION (11 KV CABLE) | | | | |
| 14 | supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminum conductor cable of 11 kV grade as required. | | | | |
| (a) | 240 Sq.mm (indoor) | 6 | set | | |
| | | | | | |

| | | | | | |
|---|--|-----|-------|--|--|
| 15 | Supplying, laying & Fixing of following sizes of 1.1 KV grade single core/multicore aluminum conductor XLPE insulated and PVC sheathed armoured cable conforming to IS 1554 (Part-I) 1988. | | | | |
| | 3.5 Core, 300 sq.mm. XLPE Aluminum Cable | 500 | meter | | |
| 16 | Supplying and making end termination with brass compression gland and aluminum lugs for following size of PVC insulated and PVC sheathed / XLPE aluminum conductor cable of 1.1 KV grade as required. | | | | |
| A | 3½ X 300 sq. mm (70mm) | 20 | each | | |
| OUTDOOR PACKAGE TYPE SUB-STATION | | | | | |
| 17 | Supply, installation, Testing & commissioning of outdoor type Package Substation of approved brand and manufacturer complete with 11 KV Breaker, 1250 KVA Transformer, 2000 A ACB, Earthlingbus , Pad Locks, I/C connection between RMU and Transformer with 3Cx 240 sq. mm XLPE cable and connection from transformer to LT. ACB will be with bus bar of suitable rating, 11 KV Cable termination kits for RMU etc. complete as per following requirements on existing foundation as required at site. | | | | |
| HT Section Compartment | | | | | |
| | Non Extensible sealed, 11KV 3-way Ring main Unit comprising of 1 No. Circuit Breaker for 1250 KVA Transformer and 2 nos 11KV isolator units - QTY : 1 Set as per details below: | | | | |
| | 11 KV BREAKER | | | | |
| | 1 No. 630A Vacuum circuit breaker and with O/C + E/F relay type VIP35 (for Local transformer control) with SF6 gas pressure Indicator. (Sealed unit), separate CTs for protection of class 5 P-10, 2.5 VA and class 1.0 for Metering. | | | | |
| | IDMT RELAY for circuit Breakers - Self powered, Merlin Gerin type VIP35 | | | | |
| | Neon cable indicator for circuit breaker | | | | |
| | Integral ear thing facility for ring switches | | | | |
| | Shunt trip coil rated for 230V AC | | | | |
| | 11 KV Isolators units - 2 No. | | | | |
| | Trip push button for circuit breaker/Isolator | | | | |
| | SF6 gas Pressure Indicator | | | | |
| | Padlocking facility | | | | |
| Transformer Compartment | | | | | |
| | 1No. 11KV/433V , 3Phase 50Hz 1250KVA , DYn11, cast Resin Dry type with copper conductor dry type distribution transformer with corrugated tank arrangement having a no load voltage ratio of 11 KV/433V. Tapping +5% to - 7.5% in steps shall be provided on HV winding. Changing of taps shall be carried out by means of ON load tap changer. The transformer shall be manufactured as per IS 11171 | | | | |
| | Other specifications like Impedance, losses & Temperature size as per ECBC Norms. | | | | |

| | | | | |
|--|---|-----|--|--|
| LT System Compartment | | | | |
| LT System Compartment shall have the following switchgear on LT side of transformer: | | | | |
| 1 nos. 2000A manually operated spring charged four poles MDO ACB fixed type suitable for bus bar connection on incoming side and bus-trucking on outgoing side. The ACB's shall be complete with Microprocessor based Release(SR-18G) for overload, short circuit, Inst. Earth Fault Protection complete as required. and meters etc. as required as per specifications/drawings | | | | |
| Al PVC sleeved Bus bar from Transformer Secondary to LT section 2000 Amp Capacity. | | | | |
| Metering for Incomer | | | | |
| 0-500V Voltmeter with VSS | | | | |
| 0-2000A Ammeter with ASS & CT's | | | | |
| Digital Multifunction meter with protection MCB etc. | | | | |
| Indicating lamps (LED Type) for incomer | | | | |
| 3 numbers phase indicating lamps suitable for 230 V AC fittings with back up MCB | | | | |
| 1 No.ON/OFF indicating lamp on each incomer feeder for indicating the status of feeder with back up MCB | | | | |
| 1 No. T-N-C breaker control switch (Trip/Neutral/Close) | | | | |
| Protective devices for incomers | | | | |
| The incoming ACB shall be provided with the following protective devices:- | | | | |
| Shunt trip coil | | | | |
| Under voltage and over voltage relay with inbuilt timer for transformer incomers | | | | |
| Separate CT's shall be provided for protective system and measuring system. CT's shall be suitable for APFCR of capacitor bank of suitable VA (for Transformer Incomer) | | | | |
| Outdoor Structure | | | | |
| Outdoor type enclosure having modular construction of 2mm Galvanized Sheet Steel for better heat dissipation and providing robust construction. The Enclosure shall have IP54 degree of protection for HT & LT switchgear compartment & IP23 degree of protection for Transformer compartment. The enclosure exterior shall be painted with epoxy based powder paint (of approved shade). Each compartment will be provided with the door and pad locking arrangement. Doors of transformer compartment are fitted with Arc reflectors from the inside for providing better safety. The Compartment illumination lamp with door operated switch shall be provided for each compartment | | | | |
| Outdoor Package type substation as per details described as above, SLD and as per specifications | 2 | Set | | |

| | | | | | |
|----|--|--|--|--|--|
| 18 | Fabrication, supply, installation, testing and commissioning of floor mounted cubicle extendable type LT panels of approved brand and manufacturer, suitable for 415 V, 3 phase, 4 wire, 50 Hz AC supply system (IP 54 degree of protection) fabricated in compartmentalized design from CRCA sheet made out of 2 mm thick for frame work & covers 3mm thick for gland plates including cleaning & finishing complete with 7 tank process for powder coating in approved shade, having Four Pole Al alloy bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 31 MVA for 1 sec, bottom base channel of 100 X 50 X 5mm MS Channel. Entire panel shall have 2 Runs of common copper earth bar of size 25mm X5mm at the rear side, interconnections from main bus bar to switch gears with required size of AL bus bar and control wiring with 2.5 Sq.mm PVC insulated FRLS copper conductor single core cable, cable alleys, cable gland plates etc. i/c providing and fixing following switch gears: | | | | |
| | Incoming: | | | | |
| | 2000 A, 4P ACB 50 KA, EDO - 2 No. | | | | |
| | 800 A, 4P ACB 50 KA, EDO - 3 No. | | | | |
| | Bus Coupler | | | | |
| | 2000 A, 4P ACB 50 KA, EDO - 1 No. | | | | |
| | Bus Bar | | | | |
| | 2500 A TPN AL. bus bar with coloured heat shrinkable PVC sleeve-1 Set | | | | |
| | Outgoings: | | | | |
| | 63 A, 4P MCCB 36 KA - 2 No. | | | | |
| | 100 A, 4P MCCB 36 KA - 2No. | | | | |
| | 400 A, 4P MCCB 50 KA - 2 No. | | | | |
| | 1000 A, 4P ACB 50 KA, EDO - 2 No. | | | | |
| | PLC based panel for Auto Start, Auto Load Sharing and Logic Load Management and Synchronization Panel complete with Control / Power wiring and necessary hardware as required for Package type substation with 2 Nos. 1250 KVA T/R, 3 Nos. 500 KVA DG, and 1 Coupler. It shall be supervised and integrated toSCADA. | | | | |
| | Instruments: | | | | |
| | Multi Function Meter (MFM) with CTs, ratio of CTs shall be as per Incomers ACB & Fuses/MCB/Selector Switch -4 Set | | | | |
| | Note : Each 4-pole EDO type Motorized ACB having release with following functions :Protection for O/C, S/C, E/F and Metering for Current- I1,I2,I3,In,Iavg,Imax, Voltage- Vph, Vline,Power- KW,KVA,KVAR, Power factor, Maxi meters/minimeters Energy –KWh,KVAh,KWArh, Demand current- Ph& Neutral, Demand power-KWh, Under & over frequency, current unbalance, reverse power, phase seq. reversal, Last 10 faults with date and time stamping, Last 10 alarms with date and time stamping, Current and Voltage Harmonics till 31st multiple with Waveform capture. All release data should be available over Ethernet. | | | | |

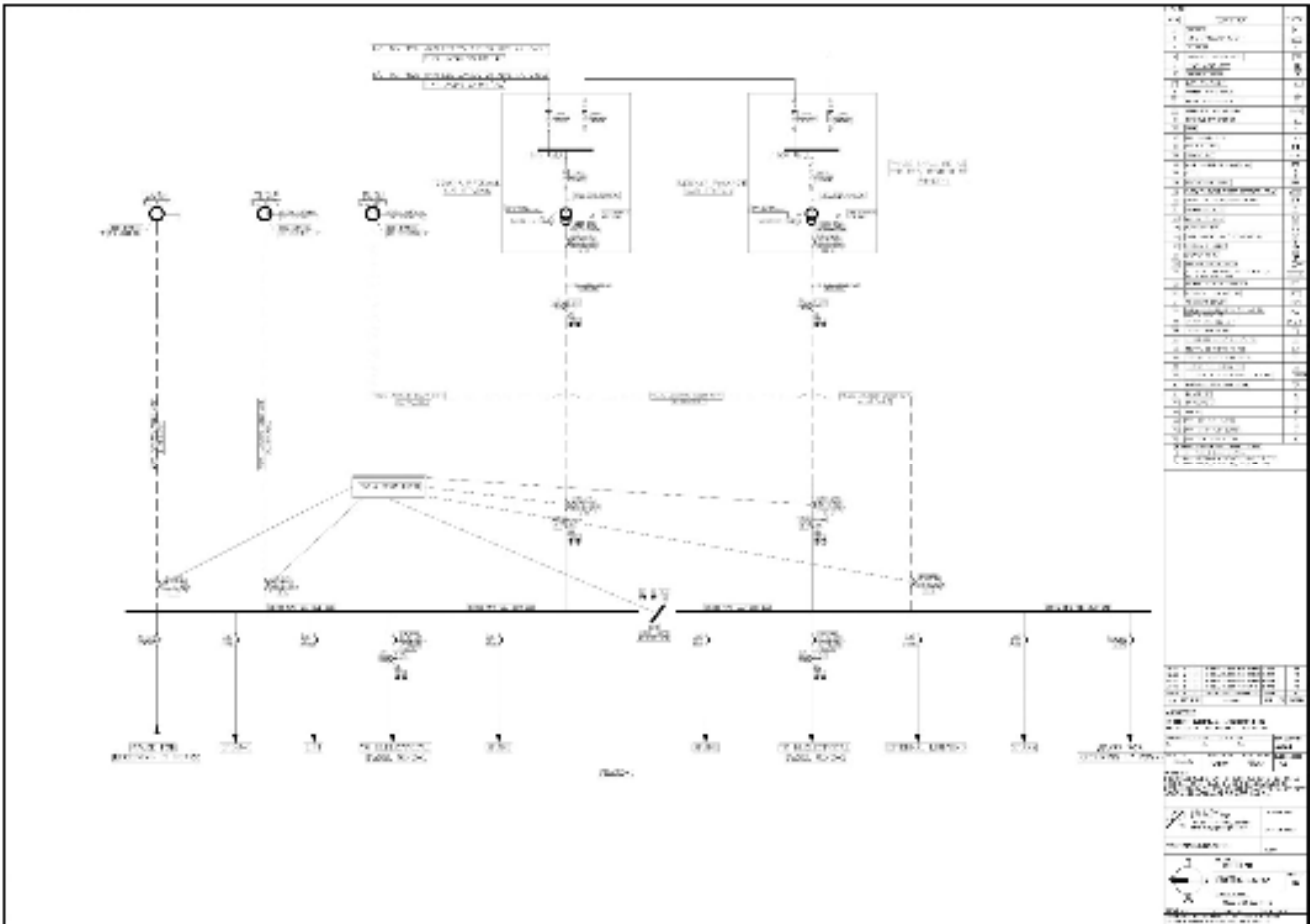
| | | | | | |
|----|---|-----|-------|--|--|
| | TNC breaker control switch. | | | | |
| | ON, OFF, Trip, Ready to close and RYB indication lights With backup MCBs of 2A. | | | | |
| | 96 x 96 sq.mm display module mounted on panel door Directly connected from release to display all parameters of ACB/MCCB. | | | | |
| | Note : The Panels should be SCADA Compatible for Monitoring & Control on Ethernet and should include all accessories as required. | | | | |
| | DG Set LT Panel as per specifications and details above complete as required. | 1 | Set | | |
| | EARTHING | | | | |
| 19 | Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required. | 10 | each | | |
| 20 | Providing and fixing 25 mm X 5 mm copper. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required. | 100 | meter | | |
| 21 | Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/Coke and salt as required. | 4 | set | | |
| 22 | Providing and fixing 25 mm X 5 mm GI strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required. | 40 | meter | | |
| 23 | Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required. | 40 | meter | | |
| 24 | Providing and fixing 25 mm X 5 mm GI strip on surface or in recess for connections etc. as required. | 40 | meter | | |
| 25 | Providing and fixing 6 SWG dia G.I. wire on surface or inrecess for loop ear thing as required. | 150 | meter | | |
| 26 | Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refillingetcas required. | | | | |
| A | 250mm dia RCC Pipe | 20 | meter | | |
| 27 | Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required. | | | | |
| A | 120mm dia PVC pipe | 20 | meter | | |

| | | | | | |
|----|---|-------------|----------------------|--|--|
| 28 | Shifting of 500 KVA DG set (in working condition under AMC with OEM, M/S Kirloskar) from existing location to new location ,(within two KM distance in the campus) including installation, testing and commissioning complete with provision of required exhaust system as per standard norms, fabrication and installation of diesel tank of appox.990 litre capacity per tank etc. Complete in all respect as per the site requirement and direction of Engineer –in –charge. (Cost of spare parts, oil, lubricants required ,if any, on actual basis shall be paid extra/ borne by the department) | 2 | Job | | |
| 29 | Shifting of 500 KVA DG set (in unused condition) from existing location to new location ,(within one KM distance in the campus) including Servicing, installation, testing and commissioning complete with provision of required exhaust system as per standard norms, fabrication and installation of diesel tank of appox.990 litre capacity per tank etc. Complete in all respect as per the site requirement and direction of Engineer –in –charge. (Cost of spare parts, oil, lubricants etc. required ,if any, shall be paid separately on actual basis/provided by the department) | 1 | Job | | |
| 30 | Shifting of 320 KVA DG set (in unused condition) from existing location to new location ,(within two KM distance in the campus) including Servicing, installation, testing and commissioning complete with provision of required exhaust system as per standard norms, fabrication and installation of diesel tank of appox.990 litre capacity per tank etc. Complete in all respect as per the site requirement and direction of Engineer –in –charge. (Cost of spare parts, oil, lubricants etc. required ,if any, shall be paid separately on actual basis/provided by the department) | 2 | Job | | |
| 31 | Recovery on account of the cost of old dismantled material as retrieved from old DG sets as detailed below- 1. AMF panel of (a) 500 KV with all accessories (b) 320 KV with all accessories (c) L.T. Panel board | 2 3 3 | Each Each Each | | |
| 32 | Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe of 50 mm dia conforming to IS 1239/3589 i/c fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation & providing cement concrete blocks as supports, anticorrosive paint two or more coats ,refilling the trench etc. complete as required. | 180 | meter | | |
| 33 | Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)- 50 mm nominal bore | 2 | each | | |
| | Total | | | | |

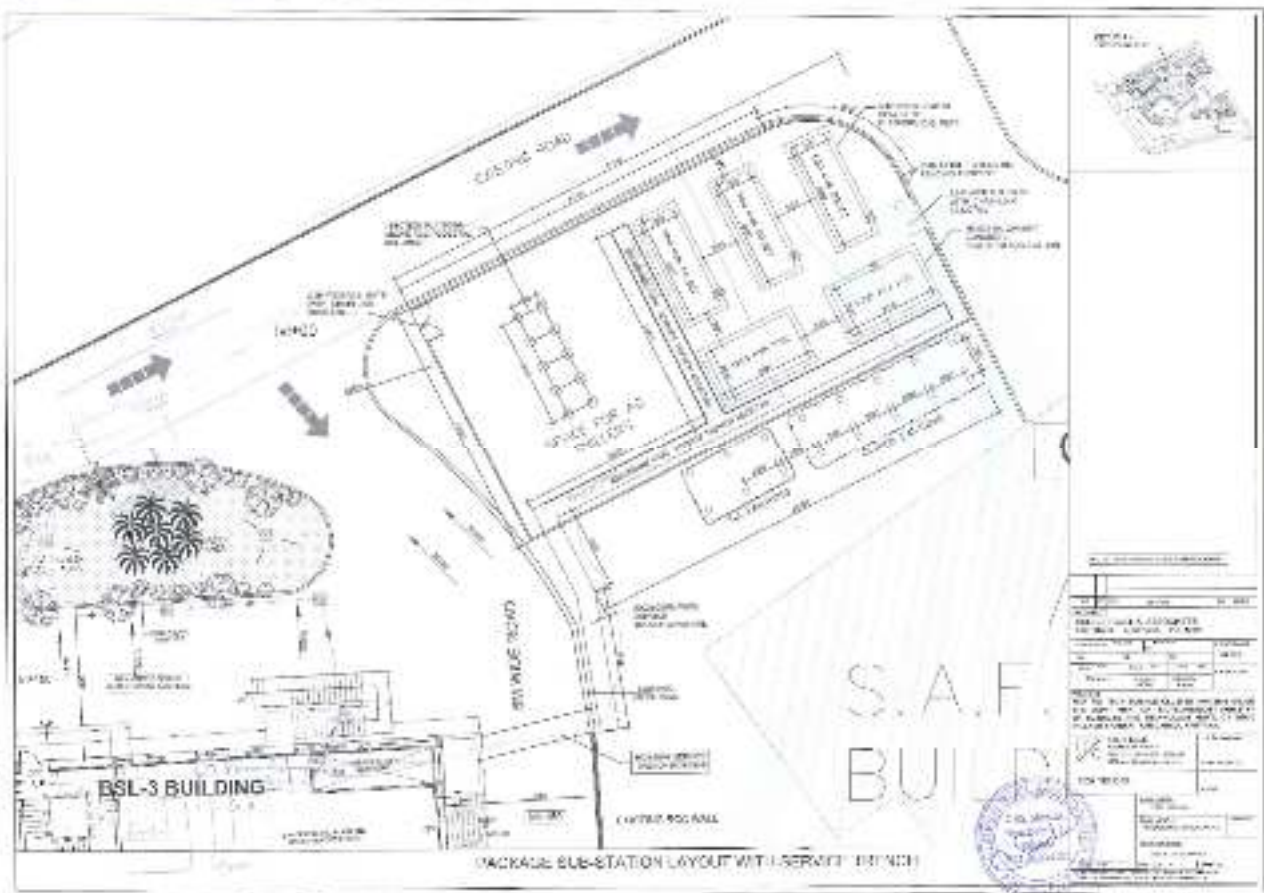
ANNEXURE - X

TENDER DRAWINGS

----- **ATTACHED SEPARTELY**-----



Single Line Diagram



Package Type Substation Layout for BSL-3 Building with Service Trench